

On Infrastructural Speculation

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Jeremy Huggett raises important concerns in his keynote about the implications of developing digital infrastructures to support archaeological knowledge and, in more practical terms, the everyday work of knowing in archaeology and about things archaeological. Much of the discussion concerning infrastructures so far has been premised by a tacit assumption that digital infrastructures are both necessary and helpful. What could and should perhaps be asked is – paraphrasing Christine Borgman’s concern about data sharing (2015) – if digital infrastructure is an answer, what is the question? While the two most likely replies probably relate to why something is not available or why that something is ‘poorly’ organized, there are good reasons to argue that such questions are unsatisfactorily simple. Another crucial question, perhaps as a follow-up to the previous ones, asks what kinds of knowledge and knowledge-making a particular infrastructure affords and constrains. To ask the reverse might be equally important: what kind of digital infrastructure is needed to support particular types of archaeological knowledge and knowledge-making? As Huggett points out, citing the already vast body of literature on infrastructure, it would be a fallacy to believe that the infrastructures were neutral. In this sense I must wholeheartedly agree with Huggett’s emphasis on the importance of more research into what infrastructures do, how they achieve it and how

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they influence archaeological knowledge and knowing through guiding and regulating how archaeologists and other stakeholders of archaeological knowledge do their work.

A necessary part of this exercise is to continue mapping the development (as Huggett does in his text), zooming in and out from both outside and within the infrastructures, and examining how they work in practice, for instance, by close reading and ethnographies of the abundance of existing digital and non-digital infrastructures. Another equally necessary exercise is to inquire into the broader epistemic assumptions underpinning the idea and ideology behind contemporary research infrastructures and the datafied research paradigm. While pursuing this understanding is in the interest of science and technology research, and infrastructure and information studies, there is also room for archaeological theory to scrutinize further what ‘datafying’ (Couldry 2020) archaeological data does to archaeology, similar to how earlier theoretical discourse debated the implications of antiquarian, processual and post-processual approaches to archaeological knowledge-making.

In addition to delving into the broader issues pertaining to infrastructures and their impact on archaeology and archaeological knowledge, Huggett raises important questions on how their influence is enacted through standardization, metadata and interface design. As he notes specifically of metadata, all three are often treated as benign. They are typically portrayed as a part of the solution rather than a potential source of complications or, alas, problems. Here the opening of the black box Huggett proposes for making interfaces less opaque could well be extended to expanding the ongoing work (e.g. Börjesson et al. 2022) of increasing the transparency of standards, standardization, metadata and metadata work to decrease their opacity and what they do to archaeological knowledge.

However, while I am inclined to agree that lifting the lid off the black box of infrastructures is important, I would argue that this is not enough. Possibly the greatest conundrum of data management and discovery relates to the difficulty underlined by Huggett, not only to understand, but to seriously challenge the infrastructure, and being able to consider how data could be structured, described and made otherwise available. An infrastructure does not function if it is not rooted in how its ‘users’ do their data work. It needs to follow the standards users are using. Similarly, the metadata created and interfaces developed need to facilitate the specific ways of searching, accessing and inputting information and be compatible with how the infrastructure has been envisioned by its users. At the same time, it is equally important for any future users of the information preserved through the infrastructure that the infrastructure constrains as little as possible how the information can be retrieved, restructured and

used to answer completely new, previously unforeseen questions. The current infrastructures, and how they include, exclude and structure information, will be challenged by the future as fiercely as present-day scholars challenge the practices of previous generations of archaeologists. Like the current paradoxical frustration surrounding the difficulty of using archaeological legacy data to address contemporary practical needs and research questions, and the simultaneous, spectacular success of many such endeavours, the data will hardly ever be directly retrievable for use beyond the very immediate, specific and consequently transient needs encoded in the infrastructure. At the same time, however, if infrastructures are (reasonably) inclusive (enough) of the variety, complexity and richness of data, it is not necessarily a problem, as beyond very elementary needs, every individual researcher and user needs to piece together their data from scratch anyway. Infrastructures work best if they are transparent and facilitate data discovery in the present but have elasticity so that the evident diversity of (re)use(s) is hindered as little as possible. An infrastructure needs to trust that future generations will succeed precisely *because it does not* try to solve all problems, and is transparent and aware of its affordances and constraints (Huvila 2018), possibilities and limitations.

A relevant follow-up question urging for the importance of the intelligibility behind infrastructures is how to increase their transparency and epistemic openness. Huggett calls for ‘critical and extensive overviews rather than the more fragmentary approaches adopted to date’ to interrogate infrastructures and their implications to archaeological knowledge and knowledge making. Agreeing with Huggett, I am inclined to believe that such critical and extensive overviews would perhaps benefit by being extended through scholarly speculation on future archaeological knowledge-making in the spirit of Isabelle Stengers (2009), who has advocated it as an alternative to critical thinking. Speculation ‘always begins with the insistence of a possibility that makes us feel that things did not need to be conceived as they are, and it tries to nurture this feeling, to explore what it opens up to, what it demands’ (Bergen 2018; Pignarre & Muecke 2023), and deals with the possibility of the ‘leaps of imagination’ when critical thinking aims at the best conceivable and most intelligent choice (Stengers 2002; Pignarre & Muecke 2023). In the best of worlds, a critical and extensive overview allows for consideration of both obvious paths and speculative courses which introduce new possibilities for developing and using existing and future infrastructures without degrading the critical rhetoric of what needs to be done, and of the perception that there is no choice in the matter (cf. Stengers 2009). Ideally, speculative research on digital infrastructures conducted together *with* the infrastructures *inside but from outside* would generate overviews as proposed by Huggett, and would serve as a

‘speculative friend’ for, rather than against, existing and future infrastructures, helping them to develop and thrive.

Another way of discussing the speculative take on comprehensive in-depth studies of both specific infrastructures, and the infrastructure of digital archaeological infrastructures as a whole, would perhaps be to describe it as a form of ‘infrastructural imagination’, something Geoffrey Bowker (2014) proposed would be needed to understand the role of infrastructures in our lives. To extend the attempt to understand infrastructures and the information, or data, they incorporate from our lives to the lives of future users of digital infrastructures would probably benefit from something beyond mere imagination, perhaps a dose of *infrastructural speculation*: courage to think and talk beyond what is possible and imaginable but perhaps still desirable, and conversely, strictly unwanted.

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