



The march of the robot dogs

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Abstract. Following the success of Sony Corporation's 'AIBO,' robot cats and dogs are multiplying rapidly. "Robot pets" employing sophisticated artificial intelligence and animatronic technologies are now being marketed as toys and companions by a number of large consumer electronics corporations.

It is often suggested in popular writing about these devices that they could play a worthwhile role in serving the needs of an increasingly aging and socially isolated population. Robot companions, shaped like familiar household pets, could comfort and entertain lonely older persons. This goal is misguided and unethical. While there are a number of apparent benefits that might be thought to accrue from ownership of a robot pet, the majority and the most important of these are predicated on mistaking, at a conscious or unconscious level, the robot for a real animal. For an individual to benefit significantly from ownership of a robot pet they must systematically delude themselves regarding the real nature of their relation with the animal. It requires sentimentality of a morally deplorable sort. Indulging in such sentimentality violates a (weak) duty that we have to ourselves to apprehend the world accurately. The design and manufacture of these robots is unethical in so far as it presupposes or encourages this delusion.

The invention of robot pets heralds the arrival of what might be called "ersatz companions" more generally. That is, of devices that are designed to engage in and replicate significant social and emotional relationships. The advent of robot dogs offers a valuable opportunity to think about the worth of such companions, the proper place of robots in society and the value we should place on our relationships with them.

Key words: AIBO, animals, artificial intelligence, ethics, old age, pets, robots, robot pets, sentimentality

Introduction¹

For decades now, pundits have been predicting the presence of robots in the homes of the future. The invention of tireless household robots was supposed to free us from the demands of domestic drudgery and lead us into a brave new world of greatly increased leisure time. This future has been resolutely slow to arrive. The technical demands of performing useful tasks in a chaotic environment of uneven surfaces alongside human beings has proved more difficult than robot enthusiasts accounted for. The market for household robots has also been severely constrained by the fact that, for the foreseeable future at least, it seems likely to remain far cheaper to employ cheap human labour to do the housework than to purchase an expensive robot. Until recently, robots have been confined to industrial or, occasionally, military or exploratory applications. However, in the last two years or so, robots have finally begun to appear in homes – in the somewhat surprising shape of robot

pets! Following the success of Sony's 'AIBO,' robot cats and dogs are multiplying rapidly. "Entertainment robotics" is widely anticipated as a burgeoning field.²

At first sight the idea of robot pets seems relatively innocuous. They are but one of a range of diverting new technological entertainments made possible by improvements in computing technology. But in the search for a more noble purpose for their research – and, more cynically, in search for more funding – a number of researchers have seized on the idea that such devices could play a worthwhile role in serving the needs of an increasingly aging and socially isolated population.³ Robot companions, shaped like familiar

² It is clear that some robot manufacturers hope that the development of robot pets will greatly accelerate the acceptance of robots into the home. Playing with them will accustom us to robots, while the technology developed for them can also be applied in household robots with more ambitious purposes. See M. Fujita and H. Kitano. Development of an Autonomous Quadruped Robot for Robot Entertainment. *Autonomous Robots*, 5: 7–18, 1998.

³ See, for instance, "Glimpses of a robotic future," http://news.bbc.co.uk/1/hi/english/world/asia-pacific/newsid_1048000/1048602.stm, at 15.02.02; "Robot Dog a Japanese Techno-

¹ I would like to thank Jeremy Aarons, Andrew Alexandra, Jacqui Broad and Kate Crawford for discussion and comments over the course of the development of this paper.

household pets, could comfort and entertain lonely older persons.

In this paper I argue that this goal is misguided and unethical. While there are a number of apparent benefits that might be thought to accrue to the lonely aged from the ownership of a robot pet, the majority and the most important of these are predicated on them mistaking, at a conscious or unconscious level, the robot for a real animal. For an individual to benefit significantly from ownership of a robot pet they must systematically delude themselves regarding the real nature of their relation with the animal. It requires sentimentality of a morally deplorable sort. Indulging in such sentimentality violates a (weak) duty that we have to ourselves to apprehend the world accurately. The design and manufacture of these robots is unethical in so far as it presupposes or encourages this delusion.

The evil of robot pets is not the most urgent issue facing society today. It is far from being the most significant ethical issue arising out of our treatment of the growing numbers of older persons in our community. It may therefore seem an odd topic for philosophical treatment. But the invention of robot pets, and the suggestion that they could play a worthwhile role as companions for the lonely aged, heralds the arrival of what might be called 'ersatz companions' more generally. That is, of devices that are designed to engage in and replicate social and emotional relationships of sorts that we value. In the future, the attempt will perhaps be made to develop robot companions in the shape of human beings – 'androids.'⁴ The advent of robot dogs offers a valuable opportunity to think about the worth of such companions, the place that robots might take in human society and the value we should place on our relationships with them. I hope that the conclusions of the paper will therefore be relevant to a much wider range of issues that are likely to arise

sensation;" http://augustachronicle.com/stories/051699/tec_robot.shtml at 14.02.02; Irene M. Kunii. How much is that Robot in the Window? *Business Week: Asian Edition*: 22, November 27, 2000; Yuri Kageyama. Nurse Gadget Patrols the Wards. *The Age*: 44. Melbourne, Australia, April 6, 2002. For a useful survey of the cutting edge of contemporary robotics research, which highlights Japanese interest, especially, in robots as carers and companions for the elderly, see P. Menzel and F. D'Aluisio. *Robo Sapiens: Evolution of a New Species*. The MIT Press, Cambridge, Mass., 2000. It is clear that this justification for robot research genuinely represents an influential vision of the future application of robots, which is likely to come true to some extent over the coming years.

⁴ A rather naive discussion of the possibility of android companions may be found in Chp 6, "Surrogate People" of Geoff Simons. *Robots: The Quest for Living Machines*: 166–193. Cassell, London, 1992. This discussion includes an enthusiastic endorsement of the possibility of robot lovers!

as these technologies insinuate themselves further into our society.

The march of the robot dogs

To those not familiar with the rhetoric of the robotists and their marketing gurus it may seem farcical that anyone should take the idea of developing robot companions for the elderly seriously. But not only have a number of robot designers and developers publicly expressed their interest and involvement in this project but there are already a number of robot pets on the market – and more are on their way.

