

Roundtable:

The future of culture in more-than-human worlds of being

Technologies of the Anthropocene

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Abstract: Rather than a levelling-down of the human to the standing of a biological machine, technologies of the Anthropocene have tended towards sensibilities which level-up a variety of non-humans. In simpler terms, these technologies (such as AI, robotics and the technologies of space exploration) have tended to promote new animistic sensibilities. However, it is important to avoid any assumption that sensibilities entail ontological commitments. In this paper, our basic claim that technologies of the Anthropocene are a driver for animistic sensibilities (the *sensibilities claim*) is set out and supported by an appeal to the case of space technologies. It is then qualified by appeal to the contrasting case of botanical fieldwork, where a sense of *working with* the non-human also holds.



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Introduction

Reflecting upon the 20th century, Hannah Arendt (2017, 2018) argued that advanced technologies promised a great deal, but they also had a dangerous levelling-down tendency. A tendency to reframe the human as nothing more than a biological machine that might be seen from space as little more than a lab creature. Something to be conditioned and acted upon rather than a thinking agent. What we have seen in recent decades looks more like a levelling-up process. Agency and a concept of personhood (based upon humanity) are increasingly taken to have a broader potential application: not only to other creatures but also to rivers, mountains, the planet, and perhaps even to robots and AI. We have not become like ants, but ant colonies are seen as more like us, exhibiting both intelligence and collective agency.

One of the drivers for this more animistic view of things has been the exemplary technologies of our times, for which we will use the concept ‘technologies of the Anthropocene.’ By this, we mean space technologies, AI together with robotics, and various biotechnologies. (The list is not exhaustive but indicative.) It seems that technologies of the Anthropocene are promoting new animistic sensibilities. Let us call this the *sensibilities claim*. It involves appeal to the disputed concept of the Anthropocene, but here we will remain officially neutral between rival conceptions of what the Anthropocene involves, beyond noting that the concept is used to mark out a period of unprecedented and global human influence. A period in which our influence broadens and goes deep.

The sensibilities claim is likely to be well received by people who want something of this sort to occur, i.e., people who believe in an integration approach to science and religion and who have something of a preference for indigenous cosmologies over (Western) science. In bald terms, the familiar thought behind such approaches is that our view of what there is should open up ways of co-operating with natural processes as non-human and non-creaturely agents for the purposes of both activism and science. Our interest here is not in any particular variant of this familiar line of thought, but Bruno Latour’s claim that our supposed modernity is shallow (Latour 1993), Graham Harvey’s (2014) claim that we may always have been animists, and Marisol de la Cadeña’s (2015) ways of talking about “Earth Beings” bring Earth-focused commitment and non-human and non-animal agency together. The egalitarian and ontological moves made by such thinkers rest upon the recognition that co-operation is not just experienced as ‘working for’ but experienced as ‘working with’.

This is an egalitarian vision. By contrast, our sensibilities claim is not about value equality, and certainly not about ontology. If anything, we are vaguely suspicious about the familiarly Western methodology of setting out a value discourse and then adding whatever ontological commitments seem necessary so that it makes sense. Rather, our claim is strictly about ways of experiencing and responding. It is about the phenomenology of being with rather than a claim about the beings that we are with. Less obviously, it is about economy in a pragmatic sense which owes something to Peirce’s ‘Note on the Theory of the Economy of Research’ (1879). Pragmatic reasons do a great deal of work in research of any sort with good practice shaped by a commitment to get things done with a degree of efficiency and at no undue expense. This more Peircean side of our claim will be gradually unpacked, and for the moment, we will give only a promissory note to the reader. Something else will come along as the text unfolds.

The restriction of our claim to sensibilities has the convenience of working around a problem about location, a concern with where agency and intelligence might be found. If, for example, we were committed to saying that non-human agents such as rivers and AI systems exhibit agency, and therefore intelligence, we would quickly encounter the difficulty of specifying where these things are

located. If we say ‘across the whole thing’ or (more promisingly) ‘it is distributed across the patterned relationships with everything else,’ then we may have said something true, but some philosophically thick assumptions about distributed intelligence are brought into the picture. Assumptions that we do not need to set up our case. By contrast, an appeal to animistic sensibilities alone need not solve any such problems. It has a certain explanatory economy.

To cash out the sensibilities claim together with some of its limits, we will look briefly at two cases. The first takes the direct approach of focusing on technologies of the Anthropocene in the form of robots, AI and technologies for space exploration. The second takes a more indirect route and appeals to botanical fieldwork as a contrasting case where the relevant technologies have a more tenuous foothold, and where the constraints of practicality allow us to press the point that economical response continues to shape our relationships with technology.

Technologies of the Anthropocene

We are far from claiming that *all* technologies of our times tend to promote any particular and stable pattern of response. What is meant by ‘technologies’ is too wide ranging for that to be the case. Hunter-gatherer, artisan and rural technologies are not even machine-based and dependent on old evolutionary resources rather than steel and chemicals from heavy industry. Yet they, too, are technologies.

