Extending Legal Rights to Social Robots

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Abstract:
People tend to anthropomorphize robots that interact with humans on a social level. This Article explores whether projecting emotions onto objects could lead to an extension of limited legal rights to robotic companions, analogous to animal abuse laws.

I. INTRODUCTION

At first glance, it seems hard to justify differentiating between the legal treatment of a social robot,[1] such as a Pleo dinosaur toy,[2] and a household appliance, such as a toaster. Both are man-made objects that can be purchased on Amazon and used as we please. Yet there is a difference in how we perceive these two artifacts. While toasters are designed to make toast, social robots are designed to act as our companions. This type of companion is becoming increasingly

[1] For a working definition of "social robot", see infra Part II.

[2] See http://www.pleoworld.com (accessed April 2, 2012); see also Jacobsson, M. (2009) "Play, Belief and Stories About Robots: A Case Study of a Pleo Blogging Community" in: 18th IEEE International Symposium on Robot and Human Interactive Communication, p. 232-233.

common. Technological progress continues to introduce more and more robotic toys, household robots, and personal-care robots that interact with us on a social level and generate stronger psychological attachments than we experience with everyday objects. This difference in how we perceive social robots could have legal implications.

A legal shift of this sort is not unique: the law has faced similar issues in addressing how humans interact with animals. Our legal system has recently begun to extend what can be viewed as "second-order" rights to non-human entities.[3] The philosophical and psychological grounds for these rights are contested and unclear. While some would argue that society's choice to extend legal protection to animals is based on their inherent attributes, there are indicators that our willingness to do so is more strongly influenced by how easily we relate to the animals in question.

People are prone to anthropomorphism, that is, we project our own inherent qualities onto other entities to make them seem more human-like. This effect increases when animals exhibit behavior that we more readily associate with human cognition or emotions. Our inclination to anthropomorphically relate to animals translates remarkably well to autonomous robots.[4] A key characteristic of social robots is that they are specifically designed to elicit these projections. Studies involving state-of-the-art technology already indicate that humans interact differently with social robots than they do with other objects.[5] The next decade is likely to bring significant further developments in this area, both from a technological and from a research perspective.

This Article explores the possibility of a societal push for "robot rights",

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[3] For instance to animals, but also to other non-human entities, such as corporations. Second-order rights can be understood to mean limited rights that are neither necessarily inherent or inalienable, nor personally enforceable, yet recognize a legal protection for the subjects as such. See infra Part IV.

[4] See Duffy, B. (2003) „ Anthropomorphism and the social robot", Robotics and Autonomous Systems 42, p. 179-183.

[5] See for example Breazeal, C. (2003) "Toward Sociable Robots", Robotics and Autonomous Systems 42, p. 167-175.

given that such technology increasingly appeals to our anthropomorphic tendencies. It also argues that allowing for certain types of protection would fit into our current legal framework, particularly as analogs to animal abuse laws. While the nature of this Article is descriptive, it aims to provide a basis for normative discussion.

The typical debate surrounding "rights for robots" assumes a futuristic world of fully autonomous and highly sophisticated androids that are nearly indistinguishable from humans. While technological development may someday lead to such a *Blade Runner*-esque scenario, the future relevant legal issues are currently shrouded by unforeseeable factors.[6] This arguably places most legal discussions of "robot rights" in the entertaining rather than scientific or pragmatic realm.[7] This Article suggests, however, that the development of social robots that interact with us on an emotional level could inspire a different discussion. Long before society is faced with the larger questions predicted by science fiction, existing technology and foreseeable developments may warrant a deliberation of "rights for robots" based on the societal implications of anthropomorphism. Part II establishes a working definition of "social robot." Part III looks at the anthropomorphism and unidirectional emotional bonding that occurs with state-of-the-art technology. Part IV explores the idea of "second-order" rights and how our legal system protects things about which we care. Part V asks how likely it is that people will demand to extend legal rights to robots, and Part VI offers some initial thoughts about whether such rights should be granted. Part VII concludes.

[6] At this point, it is uncertain what types of technological developments will occur in what order, as well as what tangential legal structures will be in place at that time.

[7] Partly explaining why some describe those of us who engage in such discussion as "crazy."

