
Ghosts in the Smart Home

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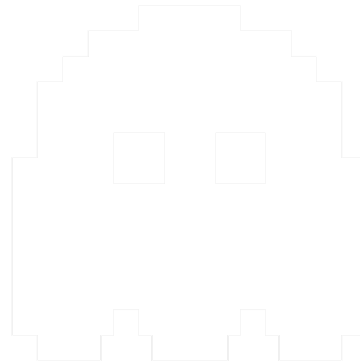
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DIS '20 Companion, July 6–10, 2020, Eindhoven, Netherlands

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ACM ISBN 978-1-4503-7987-8/20/07.

<https://doi.org/10.1145/3393914.3395841>

Abstract

We are in the midst of a 'post-anthropocentric' turn in design, research and technology. The term refers to a renewed interest in a wide range of concepts, theoretical perspectives, and methodologies. *Ghosts in the Smart Home* is a post-anthropocentric experiment which manifests as a film whose cast of characters are all internet connected 'smart' devices. The motivation is to prototype and establish new ways to see, to be, and to know, which respond to the 21st century's complex socio-technical systems.

Author Keywords

More-Than Human Centred Design; Internet of Things.

CSS Concepts

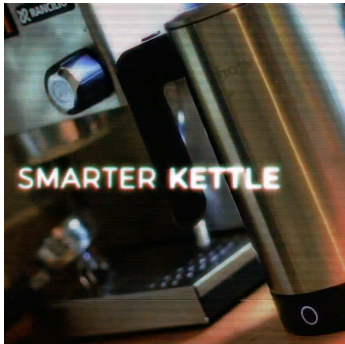
- Human-centered computing~Human computer interaction (HCI)~HCI theory, concepts and models

Background

Recent years have seen the proliferation scholarly engagement with post-anthropocentrism. The variety of approaches reflect varied ontological foundations, disciplinary commitments, and methodologies. While there are some shared characteristics, each perspective occupies some unique ground as well. Relevant theories include Post-phenomenology [8], New Materialism [4], Subject Positions [1], Actor Network Theory [9], Object-Oriented Ontology (OOO) [7] and Animism [15].



Sphero is an educational and programmable robot. It appears in the film as the narrator.



Smarter's iKettle is an infamously insecure connected product with dubious utility.

These ideas—often combinations of them—manifest in methodological proposals such as Thing Ethnography [6], Post Userism [2], Material Speculations [17], Design Fiction [10,14] and Carpentry [3].

Our own research has contributed to this landscape by highlighting how Design Research and Object-Oriented Ontology can be productive in a wide variety of ways [11] including: showing how Design Fiction can become a tool to experiment with post-anthropocentric theories such as OOO [14]; combining Research through Design with Carpentry in order to practically test philosophies [12]; amalgamating OOO with Animism to create a flexible-but-accessible post-anthropocentric framework [13]; arguing for a universal 'More-Than Human Centred Design' approach for considering other things as well as human actants [5].

In [13] we sought to address a commonly-perceived weakness in OOO. The crux of this critique is "if an object's interior is *completely* inaccessible, then the fact it's interior even exists is somewhat irrelevant" [11]. In other words, while OOO provides an argument and framework for imagining the internal realities of non-human actants it also hints that they're largely inaccessible. Exploring approaches for mitigating this constraint we proposed combining ideas derived from Animism [16] with OOO pragmatic view. Specifically, we speculated that 'objects' might have a 'soul' and a means to communicate. By leveraging this speculation, we hoped for a means to explore the inaccessible reaches of the OOO spectrum. The exploration, then, taking advantage of the souls and means to communicate we had imbued objects with, took the

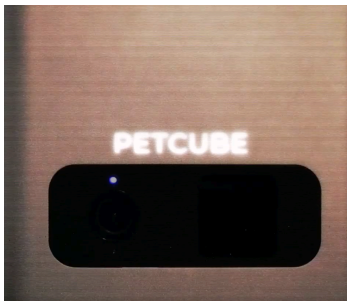
form of simulated conversations with non-human objects. Our experiments had elements of success (e.g. revealing new perspectives, collapsing traditional disciplinary barriers) as well as problematic aspects (e.g. a distracting pull towards anthropomorphism) [13]. The film we exhibit here—*Ghosts in the Smart Home*—is a progression of this research. It builds upon the published body of work but expands upon it and packages the approach into an accessible film. As with the prior work it also draws on OOO and Animism, but rather than conversations between human and non-human, the film depicts conversations between non-human and other non-human objects.

Description of the Work

Ghosts in the Smart Home is a short film which has been serialised into 11 short episodes (see [full](#) and [serialised](#) versions). It is set in an unremarkable suburban house. There are seven core characters, each of which is a commercially available internet-connected device. *Vector* is a small robot which has no utilitarian purpose; *Canvas* is an attractive 'smart light' display; *Petcube* is a remotely operated pet feeder and webcam; *Google Home* is a smart speaker; *Smarter Kettle* is an app-operated kettle; *Sphero* is an educational programmable spherical robot; and *Router* is—as the name suggests—a router. The objects, which co-exist in the same physical space, but also on the same computer network, have become aware that their human users are considering going *off-grid*. The humans have become paranoid that some of their connected devices are insecure and are leaking data about them. The film tells the story of the devices grappling with this concept. What would it mean for their existence and realities if their internet connection



Originally manufactured by Anki, Vector is a cute, but pointless, robot that can autonomously roam around and recognizes human faces.



Petcube incorporates a webcam, and the ability to 'throw' treats for a pet remotely.

was severed; whose fault is it; and how do the devices' different characters impact upon their relationships?

NARRATOR (N1)
 You are you. And I am me. We are they. And they are everything inbetween the eternal. Have you ever wondered what it would be like to be someone else? What about something else? Everything's an object, and every object has a reality that's just as vivid as the one you imagine with that computer behind your eyes. Now. Let's begin.

Figure 1. The opening speech delivered by the narrator, played by Sphero.

As the film progresses, we see how each device has the means to be the source of the leak. Through their conversations and arguments, we see their inner nature revealed. The writing and production is intended to convey aspects of each device's "Tiny Ontology" [3] through their individuality, character, and soul as inspired by Animism.

More-Than Human Challenges

By building on contemporary post-anthropocentric theory and making it tangible art and design led approaches are a crucial tool for exploring and extending experimental thinking. This work moves existing theory into the expressive idiom more so than research-focused projects. While sacrificing the rigor of formal research, unburdened by such constraints the aim is that this work makes the More-Than Human

Challenges we face in the 21st century [5] tangible, accessible, and evocative.

Exhibition Notes

As a film work (please follow these hyperlinks for the [full 20 minute version](#) and [serialised version](#)) *Ghosts in the Smart Home* will require an appropriate screen and audio provisioning (e.g. a quiet space and loudspeakers, or headphones can be provided for a small number of viewers). In addition to the film aspect the physical versions of the 'characters' may be brought to the exhibition to add a more interactive element (e.g. Vector can roam autonomously; Petcube and 'fire' food; Canvas provide a touch interface). If the work is accepted, an appropriate location and logistics will be organised with organisers to ensure that the film can be viewed effectively by exhibitiongoers.

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