Media Archaeologies (Cont.)*

Glitch

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A little more than a year ago, Australia turned off the last of its analogue television signals, thereby ending a 57-year broadcasting history and a three-year transition to digital. This transition has produced two distinctive signatures: the mass abandonment of now-redundant hardware and the emergence of fractured media reception. By twinning the artefacts generated via this process of transformation, my series of diptychs titled Glitch reveals an everyday glimpse into the so-called “digital revolution”.

Glitch is a tale of interruption and delay, a photographic portrait of gaps and excess, when the past and the future can’t quite meet up and the edges of the present disintegrate into imperfect vision. As a tiny variance triggering major damage (Manon and Temkin 2011), the glitch offers insight. It draws our attention to the cycles of global consumption and their inevitable trajectories – as dead media, yesterday’s news and mass material and information overload.

Like citizens of many other nations, Australians keenly embraced the television when it first appeared in our lounge rooms. It quickly became a surrogate of the communal hearth and an icon of post-war family cohesion. And for an island country the size of a continent, TV became an immediate means and source of connection with each other and the rest of the world. Through this and other telecommunications technologies Australians imagined themselves as less remote – not only as an audience, but as actors in the construction and reception of a global history, told televisually. As well as providing the first televised images of the Apollo 11 moonwalk, Australia also dished out its own now-infamous TV exports, e.g. Skippy the Bush Kangaroo (1968–1970) and Neighbours (1985–).

* Editor’s note: The articles collected here are a continuation of the Forum that was published in the print edition of JCA 2.1 (2015).
Extended Forum

Figure 1. Glitch #1 (© U.K. Frederick).

Figure 2. Glitch #2 (© U.K. Frederick).
Media Archaeologies (Cont.)

Figure 3. Glitch #3 (© U.K. Frederick).

Figure 4. Glitch #4 (© U.K. Frederick).
While historically TV has played a role in family bonding and nation building (Jacka 2004), it is also the site where contested issues reflecting individual, cultural and political differences are performed. The fact that a national Indigenous television channel did not appear until 2007, despite several strong community-based Indigenous production and “pirate” distribution outlets, is a case in point (see Langton 1993).

Within Australia, the transition from analogue to digital has highlighted growing tensions within the community over significant changes to media control and ownership regulations, data retention, privacy and communications law and policy. Moreover, the staged elimination of analogue television (June 2010–December 2013) coincided with an extremely tumultuous time in Australian politics. For the first time ever Australian voters had elected a woman, Julia Gillard, to be Prime Minister; the same election brought an extremely divisive hung parliament, something that Australians had not experienced since 1940 – i.e. more than a decade before the arrival of TV. Suddenly, alongside a growing bombardment of reality shows and BBC docs, Australians were witness to an extremely vitriolic battle over government. Prime Minister Gillard, in particular, was subject to vile commentary. As the feminist historian Anne Summers (2012) has pointed out, much of the negativity directed at Gillard was distributed through new media tools, such as Facebook and YouTube. However, for the more traditionally wired, the “old skool” TV played an instrumental role in re-circulating and cementing that content locally.

I had already commenced the photographic series *Glitch* when I began to realize the strange symmetry between the killing of analogue telly and the growing dysfunction within Australian parliament and its media reportage. At times the convergence was distinctly visible – a news reporter interviewing Gillard would explode into a cloud of coloured pixellations. Yet I don’t want to overemphasize the coincidence of these events; a murder mystery or a daytime gameshow were also prone to interference. In other words “the distinction between accidental and purposeful is not irrelevant, but it is also not the most crucial” (Manon and Temkin 2011). At the same time the glitch recalls the power of photography to still and picture time, its capacity to simultaneously render the “this will be and this has been” (Barthes 1981, 96) and the “here and now” (Benjamin 1972 [1931], 7).

This series is located in Australian experience, in its suburbs, bushland and coastal fringes. But no doubt the same sort of thing has been happening elsewhere. Clearly, killing the analogue signal has kicked the symbiotic cycle of obsolescence and consumption into overdrive as we replace our “boxes” and “tubes” with flat screens and smart devices. So that once again, even in its analogue ruin, the television becomes a conduit of mass encounter and global belonging.

In this series the glitch parallels, precedes and follows the redundancy of the physical television and charts its reallocation in space. The glitch enfolds both the cause and effect of failure. It captures the disruption in the feed and the flow of the signal as well as the failure of the material object to receive and transmit and thereby perform its function. As “matter out of place” and an object out of time the “wild” television is an arresting vision. The image of the once-pulsing heart of our domestic interiors now turfed out onto the streets becomes all the more incongruous, because it is so freighted with symbolism. Beyond the physical artefact, the glitch occupies a space between representation and abstraction. It is those moments when the flow of information is mangled beyond recognition, when communication is disrupted or made messy.
Figure 7. Glitch #7 (© U.K. Frederick).

Figure 8. Glitch #8 (© U.K. Frederick).
Media Archaeologies (Cont.)

Figure 9. Glitch #9 (© U.K. Frederick).

Figure 10. Glitch #10 (© U.K. Frederick).
Both through its fugitive ephemerality and its enduringly hard-wired manifestations, the glitch offers media archaeologists new physical and conceptual terrain. In the transition from the box to the screen we may be seeing the smoothing of the machine but we are also, for a brief time at least, witnessing the underlying complexity of our cultural entanglement with discarded electronics, strings of code, fractured media and pixel rain.

References


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Introduction

“Archaeology” is booming. In the twenty-first century different meanings, kinds, forms and ideas of archaeology popularly circulate. It is used as a metaphor, as a tool, as a description of methods and as a way of thinking and practising. The “archaeology of media” is only one of numerous uses. Archaeologists-as-such now find it difficult to make clear statements about the nature of the archaeological endeavour, and to find a strong disciplinary position within this diversity. This paper tells a transfictional story about the handling of such an identity crisis.

This identity crisis is not only about taking a position in the academic world or finding a name for a specialized discipline. The aim of the contribution is also to show how
Media Archaeologies (Cont.)

easily “archaeological thinking” blends into everyday life. It emits everywhere and affects our way of seeing, feeling and interpreting things. “Personal” and “academic” thinking can only be kept apart as analytical categories, but cannot be separated in principle.

This paper seeks to highlight this ambivalence. As researchers, the topics we are interested in construct our behaviour and our perception of the world. This defines our point of view, and influences how we read books and look at postcards and multimedia as well as at our private life and social environment. As professionals, we cannot avoid being emotionally engaged in the topics we care for.

The separation of our life into “work” and “private”, “academic” and “holiday”, “collective” and “individual” appears increasingly artificial. Nevertheless, we have to find a way through these archaeologies, and to establish a position within the discipline, while maintaining a work–life balance. To illustrate this ambivalence, I choose a web blog format, which is unusual for academic writings but which reflects on its own format and its appropriateness for the academic domain.

