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An Ethico-Legal Analysis of Legal Personality and Artificial Intelligence as Applied to Robotic Carers

As artificial intelligence (AI) advances the legal issues have not progressed in step and principles that exist have become outdated in a relatively short time. Privacy is a major concern and the myriad of devices that store data for wide ranging purposes risk breaches of privacy. Treating such a breach as a design defect or technical fault, does not reflect the complexities of legal liability that apply to robotics. Where advanced levels of AI are involved, such as with electronic butlers and carers used increasingly to assist vulnerable and ageing populations, the question of whether a robot owes a duty of confidentiality to the person for whom they are caring is becoming ever more pertinent. This question is considered in detail and it is concluded that a duty may be owed in some cases. After a brief introduction (I.) the article picks up on the aspects of legal agency and AI (II.) and examines robots as social beings (III.), their relationship to duty (IV.) as well as their capacity as “extended cognition” (V.). These aspects are then brought in context with issues of data protection (VI.) and the general relationship between civil law, ethics and robotics (VII.) before conclusions (VIII.) are drawn.

I. Introduction

The law on artificial intelligence (AI) on robotics is evolving, but as Collingridge’s law predicts, it has failed to keep up with technological advances. A set of principles for robotics published just seven years ago is already out of date (see below in section VII). It fails to take into account the problems of machine learning, which mean that programming and subsequent behaviour is not entirely predictable nor wholly down to human agency. Privacy is one of the biggest concerns in modern society, with some commentators expressing the view that privacy has disappeared altogether. Recently, consumers had to be warned about their conversations within “ear-shot” of their Samsung smart television. The FTC in the USA fined a television manufacturer, Vizio, for tracking users’ viewing habits and selling the information. These issues are typically seen as defects of design, with the manufacturers or operators being responsible for such breaches rather than the television set or another device. It is now recognized that legal liability for advanced robots would not be as straightforward as this. In many cases, they can be seen as mere agents, but particularly where advanced levels of AI are involved, this will not necessarily be the case. Electronic butlers and carers are already a reality, and the ageing population and the increasing need for care might lead to the provision of electronic care assistants in the home. Will these electronic aides owe a duty of privacy to the persons for whom they are caring? It is our argument that the answer is not ‘No’ in all cases.

II. Legal Agency and AI

The answer will probably depend on both the level of AI and the capacity that the dependent has. The dependent may potentially form an emotional bond with a sufficiently advanced robot, which poses some ethical questions of its own. It is known that play robots can engage children for hours, but will this decrease the amount of time parents spend with their children? Where the alternative is passively watching TV, the play robot might be preferable. Are robotic pets for the elderly ethical, particularly if they get emotionally attached to the animal substitute? If a person with dementia believes that the robotic pet is a real pet, is this a process of infantilisation and hence an offence to the dignity of that person?

III. Robots as Social Beings

Humanoid robots are often anthropomorphised. There was an emotional reaction when the hitchhiking robot HitchBot was destroyed in the USA. Speculative fiction is replete with examples of robots becoming humanised, from Terminator to Blade Runner/Do Androids Dream of Electric Sheep? to Almost Human.

1. Unease with Humanoids

Where the robot is humanoid, there may be an issue with the “uncanny valley”. This phenomenon describes the

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5 Dr John Rumbold, PhD Kingston University London/Barbara Pierscionek, Nottingham Trent University. Further information about the authors at p. 64.
8 RUSHTON, K., 2015, Feb 9th. Samsung warns viewers: Our smart TVs could be snooping on your private conversations. Daily Mail (Feb 9th).
human reaction of revulsion to a robot or other simulacrum of humanity that is close but close enough to the real thing. The form of a baby harp seal was chosen for Paro to minimise these effects, as people are less familiar with “sealness” than say “catness”. One important question is whether a humanoid robot might have a disturbing effect on clients with mental health issues or sensory impairments. It has been suggested there may be a “uncanny valley of mind”, where the appearance of emotional capacities in a robot may cause unease.

