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Technology in Society

Designing for conviviality

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ABSTRACT

The aim of this paper is to advance systemism (an ontological framework that accommodates both agency and social structure, stressing that everything is a system or part of a system) as a better suited ontological framework for giving an account of the role of technologies in the formation of a good society. Building on Ivan Illich's systemic understanding of a convivial society, my secondary aim is to provide a matrix for the ethical design of technologies meant to foster conviviality. I will argue that such an ethical matrix could overcome strictly individualistic or holistic understandings of the social realm, by admitting that the social change provoked by technology is affecting both the social fabric of the concerned society and the individual which is part of the social structure concerned.

1. Introduction

A critical analysis of the new technologies (roughly, the Internet and all the applications/devices made possible by it, alongside ambient and artificial intelligence, virtual reality, robots and so on) and of their role in pushing forward a good society is by no means an easy task. Such an endeavor demands not only an evaluation of particular issues raised by the use or misuse of these new tools, but also of their societal impact. If one wants to reach a more comprehensive understanding, a first step would be to set forth an ontological evaluation "helpful for reflecting on the fundamental assumptions about the social that underlie the study and evaluation of technology" [5 p. 2].

I start by making explicit the social ontological and methodological presuppositions in current strands of thinking about technology. I claim that such typically hidden assumptions about the nature of the social realm also inform our understanding of technologies and their impact at a societal level. I advance systemism (described below) and claim that it is a better suited ontological framework for giving an account of the role of technologies in the advancing a good society. I will do so by pinpointing the shortcomings of the two most common ontological frameworks, i.e., individualism and holism. Individualism focuses on the impact of technologies on individual users, ignoring society as a whole, while holism overlooks the agent(s) using the technologies, treating society and technology as two irreducible entities. Systemism remedies these deficiencies by acknowledging that society is neither a sum of random individuals, nor a homogeneous unity. It accommodates both agency and structure by admitting the complex, inter-relational and mutually shaping processes between individuals and society. When applied to technology, systemism has the benefit of seeing the artificial or virtual realm as a subsystem of society that both affects it and is affected by it. As such, the micro and macro levels are integrated in analyses concerning the role of technologies in actualizing good societies.

Because systemism seems a fuzzy and complicated ontological framework, I will appeal to a systemist thinker, Ivan Illich, who examines the role of tools in the emergence of convivial societies. Good societies are made possible only by convivial tools which enhance both the user's autonomy and social cohesion. Building on Ivan Illich's systemic understanding of a good society, my secondary aim is to provide a matrix for the ethical design of technologies meant to foster conviviality. This matrix, which rests on the assumption that technology both shapes and is shaped by society, provides a way for understanding how individual and societal values should be addressed in technology design so as to push forward better societies.

Although I use the catch-all phrase 'technology' throughout this essay, I am primarily concerned with the subset of such technologies that run through the Internet. I start from the assumption that it is a mistake to treat technology as a homogeneous unity. Branches of technology (military technology, medical technology, information and communication technologies) have their

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specificities and, as such, must be discussed on their own terms, since a desirable design criterion for one branch (for example, open source in information and communication technologies) might have catastrophic consequences when applied to another branch (just imagine open-source pace-makers or unmanned combat aerial vehicles[1]).

2. An ontological assessment of current strands of thinking about technology

When thinking about the relation between technologies and the good society many tend to refer to two different domains. One has as its focus the technical or engineering aspects of new tools. The other is concerned with ideals and values that form the structure of a good society. However, keeping these inquires separated does not lead us very far when trying to pinpoint the link or impact of these new technologies on a societal level and vice versa. And this is due to the fact that "evaluations about the new technologies are never just about technology" [5, p. 3]. Technologies and societies are deeply interconnected by mutually shaping processes [9], which demands bridging the gap between technical and evaluative analyses. Such a task can be accomplished by adopting a systemic view of the relationship between society and the Internet.

In what follows I will highlight the shortcomings of two classical ontological frameworks, individualism and holism, frameworks which infuse analyses of technologies and their role in the formation and maintaining of a good society. Drawing on the works of Mario Bunge [7,8,17,18], I argue that systemism offers the most suitable conceptual scheme for clarifying the dynamic among individuals, communities and technology. Societies, in a systemic view, are systems of correlated individuals. This ontological framework combines the explanatory powers of individualism and holism while avoiding their shortcomings [7,8]. It also has the benefit of taking into account "social values (ignored by individualism) as well as individual values (ignored by holism)" [8, p.157]. Moreover, such a conceptual framework would admit that the social change provoked by technology is affecting both social structure and the individual that acts within the respective social structure.