II. SOCIAL ROBOTS

A social robot is a physically embodied, autonomous[8] agent that communicates and interacts with humans on an emotional level.[9] For the purposes of this Article, it is important to distinguish social robots from inanimate computers, as well as from industrial or service robots that are not designed to elicit human feelings and mimic social cues. Social robots also follow social behavior patterns, have various "states of mind", and adapt to what they learn through their interactions.[10] Examples of social robots include interactive robotic toys like Hasbro's Baby Alive My Real Babies;[11] household companions such as Sony's AIBO dog,[12] Jetta's robotic dinosaur Pleo,[13] and Aldebaran's NAO next generation robot;[14] therapeutic pets like the Paro baby seal;[15] and the Massachusetts Institute of Technology (MIT) robots Kismet,[16] Cog,[17] and Leonardo.[18]

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[8] Autonomy in robotics can be understood to mean as little as the ability to perform tasks without continuous human input or control. For purposes of this Article, autonomy is defined as the ability to "make (limited) decisions about what behaviors to execute based on perceptions and internal states, rather than following a pre-determined action sequence based on pre-programmed commands." See Scheutz, M., Crowell, C. (2007) The Burden of Embodied Autonomy: Some Reflections on the Social and Ethical Implications of Autonomous Robots", Workshop on Roboethics at the International Conference on Robotics and Automation, Rome, p. 1.

[9] There are various definitions of "social robot" in existing literature. See for example a compilation in Hegel, F., Muhl, C., Wrede, B., Hielscher-Fastabend, M., Sagerer, G. (2009) "Understanding Social Robots", in: The Second International Conferences on Advances in Computer-Human Interactions (ACHI). Cancun, Mexico: IEEE, p. 169 - 174.

[10] See also Breazeal, C., Designing Sociable Robots, The MIT Press (2004), p. 1.

[11] See http://www.hasbro.com/babyalive/en_US/ (accessed April 2, 2012); see also http://en.wikipedia.org/wiki/Baby_Alive (accessed April 2, 2012).

[12] AIBO was introduced in 1999, see Sony press release, May 11, 1999, available at http://www.sony.net/SonyInfo/News/Press_Archive/199905/99-046/ (accessed April 2, 2012), and discontinued in 2006, see Borland, J. (2006) "Sony Puts Aibo To Sleep", CNET News online article, Jan 26, 2006, available at http://news.cnet.com/Sony-puts-Aibo-to-sleep/2100-1041_3-6031649.html (accessed April 2, 2012).

[13] See supra note 2.

[14] See http://www.aldebaran-robotics.com/ (accessed April 2, 2012).

[15] Guizzo, E. (2009) "Paro the Robotic Seal Could Diminish Dementia - First long-term study seeks to prove the benefits of a cybernetic pet", IEEE Spectrum article, May 2009, available at

In general, as more robots enter our lives and our homes, we are experiencing an increase in robots designed to engage us socially. This trend is not likely to slow. Social robots will continue to improve, and continue to grow in numbers as technology moves forward. Makers of toys, for instance, have for decades been working to increase interactivity and engage children by creating the illusion of intentional behavior in robotic playthings.[19] Why this engagement is so effective is explored below.

III. ANTHROPOMORPHISM AND UNIDIRECTIONAL EMOTIONAL BONDING

Humans form attachments to social robots that go well beyond our attachments to non-robotic objects.[20] These reactions to robotic companions appear to stem from our inherent inclination to anthropomorphize objects that act autonomously, especially when they are designed to exhibit "social" behavior. Cleverly designed social robots are able to mimic the cues that we automatically associate with certain states of mind or feelings.[21] Even in today's primitive form, such devices are able to elicit emotional reactions from people that are similar, for

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http://spectrum.ieee.org/robotics/home-robots/paro-the-robotic-seal-could-diminish-dementia (accessed April 2, 2012).

[16] See http://www.ai.mit.edu/projects/humanoid-robotics-group/kismet/kismet.html (accessed April 2, 2012).

[17] See http://www.ai.mit.edu/projects/humanoid-robotics-group/cog/cog.html (accessed April 2, 2012).

[18] See http://robotic.media.mit.edu/projects/robots/leonardo/overview/overview.html (accessed April 2, 2012).

[19] For instance, Pleo robot dinosaurs have been specifically marketed as a "truly autonomous Life Form capable of emotions that allow personal engagement." See Paul, R. (2006) „Robotic toy makes a big impression at the DEMO convention", Ars Technica article, Feb 8, 2006, available at http://75.102.3.15/old/content/2006/02/6137.ars (accessed April 2, 2012).

