Bibliography

Baudrillard, J. 2007. *Pourqoui tout n'a-t-il pas déjà disparu?*. Paris: Les Éditions de l'Herne.

Benjamin, W. 1999 [1955]. "Theses on the Philosophy of History." In *Illuminations*, by W. Benjamin and translated by H. Zohn, 245–255. London: Pimlico.

Crowther, D. 1988. "Archaeology, Material Culture and Museums." In *Museum Studies in Material Culture*, edited by S. M. Pearce, 35–46. London: Continuum.

d'Errico, F. and G. Lawson. 2006. "The Sound Paradox: How to Assess the Acoustic Significance of Archaeological Evidence?" In *Archaeoacustics*, edited by C. Scarre and G. Lawson, 41–58. Cambridge: McDonald Institute for Archaeological Research.

Foucault, M. 1972. *The Archaeology of Knowledge*. Translated by A. M. Sheridan Smith. London: Routledge.

____. 1978. "Dialogue on Power: Michel Foucault and a Group of Students." In *Chez Foucault*, edited by S. Wade, 4–22. Los Angeles, CA: Circabook.

Freeth, T. 2008. *The Antikythera Mechanism: Decoding an Ancient Greek Mystery.* Cambridge: Whipple Museum of the History of Science.

Frerichs, K. 1981. *Begriffbildung und Begriffswandlung in der Vor- und Frühgeschichte. Zur logischen Analyse archäologischer Aussagen.* Frankfurt am Main: Lang.

Giannachi, G., N. Kaye and M. Shanks, eds. 2012. *Archaeologies of Presence: Art, Performance and the Persistence of Being*. Abingdon, UK: Routledge.

Giediron, S. 1948. *Mechanization Takes Command: A Contribution to Anonymous History*. New York: Oxford University Press.

Hodson, F. R., D. G. Kendall and P. Tautu, eds. 1971. *Mathematics in the Archaeological and Historical Sciences.* Edinburgh: Edinburgh University Press.

Huhtamo, E. 2013. *Illusions in Motion. Media Archaeology of the Moving Panorama and Related Spectacles*. Cambridge, MA: MIT Press.

Kittler, F. A., ed. 1989. *Austreibung des Geistes aus den Geisteswissenschaften: Programme des Poststrukturalismus*. Paderborn: Ferdinand Schöningh.

Kusch, M. 1991. *Foucault's Strata and Fields: An Investigation into Archaeological and Genealogical Science Studies*. Dordrecht: Kluwer. http://dx.doi.org/10.1007/978-94-011-3540-5

Rosen, M., ed. 2011. *A Little-Known Story about a Movement, a Magazine, and the Computer's Arrival in Arts: New Tendencies and Bit International, 1961–1973*. Cambridge, MA: MIT Press.

Schreibman, S., R. G. Siemens and J. Unsworth, eds. 2004. *A Companion to Digital Humanities*. Oxford: Blackwell.

Simondon, G. 1958. *Du Mode d'Existence des Objets Techniques*. Paris: Aubier.

Zielinski, S. and D. Link. eds 2006. *Variantology 2: On Deep Time Relations of Arts, Sciences and Technologies*. Köln: Walther König.

Wolfgang Ernst is Professor for Media Theory at the Institut für Musik und Medienwissenschaft at Humboldt University, Berlin, where he co-runs the Media Archaeological Fundus. Address for correspondence: Institut für Musik und Medienwissenschaft, Humboldt University of Berlin, Unter den Linden 6, 10099 Berlin, Germany. Email: wolfgang.ernst@hu-berlin.de

· ·

❑ Artifactual Interpretation

■ Grant Wythoff

Columbia University, USA
grant.wythoff@gmail.com

It was very late in the process of writing my dissertation—a cultural history of the gadget—that I came across an article on using the archaeological record to reconstruct social interaction during the Paleolithic (Gamble 1998). As a media studies scholar, it wasn't only the disciplinary differences that were so exciting (the dense network of citations, the seamless toggling between theoretical synthesis and quantitative analysis). I encountered this one article that sat atop of a century's worth of research and debate

over what it means to interpret an artifact at a moment in which humanists like myself—primarily trained in the analysis of text—are beginning to take up new objects of study in what some have referred to as the "material turn". Several years later, and deeper into the literature on topics like the Mousterian debate and technofunctional variation than I ever would have expected to be, I have found the history of archaeological thought to be an immensely valuable, untapped resource for some of our current questions, enthusiasms, and impasses in media studies.