The most widely known and probably most advanced robot pet is a robot dog marketed by Sony Corporation called AIBO.⁵ AIBO is an acronym for Artificial Intelligence roBOT but also, tellingly, a Japanese word that is variously translated as 'friend,' 'partner' or 'buddy.' AIBO is a sophisticated "entertainment robot" that makes use of near state-of-the-art artificial intelligence and robotics technology in the attempt to generate complex behaviour in a robot that will (hopefully) entertain and amuse those around it. AIBO has a sense of touch, hearing, sight and a sense of balance. He can walk, shake hands, chase a ball and even dance.⁶ AIBO has programmed instincts, or drives including: Movement, Fear, Recharge, and Search. AIBO can also express six 'emotions': happiness, anger, fear, sadness, surprise and dislike. He expresses his emotional state with a wag of his tail or by changing the colour and shape of his eyes or by his body movements. He also barks, whines, growls and uses a series of musical tones to fully express his mood. The latest version of AIBO, AIBO ERS-210, has voice recognition and can understand up to 50 voice commands. Once you have recorded a name for your robot companion, AIBO is able to recognise it, and will respond with electronic tones when he is called. You can tell AIBO to dance, sit, or to take a picture of you with the digital camera located in his nose.

The combination of AIBO's drives, emotions and stimulus produces 'behaviour,' which is accordingly relatively complex and unpredictable. AIBO's behaviour is also dependent on his interaction with his owner and therefore, according to Sony's promotional

⁵ Sony has actually released three versions of AIBO, each more sophisticated than the last. According to one source, Panasonic are apparently also developing robot teddy bears and cars designed as companions for old people. See "Robot Dog a Japanese Techno-sensation," http://augustachronicle.com/stories/051699/tec_robot.shtml at 14.02.02.

⁶ Marketing for, and media reportage of, AIBO typically genders 'him' as male.

material, no two AIBOs are ever alike. He grows and develops as time passes and according to how much he is played with, proceeding through the developmental stages of an infant, child, teen and adult. The type and amount of attention his owner gives AIBO, will determine his personality which in turn influences behaviour. AIBO even has the ability to 'learn' and 'unlearn' certain behaviour.⁷

There is undoubtedly something toylike or gadget-like about AIBO. AIBO's moulded plastic surfaces and mechanical gait leave little room for the illusion that he is alive.⁸ He looks like a robot dog rather than a dog and his design appeals to cultural archetypes of robots perpetuated through representation in cartoons, television and film.⁹ There are also various accessories that one can purchase to extend his capabilities and increase his range of behaviours, including memory cards that allow him to mature and develop, or alternatively become an 'adult' dog instantaneously, and one that allows him to play 'scissors, paper, rock.' There is even a special carry bag available to transport him. The existence and marketing of these accessories makes it even more obvious that we are dealing with a clever gadget rather than a real animal.¹⁰ One suspects that the majority of the people who have purchased AIBO (some 90 000 to date) do so in the belief that they are buying a cool toy rather than acquiring a robot companion.

A "friend for life"

Despite this, Sony's promotional material is adamant that AIBO is *not* a toy and states so explicitly and repeatedly. According to one corporate source,

⁷ My description of AIBO's capabilities is taken more or less verbatim from various promotional materials published by Sony on the Web. See, for instance, "AIBO Homepage," <http://www.us.aibo.com>, at 14.02.02; "Sony AIBO Robot Dog," http://www.robotbooks.com/sony_aibo.htm at 16.8.01; "AIBO Homepage," <http://www.eu.aibo.com> at 16.8.01.

⁸ Although as we shall see below, the relative complexity of his behaviour is likely to cause at least some people to attribute emotional states to it.

⁹ In fact while the first two versions of AIBO were modelled on dogs, the latest version is apparently modelled on a lion club. This latter design apparently allows those who wish to identify AIBO with a cat the latitude to do so.

¹⁰ A flourishing subculture has even grown up around modifying AIBO and altering its programming. Such AIBO 'hackers' presumably have no illusions that they are dealing with a creature with "real emotions," instead they are experimenting with a new technology and seeing what possibilities it offers.

"AIBO is not a toy! He is a true companion with real emotions and instincts. With loving attention from his master, he will develop into a more mature and fun-loving friend as time passes."¹¹

And also,

"Like any human or animal, AIBO goes through the developmental stages of an infant, child, teen and adult. Daily communication and attention will determine how he matures. The more interaction you have with him, the faster he grows up. In short, AIBO is a friend for life."¹²

AIBO is intended and advertised as a "robot companion." Indeed Sony Australia's AIBO website is titled "AIBO – Your companion for the new millennium." No doubt much of this is marketing hype. One doubts that AIBO's design team think of him as a "friend for life." Yet Sony obviously believes that it can succeed in promoting AIBO, to some people at least, as a companion and a substitute for a real pet.

Other robot pets

As well as AIBO there are at least 13 other sorts of 'robot pets' currently on sale around the world, including "Poo-Chi" and "Meow-chi" (a robot cat), "Tekno the Robot Puppy" and "Kitty the Tekno Kitten," "Tiny the Tekno Puppy," "Super Poo-Chi," "Furby" (a robot cat), "I-Cybie" (a robot dog), "NeCoRo" (a robot cat) "Big and Lil' Scratch" (dogs again), "Rocket the Wonder Dog" and "Baby Rocket Puppy."¹³ Most of these are much more obviously toys than "robot companions" (and are consequently much cheaper than AIBO). Nonetheless they also are designed to 'interact' with their owners to some extent and have primitive personalities, sets of behaviours and learning mechanisms.¹⁴ Their marketing empha-

¹¹ "Sony AIBO Robot Dog," http://www.robotbooks.com/sony_aibo.htm, at 16.8.01.

¹² "Sony AIBO Robot Dog," http://www.robotbooks.com/sony_aibo.htm, at 16.8.01.

¹³ Descriptions of these robot pets (plus a few more besides!) can be found at "Robot Dogs," <http://www.robotbooks.com/robot-dogs.htm>, at 16.8.01; Michael Idato, "Living dolls," <http://it.mycareer.com.au/techlife/inventingthefuture/2001/11/24/FFXT6464HUC.html>, at 14.2.02.

¹⁴ In particular 'NeCoRo' is a robot cat that is designed to establish an emotional bond with its owner. It has much more limited abilities to move than other robot pets, but a much greater ability to interact with its owner, through being petted and purring or stretching etc, in order to establish a rewarding relationship. See "Robo-cat is out of the bag," http://news.bbc.co.uk/hi/english/sci/tech/newsid_1602000/602677.stm, at 17.10.00.

sises their interactive nature, their ability to learn and their ability to demonstrate and express emotions. In several cases it is suggested that these pets can become your 'friend.'¹⁵ Other robot pets are under development. Some of these will undoubtedly outdo AIBO in terms of complexity and range of behaviours.