2. Emotional Attachment

The relevance of these issues is that our attitudes towards robots are influenced by their appearance. Calo comments on our tendency to react to robots as social beings, and cites a reported example of soldiers risking their lives to rescue a robotic member of the team. Darling reports that soldiers name their robots, promote them, and become upset when they “die”. Whether or not human beings can have a friendship with robots is debated. The human can have an emotional attachment to the robot, but not vice versa. If it is difficult for a human to understand what it is like to be a bat, it will be even more difficult for a robot to understand what it is like to be a human. It could be argued that the robot, whether a T-800 killer robot (Terminator franchise) or a Paro baby harp seal, has no capacity for moral agency or an emotional attachment to the human being; this means that robots cannot have empathy (a trait exploited in the Voigt-Kampff empathy test in Do Androids Dream of Electric Sheep/Blade Runner). There is also an argument that in the future robots can become moral agents. The genuine personality (called “Synthetic Soul”) demonstrated by “Dorian”, the DRN Police Synthetic in “Almost Human” is not a possibility on the immediate horizon.

3. Trust

The maintenance of a relationship requires trust. The robot in Robot & Frank agrees not to tell Frank’s son about their activities to build trust. In the film, a retired burglar enlists his robotic carer into one last robbery. In its own way, the robot provides Frank with independence. Frank becomes attached to the robot and wants to prevent its memory being erased. A requirement for robots to be slavishly adherent to the law will inhibit their capacity to be social beings. It also inhibits their capacity to drive, for example – another activity that relies on social cues and interactions.

IV. Robots and Duty

Where the robot is an assistive technology and the dependent has an expectation of privacy, there may be a legal case for respecting that on the ground of the common law duty of confidentiality (with some exceptions where personal safety is involved, just as with human agents). Whether the appropriate test should be objective or subjective is arguable. It would require advanced capabilities for a robot to recognize subjective expectations. These issues are not theoretical. Toys connected to the internet can be hacked, and recently the doll “Cayla” was banned in Germany as a “hidden espionage device”. In a recent case in Arkansas, police have applied for a warrant for voice data from an Amazon Echo device used by a murder suspect. There are many apps being developed for mental health care. These forms of AI might become effective electronic confessors, with all the responsibilities and duties that this entails. One study found that 57% of children would trust ‘Robovie’ with their secrets. Conversely, for someone who is very self-conscious about their body, having care performed by a non-judgmental robot may be preferable to exposing themselves to human gaze.

1. Legal Agency of Robot/AI

The robot/AI can be considered capable of legal agency itself, or alternatively the dependent is capable of instructing the robot as his or her agent. Even if the robot is provided by the carers, it can be argued (if the robot is afforded some form of legal agency) that the robot in fact owes its “duty of care” to the dependent. This is the position that Frank’s robot takes, within limits. Its priority is to optimise Frank’s health, even if this includes planning and executing crimes.
2. Implications of “Duty of Care”

“Duty of care” has moral connotations which arguably would not apply to a robot without moral agency. Can a robot have any duties in that sense? When the cleaning mechanoid Kryten in the science fiction TV series Red Dwarf is exhibiting relish for his cleaning duties, can that be attributed to any morally praiseworthy qualities or is it simply an inevitable result of his programming? We praise a dog as a “good boy” when he has been trained well. By analogy, we might consider a robot that has developed good traits for social care through machine learning a “good robot”.

3. Implications of Accountability

One of the issues surrounding robots in many applications is accountability. Accountability ultimately relies on the potential for punishment for infringements. Can a robot be truly punished? If a robot is damaged or even destroyed, does it suffer? Punishment and suffering requires an emotional capacity that is neither necessary nor desirable for a manufactured entity. Any aberrant behaviour only requires correction, not retribution. Some might argue there needs to be human supervision, whether the robot is a battlefield robot who kills or a carer who tends; the moral agent for whom, in the phrase popularised by Harry S Truman, “the buck stops here”.

Other commentators warn about the unnecessary insertion of a human in the loop as a “moral crumple zone” – a cyber scape-goat.

4. Definition of “Duty”

Duty can also be defined as

“A task or action that one is required to perform as part of one’s job”.

