



---

37 POWER, PARTICIPATION, AND  
THE DOG INTERNET

---

42 GETTING THE MEASURE OF BEHAVIOR ...  
IS SEEING BELIEVING?

---

47 TOWARD CHARACTERIZATION  
OF PLAYFUL ACI



**SPECIAL  
TOPIC**

# FRAMEWORKS FOR ACI: ANIMALS AS STAKEHOLDERS IN THE DESIGN PROCESS

---

Animal-computer interaction (ACI) [1] is an emerging discipline concerned with studying the relationship between animals and technology, designing interactive technology to support animals, and developing methodologies that can enable animals to participate in the design process as legitimate stakeholders. By welcoming animals to the design table, ACI is delineating new frontiers for interaction design. However, if co-designing HCI artifacts is already fraught with misunderstanding, how might ACI researchers hope to design *for* and *with* other species? It is this key question that the contributions to this Special Topic on ACI address from different perspectives. >>>>

 **Steve North** and **Clara Mancini**, Special Topic Editors

>>>> In “Power, Participation, and the Dog Internet,” interaction designers Shaun Lawson, Ben Kirman, and Conor Linehan use speculative design to highlight how interspecies differences make designing for and with other animals fundamentally difficult and unlikely. Considering issues of power, exploitation, and consent, the authors challenge us to question the real motivations behind such an ambition. Is it truly for their benefit or for ours? Is it really co-designing, or are we driven by our own agendas? The authors invite us to use our imagination to explore what animals might actually want from technology and what that would mean for ACI.

By way of contrast, in “Getting the Measure of Behavior ... Is Seeing Believing?” animal scientists Carol Hall and Amanda Roshier stress the importance of measuring what can be observed, particularly (but not only) behavior. The authors highlight how better recording and analysis of animals’ behavior can help ACI researchers understand their needs, wants, and responses to our designs, which can help them approach designing for and with them. However, the authors caution us about the challenge of interpreting behavior, not least because animals are individuals whose responses to stimuli cannot simply be generalized.

On the other hand, in “Toward Characterization of Playful ACI,” Hanna Wirman and Anna Zamansky are interested in establishing shared vocabularies and theories to guide the interpretation and design of animal-computer interactions. They suggest that this will help designers make better sense of what they observe during the design process. In particular, the authors focus on “playful interactions” as the context in which animals are more likely to freely express themselves and manifest what they want. The authors’ ethologically grounded framework aims to help designers consider different aspects of the animal’s experience and how these might be

measured.

How might these different perspectives be constructively integrated in ACI research and practice?

As Lawson et al. contend, we are unlikely to ever free ourselves from our anthropocentric biases. Of course, the speculative design approach proposed by the authors is itself open to charges of anthropocentrism. However, speculating outside the pressures of real product development can enable designers to more freely attend to what might truly matter to the species we aim to design for and with. If we cannot speak “animal” and animals cannot speak “human,” then reckoning with our own biases is the fundamental starting point of any interspecies design journey. Accurately measuring all that is manifest about other animals, such as behavior, anatomy, and physiology, could help us out of our innate human biases. However, Hall and Roshier warn us against demeaning generalizations based on species-specific traits. They remind us that animals are individuals, defined not only by their genes but also by their learning experiences. Each is endowed with a unique personality, which may change how s/he responds to technological artifacts.

Wirman and Zamansky describe how play is intrinsically motivating for all animals. They propose encouraging individual personality traits to spontaneously emerge in playful interactional contexts. It is hoped this will provide essential insights into what animals might want. However, designers should still endeavor to develop tools that will systematically interpret such interactions. This might start to reveal the underlying user experience of individual animals.

But is this not, in essence, what interaction designers have been contending with for decades? Many design failures in HCI history show how understanding—designing for and with—others is always a challenging endeavor. In HCI, we have learned how it is only through

shared practice and iteration that we can incrementally achieve a common ground and positive outcomes.

So, do we really need perfect interspecies understanding and participatory methods to make progress? Perhaps, even without these, we can still produce something of value for other animals. Perhaps we can do this by recognizing our own biases, by measuring what we can as accurately as possible, and by aiming to construct models to orient our interpretation of what we observe. Maybe, to begin with, what we do just has to be *good enough*. If we can develop some interim approximate measures, we might start to iteratively detect incremental improvements.


Arguably, it is the process and how we conduct it that really matters—more so when the process is informed by certain values and we refrain from assuming successful or unsuccessful outcomes. If we want to truly co-design with non-humans, accepting that our design will never be perfect is key. Perhaps we need to value the dissonances in the process, and pay attention to what falls between the cracks.


---

#### ENDNOTE

1. Mancini, C. Animal-computer interaction (ACI): A manifesto. *Interactions* 18, 4 (2011); DOI: <http://dx.doi.org/10.1145/1978822.1978836>

---

 **Steve North** is an HCI researcher in the Mixed Reality Laboratory at the University of Nottingham. Through the HABIT project, he studies horse-computer interaction, focusing on automated behavior identification. He is interested in systems where the interactors are unaware and their interactions are implicit. Steve likes to cuddle horses.  
→ [steve.north@nottingham.ac.uk](mailto:steve.north@nottingham.ac.uk)

 **Clara Mancini** is a senior lecturer in interaction design and head of the Animal-Computer Interaction Laboratory at The Open University, U.K. The lab’s mission is to expand the boundaries of interaction design beyond humans, to improve human and nonhuman animal well-being and social inclusion, to support interspecies cooperation, and to foster environmental restoration.  
→ [clara.mancini@open.ac.uk](mailto:clara.mancini@open.ac.uk)