Robotics for space is a particularly good illustration of our claim. It has long been known that humans can become uneasy when robots are *too* much like ourselves. With Dennett we can recognize the importance of seeing even simple moving shapes as living beings and somewhat akin to ourselves (Dennett 2014). Yet we are lost for any easy response to what is uncomfortably similar yet not alive. Like us yet not living. Perhaps some of us can even go further than Michael Ende’s girl hero, Momo, who discovers that she cannot ultimately love the perfectly accessorised robot toy doll (Ende 2009). But going further than Momo may depend upon a strong sense of difference between the human and the non-human, the biological and the robotic. In slightly more formal terms drawn from Masahiro Mori (1992), we like our robots to be anthropomorphic *up to a point*. Beyond this, we enter the ‘uncanny valley.’ We may want a computer to be a good but (in principle) beatable opponent at chess. We do not want it to habitually shake its foot, or nod and twitch when it gets into time trouble. Such a machine would be less about chess and more about mimicry, even parody.

Mori’s insight presses again towards divergence and human-robot difference. Yet the difference does not have to be understood as our being agents while they are something else. In Mori’s terms, borrowing from a classic koan (‘Joshu’s Mu’ from the *Mumonkan*, and from some work on it by Dogen interpreted by seen through the eyes of Watsuji (2011)), if we can have Buddha nature, so can they. But such nature is not really *inside* any of us. So maybe neither of us has it. Rather intelligence has to be distributed about. Again, this looks right but brings back a more ontological set of worries about *where* to locate intelligence, and we want to hold onto the uncanny valley idea without following Mori into claims about ontology.

When we shift the context of human-robot interactions into space, matters are different. It turns out that in space, there are good reasons why we may want AI robots, and particularly those associated with healthcare and wellbeing, to be as strongly anthropomorphic as we can get them to be. Reasons pointed out by Pagello et al (2022) with particular reference to healthcare in space: it aids functionality in an environment where there are few other humans to interact with. Similar considerations apply to healthcare more generally (Chandani et al., 2022). In the hypothetical circumstance of a long-duration mission, such as a mission to Mars, human-like interaction becomes

an issue of good mental health. Similarly, with AI robotics in disaster relief, anthropomorphic appearance and communication tend to support a positive attitude towards robots (Klüber & Onnasch, 2022) for human agents in situations where the least of their worries is the uncanniness of where assistance comes from. Pagallo et al. (2022) also give a nice hypothetical example of robots used as persuaders to promote recycling rather than throwing away materials as rubbish. The more like us the robots are, the more persuasive they are likely to be.

Anthropomorphising the other is a tried and tested way of getting things done in an economical way, a way that works well and does not require us to unpack a large number of qualifiers about what may and may not be real. Similarly, agents routinely use ethically laden language, but without having to unpack any particular set of metaethical claims about moral properties or about whatever it is that makes ethical judgements true or false. Everyday interaction is not philosophically demanding, and this applies as much to robots or AI as it does to anything else. We can ask these deep philosophical questions about being, and they are interesting, but they are not the stuff of routine interactions. They are not the stuff of *being with* and *working with*.

And so, we can begin to redeem the promise made about why economy enters into the *sensibilities claim*. Our thought is not that these technologies simpliciter push us towards animistic sensibilities. Rather, they do so only by virtue of a principle of economy, which enters into our routine ways of being and interacting. As a familiar type of example, drawing a little from Daniel Dennett, it is possible to look at a chess board and say to oneself that ‘the electronic system which is taking the place of an actual opponent physically instantiates a depth search algorithm that may well result in move x.’ But that would be an absurdly uneconomic way to play chess. Nobody improves their game in this way. This is not what the experience is like.

The contrasting case of fieldwork in botany

While fieldwork in botany is a strongly contrasting case, there are some interesting commonalities. The phenomenology of fieldwork in botany is often that of interaction and not mere use of things. There is a two-way process and while we may think that only we are truly active, something else seems to be going on. There is still no particular place at which the intelligence of plants, or of a culture of plants, might be located. Nothing of this sort is claimed. Yet this is hardly a barrier to animistic sensibilities. Nor to the sensibilities in question being instructive sensibilities which improve the quality of our engagement *without* involving anything like precise ontological commitments to botanical minds or souls.

This difficulty and ambiguity are not only characteristic of animistic sensibilities. It is not at all unusual for actual or paradigm instances of animism associated with actual shamanistic practices. During the course of ethnographic fieldwork in Western China, one of the authors (Springer) has found that locals sometimes struggle for words to tell the field-working ethnobotanical naturalist what they sense and how they engage with the non-human. There can be precision up to a point, without fixing ontological commitment. Flavorists, too, are a tiny group of specialists in this wider scientific environment. Both will defend their particular human contribution at a time of technologically enabled change. Locals, too, are often notably enthusiastic about their apps on mobile phones, their contributions to databases, and (esteemed) new digital media. Often, they claim a place right in science and have high hopes for AI. Yet the phenomenology of recognizing and finding herbs remains one in which the human does not seem to be doing all of the work. It is an experience of interaction, without a discretely located agency of the other.

