



An archaeology of digital knowledge
Imaginaries of the digital cultural heritage archive

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Publication date:
2016

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Citation for published version (APA):
Andreasen, T. A. C. (2016). *An archaeology of digital knowledge: Imaginaries of the digital cultural heritage archive*. Det Humanistiske Fakultet, Københavns Universitet.

An archaeology of digital knowledge - Imaginaries of the digital cultural heritage archive

“[...] il nous faut apprendre à détecter, pour y résister de nouvelles formes de prise de pouvoir culturel.”

Derrida: *L'autre cap*, p. 55

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For Bente –

The initiating condition of possibility
for this and whatever may follow.

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Anacrusis

Not unlike any other dissertation ever written, this one was supposed to be about something else. My Ph.D. position was made available by the LARM project, a research project spanning 10 research and cultural institutions, the goal of which was to develop a digital research infrastructure for Danish radio. The topic called for was *user contribution to digital cultural heritage archives* and the candidate was asked to deliver an evaluation of “best practice” accompanied by an analysis from the perspective of philosophy of technology. As will no doubt become clear, user contribution plays an exceedingly small part in what follows. And as will also become apparent, any recommendation for best practice has been reduced to a critical stance with regard to the object at hand.

These changes of scope and path are, of course, common and necessary parts of the process of concocting a dissertation. As someone kindly remarked at the beginning of my employ: Now you have written the project proposal you needed to get funding, next you need to describe the dissertation that you are actually going to write. But one thing is the difference in tastes and desires between the candidate and the funding organs, another is the legitimate academic reason for diverging from the given path. In the present case, it soon became apparent that the question of user contribution to digital cultural heritage archives took far too much for granted. What is a user? Such an entity could possibly be defined from a technological perspective as the actual person referenced by a digital profile within a computational environment, which could then be defined as specific interface behaviour adapted to a dataset, defining characteristics of an ID in a user database. Even within this narrow technological perspective, however, questions regarding interface behaviours and database operations abound. Just the relation between profile and “actual person” should give us pause. What is an actual person? What is the relation between the traces left by such a person and the aggregation of a profile? Foucault once wrote: “Plus d’un, comme moi sans doute, écrivent pour n’avoir plus de visage. Ne me demandez pas qui je suis et ne me dites pas de rester le même : c’est une morale

d'état civil; elle régit nos papiers. Qu'elle nous laisse libres quand il s'agit d'écrire."¹
Is the profile the computational establishment of an inescapable identity of the user as writing author?

It was once famously claimed that "On the Internet, nobody knows you're a dog."² The profile was presumed to be radically severed from any necessary inferences of actual identity; it was the supposed freedom from the obligation to prepare a face to meet the faces that you meet. Or at least it was the supposed contingent relation between face and subject. This assumption collapsed spectacularly like an all too rapidly cooled soufflé, however, when, in 2006, *New York Times* reporters, Michael Barbaro and Tom Zeller Jr. identified AOL subscriber no. 4417749 as 62 year old widow Thelma Arnold simply by examining search keywords.³

Instead of continuing in this vain in a no doubt vain attempt to deconstruct the original question, a deconstruction that would leave the question unanswered, the present dissertation limits itself to questioning certain imaginaries regarding the digital cultural heritage archive and the related questions of heritage, the subject and community. What is, then, a digital cultural heritage archive? This is the deceptively simple question taken as the point of departure for the present dissertation. The question, of course, contains numerous other questions: What is an archive? What is cultural heritage? How does one inherit culture? And what difference does it make if the archive is digital or not? The dissertation aims to explore the above questions, not to answer them individually, but to ask *concerning* the digital cultural heritage archive over five chapters, each considering the digital cultural heritage archive in specific instantiations and in a specific mode.

The first chapter describes the archive as *a kingdom of relations*, i.e. it proposes an analysis of the distributions inherent to archives in general and the cultural heritage archive – whether digital and analogue – in particular. "Distributions" is not meant to indicate relations between actors or entities endowed with various

¹ Foucault, *L'Archéologie Du Savoir*, 28.

