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2016

<https://doi.org/10.25969/mediarep/13393>

Veröffentlichungsversion / published version

Sammelbandbeitrag / collection article

Empfohlene Zitierung / Suggested Citation:

van Est, Rinie; Royakkers, Lambèr: Robotisation as Rationalisation – In Search for a Human Robot Future. In: Liisa Janssens (Hg.): *The Art of Ethics in the Information Society*. Amsterdam: Amsterdam University Press 2016, S. 44–48. DOI: <https://doi.org/10.25969/mediarep/13393>.

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ROBOTISATION AS RATIONALISATION

IN SEARCH FOR A HUMAN ROBOT FUTURE¹

Rinie van Est and Lambert Royakkers

The idea that robots in the future will take over the control of this planet from the human race is very much alive today. At the end of 2015, public figures like Elon Musk and Stephen Hawking stated that full artificial intelligence could spell the end of the human race. Bill Joy, nicknamed the 'Edison of the Internet', was one of the first to raise awareness for this existential threat. In 2000 he wrote a controversial article, 'Why the future does not need us', in which he warns for the dangers of uncontrolled intelligent systems, stating that we may actually destroy ourselves if we continue to further developing intelligent systems. That said, not everybody feels negatively towards a society dominated by robots. Some praise it as a next step in evolution and a victory for intelligent life. Transhumanist Ray Kurzweil happily foresees a future in which the world will belong to people who have reached a next level in intelligence (cyborgs) and to intelligent machines (robots), sadly the 'ordinary' unenhanced man has no place other than to function as a kind of pet.² Are these visions of super-humans, super-intelligent machines and the end of the human race merely wild speculations or should we take these kinds of predictions seriously?

Our pragmatic answer is that we should take the issue of human control over intelligent machines as well as the theme of robots as potential dehumanising technologies very seriously. This essay will focus on the latter theme, and claims that robots can act as both humanising and dehumanising systems. An example of the former, since 2004 robot jockeys are used to replace children at camel races in various Gulf States. These children were often kidnapped from nearby, poorer countries, such as Sudan and Pakistan, and treated very badly. In situations like this there may even be moral obligation to apply robotics. The challenge, of course, is to stimulate such humanising effects, like using robots to take over 'dirty, dull and dangerous' activities, and to prevent dehumanising effects, such as by not allowing robots to nurture our children or take care of our elderly. We will discuss the theme of dehumanisation from the perspective of rationalisation.

044

Rationality and Irrationality

When human robots are found, mechanical robots cannot be far behind. Once people are reduced to a few robot-like actions, it is a relatively easy step to replace them with mechanical robots.³

At the beginning of the Twentieth Century, social theorist Max Weber (1864 – 1920) found that the modern Western world had become dominated by a belief in rationality. Weber saw the bureaucracy as the paradigm for the rationalisation process in his day. Belief in efficiency led to the redesign of the factory and labour. Engineers not only mechanised separate actions but aimed to design the factory as one 'great efficient machine'. Rationalisation, however, took place in many social practices. For example, also the kitchen became seen 'as a factory that converted input (groceries) into output (meals) by means of specific activities, technologies, and spatial distances.'⁴ In a similar fashion, offices, airports, and cities were defined in terms of flows that could be designed and mechanised in an integrated manner.

Weber discussed rationalisation as a double-edged phenomenon. On the one hand, it could have many benefits, such as broader access to cheaper products and services with consistent quality. On the other hand, 'rational' systems can possess a variety of irrationalities, such as inefficiency, unpredictability, incalculability, and loss of control, for example; too many rules can render bureaucracies inefficient. Max Weber was most concerned about the so-called iron cage of rationality; the idea that an emphasis on rationalisation can reduce the freedom and the choices people have, and can lead to dehumanisation.

¹ The argument in this paper draws on our book *Just Ordinary Robots: Automation from Love to War* (Royakkers and Van Est 2016). Just ordinary robots explore the social significance of the actual and intended use of robots in five domains: the home robot,

the care robot, the use of drones in the city, the car robot and military drones.

² Kurzweil 2005.

³ Ritzer 1983: 105.

Robots Caring for Humans

The notions of rationalisation and dehumanisation play a key role in the debate regarding care robots. Care robots are often depicted as the epitome of effective and efficient care. It is the ultimate rationalisation of a concept that can neither fully be measured nor captured in sensors and data. From an ethical perspective the hot potato is care without any human contact. The deployment of care robots may give rise to several ethical issues depending on whether robots play a role as: (1) companion for the care recipient, (2) cognitive assistant for the care recipient, and (3) (supporter of the) caregiver. Before we discuss the ethics, it is important to realise that the actual deployment of these types of robots is not expected in the short term.