[20] As shown by various studies. Some of these are briefly described in this Part. For more examples see Scheutz, M., "The Inherent Dangers of Unidirectional Emotional Bonds between Humans and Social Robots", in: Anthology on Robo-Ethics, eds. Lin, B., Bekey, G., et al., The MIT Press (2012).

[21] See for example Turkle, S., "In Good Company?: On the Threshold of Robotic Companions". In: Close Engagements with Artificial Companions: Key Social, Psychological, Ethical and Design Issues, Yorick Wilks (ed.). Amsterdam and Philadelphia: John Benjamins Publishing Company (2010).

instance, to how we react to animals and to each other.[22]

The projection of lifelike qualities begins with a general tendency to over-ascribe autonomy and intelligence to the way that things behave, even if they are merely following a simple algorithm.[23] But not only are we inclined to ascribe more autonomous agency than is actually present, we also project intent, as well as our own emotions (delight, pain, confusion) onto other entities. From being reluctant to switch off robots that give the appearance of animacy,[24] to ascribing mental states to AIBO dogs,[25] we respond to the cues given to us by lifelike machines, even if we know that they are not "real".

This effect already comes into play when objects are not specifically designed to evoke these feelings. For example, when the United States military began testing a robot that defused landmines by stepping on them, the colonel in command called off the exercise. The robot was modeled after a stick insect with six legs. Every time it stepped on a mine, it lost one of its legs and continued on the remaining ones. According to Garreau (2007), "[t]he colonel just could not stand the pathos of watching the burned, scarred and crippled machine drag itself forward on its last leg. This test, he charged, was inhumane."[26] Other autonomous robots employed within military teams evoke fondness and loyalty in their human teammates, who identify with the robots enough to name them, award them battlefield promotions and "purple hearts", introduce them to their families, and

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[22] See id.

[23] For starters, how many of us have been caught in the assumption that the shuffle function on our music players follows more elaborate and intricate rules than merely selecting songs at random? See also Shermer, M. (2008) „Patternicity: Finding Meaningful Patterns in Meaningless Noise: Why the brain believes something is real when it is not", Scientific American 299, p. 48.

[24] See Bartneck, C., Van Der Hoek, M., Mubin, O., Al Mahmud, A. (2007) „Daisy, Daisy, Give Me Your Answer Do!: Switching Off A Robot", Proceedings of the ACM/IEEE international conference on Human-robot interaction, p. 217-222.

[25] See Friedman, B., Kahn, P., Hagman, J. (2003) „Hardware Companions? – What Online AIBO Discussion Forums Reveal about the Human-Robotic Relationship", in: Proceedings of the SIGCHI conference on human factors in computing systems, p. 273–280.

[26] Garreau, J. (2007) „Bots on The Ground in the Field of Battle (Or Even Above It), Robots Are a Soldier's Best Friend", Washington Post online article, May 6, 2007, available at http://www.washingtonpost.com/wp-dyn/content/article/2007/05/05/AR2007050501009.html (accessed April 2, 2012).

become very upset when they "die".[27] While none of these robots are designed to give emotional cues, their autonomous behavior makes them appear lifelike enough to generate an emotional response. In fact, even simple household robots like the Roomba vacuum cleaner prompt people to talk to them and develop feelings of camaraderie and gratitude.[28]

It is not difficult to imagine that social robot design is capable of significantly magnifying our anthropomorphizing responses. When robots are able to mimic lifelike behavior, react to social gestures, and use sounds, movement, and facial expressions to signal emotions in a way that we immediately recognize, this specifically targets our involuntary biological responses, causing our perception to shift.[29] Owners of Sony AIBO dogs (developed in the 1990s), while fully aware that it is a robot, regularly ascribe lifelike essences and mental states to their artificial companion.[30] The robotic seal Paro, currently used as a therapeutic device in nursing homes, reacts to touches and words. It conveys a sense of animacy by exhibiting emotional states, responding to people's actions, and learning individual voices. Most of the patients (and other people) who work with Paro treat it as if it were alive.[31] The effect of social robots generally supersedes the "accidental" projection invoked by non-social robots, because it is intentionally targeted — it is their main function.

The projection of autonomy, intent, and emotion facilitates bonding between humans and robots. While this relationship is one-sided, it can nevertheless create deeply felt attachment. One factor that may play a significant role in the development of such unidirectional relationships is a psychological

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[27] See id.

