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Digital Games for Animals



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Synonyms

[Digital games for animals](#)

Definitions

Digital games aimed at animal players are a growing area in both entertainment and research, enabled particularly by the mass availability of touchscreen technology. These games rely on animals' natural proclivity for play and can facilitate playful interactions between species.

Prerequisites for Digital Play in Animals

Humans are far from the only species known to engage in playful behavior. Wirman et al. (2011) argue that “all mammals play, including humans,” and play-like behaviors have also been identified in birds, reptiles, fish, and invertebrates such as octopuses (Burghardt 2005). While the evolutionary dynamics and psychological mechanisms of play are not yet fully understood, it is known that

in both humans and other animals, playing is a crucial prerequisite for physiological, psychological, and social development (Bekoff 1972) and play deprivation can result in serious developmental deficiencies in adulthood (Hol et al. 1999). Based on this evidence, scholars such as Sutton-Smith (1997: 218) have advocated for a definition of play which encompasses both humans and animals.

Animals are also known to interact with technology in a variety of ways. Many pet owners have observed their animal companions watch television, and animals' engagement with screen media can be meaningful. Research suggests, for example, that dogs can recognize other dogs on the screen and distinguish them from other species using visual cues alone (Autier-Dérian et al. 2013).

Service animals are often trained to use technology. One example is “canine augmentation technology,” developed to foster more efficient dog–human communication in search and rescue operations (Ferworn et al. 2006). Digital technology also plays a major role in animal cognition research, with great apes such as the male bonobo Kanzi being trained to use a touchscreen interface to communicate with humans in a lexigram-based language (Greenfield et al. 2008). More recently, underwater acoustic touchscreens have been developed to facilitate human–dolphin communication (Herzing 2016).

Digital games for animals use technology as a vehicle for animals' natural playfulness.

Examples

Whereas some digital games for animals are commercial products targeting pet owners, others are developed for research purposes or for use in specialized facilities such as animal rehabilitation centers and zoos. Of the former variety, most games appear to target cats and feature a similar mechanic: tracking and tapping an object moving on the touchscreen. *Friskies Jitterbug* and *Cat Alone* are the better known of many such titles. A number of similar games, such as *Jolly Dog*, also exist for dogs.

Research-based games and games used in specialized settings often focus on enriching the lives of captive animals, targeting species as diverse as parrots (Woodman 2014), penguins (Westerlaken 2017), and orangutans (Webber et al. 2017). Many such games promote cross-species play. One example is *Pig Chase*, an experimental game developed in the Netherlands, which involves farm pigs interacting with a large touchscreen installed in their pen. The objective is for a pig to use its snout to touch a moving ball, which is remotely controlled by a human player. When touched, the ball fires off colorful sparks. The game keeps track of each pig's individual performance and has a leaderboard which can be viewed by the human on their tablet. The aim of the project is to relieve the pigs' boredom, which is a major issue in intensive farming, as well as facilitate cross-species play and, through it, reduce "the distance between farming practices and the general public" (Meijer 2016: 71). Other examples of cross-species digital play have involved orangutans (Wirman et al. 2011; Webber et al. 2017), cats (Westerlaken and Gualeni 2014), dogs (Wingrave et al. 2010), and hamsters (Cheok et al. 2011).

Rationale

One of the main reasons to explore digitally mediated play in animals is its potential to improve their lives. Digital games can provide cognitive stimulation and enrichment to captive animals, mitigating the issue of boredom and facilitating

cognitive development (Baskin and Zamansky 2015). Experimental evidence suggests playing digital games can relieve stress and depression in home alone dogs (Geurtsen 2014). Another issue digital play can address is animals' sedentary lifestyle (Pons et al. 2014). One example is *Feline Fun Park*, a game for cats which has an automatic mode where the level of challenge is adjusted based on the animal's activity level (Young et al. 2007).

Digital play can also benefit human–animal interactions. Some digital games, such as *Canine Amusement and Training*, are designed to facilitate dog training (Wingrave et al. 2010). Other digital games, such as the human–orangutan collaborative game deployed at Melbourne Zoo, aim to increase visitors' empathy for animals while providing the latter with environmental enrichment (Webber et al. 2017). Another project, *Apps for Apes*, included an iPad donation campaign for captive orangutans as a way of raising public awareness about orangutan survival in the wild (Smith 2011).

As an area of research, digital play in animals can be regarded as part of the wider domain of animal–computer interaction (Baskin and Zamansky 2015) whose aims and concerns it shares. These include improving animals' life expectancy and quality, assisting working animals in their legal functions, deepening our understanding of animal cognition, and fostering better communication between species (Mancini 2011). Studying animals' digital play may also help us better understand the psychology and the roles of play – including in our own species (Wirman 2013).

Challenges

Despite their potential, digital games for animals present a number of challenges and concerns, most notably of an ethical nature. Play is meant to be a voluntary and autotelic (intrinsically motivating) activity (Denzin 1975), yet this is not always the case with digital games for animals, which in many settings are reward-based (Wirman et al. 2011). It is thus often unclear whether the

animal is genuinely playing or exhibiting trained behavior (Baskin and Zamansky 2015). Some breeds of dogs display strong predatory patterns when engaging with digital games, suggesting the animals may be trying to hunt, with the failure to capture the prey resulting in frustration (Baskin et al. 2015).

Another concern is the short- and long-term physiological and behavioral effects of digital play in animals (Westerlaken and Gualeni 2014). As many other aspects of animals' technology use, these require further research.

A more technical challenge lies in the fact that modern technology is overwhelmingly designed for human use and is not easily accessible to other animals. Most mammals, for example, have dichromatic color vision, as opposed to the trichromatic vision in humans (Neitz et al. 1989), meaning that they are able to distinguish between a more limited range of colors. Avians such as parrots can recognize images on a flat-panel display but not a cathode-ray-tube screen, due to the latter's flickering (Woodman 2014). Many animals, including dogs and cats, also have a different field of vision and depth perception compared to humans (Pons et al. 2017), making standard tablet screens suboptimal for their use. Additionally, most touchscreens are neither durable enough nor responsive to claws, rendering standard tablets nearly unsuitable for cat and dog use (McGrath 2015), despite the proliferation of "feline" and "canine" games on these devices. Thus a crucial challenge when designing a digital game aiming at animals is to ensure it uses "species appropriate" (McGrath 2009) technology and undergoes sufficient user testing with actual animals to mitigate the developers' inevitable anthropocentrism (Westerlaken and Gualeni 2014).

Cross-References

- [Cognitive Psychology Applied to User Experience in Video Games](#)
- [Cybersickness](#)
- [Psychological Game Design](#)

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