The Reign of Catz & Dogz at CHI 2009

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Abstract  
Despite the enormous commercial successes of products such as Nintendogs, very little is known about people’s interactions with artificial representations of animals. However there is an increasing body of research in different disciplines which could be used to better understand such interactions. The Reign of Catz & Dogz at CHI 2009 is a one day workshop which will bring together researchers in an inter-disciplinary, international and multi-cultural setting to explore the relevant issues surrounding interactions with virtual creatures and the role such creatures will play in the future.

Keywords  
Virtual pets, companionship, human-robot interaction

ACM Classification Keywords  

Introduction  
Researchers and companies worldwide are developing software artefacts and embodied devices inspired by our fascination and interaction with animals. For instance, the virtual pet and electronic companion genres of computer games and computing devices
respectively are examples of very successful commercial technological products. As examples of commercial virtual (screen-based) pets we include software games such as Catz, Dogz, MoPets and Nintendogs, whilst as examples of electronic (embodied) companions we include devices such as Pleo, Furbie and Sony’s AIBO. Many such products, visually at least, are often replicas of real animals - such as cats and dogs - though they can also frequently be abstract or fantasy creatures. Millions of consumers worldwide have purchased these products, played with them, interacted with them, invested time in looking after them, and perhaps even become emotionally attached to them. Despite this huge financial and emotional investment by consumers, and an ongoing development and marketing investment by industry (new titles are appearing almost daily), academic interest in such products is virtually nil.

Accordingly, new media commentators such as Turkle [1] have argued that the lack of understanding of artificial creatures is an important, or even ‘urgent’, issue. Recently, Isbister [2] attempted to rationalize people’s motivations in engaging with a virtual pet and suggested that the objective is to enjoy the pet’s development as well as its moments of both connection and resistance to the player. She concluded that virtual pets are unique as autonomous agents since they evoke a high degree of time and emotional investment. Subrahmanyam et al. [3] discuss the shift from real-life to simulation in the context of virtual pets and conclude, like Turkle, that systematic research is needed to assess the impact of such technology.

As the designers of all virtual pet products are no doubt aware, an accepted consensus within anthrozoological (human-animal interaction) research is the quantifiable positive effects of human-animal relationships. For instance, interaction with real pets has been shown to positively effect people as they get older [4], alter the interaction between people when they meet for the first time [5] and help overcome the death of a close relative [6]. More fundamentally, Wilson [7] coined the term biophilia meaning “the connections that human beings ... seek with the rest of life”, and argued that such cravings are determined by a biological need. However, little exploration has been made of the link between such socio-biological theories and human interactions with artificial creatures and systems.

Research in Related Areas
Despite the lack of research into interactions with commercial artificial representations of animals, there is a good deal of relevant work ongoing in other areas that could be applied to this area.

As mentioned above, there are many researchers, working largely in comparative psychology and the animal behavioural sciences, who have studied the benefits of human interactions with real animals. However, collaborations between this community and computer scientists intent on creating interactive systems remain rare. In our own work (e.g. see [8]) we have applied companionship metrics developed to study human perceptions of real pets to the analysis of virtual pets such as Nintendogs – however similar work remains scarce. In contrast, even business and marketing researchers have started to take the issue of animal companionship seriously [9].

In computer science, the most relevant group of researchers who could contribute to the discussion
Regarding virtual creatures is the human-robot interaction (HRI) community. For instance, HRI research has long used Sony’s AIBO as platform to investigate people’s reactions to zoomorphic robots – indeed several studies have attempted to compare AIBO with real dogs [10]. A number of HRI researchers are currently engaged in work that is attempting to create artificial companions. The seal-like commercial robot Paro for instance has been used in several such studies, primarily, in Japan [11]. Some researchers are also beginning to develop their own novel devices with similar goals – Saldien et al [12] are developing the robotic creature Probo as a comforting companion for hospitalized children; the MIT robot teddy-bear Huggable [13] is being developed for similar purposes, whilst [14] describes a novel “Haptic-Creature” which affords therapeutic interactions through touch – rather like a cat would do when sitting on one’s lap.

Other research relevant to artificial creatures is grounded in autonomous character development. However, though artificial dogs, for instance, exist in many software systems (including, infamously, in Microsoft Office), very few incarnations of virtual dogs have been based on genuine ethological or anthrozoological studies – though exceptions to this include work done by the Synthetic Creatures Group at MIT [15] and most recently by Goertzel et al [16] in their work in Second Life. As already stressed however, the public’s desire to ‘own’ even very basic representations of virtual cats and dogs (and even Hamsters, Rabbits and Dolphins) appears insatiable – the simple application (fluff)Friends, which puts static images of chosen virtual pets on owners’ Facebook profiles, has almost 100,000 daily active users [17] according to its homepage in the summer of 2008.

An open question regarding artificial representation of creatures is the future role that they will play in a society populated with pervasive computers, personal robots and ambient intelligence. In Europe several large multi-disciplinary, and multi-partner, projects have recently been funded to further explore the potential of robotic artificial companions – most notably these include the COMPANIONS project [18] and LIREC [19] – both of which focus on aspects of combining advanced technologies to create personal, persistent ‘agents’ or ‘companions’, which stay with the user for long periods of time, developing a relationship and getting to ‘know’ its owner’s preferences and wishes.

The Reign of Catz and Dogz at CHI 2009

The Reign of Catz and Dogz at CHI 2009 is a one day workshop which will explore human interaction with zoomorphic virtual creatures. The workshop will build on two previous workshops held at the annual AISB (Society for the Study of Artificial Intelligence and the Simulation of Behaviour) conference in the UK in 2007 and 2008. The aim of Catz and Dogz at CHI is to bring together multi-disciplinary researchers from around the globe to identify the relevant open-issues surrounding interactions with virtual creatures and the role such creatures will play in a future where technology is pervasive. In particular, we want to encourage discussions which explore interactions with virtual creatures from both inter-disciplinary and cross-cultural perspectives. The workshop will include presentations, activities “in-the-wild” away from the conference venue, discussion panels and demonstrations designed to encourage interaction among attendees from different disciplines. One activity will be centered upon studying interaction with virtual pets in public and to monitor and evaluate the reaction of by-standers to this
interaction and to the concept of artificial creatures in general.

Conclusions
Little is understood about interaction with virtual representations of animals, despite evidence to show that there is enormous public fascination with such artefacts. Catz and Dogz at CHI 2009 proposes to bring together researchers from multiple disciplines, in an international setting, to discuss how we might better understand such interactions and the future role virtual and artificial creatures will play in society.

References
[18] The EU COMPANIONS Project – see http://www.companions-project.org
[19] The EU LIREC Project see http://lirec.eu