² This famous statement was the caption of a cartoon by Peter Steiner published by *The New Yorker* on July 5, 1993. The joke has been repeated more recently with regard to the tracking of objects on the Internet of things: "On the Internet of Things, nobody knows you're a fridge."
<http://www.secmeme.com/2014/02/on-internet-of-things-nobody-knows.html>

³ Nicholas Carr tells the story better than I do; see Carr, *The Big Switch, Rewiring the World, from Edison to Google*, 185–186.

characteristics or attributes of power but, rather, the operations through which objects, actors and the rules governing their interactions constitute and are constituted by the archive. The chapter thus provides an initial cartography or diagram of the relations between the archival object, the archival order, the subject and the other. Although the chapter engages in a discussion with numerous theoretical positions, it takes Derrida as its main protagonist by examining the archive as a topo-nomology, a specific topos both governing and constituted by an archival law determining the different modes of inclusion of objects and access of subjects permitted by the archive.

The second chapter performs an *archaeological analysis* of the digital cultural heritage archive as *an object of formations*, i.e. as a structure created and sustained by a convergence of two separate formations: 1. Technological development as the material condition of possibility of the digital cultural heritage archive; 2. The discourse of cultural politics that provides the funding and the legitimising vocabulary of digital cultural heritage archives. As indicated by the archaeological mode, the chapter takes Foucault as its guide in examining the archive of the archive, i.e. the historical conditions of possibility for such a term as the digital cultural heritage archive to arise.

The third chapter attempts an analysis of the digital cultural heritage archive as *three-fold Thing*. Taking Heidegger's notion of the four-fold of the thing as its inspiration, the purpose of the chapter is to go beyond the archaeological description of historical formations as conditions of possibility and consider the current strategic investments, interventions and interruptions in the space opened by the digital. These new imaginaries are analysed as systems of Access, Evidence and Control – *access* as the newfound availability and emancipation of the digital object, *evidence* as the cognitive approach marshalled in response to the surge of data and *control* as the new ruling practice, whether academic, ethical or critical.

The fourth chapter takes Alexander Galloway's presentation of two different readings of the word *techne* as a point of departure for an exploration of larm.fm, the research infrastructure developed by the LARM project. Larm.fm is presented in accordance with the two readings of *techne* as, respectively, a medium with specific

formal characteristics and a dispositif, i.e. the bringing together of heterogeneous elements in an operation determining the character of each element.

The fifth chapter engages in a *political analysis* of the *community of memory* established by the cultural heritage functions of the archive. Cultural heritage, of course, has to do with both culture as artefacts and culture as the community congregating around such artefacts. The purpose of this final chapter is to investigate the ways in which the DCHA can be said to go beyond mere preservation and participate in the constitution of a community in the specific temporal conjunction of the past as a resource to drive the present into the future. This temporal conjunction is problematized with regard to the notion of the contemporary and ways in which such a time may become emancipatory.

1. A kingdom of relations

“The rulers are the mediators. They arbitrate and exercise dominion in the middle of a kingdom of relations. The mediator is the one who takes care, who directs or leads with attention to the entities at play.”

Galloway: "Love of the middle" p. 65

1.1 Opening the archive

1.1.1 The notion of the archive

In order to finally begin, neither at the beginning nor with the archive itself, but with the word “archive,” we could follow Derrida (why not?) in beginning with the *ἀρχή* of the word “archive” as commencement and commandment: the sequential and juridical orders of place.⁴ The archive is the putting *in its place* of an object, its introduction in a system of identification and classification: “Une science de l’archive doit inclure la théorie de cette institutionnalisation, c’est-à-dire à la fois de la loi qui commence par s’y inscrire et du droit qui l’autorise.”⁵

If we follow Derrida’s lead we must consider the founding law, the law governing the selection of what to include and the very establishment of the place of inclusion but also the law of access: who has access to the included objects and how is this access performed: “Nul pouvoir politique sans contrôle de l’archive, sinon de la mémoire. La démocratisation effective se mesure toujours à ce critère essentiel : la participation et l’accès à l’archive, à sa constitution et à son interprétation.”⁶

⁴ Derrida, *Mal d’archive, une impression freudienne*, 11.

⁵ Ibid. 15.

⁶ Ibid. 15 n.1.

