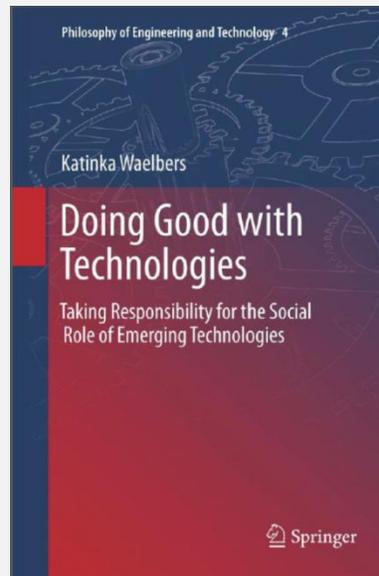


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## **DOING GOOD WITH TECHNOLOGIES**



Waelbers, Katinka. *Doing Good with Technologies: Taking Responsibility for the Social Role of Emerging Technologies*. Springer, 2011. DOI 10.1007/978-94-007-1640-7

**Key words:** ethics and technology, Actor-Network Theory, responsibility, new technologies

The ethics of new and emerging technologies becomes a focus of many studies in recent years as technology becomes more and more prevalent in our society. Technology did not occupy an important role in philosophical discussions until Heidegger's 1954 breakthrough article "The Question Concerning Technology". Until then, in modern philosophy, technological devices were viewed as mere scientifically produced tools neutrally employed in human activities. However, Heidegger considered modern technology as a metaphysical force that determines humanity and that is beyond human control. These two conflicting views, technological instrumentalism and technological determinism, come to an end with the "empirical turn" in the philosophy of technology, a term coined by the Dutch philosopher Hans Achterhuis. The main driving force of this turn is the idea of mediation. Technologies mediate our life, our perceptions, our decisions, our actions, but they neither determine them, nor are they neutral. One consequence of this turn is the focus of contemporary philosophy of technology on the ethics of technological design. If technological devices influence and mediate perceptions, decisions and actions, the design process should take this influences and mediations into account and create better technologies from the moral point of view.

Katinka Waelbers, one of the contemporary Dutch philosophers, makes a remarkable contribution to this ongoing debate by her newest book *Doing Good with Technologies: Taking Responsibility for the Social Role of Emerging Technologies*. She offers a toolbox for the designing process for evaluation of ethical implications of new and emerging technologies by combining the Actor-Network Theory of Bruno Latour, that analyses the constitution and the morality embedded in technological artefacts, with the ethical analysis of practices done by Alasdair MacIntyre. As it becomes clear from analysing the technological environment, neither deontology nor consequentialism can account for an ethical evaluation of design given the fact that the evolution of a technological artefact is complex and depends not only on design but on users and wider social practices. The designer does not have full autonomy regarding the artefact he creates and the outcomes of the design process are commonly unforeseeable, raising the question about the responsibility that a designer could assume given the indeterminacy of the outcomes. In search for a sound theory that will ground a responsible design and a workable toolbox that will give practical instruments for evaluating the moral consequences of emerging technologies, Waelbers states from the beginning the main questions that will guide her endeavour:

1. How can the social role of technologies be best understood?
2. If technologies fulfil a social role, can people still be responsible?

3. How can practitioners work to take responsibility for the social role of future technologies in practice? (page 4)

These three questions are developed in 8 chapters that expose the development in the field and the needed background theories, propose a theoretical framework for evaluating the social role of technologies, and exemplify the proposed method by a critical analysis of intelligent cars that are currently being developed.

In the first chapter, "Responsibility for the Social Role of Technologies", Katinka Waelbers argues for the need of taking responsibility because technology modifies our ideas, decisions and actions whether we like it or not. Consequently, it is better to assess and influence these modifications in order to enhance human well-being than to let technological mediations evolve in a hazardous manner. Nevertheless, is it possible to influence the modifications that technologies introduce? As shown in the second chapter, by examining the history of various conceptions on technology, there is a broad range of views regarding the ontological status of technology, from pure instrumentalism to extreme determinism. According to the first position, technologies are mere value-free instruments and only their use is ethically relevant. The latter position affirms that technology self-develops according to its own human-independent internal logic, a situation that renders ethical evaluation pointless. These opposed views find an answer in the powerful theory of Bruno Latour, the Actor-Network Theory or ANT, that analyses both humans and technologies as actors that enact scripts or programs of actions. In order to bring about their scripts, both humans and technologies need to interact with each other and mediate each other's action. To take the most famous example of Latour, the speed-bumpers are designed to slow down incoming cars and their program of action is enacted through the human program of action that determine the driver to protect his/her car. Further, human script is mediated by the car's gears. To sum up, Latour shows that technologies mediate human actions and that both human and technologies fulfil a social role that is to be studied in the networks of real interactions, networks that evolve over time.