Furthermore, my aim is to respond to contemporary patterns of producing and presenting texts: “Likes” and short comments develop new blended languages of phrase-pieces and shortcuts, sometimes with different (and new) rules of grammar.

This is an experimental contribution. It tries to find new ways of academic expression, not only to transport knowledge about different types of archaeology, but also to show the process of thinking about them. It is absolutely necessary to propose new ways dealing with academic and personal responsibilities in this century of collective individualists.

October 21, 2014

I finished my PhD in Classical archaeology. My thesis is about the semiotics of Charles Sanders Peirce and the possibility of applying his system of icon, index and symbol to archaeological objects, exemplified with the region of the Roman province of Epirus. The aim is to offer different categories from “Greek” and “Roman” in Roman archaeology (meaning the archaeology of the Roman provinces). The title is “Dies ist kein römisches Objekt”. A colleague said to me: “There’s too much material culture in your work for you to be a landscape archaeologist.” Another one said: “Nice try, but where is the Classical archaeology in it?” What does that mean? I feel confused.

November 2, 2014

I feel unsure: is there more collective identity (Assmann 2007; Drichel 2008, 593; Hodos 2010, 20–21; Gehrke and Hofmann 2011, 5) or more alterity (Alterität — or the next step: Alienität [Hofmann 2014]), in my relationship with archaeological colleagues? In the past days I have been in the Winckelmann Institut, the institute for Classical archaeology at Humboldt University in Berlin. But I feel different than I did before from the others: What should I wear? How should I walk? What should I drink, how should I greet in order to demonstrate my collectivity? Right now I feel like I’m a “Kulturwissenschaftlerin”, so maybe I’m not in the right place…

I was on holiday for a few days with a non-archaeologist. I spent only eight hours in total at the museums. That makes me feel proud and so normal!

**November 29, 2014**

I attended a conference called *Mediated Objects*. Very interesting subjects and aspects of “Medialisierung”. I was one of only two archaeologists, but I met a “media archaeologist” there. We talked nearly the whole night about my kind of archaeology, his kind of archaeology, Foucault and the idea of archaeology as a metaphor (Foucault 1981; Tilley 1999; Ebeling 2012, 512–663; Rößler 2004), my Peirce and his Kittler, the significance and function of coffee-breaks in conferences, the materiality of philology and the possibility of timelessness of source-codes (Hiller 2014). Had a good time.

**December 1, 2014**

I read Kittler’s essay on Nietzsche (Derrida and Kittler 2000). I think about the old idea of structuralism: “La mort de l’auteur” (Barthes 2000). I believe that the next logical and poststructural step is “the Death of the Reader”. I’m frightened (but YOLO—so what).

**December 2, 2014**

I became ill.

**December 6, 2014**

Thinking about possible translations (or transactions) of the different systems of studying “Classics” in the UK and “Klassische Archäologie” in Germany. The concept of translation (Bachmann-Medick 2004, 2009) might be helpful when talking to each other about it. More and more, however, I believe that “understanding” is such a subjective thing… (omg).

**December 7, 2014**

This “translation” shit stuff seems to be much more complicated. If the idea of understanding is a subjective “thing”, then the immateriality of thinking, which is manifested in acting, creates an “Interpretant und Darstellung” according to Peirce. So if I am the Firstness and my thinking is the Secondness, then the thought and writing down the thought (maybe, for example in a diary or a blog) is the Thirdness (Peirce 2000a, 117–118, 2000b, 193, 2000c, 280) which creates “Semiosen” (Eco 1987, 32) all the time “ad infinitum” (Peirce 1983, 64, Peirce 2000d, 375, 2000e, 390, 2000f, 426). Meaning that translation never ends. Lost in…! Can’t think about it now. Still feeling ill.

**December 9, 2014**

Reading “Vom Griechenland” (Kittler 2001) and “Das Nahen der Götter” (Kittler 2012). I try to find a good connection—no, I try to find any connection between his ideas of antiquity and ancient times and my ideas of being a good archaeologist. Can’t get it. Maybe I need more time to read. Or more to read.

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2. [https://www.uni-giessen.de/fbz/faculties/gcsc/gcsc/research/research-areas/research-area-4-visual-and-material-culture-studies/events/Mediated%20Objects](https://www.uni-giessen.de/fbz/faculties/gcsc/gcsc/research/research-areas/research-area-4-visual-and-material-culture-studies/events/Mediated%20Objects)
**December 10, 2014**

I need more time, definitely!

**December 16, 2014**

I decided to be a “Medienarchäologin” right now. I feel better.

**December 18, 2014**

I talked to the colleague (because now he is one!) I met at the conference in November. I told him, that I’m a media archaeologist now, and that I plan to start with “Musik und Mathematik” (M&M, Kittler 2006). He said, that’s OK, but I should also read the early Kittler, because the late Kittler is very much a “Kulturwissenschaftler”. The rest of the day I reflected upon the options of the translation of “cultural studies” and “studies of culture” (Kramer 2005, Nünning and Nünning 2008, 3–4, Assmann 2011, 17–18).

**December 23, 2014**

The train I’m on to visit my family is two-and-a-half hours late. I think of the materiality of traffic and transport (Neubert and Schabacher 2013, Schabacher 2013). The voice in the loudspeaker says: “Thank you for choosing Deutsche Bahn today!” (Spörrle and Schumacher 2008). I feel very German.

**December 25, 2014**

Eating the whole day. Thinking of the “Medialität” of a hollow “Nikolaus” made of chocolate:

- fancy glittery wrapping like a kind of gift (also to myself) just hiding the hollow chocolate-body
- function is only to be sweet and to be eaten
- after eating you feel sick and have only a small ball of fancy aluminium as a leftover
- satisfactory and unsatisfactory at the same time

Peirce helps (again).

**December 29, 2014**

I think about the influence of eating and drinking, and of loving to read, write and interpret texts. I ponder the possibilities and limits of an “emotional archaeology”. Conclude that it might be too personal.

**January 1, 2015**

I call my family and very best friends to wish them a Happy New Year.

January 2, 2015

Writing a collective message to further friends, colleagues, aunts, uncles and cousins to wish them a Happy New Year.

January 3, 2015

I let my avatar on Facebook wish a Happy New Year to everybody in my friends list who I don’t know, have never met and never talk or write to. I delete everybody from the list who doesn’t like it in an “mrt” (Bernbeck 1997, 65–70) of 48 hours.

January 5, 2015

I got a postcard, handwritten with a pen, from one of my aunts to wish me a Happy New Year. The first information I got was that the “Schachtschleuse” in Minden (Germany) is celebrating its centenary, because that is what is shown on the stamp: a very detailed picture of the Watergate building. Thought about the “Abbildhaftigkeit” and the representing effect (Schulz 2009). Was fascinated (lol)! Called my aunt to say thank you. She asked if I liked the motif of the postcard. I said yes, of course, but couldn’t remember.

