

**Technology and Society in Habermas' Early Social Theory: Towards a Critical Theory of Technology beyond Instrumentalism**

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*Krisis* 2023, 43 (1): 66-84.

**Abstract**

Jürgen Habermas is not often thought of as a philosopher of technology. After presenting his early critique of technocratic consciousness, I will contend that the main problem of Habermas' conception of technology lies in the conflation of "technology" with "technical rationality". Feenberg criticizes Habermas' position for implicitly depoliticizing technology. By developing a distinction between "technology" and "technique", I will argue that Habermas' position does not exclude a critical theory of technology. The emergent picture will combine Habermas' emphasis that technology is more than a historical project with Feenberg's optimism on the possibility of an emancipatory reorientation of technology.

**Keywords**

Habermas, Feenberg, Winner, Critical theory, Philosophy of technology, Technical rationality

**DOI**

<https://doi.org/10.21827/krisis.43.1.37753>

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## Technology and Society in Habermas' Early Social Theory: Towards a Critical Theory of Technology beyond Instrumentalism

Antonio Oraldi

### Introduction

This paper offers a critical appraisal of Habermas' conception of technology, as outlined in his early essay *Technology and Science as "Ideology"* (TSI). The main objective of the article is not a systematic exegesis of Habermas' conception of technology, but to explore its potential as a critical-political tool. The main issue at stake is whether technology constitutes a possible driver of emancipation. Without being anti-technology per se, Habermas nonetheless excluded any significant emancipatory potential of technology in virtue of its intimate association with instrumental action. Throughout the ages, human beings consistently made use of tools and instruments to modify the external environment. As such, technology is not simply a historical project carried out by specific social groups: for Habermas, technology is a "project of the human species" (1968). In this perspective, technology is a transhistorical force and it is always oriented to exercising a degree of control over the external environment.

Philosopher of technology Andrew Feenberg argued that Habermas' transhistorical position hinders the imagination of an emancipatory technology. I will argue that, while Habermas' critique of technocracy is laudable, it is based on a narrow view of technology as technical rationality; this is the main flaw of Habermas' conception. Nonetheless, Feenberg's contention that Habermas' theory *excludes* the possibility of a critical theory of technology will be challenged (*I*). The transhistorical stance does not necessarily imply the idea that technology is neutral and apolitical. Rather, this position allows for a framework where general interests (e.g. modification of external environment) and particular interests (e.g. capitalist profit) co-exist.

I will reframe the Habermasian position through a distinction between technique and technology, which prevents the conflation between technical rationality and technology (*II*). This distinction allows the avoidance of the idea that technologies are value neutral, and it points to the analytic separation between instrumentality and artificiality. Langdon Winner's politics of artifacts (*III*) will be integrated into the discussion so as to show that the transhistorical stance is not acritical when it incorporates a distinction between technology and technique.

## I. Transhistoricism and Instrumentalism

### *Habermas on Technology*

There are at least two general ways to understand technology: technological instrumentalism and technological expressivism (Carpenter 1992). In the former, the isolated and independent mind approaches and utilizes a world of objects that is fundamentally external to it; in the latter, objects are constituted through relations of meaning in which the mind is embedded both socially and historically. Although Habermas' conception of autonomy and his linguistic philosophy position the human mind as neither independent nor isolated from the external world, his conception of technology is instrumentalist. In Habermas' writings, technology is always associated with an instrumental attitude to the world: a set of techniques and procedures directed towards the fulfilment of goals.

Though Habermas never elaborated a comprehensive theory of technology, some of his most significant claims on the nature of technology were put forward in TSI. In the 1968 essay, Habermas challenges Marcuse's views on technology. The stakes of the debate focus on the role of technology as a potential driver of human emancipation from the forces of economic and political domination. For Marcuse, technology is a "historical-social project" which reflects "what a society and its ruling interests intend to do with men and things" (Marcuse 1968, 223). Thus, a capitalist society will produce capitalist technologies that reinforce the dominant system. If only we had a radically different technology – which, for Marcuse, is both possible and desirable – we would be empowered to change the system.

Drawing from Gehlen's philosophical anthropology, Habermas contraposes a "universalist" position, according to which technology springs from the organic functions of the body. Eyeglasses ameliorate sight, hammers intensify strength, and washing machines substitute the act of washing with hands. Technology is a result of *organic projection* of bodily activities. As technology advances, the functions of bodily organs are increasingly projected onto tools and machines.<sup>1</sup> In other words, the process consists of a "step-by-step disconnection of the behavioral system of purposive-rational action from the human organism and its transferral to machines" (Habermas 1968, 106). Technology is thus an *instrumental* process characterised by incremental delegation oriented to acting upon the external environment.

