

“I Care About Him as a Pal”: Conceptions of Robotic Pets in Online AIBO Discussion Forums

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ABSTRACT

In this study, we analyzed people's conceptions of AIBO, a robotic pet, through their spontaneous postings in online AIBO discussion forums. Results showed that AIBO psychologically engaged this group of participants, particularly by drawing forth conceptions of essences (79%), agency (60%), and social standing (59%). However, participants seldom attributed moral standing to AIBO (e.g., that AIBO deserves respect, has rights, or can be held morally accountable for action). Our discussion focuses on the societal implications of these results.

Keywords

Robotic pets, virtual pets, user conceptions, online discussion forum, online bulletin boards, AIBO

INTRODUCTION

In recent years, there has been a movement to create technological substitutes for pets – such as the Tamagotchi, Furby, Techno, Poo-Chi, and I-Cybie. One of the most sophisticated of robotic pets currently on the market is Sony's robotic dog AIBO, which in Japanese means “companion”. According to Sony's literature (www.aibo.com), “AIBO's a true companion with real emotions and instinct.” Elsewhere [2], we have argued that computers, as they can be conceived of today in material and structure, are not social agents. In this light, Sony's claims about AIBO (that AIBO has “real emotions and instincts”) are epistemologically false. But psychologically that might not matter [4]. In other words, it may be that through such interactions, people conceive – in some meaningful ways – that they are interacting with an animal.

In this study, we analyzed people's conceptions of AIBO through their spontaneous postings that occurred in online AIBO discussion forums. Our goals were: (1) to investigate

how AIBO owners (and others) conceptualize their relationship with a robotic pet; and (2) to investigate the proposition that robotic technologies are blurring traditional epistemic boundaries between, for example, sentient/not sentient, intelligent/not intelligent, and alive/not alive [1, 5].

METHODS

Participants and Procedures

Data was collected from three well-established online forums that discuss Sony's robotic dog, AIBO. Postings were collected from each online forum from May 22 – September 5, 2001. 3119 postings from 182 participants were collected (mean, 17 postings per participant; median, 4; range, 1 – 285).

Coding and Reliability

A coding manual was generated from postings to the same three online forums, prior to the data collection period. Every posting was examined for coding. If a participant used the same category in multiple postings, that category was coded as “used” only once. To assess reliability of the coding system, an independent scorer trained in the use of the coding manual recoded postings from 30 randomly chosen participants (16%). Reliability results showed 90% agreement at the most detailed level reported in Table 1.

RESULTS

Four overarching categories were identified in participants' postings about AIBO. *Essences* refer to the presence or absence of technological, biological, or animistic underpinnings of AIBO (e.g., “He's resting his eyes”). *Agency* refers to the presence or absence of mental states for AIBO, such as intentions, feelings, and psychological characteristics (e.g., “He has woken in the night very sad and distressed”). *Social standing* refers to ways in which AIBO does or does not engage in social interactions, such as communication, emotional connection, and companionship (e.g., “I care about him as a pal, not as a cool piece of technology”). *Moral standing* refers to ways in which AIBO may or may not engender moral regard, be morally responsible, be blameworthy, have rights or deserve respect (e.g., “I actually felt sad and guilty for

Table 1. Percentage of Participants (N=182; Postings = 3,119) by Category

Category	Affirmed	Negated
1. Essences	79	16
1.1 Artifactual	75	8
1.2 Biological	47	1
1.3 Animistic	14	11
2. Agency	60	4
2.1 Listens	9	1
2.2 Feels	38	1
2.3 Has Intentions	42	2
2.4 Can be Raised	39	1
2.5 Can be Praised	10	0
2.6 Has Intelligence	18	2
2.7 Unique Psychologically	20	1
3. Social Standing	59	8
3.1 Communication	45	3
3.1.1 <i>Nonverbal Commun.</i>	34	0
3.1.2 <i>Person Talks to AIBO</i>	12	0
3.1.3 <i>AIBO Talks</i>	13	1
3.1.4 <i>Reciprocal Commun.</i>	27	3
3.2 Personal Interests	34	3
3.3 Emotional Connection	28	3
3.3.1 <i>Person to AIBO</i>	27	1
3.3.2 <i>AIBO to Person</i>	8	2
3.3.3 <i>Reciprocal Emotion</i>	4	0
3.4 Companionship	26	1
3.4.1 <i>AIBO's Inherent Value</i>	1	0
3.4.2 <i>Miss AIBO's Company</i>	12	1
3.4.3 <i>AIBO as Family Member</i>	10	0
3.4.4 <i>AIBO as a Companion</i>	16	1
4. Moral Standing	12	2
4.1 Engenders moral regard	7	1
4.2 Recipient of moral care	4	1
4.3 Morally Responsible	1	0
4.4 Morally Blameworthy	1	0
4.5 Rights	3	0
4.6 Deserves Respect	3	0

Notes: (1) Percentages reported in **bold** refer to usage of the overarching category; percentages in plain text refer to the next sub-level in the hierarchy; and percentages in *italics* refer to the lowest level. Within each level of the hierarchy, participants who used more than one sub-category are only counted once in the overarching category. (2) "Affirmed" refers to the presence of qualities or behaviors (e.g., "He is just so alive to me!"), while "negated" refers to the absence of qualities or behaviors (e.g., "An Aibo is not alive; it doesn't feel pain"). (3) 11% of the participants had at least 1 coding that was uncodable.

causing him pain!").

As shown in Table 1, by and large participants wrote about AIBO in terms of qualities and behaviors that AIBO possesses rather than in terms of qualities and behaviors that AIBO lacks. Specifically, 90% of the participants affirmed at least one category, while only 21% negated at least one. Moreover, roughly two-thirds of the participants

made affirmative references to AIBO's essences (79%), agency (60%), and social standing (59%). In contrast, there was a relative absence of reference to AIBO's moral standing (12%).

DISCUSSION

This study provides an in-depth characterization of the conceptions of AIBO that AIBO owners (and others) bring to online AIBO discussion forums. On the one hand, our results suggest that AIBO psychologically engages this group of participants, particularly by drawing forth conceptions of essences, agency, and social standing [4]. On the other hand, participants seldom attributed moral standing to AIBO (e.g., that AIBO deserves respect, has rights, or can be held morally accountable for action) [1]. Traditional moral psychological research has shown that conceptions of essences, agency, and social standing help establish a basis for and then become coupled with a moral orientation to animals and humans [3]. Thus, our results suggest that interactions with robotic pets challenge traditional patterns of social and moral reasoning.

As robotic pets become increasingly sophisticated technologically (and compelling psychologically), these findings lead us to be both concerned and hopeful. We are concerned because people in general, and children in particular, may fall prey to accepting robotic companionship without the moral responsibilities (and moral developmental outcomes) that real, reciprocal companionship involves. Yet we are hopeful that for some populations – such as for elderly who may no longer be capable of caring for real animals – this separation of social from moral standing may accord benefits. For example, robotic pets may accord the elderly some degree of comfort and companionship (yet not be harmed by incompetent care). With Alan Beck, Gail Melson, and Nancy Edwards, we are currently examining these questions in a series of studies funded by the National Science Foundation.

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