January 6, 2015

Started reading M&M.

First ideas (written down by hand in the institute and transcribed here): As someone who is interested in the ideas of media possibilities in general I like many of the text’s aspects. I see the antagonism of a subjective-emotional-associative realization of an analytic-academic subject, an antagonism which is fixed so strongly within German academic practices and language: “Ein Zwiespalt zwischen ‘Wissenschaft’ und ‘Wollen’, zwischen ‘Analytik’ und ‘Emotion’, zwischen ‘Drang’ und ‘Verstand!’” Is it respectable and allowed to mix the languages? To act in a creative or poetic way in academic texts? I think the problem in Germany (maybe in other countries, too?) is that you cannot discuss this as a normal subject in a calm way. The discussion is so emotional—you have to “genialize” or to “demonize” the author. Lots of people are too afraid or angry—or I don’t know what they are—of this style or the idea to accept it. They cannot say: yes, this, too, is one way to express academic work; this­too­is­one­way. Not the only one! Maybe I’m emotional, too…

January 10, 2015

Continued reading M&M, now thinking about the sex aspect.


I send these ideas to the media archaeologist. He tells me about a machine Kittler built—a synthesizer—and about the “Turing test”. I had never heard about that before, but can’t admit it because it’s frowned upon in the academic environment. Then we talk about the construction of Man by the “Humanwissenschaften”, the gender aspects of men and women, these categories used to refer to people by society, and the positions of machines in all this. It ends in ideas of posthumanism, postculturalism and further post-systems that have to be invented. It was a long night.

January 13, 2015

I read about the “excavation” of the Atari Video Game Burial in Alamogordo. Start thinking about the idea of punk archaeology (Caraher et al. 2014).

January 15, 2015

I decided to be a punk archaeologist.

January 17, 2015

A friend told me that he bought the domain “archaeoporn.tv”. I thought about becoming a porn archaeologist… Now having thought about it for 21 minutes and 38 seconds, I decide not to.

January 18, 2015

I met a colleague (UFG, acronym of “Ur- und Frühgeschichte”, historical variation of prehistorical archaeology), told him about my ideas of possible connections of forms, methods and issues of archaeology, Kittler, punk and media (didn’t tell him about the porn aspect). He said that it is not yet too late for me to come back home. I have no idea what he was talking about.

January 20, 2015

The media archaeologist sent me a cfp: Invitation to contribute to the forthcoming forum on “media archaeologies”. Told him that I have no idea what to write about: haven’t read enough Kittler to position myself, don’t feel enough of a Classical archaeologist to make a contribution, and I’m personally not involved enough to be an emotional archaeologist. He said I should write about exactly that.

January 21, 2015

Became ill again.

January 24, 2015

Still feeling ill but read about Kittler as a “Nekrolog” (Ebeling 2012, 664–729). I believe that I now understand the problem of the archaeological term of “Medienarchäologien” and the idea of media in “Klassische Archäologie”. It lies within the issue of philology (btw: it has nothing to do with Peirce or “Becoming Roman” [Woolf 1998]: I’m assuaged!!).
Can’t write it down now because of the typical academic fear, that someone will steal MY idea and write about it before I can!

January 31, 2015

Sent my paper to the JCA. Have no idea if that’s what they expect. Decide not to care. Feel very punky.

References


Notes for an ecological archaeology of imaginary media hacking

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If dreams and utopias are accepted as legitimate and “real” elements of culture, they also have broader historical validity, for they give form to desires that have guided and inspired the development of media technology for hundreds and perhaps thousands of years. (Huhtamo 2010, 35)

Anonymous and the Hacking of Local Struggles

From the end of 2010, a series of socio-political struggles and uprisings occurred in North Africa. Although celebrated in the public sphere as “the Arab Spring”, the struggles took a different form in each country, reflecting specific histories, economic conditions, authoritarian political structures and social compositions. However, across...
all the protests a common trait emerged, although it has often been overemphasized: this was the widespread use of media technologies to disseminate information, and to coordinate and activate large segments of the population. Several scholars have recognized the crucial role played by networked media for the mobilization of citizens in local demonstrations, within a context of the constant expansion of internet connectivity and media technologies (Castells 2012; Gerbaudo 2012; Howard and Hussain 2013).

Many of the digital campaigns in support of mobilizations were promoted under the moniker of “Anonymous”. Two examples, known as “Operation Tunisia” and “Operation Egypt”, consisted of a series of digital direct actions that made use of a large repertoire of digital “weapons”: in the face of repression from local authorities, these included defacements of government web pages, releases of leaked information regarding corruption within the main national institutions, and mass digital strikes in the form of DDoS attacks (again against government-related websites). Moreover, “hacktivists” propped up and sustained local protesters with technological support, facilitating the circumvention of internet censorship and other obstacles that would otherwise have led to the almost-total shutdown of digital networking connections, as happened in Egypt.

During OpTunisia, in addition to “conventional” software tools to bypass connection limits, a very basic script was also distributed, that allowed local activists to block government phishing attempts through the use of malicious code that collected data and spied on citizens’ communications. For OpEgypt, Anonymous (in collaboration with Telecomix) attempted first to restore local connections via analog telephone modem routing, and then issued a digital pamphlet in Arabic titled How to Protest Intelligently. The efforts were crucially directed at “infrastructural” support to enable citizens to materially restore connectivity, evade electronic surveillance and circumvent on-line censorship in response to the blocks imposed by authorities (Beccaria 2012; Olson 2012; Coleman 2014).

In the history of Anonymous, these two operations are widely recognized as turning points, as direct technological support was aligned to the more disruptive character of the hacktions deployed in these and previous operations. These hacking strategies,

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1. A Distributed Denial-of-Service attack is an overload of connections that makes a certain resource unavailable to users. Although it is considered a criminal activity in several jurisdictions, it is related to the same material capacity as mediation. Because of its short- and long-term effects, a similar technique has been used widely for political protests.

2. In Egypt, mobile phones and Blackberry networks were also blocked and, according to Castells (2012), the turning off of the internet affected 93% of the population, leaving out only some academic institutions.

3. The anti-phishing code was a script to be used with “greasemonkey”, an add-on extension available for the Firefox browser.

4. Telecomix is a disorganised cluster of net-activists.

5. The pamphlet is not simply focused on on-line communication, and is concerned with a wide series of precautions for protests. It can be found easily, and is freely available on the internet.