This political aspect of archival control does not mean, however, as Ariella Azoulay would wrongly have it, that the walls of Derrida's archive are necessarily guarded by sentries (*ἀρχοντες*) "distancing those wishing to enter [...]."⁷ The sentries are most certainly there in Derrida, and they do prohibit uninhibited access, but they are as much an opening for engagement as they are a closure. Azoulay's concept of the well-guarded archive is closer to that of Wolfgang Ernst's bureaucratic archive meant for legal systemic feedback and not cultural reactivation: "Exactly as long as its records cannot be accessed by the general public for the use of cultural knowledge, a memory agency can be called archive."⁸ For Ernst, the distributed accessibility of the Internet is radically at odds with the nature of the archive and "[the computer] effaces the resistance to access characteristic of the traditional archive thus far [...]"⁹

Azoulay's view of Derrida's archive as fundamentally closed is based on the claim that he overlooks the new archival state of affairs brought about by digital media:

"“Archive fever” is not simply a problematic translation of a book title, Derrida's *Mal d'archive*. It is a real phenomenon that Derrida ignores. It is the result of numerous individual initiatives of creating new archives and depositories, and of claiming the right to re-arrange and use existing ones. Radical changes brought about by the new social (civil) media have turned these initiatives into a contagious and irreversible trend, whereby archival procedures, such as collecting, extracting and cataloguing, can be practiced through these new media in a way that contests the monopoly, let alone the authority or prerogatives, of official archival agents and institutions.”¹⁰

Contrary to Azoulay's claim, Derrida's questioning of the archive is, in fact, directly and explicitly engendered by the challenge to archival order and power

⁷ Azoulay, "Archive."

⁸ Ernst, "Cultural Archive versus Technomathematical Storage," 64.

⁹ Ernst, "Dis/continuities: Does the Archive Become Metaphorical in Multi-Media Space?" 108.

¹⁰ Azoulay, "Archive."

posed by new media and the consequent opening of not only the archive but also of new political futures. With his death in 2004, Derrida just missed the advent of the “social (civil) media” mentioned by Azoulay, but he nonetheless performs a relevant analysis with regard to the political and juridical consequences of the dominant new media of his time:¹¹ “[...] à un rythme inédit, de façon quasi instantanée, cette possibilité instrumentale de production, d’impression, de conservation et de destruction de l’archive ne peut pas ne pas s’accompagner de transformations juridiques et donc politiques.”¹²

Derrida, Azoulay and Ernst all agree, however, that something new is afoot: The archive is challenged by its new media foundation. Azoulay and Ernst both consider the new as a result of an epochal shift. For Azoulay, “radical changes [are] brought about by the new social (civil) media.” For Ernst, the era of archives has past and been replaced by media of transmission, ultimately characterised by the rise of the Internet.¹³ Derrida, finally, acknowledges the importance of the new media but insists on analysing their impact within the same horizon as traditional archives. Freud’s circumcision and E-mail are both traces made by specific technologies of impression within the same overarching archival framework and not insignia of two radically separate eras or spheres.

We shall return to the possibility of Azoulay’s notion of civil media in chapter 5, but for now, a fundamental difference between Derrida and Ernst can be established by their respective perceptions of the *word* “archive”. Leaning on Derrida once more, we could claim that Ernst operates with a *concept* of the archive, whereas Derrida operates with a *notion* of the archive.¹⁴ The *concept* is assured in its consistent relation to the object. It knows what an archive is and can measure any empirical

¹¹ In *Mal d’archive*, E-mail is the privileged example (pp. 34-35, but he also mentions numerous others: e.g. “des multimédia et du CDrom” (*Prière d’insérer*), “micro-informatisation, électronique, computerisation, etc.” (p. 32), “de cartes de crédit téléphonique MCI ou ATT, de magnétophones portables, d’ordinateurs, d’imprimantes, de Fax, de télévision, de téléconférences [...]” (p. 33) and even the “répondeur automatique” (p. 100).

¹² Derrida, *Mal d’archive, une impression freudienne*, 35.

¹³ “[...] aus der Ahnung heraus, daß die Epoche der Archive gerade zuende [sic!] geht [...] [A]m Ende wird die Einsicht stehen, daß wir uns von einer alteuropäischen Kultur, die das Speichern privilegiert, hin zu einer Medienkultur der permanenten Übertragung fortbewegen.” Ernst, *Das Rumoren der Archive*, 13–14. “[...] an die Stelle von Bibliothek und Archiv tritt ein Begriff der generalisierten Post namens Internet.” Ibid. 15.

¹⁴ “J’oppose ici la rigueur du *concept* au vague ou à l’imprécision ouverte, à la relative indétermination d’une telle *notion*.” Derrida, *Mal d’archive, une impression freudienne*, 51.

object by this standard. The concept is thus itself an archival law governing the in- or exclusion of archival objects with regard to an archive of archives. This clear measure is also what allows the establishment of an epochal shift: What the archive was, is no longer.