A robot as companion can lead to misleading relationships, particularly since people have an innate tendency to attribute human traits, emotions, and intentions to non-human entities, such as robots. This so-called anthropomorphism tends to increase trust in robots, which can be both used and misused to persuade people to engage in certain actions. The robot as companion technology also raises controversial images of lonely elderly people who only have contact with animals or humanoid robots. The ethical concerns about the pet robot focus on the degree of human contact that such technology brings about. Sparrow and Sparrow describe care robots as 'simulacra' replacing real involving, complex, but rewarding social interaction.⁵ Other authors are more positive; Borenstein and Pearson believe that the deployment of a robot, such as the seal robot Paro, can relieve feelings of loneliness and isolation.⁶ A companion robot may also help isolated elderly people to keep up their skills of social interaction.

Cognitive assistance care robots may meet the need for senior citizens to live independently at home for a longer time. A robot can assist someone to remember appointments, to take medication or to eat on time, and can also ask the care recipient questions; such as do you have pain in your leg and then make a log-entry. The use of care assistant robots also raises questions. How pushy may a robot become, for example, in reminding someone to take medication? What if someone refuses to take the medication? This situation demonstrates the danger of paternalism or creating authoritarian care robots.

The use of robots as (supporters of) caregivers raises social issues relating to the human dignity of the care recipient. Sharkey and Sharkey believe that when robots take over tasks such as feeding and lifting, the care recipients may consider themselves to be objects.⁷ Another drawback may be the reduction in human contact caused by the use of care robots. It is expected that the contact between care recipients and human caregivers will increasingly be mediated by technology. The unpleasant question underlying all of this is: how many minutes of face-to-face human contact is a care recipient entitled to receive each day?

It is important however to observe the choice of the care recipient. Some people might prefer a human caregiver, while others may prefer the support of robots, depending on which one gives them a greater sense of self-worth. Robots can thus be used to make people more independent or to motivate them to go out more often. The elderly may, for example, keep up their social contacts as they can go outside independently with the help of robots; robots here are used as technologies to combat loneliness. Equally, when deploying robots to assist people when showering or going to the toilet, the robots are the key to independence. Again, the manner in which robots are deployed and the tasks they carry out are both of crucial importance. The more control the care recipient has over the robot, the less likely he or she is to feel objectified by the care robot.

Robotisation as Rationalisation

Faith in rationalisation implies that efficiency, predictability, calculability, and control through substituting technology for human judgement present dominant cultural values.⁸ In our era of big data, control often refers to digital control by means of algorithms. Rational systems aim for greater control over the uncertainties of life, in particular over people, who present a major source of uncertainty. One way to limit the dependence on people is to replace them with

4 Van den Boogaard 2010: 137.
5 Sparrow and Sparrow 2006.
6 Borenstein and Pearson 2010.

7 Sharkey and Sharkey 2012.
8 Cf. Ritzer 1983.

machines. After all, robots and computers are less rebellious than humans. Replacing humans by robots, therefore, is the ultimate form of rationalisation.

For example, in the course of the twentieth century manufacturers have robotised their car factories. That robotisation was preceded by the far-reaching rationalisation of the work practice; originally, craftsmen ruled the production process. Then dividing the work into many simple partial activities paved the way for its mechanisation and eventually made it possible for robots to enter the factory. Now robots are moving into society, a central question becomes: to what extent are we willing to rationalise our social practices in order to enable robots to play a role, or even replace humans, in these practices?

Independently of robotics, processes of rationalisation have accelerated over the last decades and become globalised. In *The McDonaldization of Society*, Ritzer argues that no aspect of people's life is immune to rationalisation anymore.⁹ He sees the fast-food restaurant as the paradigm for the rationalisation of contemporary society. The entire food chain – from farm and factory to consumption – is geared toward efficiency. Nowadays many US citizens opt for dining at fast-food restaurants or eating microwavable food in front of the TV, this to the detriment of cooking from scratch and 'quality time' family meals. Ritzer argues that the fast-food culture has various dehumanising effects: the meatpacking industry creates 'inhuman work in inhumane conditions' and consumers are dehumanised as 'diners are reduced to automatons rushing through a meal with little gratification derived from the dining experience or from the food itself.'¹⁰

The history of the car factory illustrates that rationalisation of social practices can be a stepping-stone to robotisation. Namely, since robots have limited physical, social and moral capacities they can only work in a robot-friendly environment. For example, when people want to employ a vacuum-cleaning robot, they have to hide cables, remove deep-pile carpet or lightweight objects from the floor. This process of rationalising the living room is known as *roombarisation*, referring to the Roomba, the first vacuum-cleaning robot. Floridi argues that already for decades we are rapidly adapting both our physical and mental living space to the limited capacities of ICTs, including social robots.¹¹ To summarise: we seem to be rationalising each aspect of our lives, and often in an ICT- or robot-friendly way, so ICTs, like robots, may contribute to these processes of rationalisation.