6. Inspired by Samuel (2004), I define politically-oriented digital actions as hacktions. This conceptually comes from the “hack”, sharing originality, creative invention, and a certain refusal of constraint. However, this networked media action can be thought of as the political “deterritorialization” of the hack that, instead of reaching points of high efficiency (as happens with exploits discovered to correct the holes of a system), points towards a “reterritorialized” deficiency (disruption, dysfunction, disturbance etc.). The case of political coding is in this sense a very borderline one, but the concept has been developed to impede any conceptual limitation, while enabling a potential with a tendency to unlimited “machinic” relations.
which equip physical mobilizations with technological support, have been read in the literature as a “digitally correct” form of hacktivism, and defined as “the political application of hacking to the infrastructure of cyberspace” (Jordan and Taylor 2004, 69). The particular “techno-aid” of the Texas-based hacking group The Cult of the Dead Cow (cDc) has been studied as one clear example of this trend of hacktivism, being directed “to assist […] non-governmental organizations, social justice groups and human rights entities in the use of advanced information technologies for the furtherance of their works” (Hacktivismo 2003). Therefore, a similar way of employing hacking skills can be inscribed within a genealogical lineage, which practically and conceptually links the help guaranteed to overcome the limits of connectivity (in the two cases mentioned above) to a recent past of software development for social and political issues.

My suggestion is to expand these genealogical lineages beyond the strict computational field, pushing forward some theoretical assumptions developed in the field of media archaeology. Thinking media archaeologically means to investigate contemporary media cultures employing visions, knowledge(s) and experimentations coming out of the past, while also taking into consideration weird and not-fully realized apparatuses, practices or inventions. This allows studying contemporary network cultures at a practical and theoretical level beyond the specificity of networked digital media. In fact, with media archaeologies—because of the relevancy given to materiality and time—these cultures appear as stratified, allowing novel re-discoveries of technologies from the past in parallel with the growing obsolescence of present ones (Parikka 2012). In this sense, media archaeologies posit critical relevance on the linear celebration of the progression of human–technological assemblages.

In addition, I would like to explore similar non-linear historical paths by implying an ecological thought, which is able to posit questions of “relationality” between the overlapped planes of scalar mediation involved in this speculative suggestion. On the one hand, media archaeology points towards the “demythification” of the newness of contemporary media forms, permitting the reconnection to a past into which these are necessarily inscribed. On the other, a similar approach, assembled with media ecological questioning, demonstrates how media act outside the strict field of communication, operating through broader ecologies of mediation—pushing the boundaries of its strict humanist understanding. With the archaeological approach, media ecologies share the necessity for “qualitative”, more than “quantitative”, readings of media forms and processes. Moreover, ecological thought equally posits attention to media materialities, assuming a relational dimension into which these are directly intertwined with psychic and social ecologies. In particular, within the latter, media practices (in their material capacity of intervention) can play a crucial micropolitical function that is able to activate novel processes of subjectification (Guattari 2000 [1989]). My aim is to link the introduced technological assistance of Anonymous to another, un-realized “hacking” desire for political support, through a non-linear mapping of ontogenetic imaginaries.

7. The definition of “ecological” to which I refer is a recent and not fully developed approach in media studies. This differentiates from the Toronto School-inspired field of media ecology, by having a crucial reference in the “ecosophical” approach of Félix Guattari (1995a [1992], 2000 [1989]).
Opening Ontogenetic Lines: Imaginary Archaeological Desires beyond the Computational

It is at the intersection of heterogeneous machinic Universes, of different dimensions and with unfamiliar ontological textures, radical innovations and once forgotten, then reactivated, ancestral machinic lines, that the movement of history singularises itself. (Guattari 1995a [1992]: 41)

First of all, it is crucial to recognize “hacking” as a matter not strictly related to computation. Despite the widespread image of hacking as a mischievous criminal computing activity, or, in contrast, as primarily an aspect of technology (Jordan 2008), several researchers have highlighted how hacking relates to basic curiosity and intellectual challenges (Gubitosa 2007; Paccagnella 2010). Hacking is a matter of knowledge actualized through a “hands-on” attitude; it is the material application of the key elements of forms of inventive abstraction. The desire to find opportunities for original applications, with the view to overcoming limitations, thus finds contemporary expression in the field of computation. In fact, going further within a conceptual excavation, this can be reconnected to a pre-modern and pre-industrial past, as the “ancient” meaning of the word reveals. The verb “to hack” in fact referred to the action of cutting properly in arboriculture, which later came to characterize the agent, the hacker (see Kennedy 2015; and any English dictionary). Hacking was, and still is, a creative disruption, a form of applied knowledge to a material “tinkering” capable of pushing existing boundaries beyond their singular actuality (an abstractive potency, as Wark [2004] might suggest).

Accepting hacking as a matter not exclusively related to computing calls attention also to the elements of “alterity” of a specific technological machine outside its strict “singularization” and its sole, actual manifestation. Surely, a small piece of code, like the script developed to help Tunisian activists bypassing governmental control, is not a complex output of techne. However, this (as well as the related “infrastructural” support observed) equally involves a whole field of micropolitical desires, which are actualized—in this case—in specific coding assemblages. These assemblages can be defined as kinds of “machines of technical help”, parts of a broader machinic system while also intertwined with other systems not strictly technological, such as the social or political machines of struggle. Here, with the aim of comprehending a similar field and its interrelations within specific technological expressions, I propose to follow the heretic ontological “machinism” of Félix Guattari (1995a [1992], 1995b [1993]), who suggested positing the question of technology (in the materiality of technological apparatuses) under a broader machinic one. This is a heterogeneous and transversal plane able to constantly differentiate according to emerging relations that “existentialize” the specific technological machine.

Guattari suggests technological machines can be mapped via two different axes: one of alterity, corresponding to the opening of the technological machine towards the external, and one of consistency, towards its internal.8 Relations towards the outside can be

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8. In positing these rhizomatic axes Guattari was inspired by the work of biologists Maturana and Varela (1980 [1972]), and his work is especially an attempt to broaden autopoietic and allopoietic processes towards heterogeneous ontological machines (not strictly technological). It is also
considered through ontogenetic elements, which are the pre-individualized meta-stable “components” that will coalesce into the existentialized singularity of the technological machine. Between these, there are, for instance the elements of the plan—the social or economic conditions implying these technologies or a certain set of instructions or knowledge. These are all ontogenetic constituents that allow the technological machine to be conceptually opened to its externality, to think about this “ecologically”, which means through its scalar “relationality” with other plural machinic systems. This happens, for instance, with the material components, which are deterritorialized and reterritorialized; an example is the minerals that will become a computational microchip, and that subsequently can be traced down to the extractive machine and a whole series of other machinic relations (of labour exploitation, of human dominance over “inert” matter, of the economic flows driving the extraction, etc.). However, within the ontogenesis of technological machines I suggest that desires have to also be located, and with these their peculiar “micro-politics”. This is the capacity of activating a certain affective and molecular order able to mobilize social and political machines—with or without the mediation of specific technologies—and therefore entering into relation with other machinic systems.