Although Ernst works with an epochal shift, the archive still operates as the steady horizon allowing such periodization. The archive may be no longer but it nonetheless remains the measure for its successor. The archive now mainly persists in the form of metaphor: “Der Begriff des Archivs ist dabei zu einer kulturtechnischen Universalmetapher avanciert, zu einer Begriffsmünze, die durch lauter Gebrauch bis zur Unkenntlichkeit abgegriffen ist.”¹⁵ “The media-archaeological task, then, is to re-think archival terminology in order to embrace a multi-media concept of the archive.”¹⁶ The archive only persists metaphorically and thus wrongfully and it is the task of media archaeology to develop a vocabulary adequate to the new situation at hand. So, although the archive is no longer, it remains the horizon that allows for the description of its historical conceptual obsolescence as well as the remedy for this obsolescence.¹⁷

The *notion* of the archive, on the other hand, is a vague impression that changes along with the technologies of impression. The notion of the archive is an impression of certain techniques and practices of impression. From the point of view of the *notion*, the *concept* remains inadequate¹⁸ and ignorant of its own inadequacy and there would, indeed, be no archivable concept of the archive.¹⁹ The *concept* remains inadequate because, according to the *notion*, the archive is not a particular mode of inclusion and a strictly legal mode of access. The concept will remain forever separated from its ideal referent. Ernst claims to know what the archive is and yet the archive haunts a time where it is no longer. According to the *notion*, the

¹⁵ Ernst, *Das Rumoren der Archive*, 7.

¹⁶ Ernst, “Dis/continuities: Does the Archive Become Metaphorical in Multi-Media Space?” 110.

¹⁷ Any presentation of multiple positions will risk simplification of the respective protagonists. Ernst does himself tend to mention the archive in contemporary contexts. At the *Rewriting social memory*-conference in Oslo (December 2014), e.g., he objected to David Berry’s notion of the *post-archival* on the grounds that archival functions within our digital media persist and remain poorly understood since we tend to focus our attention on interaction and thus the non-archival. So the archive is no longer what it was, but an aspect of it keeps haunting us, even within digital media. Media-archaeology is the attempt to lay that spectre in earth.

¹⁸ “[...] le concept d’archive ne peut pas ne pas garder en lui, comme tout concept, un poids d’impensé.” Derrida, *Mal d’archive, une impression freudienne*, 52.

¹⁹ Ibid. 60.

archive is not a specific order but the very fact that orders of inclusion and access exist.

Ernst's texts are riddled with categorical proclamations that this and that is not an archive and that the *word* "archive" mainly persists as inflation of the archival metaphor. Against the metaphor of the archive, he presents the memorial cybernetics of objectivised archives.²⁰ The Derridean notion would be hard pressed to make similar claims and distinctions. Instead it would ask: *How* is this an archive? How does the archival fever operate in this instance? The problem with using Ernst as the guide for examining our initial question – "What is a digital cultural heritage archive?" – is that the Ernstian answer par excellence would be: It isn't! For Ernst, the "digital cultural heritage archive" is a contradiction in terms.

For Derrida, on the other hand, if there is trace there is archive and he spent his career demonstrating that traces and archives abide by certain (grammato-)logics. In order to avoid beginning with a specific concept of the archive as a pre-established answer to the present questioning of what a digital cultural heritage archive might be, we shall begin, then, with this vague Derridean notion, not as a vague answer but as a means of questioning the operational logics of the archive.

1.1.2 Archive, library, canon

Out of this vague beginning we can distil three distinct aspects inherent to the word "archive": 1. Inclusion of the object, 2. The possibility of access to the object and 3. The quality of that access, e.g. whether or not access can be used for Ernst's "cultural knowledge" or Azoulay's "civil" engagement. We shall name these three aspects *consignation*, *interpretation* and *heritage*: *Consignation* as not just inclusion but a gathering together in a specific whole; *Interpretation* as the both legal and technical accessibility entailed in any hermeneutic engagement with the archive and, finally, *Heritage* as the ways in which the traces of the past play an active role in the cultural, scholarly, "civil" or we could even say *political* present.

²⁰ This is an explicit part of Ernst's media archaeological perspective "der die memoriale Kybernetik realer, institutionell und medial verdinglichter Archive (aller Virtualisierung zum Trotz) in den Blick gerät." Ernst, *Das Rumoren der Archive*, 8–9.