If we therefore re-frame “duty” as a responsibility that is part of the robot’s role, then the robot certainly can have a “duty of care” and a “duty of confidentiality. If there is a duty of care, then it is reasonable in light of the nature of the care to presume a duty of confidentiality too. Frank’s robot wants to fulfil this duty of confidentiality by having its memory erased.

V. ICT and Our Brains – Aid or Extension?

ICT is so intertwined with our thought processes that the term “extended cognition” has been coined to describe the use of computers and other devices as an extension of our minds. It has been suggested that therefore compromising these functional extensions of our brains could be considered an assault. It has been argued that a warrant should be required in the UK before police can search mobile phones (it is already required in the USA as per Riley v. California). If the extended cognition metaphor is accepted, such searches without a warrant could be seen as contravening the right against self-incrimination. The alternative argument is that the devices are used simply for cognitive offloading in the same way as a paper diary or address book. The ratio decidendi of Riley was that searching the phone involved a much greater intrusion of privacy than the limited search of the immediate surrounding covered under the warrantless search exception. The phone contained far more data than a diary or address book would.

Where these assistive technologies are employed to help the vulnerable, the issue of privacy is even more compelling. Here the technology is being used as part of the management of their condition, rather than an option chosen by a competent adult to make life easier. The extended cognition supplements a compromised cognition in a form of bio-enhancement. When someone with dementia records something as an aide memoire, this is externalising a thought that would normally be safe on the inside of one’s own head. It seems proportionate therefore to protect that information more robustly than for the general population. These situations would test the limits of the objective definition of “reasonable expectation of privacy.”

VI. Data protection issues

These issues can be examined through the prism of data protection law. There is no doubt that these data are personal. Where the robot is providing care, very often they will be sensitive data triggering a much stricter regulatory regime like e.g. under Art. 9 (EU) General Data Protection Regulation. The storage and retention of data might be essential for the functioning of the technology, provision of care, and audit and accountability purposes — in which case consent would not be necessary. Nonetheless, it would be important to make the client aware of this, especially where they have capacity.

1. Capacity to Consent

Where data is collected as part of giving care and only used for that purpose and related uses (such as audit), then consent is not required. Data sharing for technology development does not come under this categorisation. If the technology (whether robot or app) requires you to waive your right to privacy, the person with mental health issues might feel that their needs outweigh the disadvantages. In other circumstances this consent would be perfectly valid, but where the vulnerable are concerned there should be additional protections beyond requirement for consent, even when this is explicit and informed consent. The vulnerable may lack the capacity for truly informed consent, but nonetheless may benefit from assistive technologies that require data retention and sharing. For these reasons, privacy by design is preferable to models based on autonomy and consent. A capacity for the client to delete the robot’s memory would be useful in some circumstances.

36 Riley v. California 134 Supreme Court of the United States 2473 (2014).
2. Legitimate Data Access
The fact that data storage and retention are necessary for the provision of care does not mean that their use will be unrestricted. Any secondary use requires the usual safeguard afforded under data protection law. It may well be appropriate to use data for developing assistive technology further even without explicit consent, to avoid obstructing the progress of useful technology for this group.

VII. Civil Law, Ethics, and Robotics
1. European Union
The European Parliament has been debating civil laws on robotics. They examined the shortcomings of the law as it stands and concluded:

"the current legal framework would not be sufficient to cover the damage caused by the new generation of robots, insofar as they can be equipped with adaptive and learning abilities entailing a certain degree of unpredictability in their behaviour, since those robots would autonomously learn from their own variable experience and interact with their environment in a unique and unforeseeable manner." [para AI]

The resolution also comments on the issue of emotional attachment to robots:

"special attention should be paid to the possible development of an emotional connection between humans and robots – particularly in vulnerable groups (children, the elderly and people with disabilities) – and highlights the issues raised by the serious emotional or physical impact that this emotional attachment could have on humans." [General principles, para 3]

2. UK
The EPSRC and AHRC jointly issued principles of robotics in 2011. The five chief principles were:
1. “Robots are multiuse tools. Robots should not be designed solely or primarily to kill or harm humans, except in the interests of national security.
2. Humans, not robots, are responsible agents. Robots should be designed; operated as far as is practicable to comply with existing laws & fundamental rights & freedoms, including privacy.
3. Robots are products. They should be designed using processes which assure their safety and security.
4. Robots are manufactured artefacts. They should not be designed in a deceptive way to exploit vulnerable users; instead their machine nature should be transparent.
5. The person with legal responsibility for a robot should be attributed." [para AI]

The denial of robotic agency would rule out an electronic butler owing a duty of confidentiality, but privacy by design would be expected.