"My real baby"

It is also worth mentioning at this point a related product, although again more clearly intended as a toy than as a substitute companion; American toy company Hasbro's, "My Real Baby." Produced in collaboration with the robot manufacturer iRobot, "My Real Baby" is a life sized baby doll which makes use of artificial intelligence technology and advanced 'animatronics' in order to generate a wide range of facial expressions and behaviour. Like AIBO, My Real Baby responds to and learns from its owner's treatment of it. It possesses 15 different "emotional states." It can sense how it is being treated by its owner and alters its behaviours accordingly. It develops new behaviours and even language, as time goes by. As a result, according to Gar Roper, a child psychologist quoted on their website and in their press releases who did focus group testing on the product, "My Real Baby" is capable of participating in and contributing to the play fantasies of its child owner in a way previously unimaginable.¹⁶

It seems to me that there are serious ethical issues that might arise around this scenario. We would do well to know how the doll participates in these fantasies, how it shapes and encourages them and what the social and psychological effects on the child are likely to be, before we embrace "My Real Baby." But these issues are continuous with questions that arise with more ordinary toys or about the effects of television or other media. At this stage the move from doll to interactive robot doll does not seem to generate any new ethical issues in itself. But it is also clear that "My Real Baby" is another important step on the road to robots that could properly be called 'androids' – robots in human form – that might also serve as sources of companionship to their owners.

Robot companions for older persons?

If AIBO, and devices like it, were simply intended as amusing diversions, any ethical issues they raised

¹⁵ "Robot Dogs," <http://www.robotbooks.com/robot-dogs.htm>, at 16.8.01.

¹⁶ "iRobot Corporation: My Real Baby," <http://www.irobot.com/mrb/index.asp>, at 28.8.01.

would likely be familiar through debates over the psychological effects of toys and other media. But the suggestion that AIBO could serve as a friend rings more alarm bells. The idea that robot companions should be developed as an aid to improving the well-being of the lonely aged seems positively bizarre.

It must be said that there is something straightforwardly crazy and disturbing in this approach to the needs of an aging and lonely population. It is perverse to respond to the fact that older persons are increasingly socially isolated with the invention of robot pets rather than by multiplying the opportunities for human contact for the elderly and infirm. The search for a technological solution to this problem is especially absurd given that the social needs and experiences of older persons are to a large extent a function of the way society treats them. The large number of people who are becoming socially isolated in their advanced years is largely a result of changes in the structure of the family due increased labour force mobility (which leads to children moving away from their parents), high rates of divorce and marital separation, and changes in society's attitude to older persons more generally, alongside improvements in healthcare and nutrition that allow people to live longer. Rather than research fancy robots to entertain and comfort the elderly, we should be working to establish social institutions that integrate them into the community and provide them with opportunities for contact with other people.¹⁷

But the search for a technological fix to a social problem here arises out of a deeply rooted tendency in our society, to seek such solutions wherever problems occur. Addressing the real causes of loneliness amongst older persons would be expensive and require significant social change. Rather than set out to meet this challenge, it is easier to hope that robots will ameliorate the problem.¹⁸ It therefore seems likely

¹⁷ Notice also that the development of robot companions privatises the solution to the emotional needs of older persons. They, or their families, will be encouraged to individually purchase an expensive toy. The community need do nothing, or at most might be requested to subsidise these purchases. One suspects that this is another reason for corporate enthusiasm for this approach to serving the needs of the aged.

¹⁸ According to some sources, Japanese scientists see the main future applications of their robots as looking after the needs of Japan's increasingly elderly population. As well as robot pets, they are developing robots to lift, feed and monitor the health and needs of older persons in hospitals or their homes. See, for instance, "Glimpses of a robotic future," http://news.bbc.co.uk/1/hi/english/world/asia-pacific/newsid_1048000/1048602.stm, at 15.02.02; P. Menzel and F. D'Aluisio. *Robo Sapiens*: 23, 44, 48, 73, 78; Kageyama. Nurse Gadget patrols the wards. *The Age*: 44, April 6, 2002.

that research into robot pets will continue, or at least that such solutions will be pursued alongside more sensible attempts to address the fundamental causes of the social isolation of the elderly.

The benefits of pet ownership

The idea that ownership of robot pets *could* improve the lives of lonely older persons builds on observations of the benefits of ownership of real animals. There is a sizeable medical and psychological literature that suggests that there are improvements in peoples' health and well-being that flow from contact with animals and the ownership of pets.¹⁹ Just stroking an animal has a number of immediate physiological and psychological effects on most people. Contact with animals can invoke a relaxation response and lower blood pressure.²⁰ The psychological benefits of regular contact with animals, and of pet ownership in particular, are less immediate but more profound. Regular contact with animals in a positive context seems to make people happier and increase their sense of well-being. According to some studies, pet owners are less likely to experience loneliness and depression than others in comparable circumstances without pets. They are also more likely to be in rewarding relationships with other people.²¹ So substantial are the effects of contact with animals and pet ownership on the happiness and well being of human beings that 'pet

¹⁹ The literature on the health benefits of pet ownership is too large to survey here. A useful starting point is C.C. Wilson and D.C. Turner, editors. *Companion Animals in Human Health*. Sage Publications, Thousand Oaks, 1998. The journal *Anthrozoos* regularly publishes findings in the area. One recent paper even estimates the savings on health spending due to the beneficial effects of pet ownership in Australia at \$988 million (Aus) for the financial year 1994–1995! See Bruce Headey, Health Benefits and Health Cost Savings Due to Pets: Preliminary Estimates from an Australian National Survey. *Social Indicators Research*, 47: 233–243, 1999.

²⁰ For a discussion of these, and other positive health benefits associated with pet ownership, see G.L.R. Jennings, C.M. Reid et al. Animals and Cardiovascular Health. In C.C. Wilson and D.C. Turner, editors, *Companion Animals in Human Health*, pp. 161–171. Further evidence of the benefits of dog (but not cat!) ownership in relation to heart disease is provided by E. Friedmann and S.A. Thomas. Pet Ownership, Social Support, and One-Year Survival After Acute Myocardial Infarction in the Cardiac Arrhythmia Suppression Trial (CAST). In C.C. Wilson and D.C. Turner, editors, *Companion Animals in Human Health*, pp. 187–201.

²¹ See C.P. Keil, Loneliness, Stress, and Human-Animal Attachment Among Older Adults. In C.C. Wilson and D.C. Turner, editors, *Companion Animals in Human Health*, pp. 123–134.

therapy' has developed, as a way of mobilising them to therapeutic ends.

Some of these effects are undoubtedly a function of the fact that pet ownership increases the opportunity for human contact and, where some pets are concerned, the likelihood of their owner exercising. Pets need to be taken to the vet, they need to be groomed, shopped for and exercised. All of these activities create opportunities to meet with and engage with people and help to overcome loneliness and social isolation which are destructive of health and happiness. Pets provide a convenient topic of conversation and a point of contact between people and so facilitate the development of new human relationships.²²

But other health and well-being promoting effects of pet ownership apparently derive from the relationships that people form with the animal companions themselves. The demands of pet ownership guarantee a certain level of involvement in the project which, if the experience is a positive one, turns into an investment in it and the pet itself. For some people, pets are endlessly entertaining; we gain joy from watching and learning about their habits, moods and antics. The mere fact that another creature relies upon us for food and companionship makes us feel wanted. The gratitude and affection they display makes us feel loved. In return, people love their pets. Having something to love, even a pet, is clearly conducive to well-being.

