Title: ‘A computational anthrozoology perspective on horse-machine interaction: explored through the Umamimi robotic horse ears’

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North, S. 2018. A computational anthrozoology perspective on horse-machine interaction: explored through the umamimi robotic horse ears. In Proceedings of the Animal Machines / Machine Animals workshop, organised by The British Animal Studies Network and the Life Geographies Group (The University of Exeter, Devon, UK. 2-3 November 2018). DOI: 10.5281/zenodo.1477441

Computational Anthrozoology includes both (i) using computers (or any other digital-era technology) to study human interspecies relationships and (ii) studying human interspecies relationships that are themselves mediated by computers. ‘Umamimi’ is a prototype machine (fitting into category (ii), above), providing a human-animal with animated horse ears. This work is not intended as a subject of serious quantitative evaluation, but more about exploring communicating as horses do, with subtly of expression, mediated by a machine. Umamimi means ‘horse ears’ or ‘horse eared’ and the author has used this name to reflect the Japanese tradition called ‘Kemonomimi’ (animal eared), which is found in both anime and manga. When the human makes small changes in the inclination of her head, Umamimi’s built-in accelerometer responds with programmed ear movements: fully forward, fully back or either ear turned outward. When in neutral (meaning that the accelerometer and therefore the device is level), a range of random default ear flicks and movements have been specified. The author will describe his autoethnographic work, which reflects on his experiences as an ‘embedded horse’, spending time within his own small herd of domesticated horses. How did it feel to communicate with horses through the movements of robotic ears?

Bio

Steve has been described in the media as ‘The Digital Horse Whisperer’. He is a Computer Science researcher, mainly working in Computational Anthrozoology and Animal-Computer Interaction (ACI). Through the HABIT (Horse Automated Behaviour Identification) project, he studied Horse-Computer Interaction, focusing on automated behavior identification from video. This involved the development of software for machine learning and computer vision. Steve is also a qualified ‘natural horsemanship’ instructor, with animal behaviour, ethology and horse training experience. His research crosses the methodological boundaries, using quantitative, qualitative and descriptive approaches, as appropriate. He has also proposed new hybrid methodologies, which combine ethnography with ethology. More recently, he has been exploring the more esoteric avenues of: nonhuman animal somatechnics, autoethnography, design / speculative fiction and ethnographic science fiction.

Related publications

North, S. 2018. Computational Anthrozoology - a manifesto: ‘as the lens’ and ‘under the lens’. In Proceedings of the 27th International conference of the International Society for Anthrozoology (ISAZ 2018): 'Animals in Our Lives: Multidisciplinary Approaches to the Study

of Human–Animal Interactions' (Charles Perkins Centre, University of Sydney, Australia. 2 - 5 July 2018). 83. http://dx.doi.org/10.5281/zenodo.1319034

North, S. 2017. Salient features, combined detectors and image flipping: an approach to Haar cascades for recognising horses and other complex, deformable objects. The Fourth International Conference on Animal-Computer Interaction, 21-23 November 2017 Milton Keynes, UK. New York, NY, USA.: ACM (Association for Computing Machinery).

North, S. 2016. Do androids dream of electric steeds? The Allure of Horse-Computer Interaction. ACM Interactions. 23. 2 (March-April). 50-53. http://dx.doi.org/10.1145/2882529. ISSN: 1072-5520

Presentation Slides

A good place to start…

Animal-Computer Interaction (ACI)

1) Studying the interaction between animals and technology in naturalistic settings, around specific animal activities or interspecies relations

2) Developing user-centered technology that can improve animals' welfare and support animals in their activities

3) Informing user-centered approaches to the design of technology intended for animals, derived from both interaction design and animal science

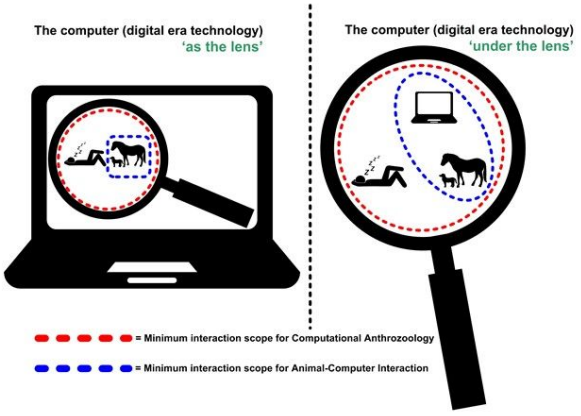
Clara Mancini, 2011. Animal-Computer Interaction (ACI): a manifesto. *Interactions 18, 4, p.69. http://dx.doi.org/10.1145/1978822.1978836*

Computational Anthrozoology

In an anthrozoological context:

1. Using computers to study human interspecies relationships and
2. studying human interspecies relationships that are themselves mediated by computers

Animal-Computer Interaction (ACI) vs. Computational Anthrozoology



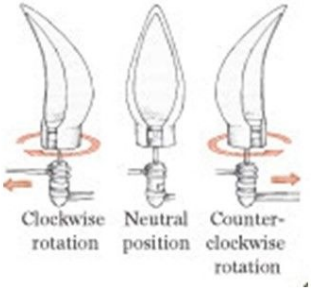
What are the origins of the ‘Umamimi’ name?

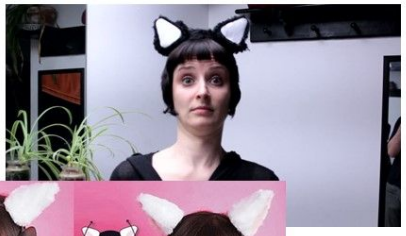
馬耳 = ‘horse ears’ or ‘horse eared’

A similar naming pattern to: ‘Kemonomimi’
(獣耳‘animal eared’)

馬 = horse (uma)
耳 = ear

Inspiration for Umamimi…





Human and other animal assemblages (cont.)

"I tried to become a goat to escape the angst inherent in being a human"

Thomas Thwaites. 2016. Goatman: How I took a holiday from being human. Chronicle Books

Horse ears and their use in equine communication

Further work

- Submitted paper for publication: describing the technical aspects and the configurable profiles (including a workflow for observing 'real' horses and modelling their characteristics using the device)
- Submitted paper for publication: using autoethnography / speculative fiction to tell the story of an imaginary study: quantitative research to evaluate how horses respond to see attentional cues from Umamimi
- Working on an autoethnography of 'a summer lived en-eared'