Guattari adds that the phylogenetic element of the internal axis involves the sequenc-ing of different generations of the same technological machine (such as the case of the various releases of the same software in the context of code development). But it is on the first axis that I would like to focus further. The desiring micropolitics—which activate these hacktivist machines of technological support, as happened with the wish to help Egyptian protesters to communicate—can be excavated through a concept developed in the field of media archaeology. This is the idea of imaginary media, a concept directly concerning desire, and its cultural and affective forces. Moreover, this axis of intensive order, being directed towards the external, is also the one capable of opening ontogenesis to a wide field of pure potentialities. It has the potential capacities of “machinizing” with virtual forces that have yet to come, forces that can emerge and singularize as forces of disruptive, as well as revolutionary, mediation.

[The history of media technologies does not comprise only those inventions and ideas that materialised as actual, commercially marketed artifacts or as institutional systems of communication, but also those dreams and visions that existed but were never “realized”. (Huhtamo, 2010: 34)]

Imaginary media is a research topic that has emerged within media archaeology. This points towards the study of unattainable media histories, of past conceptualizations of impracticable and unviable technologies. As Parikka describes it, the field of imaginary media “is something you do not always find in basic media studies textbooks: media that are the stuff of dreams and nightmares, at times existing only in the minds of inventors or science-fiction writers” (Parikka 2012, 44). Therefore, similar technologies of mediation many a time lie only in the dreams of their conceivers.

In his reading of imaginary media, Kluitenberg (2006, 2011) directly links the study of this archaeological theme to the social production of “impossible desires” (2011, 48).
According to a similar suggestion, these media are not a simple result of imagination, involving opportunities to explore the unconscious of contemporary media cultures. Within a similar perspective, understanding desires also becomes central to understanding the actualization of the media apparatuses concretely realized. For Lacan (1901–1981), the imaginary is a decisive step for the unification of the subject, which reaches its coherence under a unifying law. Within a perspective based on lack, as the fulfilment of desires happens by filling the open gap, the actualization of concrete media apparatuses guarantees the satisfaction of desire—it is this lack that pushes towards the realization of impossible mediations.

Summarizing these theoretical lines, Parikka (2012) underlines how imaginary media in relation to desires and the unconscious can also be posited within a non-Lacanian perspective. Therefore, in accordance with this, I propose to read imaginary media in their relation with forces of desire in Deleuzo-Guattarian terms. Instead of being inscribed on lack and regulated by the Oedipal law, desire is an immanent productive force, capable of creating connections (as a machine) and bodily affections by operating on a molecular field. The desiring drives are here a force of productive creation, an affirmative vitalist potency able to act in the micropolitics of a molecular field. Desire has the potential to transform—the will of novel powerful affectivities—by continually machinizing with heterogeneous components (media forms as well as political, imaginary, familiar, etc). However, it is worth noting that this potency can also close into itself, conducing regressions and fascisms (Deleuze and Guattari 1983 [1972]; Guattari and Rolnik 2007 [1986]).

Since this imaginary is directed towards a field of potentials—not yet structuralized—the concept of imaginary media can be proposed beyond the phenomenological threshold and thought of as the “non-human side of technical media”, following Parikka (2012, 62). Therefore, it is on this molecularity—affective and non-(strictly)human, material and vital—that the micropolitical capabilities of hacktivist media machines have to be comprehended. In this direction, the imaginary micropolitics of hacking can be tracked down—or better mapped—precisely thanks to the introduced ontogenetic lineages. Hence, the “alterity” of similar “onto-archaeological” lines allows us to move this speculative reflection from the few technological solutions developed to circumvent the authoritarian control of communication, towards other machinic assemblages. These can be hypothetical technologies of support never actualized, perhaps distant in terms of material relations or times, but equally crucial into activating a desiring molecularity, a certain culture of imaginary media hacking.

**Provisional Observations, or the Eco-Political Case of “Walnut-Shell Boats”: Hacking Media outside Representational Mediation**

According to the data collected by “Fortress Europe”—an observatory on immigration tragedies in the Mediterranean—between 1988 and 2014 at least 21,439 people died attempting to cross into Europe by sea. The highest numbers—8,902 in 1988, 7,065 in 1994, five per day in 2011—occurred on the routes between North Africa and Italy, in the strip of sea known as the Strait of Sicily (Canale di Sicilia). Here, shipwrecks are a regular occurrence and the observatory collects multiple data on these to study migratory
mobility, the politics of patrolling borders, and the geographic “states of exception” in relation to human rights at borders (Del Grande 2014).9

This is an extremely complex socio-political issue, which involves also historical, economic and legislative aspects. Following a Guattarian vocabulary, it is possible to say that several machines intertwine in complex relational ecologies: desiring machines (undertaking hopeless travels, in relation for instance to war machines), political-legal machines (activating push-back and detention measures), historical-ideological machines (superseding a colonial past built on the exploitation of African populations and lands), criminal-capitalist machines (profiting on human trafficking and cheap black-market labour), etc. Within a similar ecological context, technological machines are crucially also at stake—or “in the middle”—in their (in)consistent materiality. In fact, very often the nautical apparatuses employed to take to the sea are not materially suitable for this kind of journey, and the overloaded motorboats and rubber dinghies are often abandoned by the crews during sea crossings with little chance of reaching the coast. But there are also resistant machines, assembling radical political desires to potential perspectives on emancipation and autonomy.

In fact, the possibility of reaching the south of Italy via sea routes was, and still is, a central issue for social movements and networks of cooperation, with daily struggles against the measures implemented by Italian governments over the years, which strengthened repression and led to increases in criminality. During the 1990s, a southern Italian network highlighting the exploitative logics of capitalism in the region was also operative in the southern Mediterranean area. Organized around many movements and associations, the network conducted several field studies relating to social and economic questions in the local territories. These studies were inspired by Autonomist ideas, such as the impossibility of separating theory and praxis, and were centred on several problems: from the collective study of work conditions and the transformation of labour processes, to the exploitation of workforce and land, moving through connections between local institutions and criminality. The aim was to create novel opportunities for social struggles and to offer political proposals to act outside the capitalist relation, through cooperation and self-determination. Furthermore, the collectives working within the network were also involved in correlating social problems, including questions of human movement across the Mediterranean basin.10

Pushing forward my speculative excavation, another hacking machine for technological support can be (re-)discovered within the introduced onto-archaeological lineage. However, this machine is a technology only hypothesized and sketched, but never really actualized, because of the specific material condition of its conception. Instead of bridging connections to allow communications, this imaginary media was conceived

9. The observatory was founded in 2006 through the work of the writer and journalist Gabriele del Grande, who aimed to re-humanize the unknown deaths of the people travelling across the Mediterranean by narrating their unique histories.

10. Part of the activity of the network (in the form of projects, documents and researching outputs) is still available at www.ecn.org/OM/index.htm. As happens with similar field studies and researches, the outputs were less oriented to publicity and more to the self-awareness and collective action of the members of the network. However, the discussion is here mostly based on face-to-face and mail interviews I conducted over a month with members who used to be involved in the network.
as a physical mediating machine for people intending to travel from the coasts of North Africa to Europe, avoiding repressive limitations and the criminal trafficking established on those maritime routes.