This much should be uncontroversial. However, to confine our account of the benefits of pet ownership to these observations would be to treat only the superficial features of our relationships with animals. Our relationships with animals contribute to our well being in just the same way as do our relationships with other people, by being an important aspect of 'the good life.' There is a genuine ethical content to our relationships with animals. The presence and nature of these relationships may therefore contribute to our overall assessment of the value of a human life as rich or impoverished, virtuous or vicious.²³

Ethical aspects of human-animal relationships

To begin with, our pets may be a source of genuine companionship. Some animals have sufficient personality that it makes sense to talk of sharing experiences with them. This shared experience may enrich our rela-

²² This is one of the few benefits of pet ownership that robot pets could in fact plausibly secure for their owners.

²³ See Roger Scruton. *Animal Rights and Wrongs*. Demos, London, 1996 extracted in Rosalind Hursthouse. *Ethics, Humans and Other Animals: An Introduction with Readings*: 211–212. Routledge, London and New York, 2000.

tionship with them and our own lives.²⁴ The mere fact that an experience is shared with someone may enrich it for us by allowing the possibility of conversation, reflection or commiseration about it.²⁵

The idea that we experience something *with* someone obviously requires that they experience it too. It requires that our companion be an independent locus of experience. To borrow Nagel's language, it requires that there is something that "it is like to be" that entity.²⁶ The companionship that animals provide is therefore predicated upon them being conscious entities with experiences of their own.²⁷

That animals are independent loci of experience and consciousness also allows them to surprise us, to provoke wonder in us, and to teach us new truths about the world. The 'otherness' of animals, both in the sense of their individual personalities, and as representatives of species with a different mode of being in the world than our own, sometimes means that their behaviour and demeanour can grant us insight into the nature of reality and our own experience.²⁸ We may learn important lessons about ourselves, our animal companions, and our shared place in the world, through our relationships with animals. In this too our relationships with them share important features with our relationships with other people.²⁹

²⁴ See Mary Midgely. *Animals and Why They Matter*: 112–124. The University of Georgia Press, Athens, Georgia, 1983. Midgely also emphasises the importance of 'fellowship' in establishing the moral status of animals in "Is a Dolphin a Person," in *Utopias, Dolphins, and Computers: Problems of Philosophical Plumbing*: 107–117. Routledge, London and New York, 1996. See also Cora Diamond. *Eating Meat and Eating People*. *Philosophy*, 53: 465–479, 1978.

²⁵ Such enrichment may occur even when the possibility of such dialogue remains hypothetical. Our attention here is drawn to the way in which people often do talk to their pets, even though their pets cannot respond in kind.

²⁶ Thomas Nagel. *What Is It Like to Be a Bat?* *Philosophical Review*, 83: 435–450, 1974. See also Midgely. *Animals and Why They Matter*: 112–117.

²⁷ The idea that animals may be companions, in the true sense of someone with whom we may share experiences, goes some way towards explaining the grief that people typically experience when their pets die, why we understand it when they do, and why we may feel puzzlement or disapproval when someone fails to evidence grief following the death of their pet.

²⁸ Cora Diamond. *The Importance of Being Human*. In David Cockburn, editor, *Human Beings*, pp. 35–62, at p. 44. Cambridge University Press, Cambridge, 1991. The capacity that animals have to provoke wonder and alter our perception of the world is discussed in M. Midgely. *Beast and Man*: 359–363. The Harvester Press, Hassocks, Sussex, 1978.

²⁹ For a fascinating and provocative discussion of the ways in which our attitudes towards people and animals inter-relate and inform each other, see Cora Diamond. *Eating Meat and Eating*

Furthermore, relationships with animals offer many opportunities to demonstrate and to cultivate various virtues (and, for that matter, vices).³⁰ For instance, one may be kind to animals, considerate of them, demonstrate compassion or generosity towards them, or be cruel, vicious, or mean. The love that people have for their pets may itself be admirable.³¹ The value we place on our relationships with certain animals also makes possible the display of other virtues. For instance, people may demonstrate courage in rescuing their pet from a burning house. The fact that we understand and admire their love for their pet allows us to see their act as an act of courage, rather than for instance, foolhardiness, as in the case where they return to a burning house to rescue their passbook. Indeed, certain virtues and vices may *only* be fully realised in our relations with animals. For example, cruelty to animals is one of the paradigmatic examples – perhaps the paradigmatic example – of this vice. Cruelty to animals is often *more cruel* than similar treatment of other people. That animals are mute – 'dumb animals' – and unable to protest their treatment, that they often depend on us, that they are often entirely within our power, makes their mistreatment especially cruel. The presence of animals in our daily lives makes our ethical universe richer by allowing for the possibility of – and the possibility of avoiding – the maximal realisation of this vice.

More controversially, the ethical content of our relationships with animals is also partially determined by the behaviour of the animals themselves. Sometimes this is merely because animals contribute to reciprocal relations with people of sorts that we value. Thus, for instance, the admirable qualities of the bond between a person and their pet may be determined as much by the pet's affection for their owner as the owner's for their pet. But I also want to suggest that at least some animals are themselves capable of a range of ethical and unethical behaviours. Pets are capable of various virtues and vices, of being honest or dishonest, brave or cowardly, kind or cruel, etc. Literature and anecdote about animals abound with tales of devoted and brave dogs, noble horses and proud cats. I believe these attributions of virtues should be taken at face value. As I discuss further below, our concepts of virtue and vice are broad enough and extend far enough to include character traits of animals. But

People. *Philosophy*, 53: 465–479, 1978.

³⁰ R. Scruton. *Animal Rights and Wrong*. In Hursthouse, *Ethics, Humans and Other Animals*, pp. 211–212; Midgely. *Animals and Why They Matter*, pp. 15–16.

³¹ Of course this is not to claim that this is always the case. Emotional investment in animals may sometimes be unhealthy, obsessive or sentimental. All the argument here requires is that love for an animal may sometimes be virtuous.

more fundamentally, what these stories illustrate is that animals are capable of a wide range of behaviours and character traits that are amenable to ethical description and that they are capable of comprehending and responding to the ethical dimensions of some situations and relationships.³²

There is a long tradition in philosophy and science of denying what I have here affirmed. To attribute emotions (let alone ethics!) to animals, and to value relationships with them, is sentimentality and anthropomorphism of the worst sort.³³ Animals don't have real emotions, thoughts or moods. At most they have instincts and drives and their own unique mental states that we mistakenly identify with their nearest human equivalent.