3. USA
There is substantial case law in the USA on robots. Several jurists have analysed the issues posed by robots and Calo has proposed a Federal Robotics Commission. (COMM 2014)

Arkin has published work on an ethical governor, which has greater promise in the context of social robots than a prescribed set of laws. It has only been developed for a limited set of circumstances, but promises a level of sophistication far greater than a purely rules-based approach. The robot would apply a form of moral calculus, rather than apply a set of hierarchical rules such as Asimov’s laws of robotics. The results of this robotic moral reasoning would require monitoring (much like human moral reasoning).

4. Japan
The Japanese have been the most enthusiastic adopters of robotics. They have a Robotics Policy Office. One set of principles (adapted from Osamu Tezuka’s principles for Astro Boy) states:
1. Robots must serve mankind
2. Robots must never kill or injure humans
3. Robot manufacturers shall be responsible for their creations
4. Robots involved in the production of currency, contraband or dangerous goods, must hold a current permit
5. Robots shall not leave the country without a permit
6. A robot’s identity must not be altered, concealed or allowed to be misconstrued
7. Robots shall remain identifiable at all times
8. Robots created for adult purposes shall not be permitted to work with children
9. Robots must not assist in criminal activities, nor aid or abet criminals to escape justice
10. Robots must refrain from damaging human homes or tools, including other robots

Some of these ten principles have little ethical import e.g. principle 5. Principle 9 would rule out the type of assistance rendered in Robot & Frank. It would require an electronic butler to betray certain confidences, particularly relating to criminal activity.

5. Other initiatives
Murphy and Woods proposed the “Three Laws of Responsible Robotics”:

1) “A human may not deploy a robot without the

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39 See footnote 2.
40 See footnote 16.
human-robot work system meeting the highest legal and professional standards of safety and ethics.

2) A robot must respond to humans as appropriate for their roles.

3) A robot must be endowed with sufficient situated autonomy to protect its own existence as long as such protection provides smooth transfer of control which does not conflict with the First and Second Laws.\(^{45}\)

These three laws might be consistent with an electronic butler respecting a duty of confidentiality, depending on the precise determination of relevant standards of ethics.

Russian entrepreneur, Dmitry Grishin, has retained lawyers to develop what is claimed will be the world’s first robot’s Butler respecting a duty of confidentiality, depending on the precise determination of relevant standards of ethics. The development of a South Korean robotic ethics charter was announced in 2007, but there has been no official publication as yet. The Open Roboethics initiative (ORi) proposes an internet-based resource for roboethics\(^ {47}\).

VIII. Conclusions

In summary, our argument is that there is a “duty of care” and thus a “duty of confidentiality” that arises with the development of legal agency in sufficiently advanced robots. There are also expectations generated by anthropomorphism with sufficiently realistic robots. Even where this is not the case, there is a privacy argument for the protection of personal data. Conceptual arguments about the status of assistive technologies may reinforce the arguments for the privacy of vulnerable persons. However, assistive technologies are likely to be dependent on a high degree of data sharing. Robust governance mechanisms and legal protections are preferable to a reliance on consent, given that many of those cared for lack full capacity. Mechanisms for moral reasoning such as the ethical governor promise greater flexibility than a rules-based approach.

Case Law

**CJEU: Sale of Computer with Pre-Installed Software No Unfair Commercial Practice**


Headnotes


2. In the context of a combined offer consisting of the sale of a computer equipped with pre-installed software, the failure to indicate the price of each of those items of pre-installed software does not constitute a misleading commercial practice within the meaning of Article 5(4)(a) and Article 7 of Directive 2005/29.

**Facts**