046

Making Sex Mechanical

Even social relationships and sex have become rationalised, and indeed ICT is a major driver of this process. Technology is nestling itself within us and between us, it collects much information about us and can sometimes even operate like us, that is, mimicking the facets of our individual behaviour. In short, information technology has become 'intimate technology.'¹² The rationalisation of sociability is evident in 'rationalized online systems such as Facebook, where friendship is reduced to clicking an 'add' button and never needing to interact with that 'friend' on an individual basis ever again.'¹³ Also, sex has undergone substantial rationalisation. Aoyoma, a relationship counsellor in Tokyo, believes Japan is experiencing 'a flight from human intimacy.'¹⁴ Many Japanese young people have lost interest in conventional relationships and sex, because they find it 'too troublesome' (in Japanese: *mendokuzai*). Replacing them with convenient technologies, such as virtual-reality girlfriends or sex robots, can reduce dependence on 'complicated' humans. Some people even believe that the future of relationships in Japan and the rest of the world will be largely technology driven.¹⁵ In this scenario the rationalisation of sex with sex robots will ultimately make sex mechanical.

Levy only sees the advantages of sex with robots, since robots 'behave in ways that one finds empathetic, always being loyal and having a combination of social, emotional, and intellectual skills that far exceeds the characteristics likely to be found in a human friend.'¹⁶ According to Levy, it is almost a moral imperative that we work to make these theoretical robotic companions a reality, because these robots could add so much love and happiness to our world. Unlike Levy, Turkle fears that the use of sex robots will result in de-socialisation and social

9 Ritzer 2013.
10 Ritzer 2013: 135.
11 Floridi 2014.
12 Van Est 2014.

13 Flusty 2009: 436.
14 Haworth 2013.
15 Haworth 2013.
16 Levy 2007: 107.

de-skilling.¹⁷ Sex will become purely a physical act without commitment rather than a loving and caring act. She describes a trend towards rejecting authentic human relationships for sociable, human-like robots, and wonders what kind of people we are becoming as we develop increasingly intimate relationships with machines. Other authors respond that Levy ignores the deep and nuanced notions of love and the concord of true friendship. Sullins argues that in the way sex robots are currently evolving 'we have an engineering scheme that would only satisfy, but not truly satisfy, our physical and emotional needs, while doing nothing for our moral growth.'¹⁸ Also Richardson who leads a *Campaign against sex robots*, wants to raise awareness of this design issue and persuade those developing sex robots to rethink how their technology is used. She believes that they reinforce traditional stereotypes of women, objectification of women, and the view that a relationship need be nothing more than physical: 'these robots will contribute to gendered inequalities found in the sex industry.'¹⁹

A New Beginning

Robots can have a profound effect on how we define our relationships and ourselves with other human beings. Moreover, robots can act as both humanising and dehumanising systems. It is important to realise that the way robotics will develop and used in society is not fixed. There are many technical, economic, individual, social, and political choices to be made. Echoing the views of Weber and Ritzer, this essay acknowledges that modern society is obsessed with rationality. Now robotics is moving into society, we are challenged to weigh the potential social gains of rationalisation through robotisation against potential social costs.

Weber's label of the 'irrationality of rationality' comprises all the negative aspects and effects of rationalisation. It warns us that robotisation may lead to systems that become anti-human or even destructive of human beings and communities. In the 1980s, Ritzer observed that the rationalisation of food consumption caused the loss of the communal meal for which families got together every day. He regretted that because he found that family meals could play an important role in keeping families together. Ritzer argued:

There is much talk these days about the disintegration of the family, and the fast-food restaurant may well be a crucial contributor to that disintegration. Conversely, the decline of the family creates ready-made customers for fast-food restaurants.²⁰

Nowadays, various people fear that robotisation may foster similar types of vicious circles. For example, some would regret if companion care robots were to lead to a loss of interaction with real humans, or if sex robots would cause people to become physically and socially disconnected from each other, and that this in turn, would stimulate the demand for sex robots. It is important to acknowledge the possibility that apparently typical human trades, like face-to-face and skin-to-skin intimacy, can eventually be lost to technology. Precisely, because robots can have a profound effect on our humanity, we need to clarify through reflection and joint debate what kind of human qualities we do not want to lose. The scenarios about robots and (de)humanisation can stimulate that debate. So, instead of worrying too much about the end of the human race, let us begin searching for common moral principles and criteria for orienting ourselves into the robot future.

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