It is difficult to know how to respond to this challenge, which seems so wilfully blind and wrong headed to those of us who do credit animals with emotional states and personalities and (perhaps) ethics.³⁴ The attribution of complex mental states to animals occurs naturally in the context of our interactions with them. It is the 'scientific' or philosophical denial of the veracity of these attributions that needs to be explained and on which the onus of proof should lie. If we apply this same mode of reasoning to our relation with other human beings we will also find that we have no way to be sure that they have thoughts, emotions or personalities either.³⁵

³² The best discussion of animal virtue and vice I know of is provided by V. Hearne. *Adam's Task: Calling Animals by Name*. Alfred A. Knopf, New York, 1986. See also Scruton R. *Animal Rights and Wrong*. In Hursthouse, *Ethics, Humans and Other Animals*, p. 212; Stephen Clark. *The Political Animal: Biology, Ethics and Politics*: 113–115. Routledge, London and New York, 1999; Jeffrey Masson and Susan McCarthy. *When Elephants Weep: The Emotional Lives of Animals*, Chapters 8 and 9. Vintage, London, 1996. Virtues and vices are most readily identified in animals with which we are most familiar, and which have an important place in our culture as well as in individual human lives, such as cats, dogs, and horses. But I suspect that prolonged contact with and observation of, any animal capable of social interaction with humans would reveal the existence of individual character traits susceptible to moral evaluation.

³³ For a solid exposition of the orthodox 'scientific' denial of the moral emotions to animals, see Marc D. Hauser. *Wild Minds: What Animals Really Think*, Chapter 9, Moral Instincts. Penguin, London, 2000.

³⁴ For a recent and sophisticated treatment of the ethical dimensions of our relations with animals and the nature of their experience, see J.M. Coetzee. *The Lives of Animals*. Profile Books, London, 2000. See also Midgely. *Animals and Why They Matter*; Midgely. *Beast and Man*; Clark. *The Political Animal*; Stephen Clark. *Animals and their Moral Standing*. Routledge, London and New York, 1997.

³⁵ Midgely. *Animals and Why They Matter*: 116.

This is a familiar observation and one unlikely to shake the convictions of those who deny the existence of these traits in animals. So it is worth noting the related phenomenon, that the denial of an ethical dimension to the character of animals also renders it impossible to properly describe or understand the behaviour of *animals*. This truth is nicely brought out by the author of *Adam's Task*, Vicki Hearne, a professional animal trainer, who recounts how she was alerted to the poverty of the dominant philosophical approach to animals by the fact that those who held it frequently had to request her help in addressing the behavioural problems of their pets. The inadequacy of their account of animal minds and character was revealed by the responses of the animals exposed to it. Hearne's book abounds with delightful examples of the ways in which a sensitivity to the ethical dimensions of our relationships with animals and of their behaviour is essential to both understanding and altering them.³⁶

The debate about the nature of the mental and ethical life of animals is obviously a large one, that I cannot enter further here. I can only restate my belief that a proper understanding of the lives of animals, especially those with which we share an evolutionary and cultural history, will include the possibility of virtues and vices amongst animals.

However, there is a further defence of the reality of animal emotion and ethics, that I do wish to note briefly, which begins from the observation that the world of relationships and ethical attitudes that we inhabit has been developed with and alongside our animal companions. As a result some relationships we have with animals are paradigm cases of relationships of that sort. The loyalty and devotion of dogs, for instance, are exemplars of these virtues. The realisation of these virtues in the character of animals is part of what makes them what they are. In cases such as this it makes as much sense to compare the character of humans to that of animals as to judge the animal's behaviour against the human model. If the character traits of animals are paradigmatic examples of particular virtues then it obviously follows that animals may possess those virtues.³⁷

I have spent the time bringing out the ethical dimension of our relations with animals in order to show that they may constitute, or contribute to, important goods of the sort that we generally consider to be essential to a fully realised human life. We may value relationships with animals for the same reason that we value relationships with people – although

³⁶ See Hearne. *Adam's Task*, especially Chapter 3. "How to Say 'Fetch'." See also Midgely. *Animals and Why They Matter*: 113.

³⁷ Clark. *The Political Animal*: 111.

perhaps not to the same extent. One of the problems I foresee with the substitution of robot pets for real animals is that we will be unable to realise these goods in our relations with the robot simulacra.

The benefits of robot pets

Yet it seems clear that there are likely to be at least some apparent benefits flowing from contact with a robot pet. Our tendency to anthropomorphise and to attribute emotions to other entities is legendary. We already attribute feelings and thoughts to cars, computers and other machines. It seems likely that we will respond to robot animals in much the same way. Indeed, these robot companions are explicitly designed to elicit such responses. One imagines that eventually their designers will succeed in this goal. Some people, at least, will develop affection for – perhaps even come to love – their robot pets. If robots can be made sufficiently lifelike, with artificial fur, warm bodies and soft flesh then maybe it will be possible to evoke the relaxation responses that people have when touching real animals. Granted sufficient technical ingenuity there is little reason to think that we will not be able to create robot animals that will be able to elicit the same range of emotional responses from people as do real animals.³⁸

Furthermore, there are a number of obvious advantages that robot pets have over real animal companions. They do not need exercising or large yards in which to be kept. They will not foul the house. They can be manufactured so that people are not allergic to them. They are (hopefully) safe. They will not maul or scratch children. They will not bite the hand that feeds them or claw the hand that tickles their belly. They can be programmed not to jump up onto bench tops and smash crockery or eat the roast while the family is in the next room. Perhaps, their maintenance costs will be low compared to real animals. They do not need to be groomed or taken to the vet. They do not even need to be fed. All they require is to be plugged into a wall socket occasionally, or provided with a kennel or basket attached to a power supply where they can recharge their batteries, and an occasional trip to the ‘robo vet’ should their programming go awry, or one of their legs fall off. Perhaps best of all, if not wanted they can simply be turned off or put in ‘standby mode’ or something. They do not interfere with our ability

³⁸ Some qualifications to this claim are discussed below. I also have my doubts as to whether any of the existing robot pets are capable of engaging any human emotions or interests over any extended period. See, for instance, the discussion of AIBO in P. Menzel and F. D’Aluisio. *Robo Sapiens*: 224–227.

to go on holiday, or place any demands on us that we don’t wish to indulge.

Undoubtedly many of these features make ownership of a robot pet easier than a real pet, especially for older persons or the infirm. But we should also note that many of these ‘unattractive’ features of real pets, that robot pets need not share, are precisely those that make ownership of a real pet such an involving and potentially rewarding experience. The depth of our involvement with another entity is at least partially a function of the demands it makes upon us. The constant or regular attention that pets require means that they become a focus of our activities and a locus for positive or negative evaluations of this experience. We structure our routines about their needs. As anyone who has felt happy when greeted by a dog at the end of a day at work will know, their very need for us can itself be a wellspring of love and affection. Furthermore, vices like cruelty, or virtues like love, kindness, or compassion are only possible in relation to our treatment of animals *because of* their needs. If animals did not need to be fed, did not really suffer when they were not, then it would not be cruel to neglect to do so, nor could one be kind by showing especial concern that one’s pet’s needs were met. Many of the ethical dimensions of our relations with animals are predicated on the existence of the inescapable demands that they make upon us. Finally, it is the often the ‘wrong’ actions of our animal companions, within limits, that form the basis for some of our favourite anecdotes about them (the time Rex ate the sugar figurines off Aunt Julia’s wedding cake . . .) and eventually become a measure of our affection for them. Robot pets which are predictable or ‘safe’ in their behaviour may fail to engage us in the way real pets do, precisely because there are limits to the mischief they will get up to. For all these reasons, the distinction between desirable and undesirable aspects of the behaviour of our pets is not as clear as might first appear.