In fact, within the political network mentioned above, a group of political hackers—or imaginary tinkerers—imagined a series of small nautical machines, with the aim of reflecting on the possibility of offering direct technical aid to refugees emigrating to Europe via the Strait of Sicily and the southern coasts of the island. Stimulated by a “hands-on” tinkering attitude, their idea was to collectively construct these tiny boats to allow the Mediterranean to be crossed with fewer risks. Moreover, a hacking disposition was equally evident in the desire to “overcome” the authoritarian limitations of police patrols and the capitalist market of criminal human slavery, by this abstracting media technology.

The boats were envisioned as a form of “nutshell”, and their dimension was not to be bigger than those of local fishermen’s boats. Using a self-floating mechanism, this unusual ergonomic shape had to guarantee stability, in order to reduce the chance of capsizing and to minimize the potential for shipwrecks. In addition, studies on materials were used to reduce risk through the use of special floating substances in the construction phase, and, taking advantage of in-depth local studies of currents, tides, and meteorological conditions in the strait (air temperature, atmospheric humidity and pressure, winds etc.), the small boats would be able to be steered by people lacking any nautical knowledge. Finally, with the implementation of telematic networks, the idea was to coordinate and support navigation by checking timescales and directions while being in touch with associations and political grassroots groups operating on the other side of the sea.

The envisioned “nutshell” boats implied a whole series of media-ecological relations beyond the strict field of communication. These resistant imagined machines could hack materials, dreams, hopes and affects for revolutionary socio-political futures. Here, human migratory flows move within channels like sea waves, intertwining with the intensive energies of winds and currents. Knowledge and information flows were implicated too, singularizing accurate “algorithmic” nautical mediating machines able to erupt in a future outside history without borders and limitations.

According to the variantological multiplication of what can be considered a medium, as offered by Zielinski, these imaginary technologies are media in a broader sense. In fact, “[m]edia are spaces of action for constructed attempts to connect what is separated” (Zielinski 2006: 7). Therefore, more than unrealized actual apparatuses, media machines are here the desiring forces that offer a possibility of transit, the will to connect two sides of the same sea and their cultural and imaginary potentials. These desiring machines for technical support can be linked by onto-archaeological lineages to those coded by hacking groups during North African social struggles. In fact, even though their actual implementation failed for obvious reasons—dictated by the socio-historical conditions more than by the desires of their inventors—their speculative ontogenetic mapping reveals a similar micropolitical desiring force that continually re-emerges and re-actualises within the non-linear lineages of history and through heterogeneous machines of mediation.
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Faced with an unfamiliar machine, do we ask “how was it used?” or “what can it do?” Very different archaeologies flow from these two questions.

To ask “what can it do?” takes the machine at its mysterious face value and enables us to tinker around with it until it begins to work. Research might discover a user’s handbook written in some kind of technical-speak; or perhaps a description of the machine in use long ago and the magical effects that it once produced. Or again, our tinkering can conjure other, unexpected functions for the machine which were unintended by its inventors, just as we can use a screwdriver as a chisel or doorstop. “What can it do?” is a question for the (probably lone) researcher faced with an object of uncertain use. There will be more and more such encounters, but they remain encounters between enquiring human and mute machine.

To ask “how was it used?” is to engage directly with the human/machine interface as a social process. It means seeking out, where possible, the actual users of the machine during its currency in particular contexts of use. It means seeking out the other machines that it was used with, excavating the processes of which it was a part. Of course, this closes down the exploration of the potentials of the machine itself. Any context of use would have limited the machine’s potential by defining it in a particular way, by using it to realize just one aspect of its potential. What a film camera could do, and what it was actually used for in a particular production context, are entirely different things.

However, there is more at stake than simply the potential of a machine. A skilled user of a film camera was able to manipulate it in ways that a present-day researcher would not be able to achieve. The interaction of human body and machine is one of mutual learning: the skilled camera person can load film quickly, knows how to manipulate lenses and exposure, can hold the camera to produce specific visual effects. The aim was for camera and operator to “become as one”. A skilled user of a movie camera has a repertoire of “muscle memory” that specifically relates to that particular camera. A skilled user is likely to have tinkered with the camera as well, adapting it to their physical and aesthetic needs. The human/machine interface is a complex site of negotiation between the potential of the machine, the bodies of the operators, and the requirements of the context of use. So the human/machine interface has to be a key part of media archaeology’s project.

This is what we are trying to study in the ADAPT project,¹ which is funded by the European Research Council to explore the adoption and adaptation of technical arrays

1. http://www.adaptvhistory.org.uk/
in the history of television from about 1960 to the present. We use the term “array” to stress that TV was never a matter of one machine doing everything, but an assemblage of machineries, sometimes developed for other purposes, pressed into service to achieve defined aims. Often they conflicted with each other: camera, sound, and lights have long had an antagonistic relationship on set as they all have their own requirements for optimal operation, and these tend to conflict. We have also found the complex routines into which these machines and people were inserted: the activity known as “film editing” involved successive operations to marry up and separate sound from image; to relate cutting copies to the original negative; to plan and execute the production of further image and sound recording. Little or nothing of this can be intuited from engaging with the machines alone, and even written accounts leave much to the imagination.

Key to our method is an attempt to document the re-encounter of retired equipment with the people who once used it, a process we call “simulation” rather than “reconstruction” (which implies the reconstruction of a specific production). We invite skilled technicians to demonstrate how they used the equipment and to explain why they used it in a particular way. We invite them also to demonstrate how they worked together to achieve defined aims—the aims of the various genres of broadcast television at a particular moment. We record these encounters using multiple cameras and microphones, according to the conventions of contemporary TV documentary (Ellis 2012), adapted as far as possible to our particular purpose of documentation. In line with the practice of oral history, we privilege the preservation of our rushes, though it is not yet possible to make them fully available. We edit to produce short demonstrations which we will seek to disseminate as widely as possible. We have also produced a first exploration of the method in an audio-visual essay for the online magazine VIEW (Murphy et al. 2015). It is remarkable how the complexities of the interaction between skilled personnel and machinery become evident once it is filmed and viewed later. It is also remarkable how old working habits reassert themselves. Already in our first simulation of 16mm film editing we have discovered how natural it was to “cheat” an edit by substituting an aesthetically better shot from another part of the rushes for the in-continuity literal moment. In this unprompted moment of simulated work, our two editors dramatically demonstrated this everyday mediatization of time.

