IJCMR: Fiction Machines

Research Statement: Harry Meadows

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TITLE: Twisting Metal with Earth

ABSTRACT: The video Twisting Metal with Earth was produced to explore how weather stations can be useful beyond their function as mechanical sensors. It was suggested that they also act as an aesthetic interface with the hyperobjects of big data and global climate. The video’s animated characters were voiced by interview recordings from couples discussing their experience of weather. One interviewee collected and shared data from his own weather station, others gave more experiential accounts. From the characters’, a conversation emerged that blurred the boundaries between global systems and local experience. Mechanical climate sensors and plants were discussed by the characters as useful objects to think through large and complex topics.

KEY WORDS: climate, sensor, weather station, hyperobject, weather, data, critical zone, terrestrial, animation.

*Twisting Metal with Earth* presents three couples’ experiences of weather. The recordings of each participant are spoken by animated characters modelled on mechanical climate sensors. In a blending of computer generated and live motion video, the characters are introduced as weather stations placed in a garden, near a roundabout and a hilltop viewpoint. The dialogue is a result of interview questions that prompt the subjects to consider how climate data is generated, the benefits of climate prediction and their personal experience of weather.

In creating these characters, I aim to open up a concept of climate sensors beyond their use as accurate measuring devices offering useful data, but as visible material interfaces that offer an aesthetic experience of the massive but often invisible forces of climate change and big data. The aesthetic design of the machines, the data they record and the predictions made from their massive network make the climate sensor a potent extension of human senses. By giving the mechanical climate sensors a voice, I explore the symbiotic relationship between humans and machines in understanding and creating their environment. What are the surprising textures and registers of this cyborg voice and what does it reveal about my position as editor and animator?

The way the animation anthropomorphises the machines speculates on the sensors having agency, a perception that frames them as imbued with humanlike bias and emotion. Sensors as actants[[1]](#endnote-1) straying from the hard facts[[2]](#endnote-2) humans want from automated systems. Jennifer Gabrys (2016) states that climate sensors are not simply benign entities but transform the environment that they are designed to objectively monitor. ‘Sensor networks perform— and so transform— environmental systems.’ (p.38).

Now the machines are actants, animated with life and become more-than-human and more-than-technological[[3]](#endnote-3), what social or emotional concerns might they reveal? Bruno Latour (1979) highlights how scientific process can be influenced by sociological factors. He observes the complexity in generating ‘hard facts’ and the machines and people that create them, in this provocation: ‘the logic of deduction cannot be isolated from its sociological grounds’ (p.136).

Using recorded interview voice-overs to give a sense of candid authenticity to an animated non-human character is a widely used method. Here, the originality comes from the combination of perspectives and experiences of the interviewees. These centre around Roger Dobbs, founder of newforestweather.co.uk, a website that broadcasts data from the weather station set up in his garden. He also shares his data through social media and UK Weather Network. His is a life-long interest. He showed me daily handwritten records he made as a teenager in the 1960s. His dedicated endeavour allows him to get a handle on the hyperobjects[[4]](#endnote-4) of big data and climate. His technically informed account gives a counterpoint to the visceral but anecdotal descriptions from the other interviewees: from the predictions of the Hadley Centre to an helado brain-freeze.

Conducting interviews as research requires rigorous consideration of the subject. However, my motivation as interviewer is not purely to accurately record verbal accounts but also to give a voice to an animated character. My questioning of the interviewees is influenced by how the voices chime with each other in the edit. As editor, my consideration for academic rigor shifts to a responsibility towards the nuances of the characters and the conversation I create. Each recorded dialogue is combined with a body, face and stage set to create a fiction that opens up the potential for the instrument to function not just with the rationality attributed to scientific instruments, but operate on a spectrum of emotionally driven complexity, functioning not as a siloed individual but in relation to other characters.

The word animate is derived from the latin *animat*, meaning, *instilled with life*. The method of animation becomes an incantation resulting in images of sensors showing facial expressions that give nuance to their words. Importantly, they also react to their partner sensor through looking surprised, frustrated or supportive. This relationship between each couple mirrors the combinations of sensors bound together in a weather station. Gabrys (2016) describes how observation data machines, when combined, create a new environment.

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observations of environments that scientists process. Instead, sense data are indications of a process of becoming sensible, where environments, humans, and

more-than-humans are individuated as perceiving and perceivable entities.’ (p.50).

The anemometers and weather vanes I reference, are modelled on specific designs aimed largely at a consumer market. They are often purchased by climate enthusiasts. Weather stations used by organisations such as Highways England do not generally have so many whirligig moving parts, preferring more static, less flashy ultrasonic technology. The consumer models are certainly a million miles from the other end of the spectrum: gothic weathervanes featuring mythical beasts, scythe-wielding old men or cockerels. The consumer sensors have their own aesthetic. Coloured in a spectrum of grey reminiscent of an office desktop computer, entangled in wires and cable-ties but with an occasional flourish of chrome, these machines align with twentieth-century ideals of rational technology producing hard facts. The aesthetic of this design aligns to the ideals of a demographic for whom the home weather station is the perfect sculptural interface to begin to engage with the idea of climate.