[28] This despite the fact that the Roomba makes no difference between humans and the other obstacles it maneuvers around while cleaning. See Scheutz, supra note 20; see also Sung, J., Guo, L., Grinter, R., Christensen, H. (2007) „'my roomba is rambo': Intimate Home Appliances", in: 9th International Conference on Ubiquitous Computing, Insbruck (Sept 2007), p. 145- 162.

[29] See Turkle, supra note 21, at 1.

[30] See Friedman/Kahn/Hagman, supra note 25.

[31] See Calo, C., Hunt-Bull, N., Lewis, L., Metzler, T. (2011) „Ethical Implications of Using the Paro Robot, with a Focus on Dementia Patient Care", Workshop at the Twenty-Fifth AAAI Conference on Artificial Intelligence, p. 21.

caregiver effect. This human tendency can come into play even with virtual inanimate objects. In the video game *Portal*,[32] the end of which requires the player to incinerate the companion cube that has accompanied them throughout the game, some players will opt to sacrifice themselves rather than the object, forfeiting their victory.[33] Similarly, Tom Hanks develops a relationship with a volleyball in the movie *Cast Away*.[34] The interesting aspect of his attachment is nicely demonstrated when he inadvertently lets the volleyball float out to sea. Realizing that he is unable to rescue his companion, he displays deep remorse for not taking better care. The focus thereby is not on his personal loss, but rather on his neglected responsibility toward the object: he calls out to it that he is sorry.[35]

Psychologist Sherry Turkle explains in her work studying human–robot interaction that this effect is particularly strong when dealing with social robots, which are designed to evoke feelings of reciprocity. "Nurturing a machine that presents itself as dependent creates significant social attachments."[36] She finds that there is a difference between the type of projection that people have traditionally engaged in with objects, such as small children comforting their dolls, and the psychology of engagement that comes from interacting with social robots, which create an effective illusion of mutual relating.[37] While a child is aware of the projection onto an inanimate toy and can engage or not engage in it at will, a robot that demands attention by playing off of our natural responses may cause a subconscious engagement that is less voluntary.

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[32] *Portal* is a single-player first-person puzzle-platform video game, released in 2007 by Valve Corporation.

[33] Thanks to Jennifer Berk for pointing out this example. See http://www.1up.com/do/feature?pager.offset=2&cId=3165930 (accessed April 2, 2012).

[34] Hanks, T. (Producer), & Zemeckis, R. (Director), (2000), Cast Away (Motion picture), United States: Twentieth Century Fox Films.

[35] See Surowiecki, J. (2001) "Wilson the Volleyball, Reconsidered," Slate online article (March 23, 2001), available at http://www.slate.com/articles/arts/culturebox/2001/03/wilson_the_volleyball_reconsidered.html (accessed April 2, 2012).

[36] See Turkle, S. (2006) „A Nascent Robotics Culture: New Complicities for Companionship", Tech. Rep., AAAI, p. 9.

[37] See id. at 2.

Anthropomorphism is especially plausible when people have little sense of how a complex robot works, and so are especially inclined to assign autonomy, intent, or feelings to actions that actually result from algorithms they do not understand. Small children are regularly confused when asked whether the social robots they interact with experience pain or other sentiments.[38] Elderly people unfamiliar with modern technology struggle with the difference between robotic companions and live animals.[39] But the effect of projection and emotional bonding holds even for those who are perfectly informed as to the exact, detailed functionality of the robots with which they interact. For example, AIBO owners report that they remove their AIBO from the room while changing, so that they will not be "watched",[40] or that they experience feelings of guilt when putting the device back in its box.[41] MIT students in the robotics lab would often put up a curtain between themselves and Kismet, a social robot that simulates emotion through facial expressions, because the lifelike behavior of the face distracted them.[42] And Cynthia Breazeal, Kismet's developer, reports experiencing "a sharp sense of loss" when she parted ways with her creation at the end of her dissertation.[43]

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[38] See podcast documenting the confusion of 7-year-olds in differentiating between the „pain" felt by a Furby (social robot technology from 1999) and „real" pain: "Furbidden Knowledge". Radiolab Podcast (May 31, 2011), available at: http://www.radiolab.org/2011/may/31/furbidden-knowledge/; see also recent study of children of various ages interacting with a social robot: Kahn Jr., P., Kanda, T., Ishiguro, H., Freier, N., Severson, R., Gill, B., Ruckert, J., Shen, S. (2012) "'Robovie, you'll have to go into the closet now': Children's social and moral relationships with a humanoid robot", Developmental Psychology, 48(2), p. 303-314.