Habermas' view of technology is directly informed by an important distinction between two general human activities: "work" and "interaction". "Work" is purposive-rational action regulated by its own results, while "interaction" denotes a symbolic activity oriented to mutual understanding (Habermas 1968, 87-88; 91-92). The objective of "work" is finding the right means to a given end, whereas "interaction" indicates the possibility of non-coercive communicative relationships where subjects are not merely *means* but ends in their own right. In this conception, technology shares the same structure as work: it is governed by technical rules, and it is always instrumental. Thus, if technology is a project at all, Habermas says, it is a "project of the human species as a whole" (1968, 87). Because technology always involves an instrumental attitude to the world, Habermas is sceptical of Marcuse's vision of a radically different, non-instrumental type of technology.

For Habermas, technology is a universal human activity, but it takes a specific ideological function in the contemporary world, which he calls "technocratic consciousness." Technocratic consciousness is (i) "less ideological' than all previous ideologies" (1968, 111), although it is (ii) the most "irresistible and far-reaching": it not only hides class interest but, through the suppression of the distinction between the practical and technical dimension, it (iii) compromises "the human race's emancipatory interest as such" (1968, 111). Like all ideologies, (iv) it serves to detach the foundations of society from thought and reflection (1968, 111-112) – but even more than other ideologies (v) it is invulnerable to reflection because it does not put forward an image of the "good life." For it is exclusively associated with the domain of "work," not of "interaction." By glorifying "work," technocratic consciousness reduces practical (ethical-political) problems to technical problems. The highest value in this worldview is efficiency, which becomes the only measure of adequacy for solutions to human problems.

Technology becomes ideological in relation to two processes in advanced capitalism. The first is what could be termed the "technicization of politics," though Habermas does not use one specific term to encapsulate it. In modern societies, he claims, the main activity of governments is directed at the maintenance of the economic system. In this sense, politics becomes negative: its aim is to sustain the reproduction of the technical, while its deliberative quality in the realm of practical-moral affairs becomes obscured. Yet such a tendency has to confront the lasting issue that the "institutional framework of society [...] continues to be a problem of

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practice linked to communication, not one of technology” (1968, 104). The “technicization of politics” creates a legitimation gap, which is filled by science and technology themselves. Consequently, given that technical problems are removed from public discussion, the expansion of the technical realm leads to a shrinking of the public place of deliberation over practical problems.

The second tendency of advanced capitalism relevant for our purposes is what Habermas calls the “scientization of technology.” While science and technology have been interlinked for centuries, they became inseparable only towards the end of the nineteenth century. Science relies on tools to produce technically usable knowledge. Their tight connection with production forces allowed for the formation of a system, often under government control and pressured towards military and civil aims. Science and technology were thus put at the service of what he later would call the “functional imperatives of the system” (1987), namely the instrumental and objectivating forces of production and control. Because state and economic power have traditionally formed the institutional framework concerned with practical problems, the institutionalization of scientific-technical progress implies that technical problems are no longer distinguished from practical problems. Thus, alongside the technicization of politics, the scientization of technology contributes to loss of awareness of the dualism between work and interaction (1968, 105).

By virtue of this lack of awareness, the development of the social system assumes a quasi-autonomous status that appears to be determined by the inner logic of technical development (qua guarantor of economic growth). The suppression of the distinction between technical and practical (and, with it, between “work” and “interaction”) compromises human emancipation. *Homo faber* becomes *homo fabricatus* as soon as the “institutional framework of society [...] [is] absorbed by the subsystems of purposive-rational action” (1968, 106). The idea of an autonomously reproducing institutional framework on the basis of the inner logic of systems shows an extension of the idea of technology as organic projection onto society itself. Society becomes a cybernetic human-machine system in which humans can objectify the world and themselves, while in turn be fully integrated into the technical apparatus. Accordingly, Habermas’ social critique calls for solutions to ethical-political problems not via technology but in the realm of symbolic interaction: most especially with a revitalization of democratic agency through public deliberation.