Of course, the growing field of media archaeology had already been a huge influence on my work. It was with the writings of scholars like Wendy Chun, Timothy Druckrey, Wolfgang Ernst, Lisa Gitelman, Eric Kluitenberg, and Jussi Parikka that I first formulated my approach to the gadget as both a functional device and a fictional device, a material object and a cultural imaginary. But media archaeology is a field that largely takes its cue from a Foucauldian understanding of the term—archaeology as an analysis of the conditions under which a certain object, statement, or discourse becomes possible or sayable in a precise historical moment. A Foucauldian archaeology of natural history, for instance, would analyze the "governing statements" of that discourse, as listed in Foucault's *Archaeology of Knowledge*:

> those that concern the definition of observable structures and the field of possible objects, those that prescribe the forms of description and the perceptual codes that it can use, those that reveal the most general possibilities of characterization, and thus open up a whole domain of concepts to be constructed. (Foucault 1972, 147)

The media theoretical adaptation of this Foucauldian concept is twofold: first, that discernible objects and perceptual codes are themselves the products of media technologies. All modes and kinds of knowledge bear the imprint of those instruments used to record, organize, and express them. And second, that the histories of these technologies must take into account the curiosities and forgotten paths not taken: quirky or fantastic inventions that either never made it to the mainstream or now evoke a kind of retro-tech nostalgia (stereoscopes, hand-cranked 8-mm film viewers, card indexes, magnetophones, and the like). Part of the field is the simple challenge, common to all good theory, to think the present state of things differently. What if the tablet computer took off as it was originally proposed in the 1970s as a teaching platform for object oriented programming, rather than the app vending machine it is today (Alt 2011)? What if the metaphors we use to understand hidden computational operations—like copying a file, visiting a site—were fundamentally different (Tholen 2002)? How do we go about imagining that?

But much is lost, I would argue, when importing this notion of archaeology solely in the Foucauldian sense. In media studies, we need to be careful of moving too quickly from a description of a given artifact to an account of aesthetics or power relations without producing a model of how those circuits move in the first place from technology to culture and vice versa. What is at stake in interpreting an artifact in the humanities? While "interpretation" is usually associated with text, and artifacts are more closely connected with practices of description, what would it look like to more clearly outline our own hermeneutic when it comes to objects? In this sense, a sustained encounter between

media studies and archaeology proper wouldn't just be an experiment in taking "media archaeology" at its word. Such an exchange could provide the occasion for a rethinking of method amid the material turn. Let me explain.

Talk of a material turn has been percolating for close to 15 years now in a variety of humanistic disciplines. As Ian Hodder writes:

> It has become a truism in archaeology, anthropology, and the social sciences and humanities very broadly, to recognize a "return to things" over recent years, in contrast to the earlier focus on representation, and to the long scholarly tradition that separated subject from object, mind from matter. (Hodder 2011, 19)

For some, the material turn is seen as a potential answer to the exhaustion of critique, challenging us to tinker with and describe cultural phenomena that seem to resist existing theoretical frameworks (Hayles and Pressman 2013; Gillespie *et al.* 2014).

I think one of the things we've seen in recent approaches to "materiality" is not only how capacious what we might call the "material turn" can be—across a wide variety of methods, objects, periods, and disciplines—but also that there is a shared set of assumptions in these new approaches to materiality. More specifically, with emerging fields like platform studies, various new materialisms, critical making, as well as media archaeology, many more scholars now take the term "materiality" to mean the cultural lives of physical, tangible materials, rather than an abstract philosophical category. Tim Ingold's wonderful article "Materials Against Materiality" critiques this latter approach: "the concept of materiality, whatever it might mean, has become a real obstacle to sensible enquiry into materials, their transformations and affordances" (Ingold 2007).

In media studies, the effects of the material turn have been rather kaleidoscopic. Even though media studies is a discipline that thrives on decisive pronouncements regarding the primacy of the material—from Marshall McLuhan's "the 'content' of any medium is always another medium" (McLuhan 2001 [1964], 8) to Friedrich Kittler's "media determine our situation" (Kittler 1999 [1986], xxxix)—we've never settled on what precisely our object of study is. Should a media-theoretical account of radio analyze its unique narrative and cultural forms? Or on the other hand, should it focus on the specificity of the technological substrates that afford these cultural forms?