Of course the designers of robot pets are well aware of this.³⁹ Existing robot animals are already programmed to sulk, for instance, or to demand attention if they are under stimulated or have not been appropriately ‘fed.’ They may even be manufactured with a certain (perhaps adjustable) level of ‘naughtiness’ or ‘friskiness’ so that they behave unexpectedly and occasionally annoyingly, in order that we may experience a wider variety of emotions towards them. These strategies may be successful up to a point. But note that they pull in the opposite direction to the claims about the convenience of robot pets. It may not be possible to have it both ways; to design a creature

³⁹ See, for instance, M. Fujita and H. Kitano. *Development of an Autonomous Quadruped Robot for Robot Entertainment*: 15.

that genuinely engages with people and maintains their interest, without placing any arduous demands upon them.

These qualifications aside, it seems as though robot pets might offer significant advantages for lonely older persons who are unable to care for real animals. If these ersatz companions are capable of behaviour of sufficient complexity to replicate some of the joys of owning a pet then ownership of a robot pet might be the only opportunity that some individuals get to experience these. What, then, could possibly be wrong with robot pets?

The ethics of ersatz companions

My critique of robot pets begins with the observation that, no matter how sophisticated they get, they will remain simulacra for the foreseeable future. While robot animals may be designed to behave in ways which mimic closely the behaviour of real animals, their behaviour remains just this – imitation. In particular, robots do not feel or experience anything. Attributions of personality to robot pets are therefore false in a way that attributions of personality to real animals need not be. This is not to say that individual robots may not have unique and idiosyncratic features that distinguish one from another. But it is to deny that these differences reflect any reality about “what it is like to be” that robot. Thus despite Sony’s promotional claims, AIBO does not have real emotions. Nor is he likely to in the near future. At most he has sophisticated mechanisms for imitating emotional states.

AIBO’s abilities may well improve. But I am inclined to believe that no matter how clever the imitation becomes, robots will be unable to convince us that they have genuine emotions. The argument to support this claim would require a discussion of the interdependence between our awareness of other minds, our affective responses to other people and animals, and the peculiar expressive capacities of flesh, which is well beyond the scope of this paper.⁴⁰ Fortunately, this further claim is unnecessary here. All that is required

⁴⁰ But see, D. Cockburn. *Human Beings and Giant Squids*. *Philosophy* 69: 135–150, 1994; Raimond Gaita. *Good and Evil: An Absolute Conception*, especially Chp 9, Individuality. MacMillan, London, 1991; Gaita Raimond. *A Common Humanity*: 259–285. Text Publishing, Melbourne, Australia, 1999; R. Sparrow. *Artificial Intelligences, Embodiment and the ‘Turing Triage Test’*. In Ruth F. Chadwick, Lucas Introna and Antonio Marturano, editors, *Proceedings of the Computer Ethics: Philosophical Enquiry 2001 Conference: IT and the Body*. Lancaster University, Lancaster, UK, December 14–16 2001.

for the argument below is that for the foreseeable future, robot pets will offer only the appearance and not the reality of emotional responses.

Insofar as robots remain mere simulacra, most of the benefits of contact with real animals are *not* available from contact with a robot version. Thus, for instance, robot animals cannot provide genuine companionship. They cannot share experiences with us, because they do not have experiences at all. Nor can they teach us anything about the world. If they possess the ability to surprise us, they do so only derivatively, by virtue of their programming by human beings who do have this capacity.⁴¹

It is an interesting question as to whether it is possible to demonstrate virtues and vices in relation to a robot. One could presumably demonstrate something that looked like patience, for example, in one’s interaction with a robot pet. But would this be virtuous? I am not sure. It seems likely that we would not admire it in the same way, for instance, as we admire someone’s patience with a young child, because we do not have the same moral regard for its beneficiary. But we might perhaps admire it simply for what it demonstrates about the person. The extent to which we are inclined to do so will, to some extent, depend on our philosophical account of the virtues.⁴² However, other important virtues, such as kindness or generosity, do not seem possible in relation to a robot.⁴³ Robots are simply not the right sort of objects for the exercise of these virtues. As I will discuss further below, ideas about their appropriate objects are internal to what it is to have certain emotions and attitudes, including the virtues. One cannot be kind to rocks or generous to trees, for example. These virtues make no sense in relation to these objects. Similarly, it is not admirable to treat a robot in ways which

⁴¹ Today, some complex computers are capable of surprising even their programmers, but the sort of surprise involved remains different to that which living things are capable of. It is purely intellectual. It does not provoke the experience of wonder that contact with animals may involve.

⁴² The question of whether it is possible to demonstrate virtues with regards to robots thus allows us to distinguish between accounts of the virtues that are “agent-focused” – which focus on developing virtues in the agent as a *guide* to right action – and “agent-based” – wherein it is the character of an agent that *makes* an action right or wrong. See Michael Slote. *Agent-Based Virtue Ethics*. *Midwestern Studies in Philosophy*, 20: 83–101, 1995.

⁴³ ‘Courage’ is an interesting intermediate case. One can imagine a person behaving in ways which look very courageous, in order to rescue their robot dog from a burning house. Yet it seems equally open to us to speak of these as showing only foolhardiness, as we might judge their actions if they entered a burning house to rescue their stereo.

might otherwise be described as kindness, nor to be 'generous' to a computer, because there is no-one 'to' which these virtues could be directed. There is a large and important set of virtues that will be unrealisable in our relations with robots.

Finally, robot animals are unable to participate in ethical relationships with us in the way that real animals may. Robot dogs are unable to love their owners. They are incapable of genuine loyalty, or honesty, or courage or affection, or indeed any real emotion at all. They can therefore contribute nothing towards making their relationship with their owner admirable. Nor are they capable of virtues and vices themselves, as I have suggested animals are. Even the most ardent robot enthusiast would be hard pressed to seriously espouse the belief that robots can be honest or dishonest, brave or cowardly, such that they should be subject to ethical evaluation. This seems likely to remain true no matter how complex and sophisticated their behaviour becomes.⁴⁴ The absence of an ethical dimension to our relations with robots means that they are unable to count as an important good towards the realisation of the 'good life' in the way that relations with friends and real pets may.