There is a fundamental conceptual continuity on the notion of technology in Habermas' thinking: although technology can assume various roles and meanings depending on the socio-historical contexts, it is an essentially *unchanging transhistorical activity* ("transhistoricism") and it is exclusively associated with instrumental, success-oriented action ("instrumentalism"). Because tracing accurately the place of technology throughout Habermas' whole work would require a separate paper, I primarily refer to existing interpretations. Celikates and Jaeggi (2018) stress the continuity of Habermas' thinking on *Technik* around the notion of reification. Fernandes (2020) provides a very detailed reconstruction of Habermas' writings on technology, which suggests a significant conceptual continuity throughout different theoretical concerns. Voskuhl's (2014) analysis of Habermas' relationship with the techno-scientific world does not indicate any significant conceptual innovation on the concept of technology from the early period of TSI to the mature writings (e.g. *The Theory of Communicative Action*, TCA) and the late ones (e.g. *The Future of Human Nature*, FOHN). These elements suggest that Habermas' core conception of technology was already developed in TSI.

Overall, although Habermas is not often thought of as a philosopher of technology, it has been an important (though often implicit) theme in his writings. Firstly, his re-elaboration of Western Marxism into an ethics of communication committed him to take a position toward the techno-scientific world. Secondly, dynamics of instrumentalization and reification typical of capitalist societies led him to denounce the "colonization of the lifeworld" (1984), which consists of the systematic expansion of the logic of profit and power into the public and personal spheres.<sup>2</sup> In the same spirit, he wrote an explicit critique of technology in FOHN, an essay on the relationship between human autonomy and prenatal genetic engineering. Technology has been relevant in his work all along. Although one might object that Habermas could not have imagined the technologies we have today in 1968, it is sufficient to focus on TSI for the purposes of this paper. The core categories with which he approached the question of technology were already developed in it.

#### *Feenberg's Criticism: Instrumentality and Social Values*

Andrew Feenberg is one of the main proponents of a critical theory of technology in the tradition of Frankfurt School theorists. As a leading commentator of Habermas' conception of

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technology, Feenberg's central criticism is that if technology is a project of the human species, and not the expression of a particular historical epoch, then technology is purely neutral. For its *essence* would not reflect specific group interests, but only the general interest of humankind to modify nature to its own advantage. In the transhistorical-instrumentalist conception, technology would supposedly reflect an instrumental action that is free from values and particular social interests. On this basis, it would be impossible to identify harmful biases and hidden interests of domination. However, as Feenberg argues, instrumental rationality is not immune from the surrounding values in which it occurs. *Qua* social action, instrumental action is not pure means-to-end rationality, but the means and ends are always filtered through social values: "Pure instrumentality is not opposed to social norms since all attitudes have a social dimension" (Feenberg 1996, 55). The idea of a *neutral* technical rationality leads Feenberg to a very sceptical judgment of Habermasian critical theory of technology:

The notion of a nonsocial instrumental rationality seems to put the critique out of action. Where technical designs embody normative biases that are taken for granted and placed beyond discussion, only a type of critique Habermas's theory excludes can open up a truly free dialogue (1996, 64).

Feenberg's point brings attention to how critical theory should conceptualize the relationship between technology, rationality, and society. In my view, Habermas' theory does not *exclude* a critical theory of technology that enquires into the normative prejudices and political consequences of technology. Contra Feenberg, I contend that transhistoricism is not the main problem for a critical theory of technology. It is only when transhistoricism combines with a conception of technology based on the idea of neutral technical rationality that a critical analysis becomes problematic. If technology is seen as nothing but the expression of neutral means-to-end rationality, then technology analysis is effectively depoliticized. The implicit ethical norms and political consequences of technology remain underappreciated within such an approach.

The transhistorical position potentially contributed to Habermas' inability to theorize technology beyond its conceptual association with instrumental action, which then expresses itself in the systemic forces of economic and political domination.<sup>3</sup> Yet transhistoricism merely determines the permanence of the phenomenon understood as "technology" throughout historical

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ages, but it does not specify its form. Such form, in Habermas' position, is established by instrumentalism. In this perspective, technology is the result of human action based on technical rationality, which is differentiated from action based on communicative rationality. Technical rationality refers to means-to-end procedures to achieve goals aimed to modify and control the external environment; communicative rationality describes those norms which make human understanding possible in communication.<sup>4</sup> Hence it is a combination of transhistoricism and technological instrumentalism that hinders thinking about technology in broader terms, namely as a possible force of human expression and driver of emancipation.