2.1. Individualism and holism

The link between technologies and the good society is usually conceptualized within an individualistic or reductionist ontological framework [5, p. 1, 6, p. 326]. Individualism, be it ontological or methodological, explains any kind of social phenomenon in terms of individual behaviors. The basic assumption is that bigger scale processes can be logically derived from individual ones [9, p. 3]. More precisely, a society is nothing more than an arbitrary set of individuals that has no global properties. Every macro phenomenon that we aim at explaining is a result of the properties or actions of the individuals involved. Moreover, ontological or methodological individualism has normative implications, by stipulating that there are no such things as social values with an independent, irreducible nature. As a consequence, societies could be explained and construed in a modular fashion from individual processes. Systemic phenomena such as social cohesiveness, stability, or even global poverty, cannot be accounted for by individualism, because on such a view the only way to explain the emergence of processes with novel or unknown characteristics is to reduce them to

individual facts and actions [7, p. 15]. Individualism is a reductionist framework insufficient in providing a satisfactory explanation of such complex issues as societal ones.

Within this ontological framework, a good society is only a matter of cumulative individual choices and responsibility, reducible to the good life of the individuals. The societal or political implications of the use of technologies are understood as consisting in the aggregation of their individual consequences or impact [5, p. 1]. Such approaches are typical of analytical applied ethics, which tackles types of cases that raise particular problems mostly for individuals, such as privacy, personal identity, security or cybercrime. But they are also implicit in postphenomenology [see 11,12]. For example, Verbeek's mediation theory gives an insightful analysis of the relation between individual users and specific artifacts, while ignoring social relations and the social ecology of which individuals are a part [12]. As a consequence, sociality, social values and social relations are not part of the "human-technology-world scheme" [5, p. 3]. Within individualism, questioning the impact of technologies on a societal level is, in a way, useless, because such a question would be in fact reducible to the individual level. A good society is nothing more than an aggregate of the properties of its members. And although some authors take into consideration the social realm and treat it as irreducible in some respects to the individual level, they nonetheless do not fully acknowledge the mutually shaping processes between individuals and the societies they are part of, as will become more clear from the following example.

Albert Borgmann, one of the most influential philosophers of technology, has never openly identified himself as an individualist. Despite this, one can find in his works tacit assumptions and presuppositions that pertain to individualism. Firstly, it is worth stressing that Borgmann contributed to the empirical turn in the philosophy of technology, by refusing to see it as a unitary, monolithic force. As such, his focus was always on concrete technological artifacts and their specific impacts on individuals' ways of living. Borgmann's endeavor of defining the 'device paradigm' has as its ultimate aim the illumination of how technologies affect and alter the life of users and the way they engage the world [38]. The disburdening character of technologies has an ironic outcome: it makes users lose engagement with the world. Borgmann proposes engagement centered around 'focal things' as a solution to a life of mindless consumption induced by technology [37, p. 30]. His ultimate quest is to urge us to set up our technologies so as to accommodate and foster practices of engagement, where engagement is understood as "a flexible and inclusive principle of ordering one's life" [38, p. 214] and it presupposes active involvement with the world and others. But Borgmann's proposal for such reform remains centered around the private realm, addressing individuals and their attempts at construing ways of engaged living [37, p. 30]. Although he stresses the need for developing certain types of civic virtues and behaviors that would contribute to the strengthening of technological communities — like politeness, sociability and civility [38, p. 233] — his attempts are ambiguous and far too abstract to provide concrete design procedures. Approaches such as Borgmann's are illuminating when aiming to address concrete problems raised by particular artifacts which unfold within a foreseeable time-frame and involve concrete stakeholders.

Individualist ontological, methodological or moral frameworks lack the strength for addressing collective action and values that contribute in significant ways to how individuals conceive good societies. Conceptualizing societies as sets of arbitrary individuals [7, p. 18], thus restricting analyses of their impact at a micro-level, entails the denial of social relations and social values. Every potential issue or problem posed by the uses of the new technologies is reduced to individual responsibility. There are no emergent properties resulting from the interplay between individuals,

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[1] For a recent discussion of the ethics of unmanned combat vehicles (set in the context of debates about sex robots), see Ref. [39]. For a discussion on responsibility, see Ref. [4].