The "changing materialist content of materialism", as Raymond Williams puts it, has in media studies classically reflected a geographic divide (Williams 2005 [1978], 122). It used to be a safe bet to say that while German media studies emphasized the role of circuits, screens, and substrates—in other words the materiality of communication—Anglophone approaches were preoccupied with culture, aesthetics, and identity, the content delivered by those circuits. A 2003 collection of "key terms" for media studies published in the UK, for instance, contains no mention whatsoever of "material" or "materiality" among its 212 entries. The closest we get is in the definition of "medium" as "simply any material through which something else may be transmitted" (Hartley 2002, 142). That "something else" is clearly the primary focus of the remainder of the collection, which includes entries on celebrity, metaphor, multiculturalism, genre, and symbol, for instance. Materiality in this account is a neutral carrier of culture.

But the situation is no longer so simple on the American scene, with emerging approaches beginning to take up what was previously a Germanophone emphasis on the materiality of media. Again, to use some keyword collections as a yardstick, Bill Brown's entry in the 2010 *Critical Terms for Media Studies* includes "multiple orders of materiality", explained as

> A phenomenological account of the interface between user and technology, an archaeological account of the physical infrastructure of the medium, and a sociological account of the cultural and economic forces that continue to shape both the technology itself and our interactions with it.
>
> (Brown 2010, 59–60)

Anna Munster, in the *Johns Hopkins Guide to Digital Media* published just last year, shows how accounts of materiality are further complicated when the object in question is "digital". She writes that in new fields like software studies, attempts are being made to connect the digital to social relations and historical practices:

> Understanding the database, for example, as a *material* digital object, means accounting for not simply the way it organizes and stores data but how it *enacts* its mode of organizing multiply, the ways it transduces and interrelates its multiple, proliferating levels of hardware, software, data, and social practices. (Munster 2014)

So the idea here is that maybe, we can have a sort of hybrid analysis of the affordances of the material substrate as well as the cultural codes written upon it.

All of this is to say, there has been no consensus on "materiality" as a topic in my discipline. But the far-reaching material turn presents a unique opportunity for media studies. If there is anything that unites our wildly diverse confederation of departments, disciplines, and methodologies, it is McLuhan's foundational aphorism: "the medium is the message". Today, it's as if the fossil record of McLuhan's spadework can be found all over the humanities. In coming to terms with the specific forms of argumentation and evidence that media studies scholars have at their disposal—and there are many—we can offer up a methodology for conversations on materiality across the disciplines. Similarly, clarifying this methodology against a rigorous engagement with the history of archaeological thought can help us enrich the distinctive specificities of each approach. Now that humanities scholars trained in textual hermeneutics turn their expertise to material artifacts, such a methodology is very much needed.

But questions of method have been notoriously difficult in media studies. A recent call for participation in a graduate Summer School for Digital Cultures on the theme of "Challenging Methods" admits that "media studies has not developed an overarching theoretical or methodological frame and [has] instead privileged object specific approaches" (Sprenger and Engemann 2014). Surveying media studies' field of inquiry, Joseph Vogl notes that "we still have no single, stable, well-demarcated canon of knowledge to rely on, in spite of the widespread institutional and disciplinary establishment of media studies" (Vogl 2008, 2). Operating untethered from any established epistemological frameworks has produced "a mixing and clashing of methods and disciplinary traditions:

approaches from literary study, history, art history, information engineering, journalism, economics, communications, and the history of science all muddle together without any particular guiding principle" (Vogl 2008, 15). But it's precisely this wanderlust, this intellectual promiscuity, that gives the discipline its unique style. It's what allows Matthew Kirschenbaum to bring computer forensics to bear on electronic literature (Kirschenbaum 2008), Markus Krajewski to compare nineteenth-century domestic servants and search engines (Krajewski 2010), and Adrian Mackenzie to apply William James's philosophy of radical empiricism to contemporary wireless network infrastructures (Mackenzie 2010).

In fact, it may seem reductive to discuss methodologies for a discipline in which—to invoke the philosopher of science Paul Feyerabend's famous dictum from *Against Method*—"anything goes" (Feyerabend 1993). But we need not confine ourselves to *ex post facto* reconstructions of brilliant research findings or the prescription of deadening, procedural checklists. If media studies generates an ever expanding toolbox of means for thinking technologies, then we should embrace methodologies *as* thinking technologies, as Donna Haraway puts it (Lykke *et al.* 2008). Understanding media archaeology as a point of exchange with traditional archaeology is thus not only a way to highlight the distinctive interdisciplinarity at the heart of our discipline. It is also an opportunity to engage with a special set of practices at a moment in which the question of materiality is both up in the air and of the utmost importance. In the age of the anthropocene, as Fredrik Jonsson argued in a recent lecture, the question of integrating cultural and material explanations of historical change is one of the most pressing methodological problems for the humanities today (Jonsson 2014).