Feenberg claims that Habermas' conception of technical rationality implies the idea of neutrality. The "neutrality thesis" states that technologies are neither good nor bad, but their ethical evaluation is dependent on their use. Feenberg is correct because Habermas' idea of technical rationality owes to Weber's concept of the pure means-to-end rationality, which later has been subject to the historicist critique of Marcuse and social constructivism. Yet Feenberg's objection applies only insofar as technology is reducible to technical rationality. It is thus better interpreted as a critique of the *neutrality of technical-instrumental rationality, rather than the neutrality of technology itself*. Therefore, the main problem in Habermas' conception is the conflation of technology and technical rationality.

Feenberg takes his critique of neutral instrumentality as valid ground to discard the transhistorical element in Habermas' conception. Neutrality and transhistoricism are related ideas: if technical rationality is immune from socio-historical influence, then it maintains a transhistorical core of continuity. However, I would suggest that it is not transhistoricism per se that leads to neutrality: rather, it is precisely the commitment to the idea that technological action is the domain of pure technical-instrumental rationality. Transhistoricism exacerbates the problem by naturalizing instrumentality as the condition of technology, but it only has a secondary and subordinate function in depoliticizing technology. A critique of neutral instrumentality does not need to imply a rejection of transhistoricism. The existence of "general interests" to control and orient the external environment to human purposes does not automatically mean that technologies are ethically and politically neutral. In addition, Feenberg's conflation of neutrality and transhistoricism, as well as his critique of transhistoricism, runs in tension with the generalist spirit of his project, which leads him to speak of a transhistorical "basic technical relation" (2000a, 232), whose core of attributes differentiate it from other relations to reality. It is thus



better to enlarge the focus of technology analysis so as to be able to distinguish between specific group interests and anthropologically deep-seated human interests, instead of implicitly assuming the latter while focusing on the former.

Feenberg acknowledges technological instrumentalism being the problem, when he claims that “the idea that technology is neutral, even with Habermas's qualifications, is reminiscent of the *naïve* instrumentalism so effectively laid to rest by constructivism” (1996, 47).<sup>5</sup> Yet firstly, as a response, he provides a *historicist* account (with marked constructivist hints, which brings him to define his approach as “critical constructivism”; Feenberg 2017, 44), instead of offering a non-instrumentalist perspective. Secondly, it would seem that for Feenberg, the main problem is not instrumentalism *per se*, but only the supposed *naivety* of Habermas’ conceptualization of it. One could argue that Feenberg’s theory of technology does not move beyond instrumentalism itself, even though it refines the relationship between technology and instrumentality: not only by providing a specifically *technological* logic of instrumentality (see Table A in the appendix), but also with his theory of primary and secondary instrumentalization (1996, 65-66). Here, technology is defined by a double moment of instrumentalization. Primary instrumentalization refers to an extra-historical “basic technical relation,” whereas the secondary points to the reflexive dimension of technology, expressed in its socio-historical configurations.<sup>6</sup> Instrumentalism is not fully overcome because the reflexive and expressive qualities of technological action are still referred to as “instrumentalization”: such reflexivity is always associated with technical rationality.

Consequently, Feenberg’s position effectively substitutes a naive instrumentalism with a less naive instrumentalism. His analysis calls for enquiry on the particular interests that penetrate technological design. The historicist and constructivist positions indeed have the advantage of opening up the possibility for an alternative and more democratic technology. Insofar as there is no transhistorical “essence” of technology, the definition of technology is open and subject to change: each socio-historical context contributes its definition. Nonetheless, the rejection of “naïve” instrumentalism need not occur at the expense of considering technology merely a “historical project.” While sharing Feenberg’s aim of developing a theory of technology that serves emancipatory goals, the strategy adopted here is slightly different. Rather than taking the critique of “naïve” instrumentality as a rejection of transhistoricism, the relationship between technical rationality and technology is problematized, such that the latter is not confined

to the realm of the former. This implies an understanding of the place of technology in life and society that goes beyond mere instrumentalism.

So as to account for the lasting presence of technologies throughout human history, transhistoricism deserves more explicit appreciation than Feenberg concedes. Social critique is not incompatible with an element of transhistoricism – however shrunken, thereby allowing for diversity of attitudes to and meanings of technology. Adopting a philosophical anthropology where technology constitutes a key human way of dealing with the world throughout historical ages beyond modernity can only benefit critical theory in understanding the subtleties of human-technology relations. In my position, similarly with Habermas, the transhistorical element is drawn from Gehlen’s anthropological conception of technology as an organic projection of activities. Instead of retreating to a merely historical understanding of technology, a critical theory of technology should follow and expand the project that Habermas hints at in TSI: on one hand, technology is an everlasting domain of human activity, while, on the other, it takes variable forms in socio-historical contexts.

