

BOOK REVIEW

Re-engineering Humanity, Brett Frischmann and Evan Selinger (2018) Cambridge University Press, Cambridge, 410pp., £25 (hardback) £14 (paperback) ISBN 9781108707640

The core of the book is whether smart technologies could re-engineer humanity and make people act like simple machines. The authors critically analyse current trends in internet technology, which make people's life easier, at the same time taking control of it, and explain how the idea of designing programmable worlds is closely related to the engineering of predictable and programmable humans. Having said that, the book is an example of a reasoned and well-balanced set of arguments, neither an alarmist screed, nor an additional voice among the detractors of human enhancement. Frischmann and Selinger are fully aware of the worries and troublesome prognosis regarding what machines can do, especially the risk that machines might sap our humanity, issues which have been widespread for as long as machines have existed. In modern and contemporary times, an instrumentalist view of existence in a broad sense has increasingly and pervasively influenced our understanding of ourselves and has shaped accordingly the kind of societies we build up and live in. 'Techno-social engineering refers to processes where technologies and social forces align and impact how we think, perceive, and act' (p.4). *Quid novi?*

Frischmann and Selinger affirm that the risk of a unidimensional humanity has never been so acute as it is today. Philosophically speaking, they share the insights of all those (the reviewer included) who describe humans as techno-social animals. This is uncontroversial: what meaningfully distinguishes *homo sapiens* from all other species is our ability to imagine, conceptualize and engineer our environment and ourselves. In addition to this, and with respect to all other animal species, human beings are paradoxically less suitable for surviving in the natural environment since they are born with neither a specific instinctual store nor environment-fitting equipment. Precisely because of this inherent vulnerability, the absence of instinctual capabilities and 'inborn' means of survival has been compensated (by chance, in particular and random moments) by first technical and then technological-scientific interventions. These are therefore distinctive features of the human species, turning human beings into the most universally adaptable and powerful of all living animals on our planet. Technologies are not (and have never been) simply tools that humans use in order to interact with and experience the surrounding world. They are also means of mediation that shape their world: 'what matters about being human is how we exercise such power over generations to collectively produce, cultivate shared normative conceptions of humanity. How should we exercise this power? How should we engineer our world and ourselves? Which type of society should we build and sustain? These are not new questions. Modern techno-social engineering frames these questions in a new and challenging light' (p.13). The technological moment is where we humans are now, despite the digital divides that impact asymmetrically within continents, countries and even neighbourhoods.

How can we reframe the debate and the social conditions of engineering what humanity is and ought to be? This question could be the interpretive subtitle of this volume. Since the assumptions shared by the authors apparently belong to the toolkit of methodological individualism, it is understandable why the legitimate call for liberty of the two authors is limited to up-to-date reformulations of the ideal of negative freedom: freedom to be off, freedom from engineered determinism (the technophilic believes we could socially construct a perfectly optimized world if only we had sufficient data). Having said that, it is easy for everyone to agree with Frischmann and Selinger on this point: to imagine and construct 'properly' our external and internal world means adopting a sound normative point of view, enabling us to detect, investigate and criticise what is

going on. The whole volume pursues coherently such stipulations, its authors declaring honestly the bias of being white American middle-class men, who are attempting to represent the future and defend the (presumed) shared ideal of all humans.

The book starts with the controversial example of the Oral Roberts University project equipping 'selected' high school pupils with fitbit health trackers. The good intention to monitor and improve sport and physical activity for the sake of families and individuals, in order to reduce the risk of obesity in the young, is carried out by means of controlling devices recording electronically the behaviour of the participants. Even worse is the real case of activity watches for school children. The authors denounce that the nightmare of bath time and bedtime surveillance is not even evoked as a negative outcome to avoid. On the contrary, it is presented by educators and promoters as decent and healthy, with very little resistance on the part of parents or regulatory agencies.

Secondly, attention is devoted to the case of actuated navigation; special focus is on the widespread 'ideal' of being free from the burden of our body by means of outsourcing procedures. This ideal, convergent with the transhumanistic dream of mind-uploading, and opposite to the post-humanistic evaluation of hybridity and rehabilitative prosthetics, hides and obscures the existential characteristics and effects of outsourcing on individuals: this means passivity, decreased agency, decreased responsibility, increased ignorance, detachment, decreased independence.