So how do we close the metaphorical divide between the "excavations" performed in archaeology and media archaeology? We do things we might not otherwise consider: draw our object of study, fill out a context sheet, experimentally recreate historical techniques, and think in terms of geological time. We search both canons for guideposts for future exchange. In addition to numerous intellectual affinities (compare Lewis Binford's definition of culture as "the extra-somatic means of adaptation for the human organism" [Binford 1962, 218] with the analytic horizon of Friedrich Kittler's "network of technologies and institutions that allow a given culture to select, store, and process relevant data" [Kittler 1992, 369]), there are several early points of direct contact between the two disciplines. Paleoanthropologist André Leroi-Gourhan's speculations on the effects of automation and "audiovisual media" on the *chaîne opératoire* are one example from the mid-1960s:

> Not having to "think with one's fingers" is equivalent to lacking a part of one's normally, phylogenetically human mind. Thus the problem of regression of the hand already exists today at the individual if not the species level. […] Manual imbalance has already partially destroyed the link that used to exist between language and the aesthetic image of reality. It is not a matter of pure coincidence, as we shall see, that nonfigurative art is flourishing at the same time as "demanualized" technicity. (Leroi-Gourhan 1993, 255)

The film scholar William Uricchio published a piece of media archaeology *avant la lettre* in 1981 on using the "tangible record" of early twentieth-century cinema in the field of industrial archaeology as a form of documentary evidence. This includes, perhaps

especially so, avant garde film, which made the machinery of modernity one of its primary subjects (Uricchio 1981). Finally, there's Peter Sloterdijk's more recent essay on mediation and distance, in which he suggests that "a genuine, unironic attempt to grasp early Stone Age logic can help us understand what drives media technology and design" (Sloterdijk 2012). No doubt, there are many more.

Like the anarchic intellectual inquiry championed by Feyerabend, media studies and archaeology are no doubt "much more 'sloppy' and 'irrational' than [their] methodological image" (Feyerabend 1993, 160). But if we want to answer Angela Piccini's challenge in this forum's introduction to "work together to ask new questions of media technologies and their relations", I think we're well equipped to do better than exchange mere images of each other's practice.

References

Alt, C. 2011. "Objects of Our Affection: How Object Orientation Made Computers a Medium." In *Media Archaeology: Approaches, Applications, and Implications*, edited by E. Huhtamo and J. Parikka, 278–301. Berkeley: University of California Press.

Binford, L. R. 1962. "Archaeology as Anthropology." *American Antiquity* 28(2): 217. http://dx.doi.org/10.2307/278380

Brown, B. 2010. "Materiality." In *Critical Terms for Media Studies*, edited by W. J. T Mitchell and M. B. N. Hansen, 49–63. Chicago: University of Chicago Press.

Feyerabend, P. 1993. *Against Method*. London: Verso.

Foucault, M. 1972. *The Archaeology of Knowledge*. Translated by A. M. Sheridan Smith. London: Routledge.

Gamble, C. 1998. "Palaeolithic Society and the Release from Proximity: A Network Approach to Intimate Relations." *World Archaeology* 29(3): 426–444. http://dx.doi.org/10.1080/00438243.1998.9980389

Gillespie, T., P. J. Boczkowski and K. A. Foot, eds. 2014. *Media Technologies: Essays on Communication, Materiality, and Society*. Cambridge, MA: MIT Press. http://dx.doi.org/10.7551/mitpress/9780262525374.001.0001

Hartley, J. 2002. *Communication, Cultural and Media Studies: The Key Concepts* (3rd edition). London: Routledge. http://dx.doi.org/10.4324/9780203449936

Hayles, N. K. and J. Pressman, eds. 2013. *Comparative Textual Media: Transforming the Humanities in the Postprint Era*. Minneapolis: University of Minnesota Press.

Hodder, I. 2011. "Human-Thing Entanglement: Towards an Integrated Archaeological Perspective." *Journal of the Royal Anthropological Institute* 17(1): 154–177. http://dx.doi.org/10.1111/j.1467-9655.2010.01674.x

Ingold, T. 2007. "Materials against Materiality." *Archaeological Dialogues* 14(1): 1–16. http://dx.doi.org/10.1017/S1380203807002127

Jonsson, F. A. 2014. "Victorian Anthropocene, 1834-1884." Paper presented at the Heyman Center for the Humanities Thursday Lecture Series: Materiality, Columbia University, 17 April.