[39] See Taggard, W., Turkle, S., Kidd, C. (2005) „An Interactive Robot in a Nursing Home: Preliminary Remarks", in: Proceedings of CogSci Workshop on Android Science, Stresa, Italy, p. 56-61; Tergesen, A., Inada, M. (2010) "Paro the Robo-Seal Aims to Comfort Elderly, but Is It Ethical?" Wall Street Journal article, June 21, 2010, available at: http://online.wsj.com/article/SB10001424052748704463504575301051844937276.html (accessed April 2, 2012).

[40] Albeit admitting that they feel slightly silly for doing so. See Friedman/Kahn/Hagman, supra note 25, at 276.

[41] See id. at 277.

[42] See Garreau, supra note 26; see also Scheutz, supra note 20.

[43] See Turkle, supra note 36, at 9.

Returning to *Blade Runner*,[44] the movie depicts a world where androids can develop relationships based on their inherent emotions, which are very close to (or even indistinguishable from) those of humans. However, *Do Androids Dream of Electric Sheep*,[45] the novel on which the film is based, paints a notably different picture. In the book, the main character falls in love with an android that only pretends to requite his feelings. Even though he is fully aware of this fact, he cannot help but maintain his unidirectional emotional bond to her. The novel touches on a slightly different, yet plausible, reality: humans' attachment to robots may depend more on our own emotions than on any inherent qualities built into robots. Should humans routinely develop strong feelings towards robotic companions, this could become the key distinction between social robots and objects.

In summary, it appears that social robots elicit behavior in us that is significantly different from what we exhibit towards other objects, like toasters. While people have for decades named their cars and developed attachments to their handheld devices, the effect of robots that actively and intentionally engage our ingrained anthropomorphic responses is considerably stronger. Since we are already disposed towards forming unidirectional emotional relationships with the robotic companions available to us today, we can only imagine what the technological developments of the next decade will be able to effect. As we move within the spectrum between treating social robots like toasters and treating them more like our cats, the question of legal differentiation becomes more immediate. Possible implications for the law are discussed in the next Part.

IV. "SECOND-ORDER" RIGHTS

In recent history, humans have begun extending rights to non-human entities, such as animals and corporations. The philosophical and psychological grounds for these rights are contested and unclear. In the case of animal rights,

[44] Deeley, M. (Producer), & Scott, R. (Director), (1982), Blade Runner (Motion picture), United States: Warner Bros.

[45] Dick, P., Do Androids Dream of Electric Sheep? Del Ray (1982).

there are various justifications for why we would want to grant legal protection beyond the realm of property rights. Philosophical arguments range from moral obligations to prevent pain and suffering in sentient beings, to an abstract recognition of certain animals' inherent dignity. Many such positions use factors such as cognitive abilities or sentience to differentiate between the moral treatments of various types of life forms.[46] Societal discussion surrounding the prevention of animal abuse centers on the fact that animals experience pain. Because many people in our society agree that abusing certain animals is wrong, laws have been put in place to prevent their mistreatment.[47]

Aside from any value judgment, this author suggests the following: our attempts to prevent the abuse of animals could essentially be based on what their reaction to pain causes in us. In other words, our desire to protect animals from harm may not necessarily be based on their inherent attributes, but rather on the projection of ourselves onto these animals. For instance, many people do not want to see kittens be held by the tail. It is certainly possible that we feel so strongly about this because of the specific details of kittens' inherent biological pain reaction. But it is also possible that it simply causes us discomfort to see what we perceive to be pain. Our emotional bonds to kittens, plus the strong reaction of a kitten to being held by the tail, may trigger protective feelings in us that have more to do with anthropomorphism than moral obligation. While this view is not likely to be a crowd-pleaser, it appears to be realistic in light of the differential protections awarded to various animals.

Our greater desire to protect those animals to which we more easily relate indicates that we may care more about our own emotional state than any objective biological criteria. Laws governing the treatment of horses, in particular bans on the slaughter of horsemeat in the United States, have been enacted because of the

[46] See, for example, Singer, P., Animal Liberation: A New Ethics For Our Treatment of Animals, New York Review (1975).