⁴⁴ There is much speculation in the literature about the possibility of artificial intelligences becoming ethical agents but little serious argument for it. See, for instance, James Gips. *Towards the Ethical Robot*. In K.M. Ford, C. Glymour et al., editors, *Android Epistemology*, pp. 243–252. The MIT Press, Cambridge, Mass., 1995. Floridi and Sanders have argued that artificial intelligences may be moral agents and are capable of what they call "artificial evil" but deliberately stop short of attributing moral responsibility to them. See L.L. Floridi and J.W. Sanders. *Artificial Evil and the Foundation of Computer Ethics*. In Deborah G. Johnson, James H. Moor and Herman Tavani, editors, *Proceedings for Computer Ethics: Philosophical Enquiry 2000*, pp. 142–156. Dartmouth College, Hanover, New Hampshire, July 14–16, 2000; Luciano Floridi and J.W. Sanders. *On the Morality of Artificial Agents*. In Ruth F. Chadwick, Lucas Introna and Antonio Marturano, editors, *Proceedings of the Computer Ethics: Philosophical Enquiry 2001 Conference: IT and the Body*, pp. 84–107. Lancaster University, Lancaster, UK, December 14–16, 2001. It remains unclear to me how we might allow that entities were moral agents, yet deny that they should be held morally responsible for their actions. In any case, it seems unlikely that such agents could possess moral virtues, as these virtues are supposed to guide the behavior of agents that may be held responsible for their actions, as well as for their virtues or vices. The most serious defence of the idea that artificially intelligent machines could be held morally responsible, that I am aware of, is Daniel C. Dennett. *When HAL Kills, Who's to Blame?* *Computer Ethics*. In David G. Stork, editor, *HAL's Legacy: 2001's Computer as Dream and Reality*, pp. 351–365. The MIT Press, Cambridge, Mass., 1997. But even this paper stops short of explicitly stating that it is appropriate to assign moral blame to machines. After all, what would we do to punish them?

All of which is to say that no matter how sophisticated robot pets become, for the foreseeable future, they will be incapable of generating most of the benefits of ownership of a real animal. To provide lonely older persons with robot companions in the hope that they will gain benefits comparable to those possible from contact with a real animal is, at the very least, stupid. It may be worse than this and be unethical, if the provision of a robot pet is intended to substitute for other more demanding approaches towards care for the elderly.

But why should the absence of these benefits matter if, as I have already conceded, imitation may be sufficient to motivate all the psychological and emotional responses and provide all the subjective experiences that contact with real animals allows? That is, if people come to gain pleasure from the company of their robot pets, cherish them, talk to them, grieve for them when they die, even come to love them? Surely emotional investments of this sort are themselves important benefits that flow from ownership of a robot pet?

It matters because our sense of the value of these responses and experiences stems from our belief in the value of the relationships from which they flow. Our sense of the value of these relationships is itself informed by a conception of their appropriate objects. If they are directed towards the wrong objects we may feel that they do not improve a person's life. They may even harm it. Thus, for instance, romantic love for a (real) animal is not a loving relationship to be admired. It is to be deplored. Nor are we inclined to hold that the experience of, or provided by, that relationship is of benefit to a person, even though the relationship is not.⁴⁵ This experience is worthless, or perhaps even harmful, because of its origin.⁴⁶ Love, affection and respect, and the experience of these attitudes, are not goods if they are directed towards objects which are evil, callous or worthless.

Indeed to describe these emotions, attitudes and relationships, as directed to the wrong objects in such cases is already to concede more than is perhaps warranted. Ideas about their proper object are already built into what it *means* to have various attitudes. So, for instance, 'love' directed towards the wrong object may not even be love at all. It may be more appropriately described as infatuation or obsession. Similarly,

⁴⁵ We do *not* typically hold, for instance, that it is better to experience romantic love for an animal than not to experience romantic love at all.

⁴⁶ This is not to say that there may not be other benefits of experiences from relationships that are ill-founded or misconceived, just that these are not the same as those of the experience of a normal relationship of that sort.

'grief' consequent on the loss of a robot pet may really be a morally deplorable sentimentality.

Now it is clear that robots are not appropriate objects for love, grief, friendship, etc. Despite their animated appearance, robots remain essentially inanimate objects. They can contribute nothing to the relationships that people might form with them. The range of emotions appropriate towards a robot is thus limited to those that would be appropriate towards a car, or wristwatch, or antique settee.⁴⁷ Beyond these, emotions arising in our relations with robots are paradigmatic examples of a morally deplorable sentimentality.⁴⁸

Instead of being positive experiences which improve the lives of those who have them, 'affection' or 'love' for, or pleasure in the 'company' of, a robot pet are sentimental excesses that add nothing to a human life. The ability of sophisticated robots to provoke such emotions is not a virtue; it is a danger. Contact with a robot pet will not increase the well-being of a socially isolated older person. It may even harm them by encouraging them to engage in sentimentality of a morally deplorable sort.

Furthermore, given the reciprocal nature of our intimate relationships it seems likely that these 'goods' can only be achieved with regards to robots if people delude themselves about the object of their affections. We could only love or feel affection for our robot pet if we believed that it loves us back, that its frolicking when we come home reflects genuine happiness, its sulking real sadness, et cetera. That is, in order to maintain the same sort of involvement with a robot pet as we might with a real pet, we must be mistaken about its actual capacities. Of course it is likely that people will be well aware at a conscious level that their pet is a robot. Robots that are capable of convincing us that they are real animals are still a long way off, if they will ever be possible. Thus if individuals continue to maintain that they love their robot pet in the same way that they might a real pet (and not as they might love a car, for instance), or that they value its friendship,

⁴⁷ Such objects may come to have 'sentimental value' by virtue of our associating them with particular people or a particular set of events. A certain amount of grief is understandable, perhaps even warranted, when such an object is lost to us. Robot pets might come to have this sort of value to us, if, for instance, we brought our children up alongside them. We might then come to have many happy associations with the robot and grieve when it 'dies.' But note that our grief in this case is for the loss of the stimulus to our memories that such objects provide, not for the object for itself. That this is the case is clear, when we consider that such value can adhere to objects that are totally inanimate and might have no other value, for instance, a cheap watch, or even a rock.

⁴⁸ See Gaita. *A Common Humanity*: 249–253.

despite acknowledging that it is an inanimate robot, to the extent that they are in fact reporting accurately on their feelings, these can only reflect the presence of mistaken beliefs at a subconscious level.

Is there anything wrong with such an error? I believe there is. We have a duty to ourselves to avoid delusion and apprehend the world correctly. This may only be a weak duty; some forms of self deception may promote our interests and perhaps even be virtuous.⁴⁹ But when such delusion leads us to devote time and energy to a relationship that is in fact worthless, we have a duty to avoid it.