We are accumulating evidence of the human/machine interface within the television industry, and we are attempting to be as rigorous as possible in doing so, but are proceeding by trial and error in this attempt. Our first simulation was explicitly a pilot. This kind of archaeology, the “how was it used?” form, continuously produces rich data about the social determinants of the context in which machinery was deployed:

- gender relations;
- workplace hierarchies;
- division of creative responsibility;
- management processes and expectations;
- attempts to innovate and/or subvert;
- ingrained professional norms;
- perceptions of social responsibility.
All these made the machines work in a particular way. So far, so empirical. The wider implications of this work for the archaeology of media are to question the exclusion or the instrumentalization of the human within many media archaeological approaches. It shows that technologies always imply an “operating system”. For analogue technologies, the “operating system” is largely inscribed within the body of the human operator: in how they use their hands, how they co-ordinate hand and body around the machine. This “operating system” usually requires a physical reconfiguration of the machine in order to optimize its function, or a work-around to compensate for an inherent flaw. Bits are re-engineered, things are stuck on with gaffer tape, further bits of kit are brought in to “make life easier”. There is an intermediate zone between human and machine—in other words, a space of adaptation which is neither one nor the other, neither human nor machine, but a merging of the two. It combines the physical skills of the operator and the ad hoc material adaptation of machinery. The human:machine binary obscures this space of combination.

Conceptually, therefore, we need a third term in studying the everyday use of technology. For this reason, I propose that we use the metaphor of an operating system (like that of a computer) to focus on the space of the combination of human and machine in the skilled use of machinery. An operating system transforms an artfully constructed assemblage of hardware into a productive mechanism. In a computer, the operating system is a piece of software that manages all the applications and prioritizes their functioning. As such, it might be said to reside within the machine and be part of it, and, in the case of a computer this is largely the case. However, even the operating system of the computer has to adapt and be adapted to its user, unless the user simply adopts all the presets wholesale. The presets tend to have been set by young Californian geeks or Google-campus dwellers. So the rest of the world’s users have either to adapt to that mindset expressed in the machine, or enter into a setup process that is a negotiation which adapts the presets to the individual user.

Where does the operating system reside in the case of technologies that involve skilled users, like film and television equipment? In this case, it exists between person and machine, not within either one or the other. As one of our participants put it (discussing using a Steenbeck film editing table), “this used to be second nature”, emphasizing the automatic nature of the operating system. The “operating system” is the result of a mutual negotiation between mind, body, and machine. The resulting operating system is inscribed within both, but not attributable to either alone.

This proposal is scarcely new. It goes back at least as far as Ernst Kapp’s Grundlinien einer Philosophie der Technik (Kapp 2015 [1877]), but with a crucial difference: Kapp sees technology as an extension of the body, whereas the idea of an operating system is the result of a process of negotiation between bodies and machines designed and produced elsewhere, but modified in that process of negotiation. The idea also revisits the once-fashionable theory of the cyborg, championed by Donna Haraway in “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century” (1991 [1985]). But where Haraway used the idea of the cyborg as the solution to the problem of essentialism within (but not confined to) feminism, this proposal merely uses her insight that modern technological culture has blurred the boundaries between
person and machine, human and animal, natural and artificial. Haraway emphasizes that
the cyborg is a new phenomenon; but the proposed idea of an operating system can
be used to analyse any space of combination between human and machine. It claims,
in effect, that the farmer using a scythe or the cook using a hot stone is a process of
combination of object and human through the third term of an operating system. We
respect a person who can operate a scythe because unskilled use can cause serious
injury. A safe and efficient scything operation is not only a skill acquired by a human;
it also involves adaptations to the tool itself. The operating system in this case is the
combination of learned skills and physical adaptation of the object to the specific user,
or at least the selection of a ‘more suitable’ object which works best with the physical
affordances of the user: height, weight, length of arm, and so on.

So there is no particular break between the analogue and the digital in this proposal
of the “operating system”. In the area of production for the audio-visual media, the
process is the same for digitally-based technologies as it is for analogue technologies
(except that digital adaptations require less use of gaffer tape). The impact of the digital
is experienced elsewhere, in the ease of access to the technologies of the audio-visual.
The activity loosely defined as “filming” is now more widespread and more everyday. The
pervasive use of computing also means that the process of mutual adaptation between
user and machine is much clearer. Nowadays, everyone has to adapt the user interface
for their own set of skills and to achieve the aims they set or are set. Machines routinely
need us to download applications; some users even design their own. The machines
are constantly adapting because they are constantly adapted. If there is a shift here, it
is that the adaptation of technologies is now an everyday activity where once (as in the
analogue era of TV) it was the domain of a skilled elite. Once, considerable design went
into making consumer media technology as simple as possible; as the saying had it, “just
turn it on and that’s all”. Now consumer technologies demand engagement in set-up
menus, choices, and preferences.

The greater availability and reach of digital image and sound recording also enables
projects like ADAPT. It enables a new line of research which can see what was difficult
to see before. The spread of the audio-visual has brought about a new visibility: we can
now study in detail the movements of machine and body that were formerly difficult to
capture. The details of these interactions are still difficult to put into words, however.
Perhaps the traditional purely written analytic discourse of the academic is inappropriate
to the task; certainly, “publication” of results has to take a new form. It would definitely
be preferable to see for ourselves the skilled use of complex and adapted machines,
and the ADAPT project aims to disseminate the edited versions of its footage to archi-
val websites to provide context for their holdings. But further, researchers will need to
find combinations of writing, speech, and moving image that are adequate to the task
of revealing the nature of the operating systems that are the crucial third term in the
interactions between humans and machines. These are revealed through the process
of simulation and demonstration of how the machines were once used, and in the effort
of remembering what was once an automatic set of actions.
The Future of Recording the Past: Web Archives as a Resource for Public Archaeology

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Introduction

The evolution of the World Wide Web since the latter half of the twentieth century has brought with it permanent social, economic, and cultural changes, as the modes and context of our communications have been transformed, supported by the growing ubiquity of mobile devices, wireless technologies, and super-speed broadband connections (Lievrouw 2012; Elton and Carey 2013). If we consider the impact of these technocultural changes from an archaeological perspective, and seek the material evidence for this swift evolution, we must accept there are some serious obstacles in the way of our understanding of these developments. The accelerated expansion of the internet and inherent transience of the World Wide Web, alongside the development of browser technology, markup and programming languages, and multimedia capabilities, results in repeated changes to the appearance, content, and connections of web-based communications, and the possibility that no record of these iterations has been preserved.

In the UK, the first concerted effort to archive the World Wide Web took place in 2003, with the establishment of the UK Web Archiving Consortium, led by the British Library, the National Library of Wales, the National Library of Scotland, the National Archives,
JISC, and the Wellcome Trust (Dappert 2015). The UK Web Archive at the British Library¹ and the UK Government Web Archive² are currently the two main web archives in the UK. Since April 2013, the British Library has begun the process of archiving the entirety of the UK web domain in partnership with the National Library of Scotland, the National Library of Wales, Cambridge University Library, the Bodleian Library in Oxford, and the library of Trinity College Dublin (UK Web Archive 2015).