## II. Technology and Technique

Habermas’ position exposes itself to Feenberg’s critique because of an implicit assumption on the identity between technical rationality and technology. While this criticism would effectively exclude the possibility of a critical theory of technology on Habermasian grounds, I suggest that such an effort is possible, but it needs a conceptual clarification that Habermas does not provide. Nonetheless, Feenberg’s reflection calls for an expansion and amelioration of Habermas’ positions concerning technology that he himself has not provided.

Many thinkers have distinguished between technology and technical rationality in various ways, as well as between technology and “technics” or “technique” (e.g. Mitcham, Heidegger, Ellul, Ihde). Often this distinction denotes the uniqueness of *modern* technology. Rather than focusing on the modern-traditional dichotomy, I distinguish between technique and technology on the basis of the instrumentality of action. Our concepts of “technology” and “technique” are inherited from the classical Greek meaning of *techne* as “art” or “craft,” i.e. a form of knowledge on the creation of objects and modification of nature. *Techne* contains two analytically independent concepts that are worth spelling out: *instrumentality* and *artificiality*.

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The former deals with procedures, or techniques, whereas the latter indicates action mediated by artifacts. The “art” of cooking consists of a set of knowledge of the procedures necessary to cooking well: actors engage in the instrumental act of cooking with success if they know the technique. This is the realm of instrumental action and technical rationality. On the other hand, the technological dimension refers to the domain of human-made objects, tools, and artifacts that were not in nature before human intervention. The Internet, washing machines, and windmills are technologies because they are human creations which were not in nature before us. Hence technology is associated with the artificial realm.

Technical action is precisely a form of instrumental action, regardless of artificiality. Its validity lies in finding successful means to specific ends. Technical action, as based on technique, deals merely with procedures: it only responds to “how to?” questions. The (instrumental) act of cooking a meal requires a set of procedures (technique) that turns *cooking* into *cooking well*. Following such procedures means to engage in technical action. On the other hand, technology – or *technological action* – is not simply a collection of technical procedures: it is a way of relating to the world through tools or artificial systems.

Technique and technology also differ etymologically in their relationship with *logos*.<sup>7</sup> As a form of discourse, technology involves a systematic dimension of knowledge: it can be thus construed as the comprehensive study of techniques, i.e. rules, skills, and procedures for the achievement of ends. In this sense, technology is a kind of “scientized technique,” analogously to what Habermas (1968) described in TSI as “the scientization of *Technik*”: the technical attitude is extended into a comprehensive field of study. In relation to its discursive character, there is another sense in which technology cannot be reduced to mere technique: the technological attitude, unlike the technical attitude, is not merely instrumental. Because of its world-mediating function, non-instrumentalized, genuine meaning can occur in direct relation to artifacts and technologies. Hence, not all technologically mediated action is “purely technical.”

The valence of this distinction is twofold: first, it enables for a separation between an abstract, merely procedural, technical rationality from the concrete form it embodies within social contexts; second, it points out that technology is not reducible to technique because the dimension of artifacts is analytically separate from instrumentality. One can speak of a “technological

lifeworld,” when artifacts are conceived as more than mute instruments. Technology is not only “invading” the lifeworld structures, but it always has a constitutive dimension within it.<sup>8</sup>

There is reason to believe that Habermas himself thought implicitly along the lines of such a distinction – at least in the first layer, i.e. between pure technique and concrete, non-neutral technology. He was not completely naive about the fact that societal interests penetrate technological design. In the 1954 essay *Dialectic of rationalization*, a young Habermas revises Marx’s idea of pauperism and alienation; there he disagrees with the “popular conclusion” that technology is a purely neutral instrument, whose good or bad directions are entirely up to humans’ moral energy (Voskuhl 2014, 486). Similarly, in TSI, he acknowledges that, alongside the general human interest of modifying nature, there are specific interests that influence technological development: “It is true that social interests still determine the direction, functions, and pace of technical progress” (1968, 105). Moreover, when he explains the connection between productive forces and rational-instrumental action, his claim that “the knowledge implemented in forces of production” is “*embodied* in technologies, organisations and competencies” (my emphasis) seems to precisely presuppose a distinction between abstract technical rationality and the concrete process of construction of technologies (Habermas 1982, 267). The process of concretization allows for non-neutral penetration of interests from social actors. This separation between the pure procedure of technical rationality and the socially embedded construction of technologies can save Habermas’ theory from a commitment to the neutrality of *technology*, regardless of the commitment to an idea of *technical* neutrality.