The Actor-Network Theory has a major flaw if one wishes to consider the responsibility for technological mediations: humans and technologies are very similar as actors in socio-technological systems, so that the capacity of a human to initiate autonomous action is virtually annihilated. This problem is addressed in the third chapter, "Actor-Networks and Taking Responsibility", where theoretical developments on ANT that recover a stronger sense of human agency are considered. Latour simply denies the capacity of humans to be originators of action. Action is what happens in the networks composed of long chains of mediations that lack an origin. Moreover, the consequences of mediations

are hard to know given the complexity of the networks. In order to deal with this evacuation of responsibility, Waelbers considers not only actions as being relevant but also the reasons for actions and the rational assessment of these reasons. Her aim greatly differs from Latour's, who only tries to explain the mechanisms of socio-technological networks and not to evaluate future developments. Moreover, adds Waelbers, the mediations takes different forms that will make a difference when moral evaluation and responsibility are considered.

Chapters 4 and 5, "Becoming Responsible for Techno-Social Practices" and "Human Practices in Technological Contexts", represent a valuable proposal of an ethical theory that could take into account technological mediations and their moral aspects. Waelbers' account brings together two heterogeneous theories, the Actor-Network Theory and the value-ethics or life-ethics of Alasdair MacIntyre. Although different in aims, tools, and domains of analysis, these theories share a common focus on practices. Latour analyses the constitution of technological practices and the networks in which they take place, while MacIntyre sees practices as the locus in which moral values, norms and virtues emerge, develop and flourish. An important reason for taking a life-ethics approach to technological design is that the autonomy of human agents in socio-technological settings is diminished by technological mediations, which ruled out any deontological or consequentialist approach. The focus on practices and the rejection of full autonomy of humans are the starting points of Waelbers analysis. MacIntyre's insights solve a number of different issues that were unaddressed in ethical approaches to technology. First, MacIntyre offers a substantial theory of the good that can be transferred into socio-technological analyses. He distinguishes four different types of "good": fulfilling our biological necessities, possessing the relevant skills for a given practice, fulfilling a desirable social role, and being virtuous, i.e. living a good life. The ethical-oriented designer should take all these meanings into consideration. Second, it becomes possible to understand the question of responsibility of an agent that has limited autonomy regarding his/her decisions, reasons and actions.

Accepting responsibility means recognizing that your actions can make a future difference (no matter how local) and that you are willing to adjust your actions for the better. Taking responsibility means actually taking the effort to find out what is a good thing to do and acting according to those findings. (page 64)

In dealing with the future social role of technology, one important aspect is the moral imagination that has to account for the moral changes that a technology brings with it, because technology changes not only perceptions, decisions and actions, but also our moral norm and values.

After the establishment of the theoretical framework of moral evaluation of future technologies, in the sixth chapter, "Tools for a Forward-Looking Responsibility", Katinka Waelbers offers a series of practical insights for the actual design process. There are five questions that summarize the ethical aspects of design:

1. What are the aims of the technology?
2. Which practices will be affected?
3. What are the common reasons for actions in those practices?
4. Given these reasons and given the existing technologies, what uses are likely?
5. How will these uses mediate the reasons for actions in the involved practices? (page 93)

For answering these questions, the designer has three sets of tools that would enhance moral evaluation of future technologies. First, by using moral imagination we gain insights into the way others relate to technology, we picture a broad range of possible outcomes and we extract the relevant moral aspects of a technology. A second tool is the Technology Assessment, a practice that comprises strategic conferences, consensus conferences, dialogue workshops, interviews, and social experiments (like role-playing). Finally, the design process should be informed by behavioural studies, from computer simulation to statistical data regarding the use of similar technologies and to experimental uses of the prototype.

The tools of evaluating future technologies developed in the sixth chapter are exemplified by an analysis of a real-world situation that concerns the introduction of intelligent cars in European Union. The seventh chapter, "Case Study: Taking Responsibility for Future Driving", shows the many "revenge effects" that the intelligent car may have, effects that are overlooked by the naive enthusiasm that accompanies the promotion of a new technology:

The safer the cars are, the less safe (daring or unfocussed) people may behave. We might also lose the fun and the feeling of freedom that driving brings to many people, though drivers might have more time for other primary and secondary tasks. The vulnerable road users may become more emancipated, but we are also at risk of assigning drivers' responsibilities to technologies. (page 125)

The final chapter, "Will We Accept Responsibility?", restates the main arguments of the book in an insightful manner arguing for the need to take responsibility and to use our reasoning capacity. In order to create the material conditions for human well-being we must reflect prospectively on what good is and whether it is pursued by our design practices. What distinguishes Waelbers' approach in this respect is the

employment of MacIntyre's substantive criteria for the good in the ongoing debate whose principal actors are ANT, post-phenomenology and NEST-ethics.

***Acknowledgements:*** *This review was made within the project "Transnational Network of Integrated Postdoctoral Research in Science Communication. Institutional Development (Postdoctoral School) and Scholarship Program (CommScie)" supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number POSDRU ID 63663*