Thirdly, analysis of 'surveillance creep' phenomena (when a tool is used for something different from its original purpose) and solid (not fallacious) slippery slope arguments opens a reflection on how hard and complex it is to understand techno-social engineering and its insidious consequences. Such enterprises as Google and Amazon are massively intruding into school budget policies and projects by subsidizing information and communication technologies. Their aims are to mould children's preferences, creating lifelong consumers, who will learn to be passive and submissive when faced with various forms of surveillance techniques. The positive effects of techno-social innovations can blind and thus cause an underestimation of the hidden cost of their downside.

Electronic click-to-contract is interpreted as a successful method of imposing indirect control mechanisms on consumers. According to the authors, electronic contracting is a techno-social tool of particular relevance and effective for engineering human beings to behave like simple machines.

This view shows how consumers, like laborers in Taylorist workplaces, are conditioned to behave in ways that largely are determined by efficiency-oriented system designers. Considering electronic contracting through the lens of Taylorism connects our discussion to a broader set of techno-social engineering problems. (p.61)

Smart environments can prompt people to outsource thinking and acting by encouraging the pleasure that comes from minimal thinking. In time, this becomes a habit that can influence permanently their minds, making people less critical and less equipped to oppose manipulation of any kind. Analysis carried out by the authors shows that important aspects of techno-social engineering are not taken into account because of exaggerated excitement about smart environments.

The instrumental way of reasoning is enhanced to such a degree that it becomes fetishized; smart technologies are the most recognizable contemporary icon of instrumental reason. If the rapid increase of scientific and efficiency management is equivalent to the extension of Taylorism, as the authors suggest, it is easier to understand why the extension of thinking activity into smart technologies erodes people's control over their own lives. In other words, each incremental step to adopt a new technology able to increase the degree of release from labour appears to be justified in cost-benefit terms. Educational institutions may be heading in the wrong direction – towards passivity, decreased agency, decreased responsibility, increased ignorance, detachment and decreased independence. There is an incredible variety of small-scale decisions we each make regarding technology that seems rational and unproblematic. Yet the increments aggregate, and we all end up being damaged if we fail to account for the systemic effects of our single decisions.

The final part of the book proposes a techno-social engineering test made up of two steps. The first is to run an experiment to see if, in some specific contexts, humans are behaving like simple machines. In reversing the aims of the Turing test, the authors are not interested in the engineering of intelligent machines, but they are interested in the engineering of unintelligent humans. The research step would assess whether the techno-social engineering examples studied in the first step occur in other fields of human behaviour.

Such a step is designed to trigger either a metaphorical red light (to stop, to slow down, to deepen the reflection, to consider alternatives) or a green light (to conclude that no normative problems are envisaged). The authors offer some examples of how such an observative/conceptual/normative frame can be successfully applied. The authors are not sympathetic to Heidegger's prognosis regarding the fate of our age.

We don't share Heidegger's pessimism. Nor do we agree with his view that modern technology effectively has a mind of its own that humans can't change. We believe that a fully determined world hasn't been created, and that, if it were to be, it wouldn't be because technology demands how the pages of history will turn. Instead, progress towards engineered determinism requires the confluence of many factors, ranging from engineering decisions to market demands. For us, engineered determinism (a social economic outcome) entails techno-social engineering of humans, often through the construction of smart techno-social environments that render humans within the environments increasingly predictable and programmable. (p.220)

Nevertheless, hacking, repurposing, meaning-making, sabotaging, subversive practices that can thwart surveillance by authorities happen all the time and will continue to happen.

The most radical proposal is to eliminate electronic contracts altogether and replace the entire regime with legislation that fully determines the contour of legal relationships formed online. The basic idea would be to replace the private ordering accomplished by electronic contracting with public ordering enacted by a legislative body or regulatory agency charged with looking out for the public good. (p.290)

This is a pragmatic and minimal initial step, with great chances of success if considered from an incremental point of view. Alternative futures are facing us, and are mostly unpredictable.

*Barbara Henry
Dirpolis Institute
Scuola Superiore Sant'Anna
Piazza Martiri della Libertà 33, Pisa, I-56125, Italy
barbara.henry@sssup.it*