Moreover, a separation between technical rationality and technology allows for the expansion of the general interest behind technology as a double interest: one towards material control, and one towards symbolic expression. Broadening Habermas’ focus on technical action as the general interest behind technology paves the way to overcoming technological instrumentalism. Though elaborating such a project fully requires a separate inquiry, the following examples indicate how the symbolic dimension of artifacts makes the instrumentalist conception of technology inadequate. The coexistence between technical mediation and symbolic activity applies to several art and communication forms such as writing, cinema, and music. Communication technologies, especially when combined with digital technology, make an instrumentalist interpretation too simplistic. There is a qualitative difference between a hammer and online social networks: the notion of “cyberspace” embodies the idea that such technologies

are *spaces of interaction*. Analogously, video games cannot be understood purely as “instruments” either: as such, they are *spaces of expression*. The telephone is also a domain of interaction. While the hammer or the modern assembly line “reveal” a world, using Heidegger’s terminology, they do not constitute *per se* spaces of human interaction. Their monological structure associates them with “work,” while communication technologies entail dialogic structures akin to symbolic “interaction.” Even if one could apprehend the symbolic significance of the hammer or the assembly line since they connect the user to an external world that is modifiable, controllable, and exploitable, their monological structure makes an instrumentalist perspective more suitable to them than to telephones or video games.

Overall, if along with the *general* interest of acting upon external environments there can be *particular* interests, then the potential for critique that Feenberg saw as impossible becomes renewed on Habermasian grounds. There is nothing, in my view, contradictory between declaring the existence of general, transhistorical interests (as provided by a philosophical anthropology), and particular, context-specific ones. This allows for a transhistorical concept of technology to entail a corresponding politics of artifacts. Further, when the general interest encompasses both material control and symbolic expression, it becomes easier to conceive of how even transhistorical interests can assume forms that have a political character. Accordingly, a transhistorical conception of technology can sustain the idea that technology is political in an even deeper sense that Feenberg’s historicist-constructivist critique implies.

### **III. Transhistorical and Political Technology: on Winner’s Political Artifacts**

Here, I shall briefly sketch how the transhistorical conception of technology can be accompanied by a politics of artifacts as outlined by Langdon Winner. Like Feenberg, Winner points out that technologies are susceptible to penetration of social interests: technologies are ways of ordering reality and settling issues in communities (Winner 1980). Democratization of technology would thus call for political participation in the design process. I shall here follow Winner in his more audacious claim that technologies can be intrinsically political insofar as they embody and relate to political relationships in particular ways. This will allow us to imagine how, on the basis of a distinction between mere technical procedure and concrete

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technology, Habermas' depoliticized general interest behind technology can assume concrete forms that have a political cast.

In Winner's model of intrinsically political technologies there is a double distinction to be drawn: firstly, the political dimension of a technology can be external and internal to the technological system; secondly, the relation between the artifact/system to a political relationship can be either strong or weak. External political salience occurs when the *consequence* of the adoption of some technology has a political cast for society at large. For example, the nuclear bomb has external political salience in that it entails the potential effect of destroying planet Earth very quickly. In this case, the political salience is not internal to the socio-technical system of the bomb itself. Similarly, the collection of personal data through apps and websites has extrinsic political salience in that some of their uses can deeply affect personal and political life (e.g. surveillance, propaganda, influencing elections). On the other hand, the idea of political salience internal to the technical system is well expressed in Engels' essay *On Authority*, in which he outlines how railways and cotton mills exert authority on individuals who work in them. Both the architecture and pace of the machinery require the workers to structure their activities in a way that accommodates the "interests" of the machine. Otherwise, success-oriented action fails.

Engels' position entails that some technical arrangements exercise a *strong* political relationship. In this sense, some technologies *require* a certain type of social organization around it to function properly. Winner takes the atom bomb to demand a highly hierarchical and centralized control system to avoid destructive unpredictability: "The internal social system of the bomb must be authoritarian; there is no other way" (Winner 1980, 131). On the other hand, in a weaker version of this thesis, proponents of environmental technologies have emphasized how solar energy is more *compatible with* a democratic and egalitarian society (Argue 1978). Solar energy can well exist in an authoritarian society, but it is believed that its decentralized structure is more compatible with democratic control than large-scale centralized plants.