[47] For instance, see animal cruelty laws in various parts of the United States, available at http://www.straypetadvocacy.org/PDF/AnimalCrueltyLaws.pdf (accessed April 2, 2012).

general sentiment that such use is offensive.[48] It appears that a large part of the United States population is strongly opposed to horses being killed and eaten.[49] However, this is not justified by any biological differences between horses and cows. Laws are enacted to reflect this societal preference, for cultural rather than biological reasons.

When people feel that something should be legally protected, there are different ways that the law can address this. One way is by granting protection through property rights that are inherent to an owner. But sometimes society pushes for laws that go beyond personal property rights. Although individual horse owners may be able to protect their horses from harm, we may want to ensure the protection of all horses, whether we own them or not. We often care strongly enough to make wider-reaching laws, e.g. that protect the environment, preserve endangered species, grant minimum wages, or punish child abuse. These rules not only go beyond property rights, they go so far as to affect other people's property rights, for instance by prohibiting farmers from treating their chickens poorly. Granting protection to certain animals from being mistreated, and thereby restricting the actions of their owners, can in effect be regarded as granting "second-order" rights to these animals. This is an indirect, second order protection, lesser than many of the rights we give to humans, yet at the same time it goes beyond treating the animals as mere property.

Assuming that our society wants to protect animals regardless of their capacities, because of our personal attachments to them, society may well also want to protect social robots regardless of their capacities. The following Part contemplates the relative imminence of this societal demand.

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[48] See Palmer, B. (2011) "The Delicious Mr. Ed - Why Don't Americans Eat Horse Meat?" Slate online article, Oct 24, 2011, available at http://www.slate.com/articles/health_and_science/explainer/2011/10/slaughtering_horses_for_meat_is_banned_in_the_u_s_why_.html (accessed April 2, 2012).

[49] In contrast, horsemeat is a popular delicacy in many European countries. Dogs and cats are also considered acceptable to eat in other parts of the world.

V. SOCIAL DEMAND FOR ROBOT RIGHTS

How close are we really to a societal push for robot protection? Even if we agree that projecting our emotions onto other things is part of why we protect animals, will people not ultimately draw the line at something that does not actually feel pain? After all, despite the behavior we display towards them, most of us know that robots are not alive.

As mentioned above, while we find differential treatment of animals in the law, the actual discussions surrounding the moral and legal inclusion of animals usually do not consider anthropomorphism to be a justification. Rather, they invoke the experience of pain, or concepts of sentience, consciousness, and the general question of what exactly sets humans apart in a way that is relevant to a morally distinct treatment. Even amongst those who see no difference to humans that is relevant enough to deny animals certain rights, there are likely to be a number of people who draw a moral line at biological criteria.[50] For instance, people in favor of protecting creatures that experience biological pain from abuse may see no moral reason to extend it to anything beyond that. One can imagine, however, that society may be swayed to demand protection for social robots for other reasons.

One reason that people could want to prevent the "abuse" of robotic companions is the protection of societal values. Parents of small children with a robotic pet in their household are likely familiar with the situation in which they energetically intervene to prevent their toddler from kicking or otherwise physically abusing the robot. Their reasons for doing so are partly to protect the (usually expensive) object from breaking, but will also be to discourage the child from engaging in types of conduct that could be harmful in other contexts. Given the lifelike behavior of the robot, a child could easily equate kicking it with kicking a living thing, such as a cat or another child. As it becomes increasingly difficult for children to fully grasp the difference between live pets and lifelike robots, we may want to teach them to act equally considerately towards both. While this is easily done when a parent has control over both the robot and the child, protecting social

[50] While it is true that someday there may be less of a biological difference between humans and robots, opening rich avenues for debate, this argument does not seem timely for purposes of this discussion.

robots more generally would set the leading examples in society and prevent children from witnessing undesirable behavior elsewhere. For instance, one could imagine a child being emotionally traumatized by watching older children "torture" a robotic toy on the playground, the likes of which he or she has developed an emotional relationship with at home.[51]

Even for fully informed adults, the difference between alive and lifelike may be muddled enough in our subconscious to warrant adopting the same attitudes toward robotic companions that we carry towards our pets. A study of Sony AIBO online message boards reveals that people were dismayed to witness the story of an AIBO being tossed into a garbage can.[52] Not long after the Pleo robot dinosaur became commercially available in 2007,[53] videos of Pleo "torture" began to circulate online. The comments left by viewers are strikingly polarized – while some indicate deriving amusement from the videos, others appear considerably upset, going so far as to verbally attack the originators and accuse them of horrible cruelty.[54] Given that many people already feel strongly about abuse of state-of-the-art robotic pets, it may soon become more widely perceived as out of line with our social values to treat robotic companions in a way that we would not treat animals.