Kirschenbaum, M. G. 2008. *Mechanisms: New Media and the Forensic Imagination*. Cambridge, MA: MIT Press.

Kittler, F. A. 1992. *Discourse Networks, 1800/1900*. Stanford, CA: Stanford University Press.

____. 1999 [1986] *Gramophone, Film, Typewriter*. Translated by G. Winthrop-Young and M. Wutz. Minneapolis: University of Minnesota Press.

Krajewski, M. 2010. *Der Diener: Mediengeschichte Einer Figur Zwischen König Und Klient*. Auflage: 1. Frankfurt am Main: S. Fischer Verlag.

Leroi-Gourhan, A. 1993. *Gesture and Speech*. Translated by A. Bostock Berger. Cambridge, MA: MIT Press.

Lykke, N., R. Markussen and F. Olesen. 2008. "'There Are Always More Things Going On Than You Thought!' Methodologies as Thinking Technologies: Interview with Donna Haraway." In *Bits of Life: Feminism at the Intersections of Media, Bioscience, and Technology*, edited by A. Smelik and N. Lykke, 32–44. Seattle: University of Washington Press.

Mackenzie, A. 2010. *Wirelessness: Radical Empiricism in Network Cultures*. Cambridge, MA: MIT Press. http://dx.doi.org/10.7551/mitpress/9780262014649.001.0001

McLuhan, M. 2001 [1964] *Understanding Media*. London: Routledge.

Munster, A. 2014. "Materiality." In *The Johns Hopkins Guide to Digital Media*, edited by M.-L. Ryan, L. Emerson, and B. J. Robertson, 327–330. Baltimore, MD: Johns Hopkins University Press.

equinoxonline

Sloterdijk, P. 2012. "Actio in Distans: On Forms of Telerational World-Making." In *Philosophy of Communication*, edited by B. G. Chang and G. C. Butchart, 635–648. Cambridge, MA: MIT Press.

Sprenger, F. and C. Engemann. 2014. "DCRL & MECS Summer School 2015: Challenging Methods." *Leuphana Centre for Digital Cultures*. Available online: http://cdc.leuphana.com/news/news/blog-article/dcrl-mecs-summer-school-2015-challenging-methods/

Tholen, G. C. 2002. "Media Metaphorology: Irritations in the Epistemic Field of Media Studies." *South Atlantic Quarterly* 101(3): 659–672. http://dx.doi.org/10.1215/00382876-101-3-659

Uricchio, W. 1981. "The Motion Picture as a Resource for Industrial Archaeology." *Industrial Archaeology* 3: 233–237.

Vogl, J. 2008. "Becoming-Media: Galileo's Telescope." *Grey Room* 29: 14–25. http://dx.doi.org/10.1162/grey.2007.1.29.14

Williams, R. 2005 [1978]. "Problems of Materialism." In *Culture and Materialism: Selected Essays*, by R. Williams, 103–122. London: Verso.

Grant Wythoff is Postdoctoral Fellow, Society of Fellows in the Humanities, and Lecturer in the Department of English and Comparative Literature at Columbia University. Address for correspondence: Heyman Center 5730, Columbia University, 2960 Broadway, MC 4927, New York, NY 10027, USA. Email: grant.wythoff@gmail.com

···

☐ Becoming Archaeological

■ Ruth Tringham
University of California, USA
tringham@berkeley.edu

■ Michael Ashley
Center for Digital Archaeology, USA
ciao@codifi.org

Becoming Archaeological

Archaeologists do not agree entirely on what it means to become archaeological. Being buried under the ground surface is not one of the requirements; being "dead to the world" and forgotten is. But the process is far from simple or linear, and can involve many steps to prolong the life of a thing, whether building or small object, before it reaches this demise. Michael Schiffer in his books *Behavioral Archaeology* (1976) and then *Formation Processes of the Archaeological Record* (1987) was one of the first to give voice to the analysis of these natural and cultural processes. He was working from observations of modern behavior (in the southwest of the USA) in relation to materials, in which he identified the cycle of the use-life of materials, from their procurement as raw materials, their manufacture or construction into things, and their use, to their eventual discard and deposition in, under, or on the ground; he recognized mechanisms to prolong the use-life of materials including maintenance, curation, and repair, and then recycling, reuse, conservation and preservation. Not surprisingly, since the 1990s, Schiffer has become something of a "media archaeologist" himself, although he would not brand himself as such, in applying his principles of behavioral archaeology to the rise and fall of non-digital "technological" subjects (Schiffer 2011), including radios, electricity, electric cars, etc.