Data as Flux

written by Jeremy Huggett | 20/05/2021



The Earthboot device, by Martin Howse (2013)

Data is tricky stuff. It can appear to be self-evident but equally may be elusive. It can be material yet immaterial, tangible but ephemeral, objective yet biased, precise but inaccurate, detailed but broad-brush. It may be big or small, fast or slow, quantitative or qualitative. It may be easily misrepresented, misconceived, misunderstood, misread, misconstrued, misinterpreted. It can be distorted, altered, mangled, wrangled, and reshaped into something it never originally was according to different purposes and agendas. Data is slippery and perilous, but we often overlook its characteristics and peculiarities in the pursuit of interpretation and – hopefully! – knowledge. Looking over this blog, I've written a lot about data over the years. In the process, I've undoubtedly repeated myself, quite probably contradicted myself, sometimes confused myself, and that's before considering any of my more formal publications on the subject! For instance, there's the question of missing and unknown data, data associations, data metaphors, data reuse, data proxies, big data, and quite a lot more besides on data archiving etc.. Not only does this highlight how fundamental data are, but it perhaps underlines the value of a range of different perspectives about the character and nature of data.

In that light, I recently stumbled across the work of Mitchell Whitelaw, an associate professor in the School of Art and Design, Australian National University. I was following up a citation of his definition of data as "a set of measurements extracted from the flux of the real" (Whitelaw 2008) which I rather liked, although I'd broaden it out somewhat by suggesting that data is more about observations rather than simply measurements. Chasing down the rabbit hole of Whitelaw's publications, it turns out he has, amongst other things, often written about our engagement with

data amidst real-world complexity from an artistic and landscape perspective, and his observations on data seem to me to frequently have resonance with the archaeological condition, providing us with another lense through which to view the nature of our data.

For example, he has described data as

> … a *troublesome trace* … constrained in its scope; it indexes a tiny proportion of the complex histories and landscapes and systems at issue. (Whitelaw 2018)

which also neatly encapsulates the archaeological encounter. In the context of a series of digital mashups, he writes of data as showing

> … only what was legible, relevant or significant to the record keepers. Those partial, conditioned records are further mediated through the socio-technical processes of digitisation. These factors would trouble any summative, generalising conclusions — any move to reduce or collapse data into definitive findings. (Whitelaw 2018).

The idea that data are partial and mediated by digitisation, which has implications for their subsequent use, is certainly evocative of archaeological data. Furthermore, in an essay accompanying an art exhibition, he defines data as

> … a relationship, a link between one part of the world with another, and a trace that can be endlessly reshaped. Of course, that trace is imperfect; a mediated pointer, not a pure reproduction. (Whitelaw 2013a).

Perhaps most intriguing is the way in which he associates data with the earth, which, to me, instantly translates into an archaeological context. For instance, in an essay about landscape, he starts by contrasting the supposed speed of data with the slowness of the landscape:

> Data is, we imagine, an immaterial thing; or at least ethereal, made of light and electricity, processed at superhuman speed, transmitted in real time. The everyday world we move in seems dense and slow by comparison. The landscape is slower again; thick, heavy and persistent. (Whitelaw 2009).

He goes on to illustrate how this ‘fast’ data can capture the ‘slow’ landscape, whether through a form of time-lapse visualisation or through something like the Huey-Dewey-Louie Climate Clock proposed by Robert Davis, Usman Haque, and Caroline Lewis which creates a record of climate change using autonomous agents which construct different landscape elements according to measurements captured over 100 years. There’s an obvious analogy here with the way that archaeological contexts build up over time as a consequence of human, animal, and natural agencies, and the data we subsequently choose to select as representative of them.

Whitelaw also draws our attention to the artistic constructions of Martin Howse, specifically his *Earthcodes* project (Whitelaw 2013b; Howse 2013) in which Howse seeks to create an earth computer. In its first incarnation, this consists of an 'earthboot' device, with ultimately a CPU, display, storage, and power supply all to be created from natural resources. As Whitelaw describes it,

> *Earthboot* creates a bridge or link between conventional digital computation and its earthly substrate. The device literally mediates between the electromagnetic currents of the earth, and the digital protocols of the booting computer; through a process of sampling, the earth is made (or enabled) to code. Howse presents the work as short-circuiting the mineral extraction and processing of conventional hardware; instead this device 'extracts' only data, measuring immanent differences within the earth … data sourced from the material flux is converted here into code, executable instructions. (Whitelaw 2013b)

To my mind, this provides us with a rather wonderful analogy for our relationship with excavated data: the tangible evidence that we extract from the earth and translate into digital data, data that we source from the material flux. It's an analogy that is neatly reinforced by the shape of Howse's earthboot device itself (pictured above): a small, trowel-like circuit board with two copper conducting plates at the pointed end and a USB cable at the other which carry the electrical voltages which are converted into instructions which boot the computer. Perhaps not entirely surprisingly, Howse admits that

> Quite often the earthboot operating system is not always fully functional as expected. Crashing is the price to pay for booting straight from the earth. (Howse 2013).

Reviewing archaeological data through these radically different lenses provides interesting and sometimes unique ways of thinking about our data and often challenging our (pre)conceptions. Contemplating their analogies helps to shed light on the shadowy corners of data, to revisualise our approaches to data, and to consider the relationships between ourselves and our data in novel ways.

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