The enthusiast’s weather station gathers data that is then stored on a separate unit. Plug the unit into your PC and records are available to be uploaded to a variety of online platforms such as UK Weather Network or Weather Underground. These are networks of weather stations that provide real-time local readings for most major cities in the world. It is independent of the main agencies used by the broadcasters such as the BBC and uses contributions from non-professional weather stations. This underground organisation features web forum discussion and allows for individuals to have their own page that may feature photographs and webcams. Aside from a civic act of contributing to the service, this is a poetic act of trying to get a handle on the overwhelming subject of climate. James Bridle (2018) expands on the motivating sense of alienation created by huge datasets:

‘The structures we have built to extend our own life systems, our cognitive and haptic interfaces with the world, are the only tools we have for sensing a world dominated by the emergence of hyperobjects. Just as we are beginning to perceive them our ability to do so is slipping away.’ (p.75)

Here Bridle frames the networked data systems as a hyperobject machine that is too massive a data set to make sense to a human and can only be understood by other machines. Indeed, the climate is one of the largest data sets in existence. But there is also the other great anxiety which is accessed through the weather station: climate change. This, Timothy Morton (2013) writes, is a hyperobject of its own:

‘The threat of global warming is not only political, but also ontological. The threat of unreality is the very sign of reality itself. Like a nightmare that brings news of some real psychic intensity, the shadow of the hyperobject announces the existence of the hyperobject.’ (p.32)

I see the act of assembling, installing and tending to a weather station as a process of cathartic contemplation. They are installed locally and act as a visible interface for the shrouded forces of big data that exist in the cloud or the disastrous climate change effects that may seem distant from local weather. Weather station design is often anthropomorphic or zoomorphic: an upright central frame from which tentacular[[5]](#endnote-5) arms and legs extend their mechanical feelers into the world. They act as conduits to a new conception of the world that is not looking down through a Google Earth satellite but from the perspective of life on the ground. This visible positioning in our zone of experience is significant, as Latour (2018) writes:

‘The Terrestrial, is in fact limited in a surprising way to a minuscule zone a few kilometers thick between the atmosphere and bedrock. A biofilm, a varnish, a skin, a few infinitely folded layers.’(p.78).

Latour’s Terrestrial or Critical Zone, as he also calls the space between the tops of the trees and the bottom of the groundwater, is a perspective on the world that requires a conceptual framework situated within the Critical Zone. Rather than the removed objective perspective of satellite data, instead an image emerging from an assemblage of human and machine sensors, or what Gabrys (2016) refers to as ‘more-than-human’.

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Considering Gabrys’ assertion that humans and non-humans create the environments they perceive, Latour’s call for a new perspective based at ground level and Bridle’s (2018) demand for “not new technology, but new metaphors” (p.5), I have reflected on the perspectives created in pursuing my own line of enquiry. In the video, the aesthetic qualities of weather stations are transformed by giving them a face and expressive spinning actions. I have observed that the texture and register of the cyborg voices load the aesthetic possibilities of doubt, drama, frustration and fun onto the grey and chrome rationalism of scientific instruments. They become charged with the ability to act as objects for thinking about massive issues by opening up conversation from a variety of terrestrial viewpoints.

When one of the anemometer (wind speed sensor) characters talks about the fruit she grows, she highlights the significance of an object acting as her preferred interface to the climate hyperobject. “I have a quince. I haven’t had a quince for five years.” This example reveals a fragrant, sweet, juicy aesthetic alternative to the grey injection moulded plastic of the climate sensor. It also reveals that her existence as an anemometer does not satisfy her need to construct an understanding of the climate. There are exciting possibilities for weather station design in combining machines and organic objects into the assemblage.

As hyperobject interfaces, the quince has a different aesthetic to the weather station. What influences a person to select either one is an important question and it highlights the social and cultural conditions that influence a spectrum of climate understanding. This opens up Gabrys’ phrase ‘more-than-human’, and asks to which humans we refer. Here the responsibility for selecting interviewees and their representation is with the editor as story teller. The representation of voices and design of characters blur the boundaries between the global (networked mechanical data) and the local (immediate experiences). What emerges from the video is an attempt to imagine the texture and register of conversation from our situated perspective in the terrestrial, the critical zone.

1. Bruno Latour (1979) uses the term ‘actant’ to describe an object that has agency. He defines an actant as ‘something that acts or to which activity is granted by others. It implies no special motivation of human individual actors, nor of humans in general.’ (p373). [↑](#endnote-ref-1)
2. Bruno Latour (1996) uses the term ‘hard facts’ in reference to how scientists distinguish between scientific findings and ‘beliefs, a culture, or a mythology’. (p76). [↑](#endnote-ref-2)
3. Jennifer Gabrys (2016) uses the terms ‘more-than-human’ and ‘more-than-technological’ to describe sensing systems that are function between species or object categories. They might include humans, plants and machines. (p45). [↑](#endnote-ref-3)
4. Timothy Morton (2013) uses the term ‘hyperobjects’ to describe pervasive entities that are massive in dimension of time or space. (p.10). [↑](#endnote-ref-4)
5. Donna Haraway (2016) uses the term ‘tentacular’ to describe both a way of sensing the world through multi-species networks but also as a way of thinking. (p.31)

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