This does not leave a gap where ontological commitment ought to be. Such commitments would add little to sensibilities and practices which do the heavy lifting by helping us to imagine other perspectives, and, in the case of botany, by linking the findings of fieldwork across space from labs back to the natural habitat (Latour 1999). Allowing us to reach beyond a more limited sense of perspective. Not one that aspires to the viewpoint of Arendt's troublesome observer floating freely in space, but rather the pervasive idea of a single perspective that all humans can attain, an accomplishment of 'us' naturalists, based not upon space but upon the vanishing point in artistic painting. Animist sensibilities not only help us to make sense of the idea of than one perspective (Descola 2021) they also help us to make sense of inaccessible perspectives. Viewpoints that humans cannot occupy.

Having an appreciation of this does not make the fieldworker into a shaman, but it is noteworthy that in animist rituals, shamans express multiple perspectives to picture the shifting animal, human and ghost abilities of beings. They use fur capes, crafted masks with two perspectives, two-dimensional painting, or provide pocket animal figurines. The Kwakiutl shaman performs the body parts of both frog and bear painted on his back and front together for his audience (ibid). This is a way of responding to a gulf between human and the non-human ways of seeing which might otherwise seem unbridgeable. While this is very far from our routine engagement with technologies, there is still an important commonality: we do what it takes to make things work rather than what it takes to translate claims into a canonical notation from which ontology might be read off.

Similarly, field-working botanists lack crucial animal skills but can attune their senses and refine their language in the light of a set of sensibilities which shape the fieldwork experience as interaction within which the human and the non-human meet and are both indispensable. Since before the discovery of DNA, the botanists' work in forests, overseas and in herbaria required perception of the fragrances and tastes of the dried plant parts (Fauve & Jeanson 2020). In today's global herbaria collections, fieldworkers have pieced translocal fragments and stages of plants together – transformations, symbioses and trajectories – to enable myriad unexpected findings by yet unknown users coming from elsewhere: about useful plants, conservation and connected histories of lost or yet underappreciated specimen (Salick et al 2014).

Here, AI still lags far behind. It is far stronger than the human body in pattern recognition, but only once the data has been presented in a form that can be integrated into a suitably large data set. At least, for now. The nitty-gritty exploration and the sources for unexpected findings are still best created by humans during fieldwork and archiving in translocal collections. Closing the circle of collected data and patterns back in return to the locals and particular knowledge holders is always the crucial test of how carefully and effectively AI and technology have been employed to make better human/non-human interaction possible on the ground. But these are matters of ethics and knowledge rather than issues of fundamental ontology.

What the relevant technologies promote is neither a shift into ontology nor a slow replacement of the human. Any scenario in which technologies of the Anthropocene might displace the fieldworker is still far off. Botanists, flavourists and taxonomers still recognise patterns in the wild and in the archives more effectively. Digitalisation has already emerged, but its primary role has so far been that of a supplementary shared sorting tool. Digital tools and even AI have become important gadgets in this process, e.g., to link scattered bits of taste-sensitive information together across regions, languages, and disciplines. Yet, pattern recognition, the finding of new plants and new features of them, is still most effectively carried out by the human body and its senses. Any shift from this sits somewhere in the negotiated future. For the present, sending cumbersome machines to

remote sites has its limits. Scaling down will change things to some degree, but humans remain a multi-skilled and economical option of choice.

Conclusion

In space systems, the generalised rather than supplementary use of robots will eventually make more sense than sending humans. There is an inverse square law for our presence. The further out we go, the less sense it makes to send beings like us who are costly, difficult to maintain and likely to be mourned. If humans do not go, then the interactions and sensibilities will change. Closer to home, the advantages of a human perspective are worth paying for. But only because the bill never rises too high and because AI is not Laplace's demon, able to determine the state of everything at any given moment and to calculate the entire past and future. AI is not magic. It does not overcome the full range of human limitations. AI, for example, is notoriously energy intensive. Just as our own big brains are an energy intensive evolutionary sacrifice. A sacrifice which turned out to be worthwhile, but which could have gone badly wrong. There is a price for clever. Intelligence costs.

This shapes practical commonalities even across fields so apparently disconnected as space and botanical fieldwork. In both cases, there are limits to the pressures towards animistic sensibilities. Limits which are not those of ontology but of pragmatism and economy. Regular electronics would not work in space, everything has to be designed for a much lower voltage and for energy efficiency. As a result, even when we remove the humans, there may be a practical economic limit to any direct AI presence, by contrast with robotic systems which have just enough autonomy to function but not a great deal more. This is also an image of intelligence as something more spread out and harder to localise than a thing which might ever be hidden in a room and discreetly tested for its ability to pass for human. As in animist metamorphosis, the clue in bio-social-technological interactions is not to get stuck in the process, like a ghost or dead. Or to imagine that sensibility in some way must entail ontology. To live and work with Technologies of the Anthropocene, and do so in more economic, less wasteful, and destructive ways, we have to consider bio-social-technological interactions in contexts where the localisation and precise determinations of agency are of diminishing relevance.

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