However, while gaining happiness through a relationship with a robot may be foolish or misguided, it is perhaps over-dramatic to describe it as unethical. The failure here is arguably one of practical rather than theoretical reason. But ethical evaluation becomes appropriate when we move to consider the actions of those who design and manufacture such devices. If they do so with the intention of replicating the behaviour of real animals precisely in order to motivate the forming of these relationships then they are encouraging and participating the deception I have described.

The unethical nature of the attempt to substitute ersatz relations or experiences for real ones can be further brought out by considering an analogous case, that of the 'experience machine.' Imagine a sophisticated virtual reality technology that is capable of deceiving its user that they are living through real experiences. By hooking our aged grandparents up to this device we could convince them that they were at the center of a lively social set, attending numerous soirees, ball room dances, even downhill skiing excursions, when in reality they were confined to bed in a drab room in a nursing home, with little human contact. Assuming that they remained unaware of the simulated nature of these experiences, they will presumably be overjoyed at their apparent new lease on life. Even if they became aware that these experiences were simulated, they might still prefer to remain immersed in the virtual world rather than endure their condition in the real world. Yet few would be prepared to hold that this was a satisfactory, or even permissible, response to the absence of positive experiences in an individual's life, even in the case where they become willing participants in the process.⁵⁰

⁴⁹ Notoriously, having exaggerated ideas about our own abilities actually improves our performance at various tasks. It is also not hard to construct examples where a particular example of self-deception contributes towards a person achieving some morally good outcome.

⁵⁰ Conversely, if we are not concerned that human happiness be founded in an accurate perception of the world, then we should have no objection to contentment resulting from the consumption of mood-altering drugs. In which case, it seems

I take it that the strength of our intuitions here reflects our belief that illusory experiences do not count for anything in a human life. What is clearly unethical here is the intention of deceiving people, or encouraging them in their self deception.

If robot pets are designed and manufactured with the intention that they should serve as companions for people, and so that those who interact with them are likely to develop an emotional attachment to them, on the basis of false beliefs about them, this is unethical. I leave open the question as to whether this is the intention of any of the actual designers of the current generation robot pets. It may not be. But I would note that some of the ways in which these 'pets' have been advertised suggest that it is. There are also strong commercial pressures to design robot pets which are as engaging and emotionally involving as possible. Indeed the entire logic of attempting to create a robot pet points in this direction, as it is their capacity to involve us and to serve as companions to us that makes pets special in the first place.

Moreover, sophisticated robot pets may make such delusion likely even where this is not the intention of the designer. That is, it may turn out that people do form attachments to their pets, spend time with them, grieve for them, et cetera, even if the pets are not specifically designed to encourage this. If this is a foreseeable consequence of the design of the robot, then it may be unethical to proceed with its sale or distribution even if it is not intended.

Of course, none of the argument here is intended to deny that robots may make entertaining toys, or that people may enjoy interacting with them as such. We might even choose to give an aging relative such a device in the hope that the entertainment it provides would lighten their days. But such a gift is on a par with a television, a video game or a spinning top. If they should start to treat it as we might a real pet, then we have done them a disservice. If we hope, intend or foresee that they should do so, then we have done them a wrong.

Conclusions

The idea that we could improve the quality of life of lonely older persons by giving them robot dogs and cats is at the very least foolish. Ownership of a robot pet will offer few, if any, of the benefits of real pet ownership, let alone of relationships with other human beings. Worse, the attempt to do so may be unethical

simpler to provide lonely older persons with high doses of anti-depressants, opiates or other 'happy pills' than to go to all the trouble of developing complex and expensive robot animals for their benefit.

if it prevents us from doing anything more meaningful to improve the well being of socially isolated elderly persons. It will also be unethical if it is done with the intention, or the foreseeable result, of encouraging people to sentimentality or to be deluded about the nature of their robot companions.

This is not the most earth-shattering of conclusions. Nor is the evil of robot pets the most pressing issue that confronts us today. It will not require great sacrifices of us if we decide that we should not proceed with the project of developing them. Furthermore, it seems we could even proceed with manufacturing robot pets as long as we saw them only as entertainment and not as a purported source of genuine moral relationships.

But an investigation of the ethics of robot pets is worthwhile because of what we learn from it about the ethical aspects of human-animal relationships, as well as the glimpse it affords us of the shape of things to come. The evolution of robot pets is in its infancy. AIBO is the first serious attempt at creating a commercial robot that can interact with people. No attempts have yet been made to create a robot that could seriously pass as an animal in daily interaction with human beings. Yet it is presumably only a matter of time until this occurs. Likewise, in the longer term, if the technology improves sufficiently, attention will no doubt turn towards the goal of producing android companions for people.

My discussion of the ethics of robot pets has drawn our attention to the distinction between real and ersatz relationships and argued for the moral significance of this distinction. This distinction will be even more important in the case of android companions that might give rise to a larger range of emotions and responses in those who interact with them, including those that are central to a fully realised human life such as love, friendship, admiration and respect.⁵¹ I have argued that in so far as such emotions are based on illusion they are morally deplorable. It would be wrong to design android robots with the intention of generating such responses.

If true, this throws into question the ethics of the project of imitation that has been the driving force behind robotics since its inception. Ever since robots were first conceived of, scientists and science fiction writers have dreamed of creating robots that might become our friends and companions. The argument of this paper suggests that the attempt to build such creations risks ensnaring us in sentimentality and illusion and should be approached with caution for

⁵¹ Thus Geoff Simons gushes "We will learn to share our deepest secrets with our robot companions. We may even learn to relate to them in friendship, affection and love . . .," *Robots: The Quest for Living Machines*, p. 193.

that reason. Interestingly this seems to be an independent intuition to the familiar 'Frankenstein Thing' that arises regarding the idea of creating humanoid robots.⁵² This intuition concerns the goal of creating creatures in our own image; it is at its strongest when we contemplate the prospect of success at this project. But the arguments developed in this paper only have force on the assumption that our creations remain simulacra. They lapse if we actually succeed in imbuing a robot with real personality. Were we to succeed, there would presumably not be anything wrong with coming to love or befriend an intelligent robot. But until we succeed, imitation is likely to involve the real ethical danger that we will mistake our creations for what they are not.

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⁵² I owe the description of this intuition as "The Frankenstein Thing" to Bernard Rollin. See B. Rollin. *The Frankenstein Syndrome: Ethical and Social Issues in the Genetic Engineering of Animals*. Cambridge University Press, New York, 1995. Extended discussions of "the Frankenstein Thing" in relation to robots can be found in Simons, *Robots: The Quest for Living Machines*, pp. 15–40; Norbert Weiner. *God and Golem Inc*, especially pp. 55–88. Chapman & Hall, London, 1964; N. Frude. *The Robot Heritage*, pp. 56–86. Century Publishing, London, 1984; G.M. Hall. "The Frankenstein Issue", Chp 3 of *The Age of Automation*, pp. 39–49. Praeger, Westport, Connecticut, 1995.

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