**Recording the Future of the Past**

With the growing impact of Internet technologies on communications, the economy, and culture, technological developments are expanding rapidly. However, we have a significant issue for media archaeologists in the future; the lack of material evidence for these iterations means we risk losing an understanding of our social, economic, cultural, and technological histories and our perception of these developments over time (Van den Heuvel, 2010; Brügger 2011; Cowls 2014). Understanding the construction of these archives has implications for how we understand how knowledge has been created and presented online, for any subject. Without an understanding of the importance of web archiving, rather than simply “digital preservation”, we stand to lose not only a situated understanding of the emergence of the internet but the contextual understanding of the impact of these technologies on our own disciplines and intellectual traditions.

For archaeologists, the issue of archiving digital archaeological data has been a source of some apprehension for a number of years (Richards 2002; Richards et al. 2010; de Silva and Henderson 2011). Jeffrey has warned that the discipline of archaeology faces “a second Digital Dark Age”, as the adoption by archaeologists of social media and collaborative websites is “running ahead of plans or policy to preserve the material generated” (Jeffery 2012, 555). The scholarly discussion of the impact of these issues on the archaeological sector by Jeffrey and by Law and Morgan (2014) draw attention to the fact that the longevity of much of the material held on social media platforms is ultimately controlled by large corporations, so such data is inherently unstable. There are great methodological challenges for those who wish to use the World Wide Web as a source for “web historiography”, such as subjective reconstruction, technical deficiencies such as missing images or interactivities, or temporal inconsistency (Brügger 2012, 753). And for archaeologists, just as archival material, letters, and site diaries are used to reconstruct the history of archaeology, perhaps the arrival of the “Second Digital Dark Age” could see the discipline lose part of its history, if we cannot preserve our digital archaeologies for future research (Schlanger 2002, 2004; Schlanger and Nordbladh 2008)?

Technologies and websites labelled as “Web 1.0” are, and have been, typically dominated by the presentation of static web pages containing hyperlinked content (Richardson 2014), which are far more suitable for web archiving than the rich content and connections of participatory media and what is known as “Web 2.0”. As the World Wide Web has evolved and participatory media has become a common experience for web users and web architects, the reality of archiving the “live web experience”

1.  http://www.webarchive.org.uk/ukwa/
(Cowls 2014) becomes more and more difficult. We need to understand the limitations of web archives, the incompleteness of data, and that the reconstruction of archived web material will always be subjective, and will never look the same as it did when it was live on the web in the first place, since the archive is reconstructed from the raw files that constituted the website at the point of its presence on the live web at a fixed point in time (Brügger 2011, 32). It is interesting to consider the similarities between these issues with web archives and archaeological archives. Archaeological archives hold the records of an archaeological excavation, but never the archaeological excavation itself, where “structures are separate from artefactual details” (Baird and McFadyen 2014, 15). Despite the incompleteness of the record, whether as the result of changing browser technologies and their impact on web archiving, or new recording standards and techniques in archaeological recording, archiving is a process of “a transfer of material memory from one form to another” (Baird and McFadyen 2014, 16). Archives reflect the construction of knowledge throughout time and the fluidity of the assignment of value to those forms of knowledge: the web archive reflects the fluctuations in the presentation of archaeological knowledge to the public, as well as the technical restrictions of digital archiving, just as archaeological archives contain the material results of the shift in values of the archaeologists and curators who created and deposited the archival material. These provisos provide food for thought as digital analogies for the work of the archaeologist: understanding the structure of knowledge and its formation. As an archaeologist, approaching an incomplete website record, without a vision of its original use, format, or context, requires similar skills to unpick associations, reconstructing formation processes, exploring what led to disuse and abandonment, and ultimately, refitting past technologies from the debitage of its creation.

The Big UK Domain Data Project

It is worth exploring the work of Kirsten Foot and Steven Schneider, who have conceptualized the “web sphere” as an analytical approach to web archives:

We conceptualize a Web sphere as not simply a collection of Web sites, but as a set of dynamically defined digital resources spanning multiple Web sites deemed relevant or related to a central event, concept, or theme. […] The boundaries of a Web sphere are generally delimited by a shared topical orientation across Web resources and a temporal framework. (Foot and Schneider, 2006: 20)

With this concept in mind, my own attempt to use the web archives and create a web sphere for public archaeology as part of my research into the intersection of public archaeology and web archives has taken place thanks to a bursary from the Big UK Domain Data for the Arts and Humanities project. The project is a partnership between the British Library, the Institute of Historical Research University of London, and the Oxford Internet Institute. The project ran from February 2014 to February 2015 and aimed to highlight the value of web archives as a source for arts and humanities researchers. It also aimed to establish a theoretical and methodological framework for the analysis of web archives, focusing on the dataset derived from the UK web domain 1996–2013.
with a focus on the implications of a big data approach to web archives (Big UK Domain Data for the Arts and Humanities Project 2014).

My research project “Public Archaeology Online: A Historical Perspective” attempted to explore the web archive from the UK web domain from 1996–2013, using the prototype user interface called “Shine”. This was only available to the project researchers, but is being developed by the British Library for eventual public use using feedback from the experiences of the researchers on the project (Big UK Domain Data for the Arts and Humanities Project 2014). I started out with the intention of collating previous iterations of the presentation of archaeological information through the internet and I wanted to look at examples of popular, alternative/pseudo, and academic archaeology websites and blogs, and explore the evolutions of digital archaeologies during those 17 years. The project has now concluded, and with further research planned in this area stemming from the pilot scheme, it is useful here to highlight some of the issues common to the researchers on the project, in the light of disciplinary approaches to understanding web archives in an archaeological context.

Conclusion

Very few other archives have a similar sized dataset: over 2 billion resources are recorded in the index, and this is growing in terabytes each year (UK Web Archive 2015). The difficulty of dealing with the size of the archive has proven to be a common thread amongst the researchers on the project, and my own project returned hundreds of thousands of web pages with archaeological content.

The implications of a dataset of this size for historians of the web are diverse. Search queries have had to be very specific, and as algorithmic prioritization does not take place within the returns from the prototype web archive search functions, my initial project plan has been reduced in size to a manageable scoping exercise for a handful of key archaeological sites and terms. Interpreting patterns and contextualizing the meaning of labels for archaeological sites has been undertaken with a great deal of subjectivity.

There is enormous scope for further work on the impact of web archiving on our understanding of archaeology and also perhaps through the consideration of archaeological approaches to explore, reconstruct, and reimagine the technologies of past iterations of the World Wide Web. In terms of methodological approaches to these data, what Brügger refers to as “web philology” (Brügger 2012, 39) is just as much an “archaeology” of web archives. An understanding of the applications of these approaches to these data will be useful to the Internet Studies community as much as to scholars of media archaeology, digital archaeology, or even digital public archaeology, since there is no longer much cultural phenomena that “cannot be analyzed and explained exhaustively if the Internet is not part of the analysis” (Brügger 2012, 39). This area is ripe for further research at this, the almost-invisible boundary between media archaeologies and archaeologies of media.
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