The differentiation between the technical procedure of transformation and the concretized technological artifact allows for an analysis of the political salience of the artifact (whether internal or external, strong or weak) on Habermasian grounds. The political import of technology can be seen as springing directly from the general, anthropologically deep-seated human

interest to exercise a degree of control over external environments; yet, within this tendency, technologies relate to political relationships (as outlined in Winner's model) in context-specific ways, and they can embody particular interests, whether intentionally or unintentionally. Hence the declaration of technology as a project of the human species does not automatically imply its depoliticization through the idea of neutrality.

The direct relation between general interest and political salience can be illustrated by a technology that has accompanied human existence throughout history: weapons. In noting that "technology is as old as Man," Gehlen outlined that "the rough flint wedge already hides within itself the same ambiguity that today is typical of atomic energy: it was a work tool and at the same time a deadly weapon"<sup>9</sup> (Gehlen 1984, 10). In my view, weapons can be characterized as inherently political technologies throughout all ages because any user of a weapon must always divide the world into friends and enemies. The very act of looking through the scope of a sniper rifle invites such discrimination. This is political in the literal sense that the limits of the *polis* are delineated through the use of weapons: the decision to kill implies that the target is to stay irreversibly outside the human realm of possible interaction.<sup>10</sup> In Dussel's theory of resistance, the history of weapons has a definite political cast too. Weapons originated as life-affirming tools, whose principal function was the survival of the human species through the collection of fruits and the killing of animals; now, weaponry constitutes a life-threatening apparatus – whose ultimate expression is the atom bomb – with precise political consequences (e.g. geopolitical dominance).<sup>11</sup>

On these grounds, Feenberg's equation of the political dimension of technology with particular interests appears to be limited. Indeed, particular interests play a role, but the political cast of technology is inherent in the potential of artifacts – in direct consequence of the general human interest to modify and orient nature. The transhistorical conception favours a technological anthropology whereby humans have historically related to the world via technology. The process of finding a home, a shelter, and a place within the ecosystem is always a socio-technical enterprise. From branches to fire, to railways and computers, the definition of the human place in the world is a history of technological mediations. Such an anthropological model suits best the necessary contemporary experimentations to find a new "home" in the planet in face of the ecological crisis, while escaping both techno-enthusiasm and short-sighted anti-technological solutions.

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The relevance of this discussion has been to consolidate the point that a political analysis of technology is not excluded by Habermas' commitment to a transhistorical conception. Winner's model offers a political analysis of technology that is richer than Habermas' in particular details, but it does not surrender to mere particularism. By claiming that technologies are ways of ordering reality, and that the potential of artifacts is intrinsically political, Winner's model implicitly relies on a picture of technology where general and particular interests coexist. Thus, if transhistoricism does not automatically exclude the political character of technologies, then it does not preclude the possibility of a *critical* theory of technology, whose aim is to identify such political relationships and orient technology towards emancipatory purposes. Although underlying social interests in design are no less important, when attached to a distinction between technique and technology, the Habermasian transhistorical conception favours a political analysis of technology where coexistence between particular and general interests is possible. In this sense, a commitment to a conception of technology that includes a transhistorical element is not *a priori* inferior in its political analysis than one that declares no essence beyond the social context. The transhistorical conception is inferior only when a depoliticized general interest transfers uncritically to the concrete existence of technologies, i.e. when it fails to incorporate a distinction between mere technique and technology.

## **Conclusion**

This paper offers a critical commentary on Habermas' philosophy of technology. This inquiry can hopefully stimulate reflection on the conditions for an emancipatory technology. The article engages with Feenberg's scepticism on the potential of a Habermasian critical theory of technology. Feenberg's criticism brought to the fore the point that Habermas' position requires amelioration on the issues of instrumentality and neutrality. Nonetheless, Habermas' conception does not *exclude* a critical theory of technology. Habermas did not do much to dispel the myth of neutrality, but I argued that a separation between technique and technology can save his theory from a naive depoliticization of technology.

The conception of technology as more than technique allows to account for the process of translation of abstract procedural rationality into concrete contexts in non-neutral ways, and the potential of artifacts as vehicles of symbolic expression. Drawing from Winner's political artifacts, I highlighted how technologies can be politically salient in particular contexts while



being traceable to the general interest of acting upon physical and social environments around us. In addition, the distinction between instrumentality and artificiality provides the basis for overcoming technological instrumentalism by expanding Habermas' concept of technology to include symbolic expression.