Another value aspect that our society may have strong sentiments about is the question of sexual behavior. We may soon have to consider whether or not to permit sexual practices between humans and social robots that we currently do not permit when the receiver is a live human or animal. Bestiality, rape, and in particular sexual acts with underage children are condemned in our culture and heavily governed by our legal system. It is thinkable that the desire to protect our current social values could cause people to demand laws that prohibit the sexual

[51] If children have trouble distinguishing between robots and live pets, they will have a similar reaction in this scenario as to the same involving a kitten or a puppy.

[52] With comments along the lines of "[T]hat poor puppy," and "That is so sick to me!", see Friedman/Kahn/Hagman, supra note 25, at 277.

[53] See Jacobsson, supra note 2, at 233.

[54] See for example "Pleo is here! But how much punishment can a robot dinosaur take?" DVICE TV blog post, Dec 3, 2007, available at http://dvice.com/archives/2007/12/pleo_post.php (accessed April 2, 2012).

abuse of social robots.[55]

On the other hand, there may be opposition to legal protection for robots. Some animal rights opponents cite religion-based reasons for their position, in particular that humans have a soul, while animals do not.[56] In the discussion over extending rights to robots, this camp is likely to be even less convinced of the idea that we should offer protection to things that are not human, let alone even biologically alive. Assuming that they are not swayed by the above argument of societal values, they are likely to oppose an extension of rights to artificial beings. Especially in countries with politically powerful religion-based groups, one might question whether robot protection could even become subject to debate.

One thing to note here, however, is that the deeply entrenched concept of the human soul in our Western culture is viewed quite differently in some other countries. Looking across borders, the culture in Japan is influenced by the Shinto faith and its concept of animism – the belief that all objects have a spirit. The comparatively rapid development and distribution of social robots in Japan is oftentimes credited to animism, in that it facilitates greater social acceptance of robot-human interaction.[57] Japanese culture has not hesitated to embrace the introduction of robots as servants, social companions, and sexual aids. It may also be less hesitant to extend legal rights to such artifacts.[58] But regardless of where in

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[55] Which would in effect arguably be indirect rights for the robots in question, despite the fact that the focus is not on preventing harm to them.

[56] Williams, E., Nicholson, B., Lawrence, J., The Rights of an Animal: A New Essay in Ethics, C. Kegan Paul & Co. (1879), p. 31.

[57] See Kitano, N. (2007) „Animism, Rinri, Modernization; the Base of Japanese Robotics", IEEE International Conference on Robotics and Automation, April 2007, Rome, Italy.

[58] Although perhaps the initial demand would be based on something other than mistreatment issues, for instance through people wanting their robotic companions and sexual partners to have a status other than property (maybe even demanding they be granted some sort of „personhood" status out of the desire to legally marry them). David Levy proposes that future human-robot relationships may revolve around romantic love and sex. See Levy, D., "Love + Sex with Robots: The Evolution of Human-Robot Relations", HarperCollins (2007). There have already been cases in Japan of people wanting to marry artifacts or video game characters, see for example Lah, K. (2009) "Tokyo Man Marries Video Game Character", CNN World online article, Dec 16, 2009, available at http://articles.cnn.com/2009-12-16/world/japan.virtual.wedding_1_virtual-world-sal-marry (accessed April 2, 2012).

the world the (initial) demand for such rights could occur, the question remains whether the law should accommodate this social desire. Part VI offers some initial thoughts in the hopes of inspiring debate.

VI. SHOULD WE GIVE ROBOTS RIGHTS?

If parts of society sooner or later begin to ask that rights be extended to robotic companions, we will need to deliberate on whether and how to grant such rights. There are a number of factors that would deserve legislative consideration. While it is not the goal of this Article to make a normative argument for or against extending rights to robots, this Part attempts to provide some thoughts for discussion.