Technology studies can gain from Habermas' critique of technocracy, and his commitment to public deliberation can be renewed in relation to technology once we understand that technologies are more than a technical issue. Because technology is not reduced to a project of a particular historical age, the Habermasian framework is more fit to understand the coexistence between general and particular interests than Feenberg's historicist-constructivist position. The transhistorical conception does not hinder a critical and political analysis of technology; rather, it supports a more complex picture of the relationship between technology and politics. On one hand, technology can be both a "project of the human species" and relate to social contexts and political relationships in particular ways. On the other, the awareness of a deep-seated anthropological tendency to relate to the world technologically paves the way to deal with twenty-first century global challenges, avoiding both utopian and dystopian attitudes to technology.

### **Acknowledgments**

I wish to thank several people who have in some way shaped my reflections during the production of this article: Prof. Maeve Cooke for her comments and the general encouragement, Prof. Brian O'Connor for his very helpful feedback, Liliana and Enrico for the constant support, my friends Andrea, Paul, Thao, and Matteo for the many conversations, and finally the anonymous reviewers who have pushed me to clarify some aspects of the text.

**Appendix**

Components	Standard situation	Generalized value	Nominal claim	Rational criteria	Actors' attitude	Real value	Reserve backing	Form of institutionalization
Medium								
Money	Exchange	Utility	Exchange value	Profitableness	Oriented to success	Use value	Gold	Property and contract
Power	Directives	Effectiveness	Binding decision	Success (sovereignty)	Oriented to success	Realization of collective goals	Means of enforcement	Organization of official positions
Technology	Applications	Productivity	Prescriptions	Efficiency	Oriented to success	Realization of goals	Natural consequences	Systems

Table A. The lines of “money” and “power” are Habermas’ theorization of the logic of the system. Feenberg adds the third line with “technology” (Feenberg 1996, 58).

**Notes**

- 1] “At first the functions of the motor apparatus (hands and legs) were augmented and replaced, followed by energy production (of the human body), the functions of the sensory apparatus (eyes, ears, and skin), and finally by the functions of the governing center (the brain). Technological development thus follows a logic that corresponds to the structure of purposive-rational action regulated by its own results, which is in fact the structure of work” (Habermas 1968, 87).
- 2] See Heath (2014) for a thorough interpretation of Habermas’ conception of society as divided into system and lifeworld, and how the former “colonizes” the latter.
- 3] From the historicist standpoint, technology expresses itself in the content of its age and it is always open to re-definition. In Habermas’ transhistorical position, technology is essentially the same today and in Neolithic times: it can change in content (from the bow to the sniper rifle) but not in form.
- 4] In Habermas’ conception, rationality is not entirely ahistorical, insofar as “reason” is always situated in specific social practices and historical contexts.
- 5] Habermas’ “qualifications” are the following: technology is not neutral as a whole, but only in its own sphere. When political problems are reduced to technical problems, technology is no longer neutral because it becomes ideological: non-neutral problems are treated with the delinguistified means of technical action. However, when left in its proper technical-instrumental sphere, technology is neutral.
- 6] For a discussion of how Feenberg’s theory of instrumentalization departs from classical critical theory, see Bantwal Rao et. al. (2015).
- 7] The very word “technology” only appeared in the sixteenth century, in the work of French rhetorician Peter Ramus, who used the word “*technologia*” (or “*technometria*”) to denote “the *logos* of all *technai*.” Before that, *techne* and *logos* were mostly kept separate: Aristotle combined them only once (in the *Rhetoric*, “*technologousi*”) to indicate a form of reasoning subordinated to craft. It is only in the eighteenth century, however, that

technology transformed into a function-oriented activity associated with productive forces (Szerszynski 2005, 55-56).

8] Drawing on Heidegger, Feenberg also calls for “an appreciation of the role of the technical lifeworld in which we live with devices, not merely controlling them but also finding meaning through them” (2000b, 446). From this standpoint, promising dialogues between critical theory and post-phenomenology become possible (e.g. Ihde, 1990).

9] Personal translation.

10] I am not suggesting that politics is reducible to the Schmittian concern with drawing the line between friends and enemies – nor that it is or should be primarily concerned with such an operation. However, drawing that line has undeniable political consequences.

11] See Dussel (2013, 402-403).

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