Assuming there is societal demand, one argument in favor of granting rights to social robots sees the purpose of law as a social contract. We construct behavioral rules that most of us agree on, and we hold everyone to the agreement. In theory, the interest of the majority prevails in democratic societies, and the law is tailored to reflect social norms and preferences. If this is the purpose of the legal system, then societal desire for robot rights should be taken into account and translated to law. There is also the view, however, that laws should be used to govern behavior for the greater good of society. In other words, laws should be used to influence people's preferences, rather than the other way around. In this case, the question of whether we should extend legal rights to social robots becomes more complex. The costs and benefits to society as a whole must be weighed.

Whether or not one believes that the majority makes the best decisions for society in general, and even if one believes in a natural rights theory of higher truths,[59] there could be reasons to support accommodating societal preferences. Legislatively ignoring that people feel strongly about an issue can lead to discontent and even a lack of compliance with the law as people attempt to take "justice" into their own hands. Depending on the circumstances, this could cause more problems than would simply legislating the social demand. This is not to say that denying

[59] Which may or may not include extending protections to robots.

robots rights would lead to anarchy. But if there is an easy way to adjust the law to best reflect people's preferences, it may be worth doing so for this utilitarian reason.

Another benefit to protecting social robots could be the above-mentioned effect of promoting socially desirable behavior.[60] The Kantian philosophical argument for preventing cruelty to animals is that our actions towards non-humans reflect our morality — if we treat animals in inhumane ways, we become inhumane persons.[61] This logically extends to the treatment of robotic companions. Granting them protection may encourage us and our children to behave in a way that we generally regard as morally correct, or at least in a way that makes our cohabitation more agreeable or efficient.

There could, however, also be costs to legally protecting social robots. It is subject to debate whether extending rights to robotic companions would promote socially desirable values. Some argue that the development and dissemination of such technology encourages a society that no longer differentiates between real and fake,[62] thereby potentially undermining values we may want to preserve. Another cost could be the danger of commercial or other exploitation of our emotional bonds to social robots.[63] While these issues must be addressed in light of modern technology whether there is legal protection for social robots or not, they are worth considering here — in particular because a change in law could accelerate development and commercial distribution of social robots (for example by increasing their market value).

Depending on its implementation, legal intervention could also cause the

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[60] See supra Part V.

[61] „If a man shoots his dog because the animal is no longer capable of service, he does not fail in his duty to the dog, for the dog cannot judge, but his act is inhuman and damages in himself that humanity which it is his duty to show towards mankind. If he is not to stifle his human feelings, he must practice kindness towards animals, for he who is cruel to animals becomes hard also in his dealings with men." See Kant, I., Lectures on Ethics, translated/edited by P. Heath P., Scheewind, J., Cambridge University Press (1997), p. 240.

[62] See Turkle, supra note 36, at 3, lamenting the loss of „authenticity" as a value.

[63] See Scheutz, supra note 20.

opposite effect on social robot technology by distorting market incentives, changing prices, and reducing not only the commercial production of social robots, but also potentially desirable robotics research and development in general. There could be other, indirect economic costs that arise due to the introduction of new laws, especially since they would interfere with people's property rights. Furthermore, there are direct costs associated with establishing and enforcing the law.

Some practical difficulties could include defining "social robot" in legal terms, especially in light of rapidly changing technology. The extent of protection would need to be clearly established, raising questions as to what constitutes "death", what constitutes "mistreatment", and so forth. Many of these issues could be resolved analogous to animal abuse laws, but there are likely to be some difficult edge cases.

Summing up, the question of whether we should legally protect robotic companions is by no means simple. However, whether or not we end up deciding to extend second-order rights to robots, it seems timely to begin thinking about potential ways to address the general implications of anthropomorphism.

VII. SUMMARY & CONCLUSION

This Article explores the human tendency to anthropomorphize social robots. It suggests that projecting emotions onto robotic companions could induce the desire to protect them, similar to our eagerness to protect animals that we care about. The practice of assigning rights to non-human entities is not new. Given societal demand, laws protecting social robots could fit into our current legal system parallel to animal abuse laws. While the nature of this analysis is descriptive, it aims to provide a basis for normative discussion.

This Article recognizes that legal discourse involving science-fictional scenarios of robots with human-like cognition or emotion is premature. It argues, however, that current technology and foreseeable future developments may warrant a different approach to "robot rights". It seems timely to consider the societal implications of anthropomorphism and how they could be addressed by our legal system.