In Ernst's traditional bureaucratic archive of Prussian origin, consignment is based solely on provenance.²¹ Well-defined rules of belonging include objects into the archival whole in the correct chronological succession. Ernst's traditional archive is restricted to consignment of the trace or document and denies public interpretation and thus heritage. The archive is the "nicht-diskursiven Gedächtnis zum Feedback einer Verwaltung."²² Any divergence from the strict rules of provenance and any opening of the archive toward interpretation would transform the archive into a library, "Bibliothek," as a "diskursiv gefaßten Gedächtnis eines Kollektivs."²³ Ernst's archive is thus a matter of cybernetics and not of hermeneutics.²⁴

Aleida Assmann's distinction between canon and archive aligns nicely with this. *Canon* consists of the active acts and efforts of memory to keep a given past present in mind, and *archive* is the passive preservation of the past as past.²⁵ For Assmann as for Ernst, the archive is inert knowledge: "It is stored and potentially available, but it is not interpreted."²⁶ Contrary to the canon, which attributes a certain aura to its "cultural working memory," the archive destroys the aura of its "cultural reference memory." Assmann's canon is here equivalent to Ernst's discourse. Canonical aura is a matter of discursive valuation whereas the archive is an auraless matter of non-discursive reference.

Ernst and Assmann seem to agree that archival consignment is both the establishment of a concrete spatial entity and a principle of practice, both organised space and organising strategy. More than just the virtual backdrop for an actualised canon, Assmann's archive is also a very concrete "unhallowed bureaucratic space of a clean and neatly organized repository."²⁷ For Assmann, the difference between canon and archive is the one between activity and passivity, circulation and preservation, memory and storage. For Ernst, the closed and open spaces of the

²¹ "When closed data blocks migrate according to well-defined rules from production site to storage site and are stored in their original context, the archival principle of provenance (the Prussian archive tradition) prevails." Ernst, *Digital Memory and the Archive*, 85–86. The alternative to this Prussian archive is the French archive organised according to pertinence ("Pertinenz"), see Ernst, *Im Namen von Geschichte: Sammeln, Speichern, Er/Zählen: Infrastrukturelle Konfigurationen Des Deutschen Gedächtnisses*, 45.

²² Ernst, *Das Rumoren der Archive*, 18.

²³ Ibid.

²⁴ See Ibid. 29.

²⁵ Assmann, "Canon and Archive," 98.

²⁶ Ibid. 193.

²⁷ Ibid. 102.

archive and the library, respectively, are equally practical modes: “Das Mißverständnis liegt darin, daß Foucault Archiv schreibt und Bibliothek praktiziert.”²⁸ Foucault’s archive, i.e. the conditions of possibility for the epochal meaningfulness of a given statement²⁹ is, for Ernst, on the side of cultural knowledge and hence, on the side of library, not as space or institution but as practice.

For the present purpose, the fundamental difference between Assmann and Ernst is one of focus. Where Assmann focuses on the conditions of possibility for the establishment of canon and its role as support for a cultural identity, Ernst examines the materiality and technologies of culture as distinct from cultural or historical knowledge – cultural memory vs. technologies of inscription.³⁰ For Ernst, narrating the archive, transforming it from its non-discursive origins to the discursivity of the library, is already a betrayal of the cold media archaeological gaze which, like Friedrich Kittler, is more interested in how the real ceases not to inscribe itself in the substrate or is transcribed in the symbolic and the imaginary than in what these real inscriptions or symbolic or imaginary transcriptions may mean.³¹

So while for Ernst, the operation of the archive is distinct from the inclusion in the canon of cultural knowledge and can only serve such knowledge at the expense of its status as archive, Assmann’s archive keeps the archival object in a state of latency, it “stores materials in the intermediary state of “no longer” and “not yet.”³² This latency then has a dual function: It can serve as future reference for historical scholarship and it can serve as “an important tool for power.”³³ These functions are handled by the political and the historical archive, respectively, and are entirely compatible with Ernst’s framework. But “Elements of the canon can also recede into

²⁸ Ernst, *Das Rumoren der Archive*, 18–19.

²⁹ “L’archive, ce n’est pas ce qui sauvegarde, malgré sa fuite immédiate, l’événement de l’énoncé et conserve, pour les mémoires futures, son état civil d’évadé; c’est ce qui, à la racine même de l’énoncé-événement, et dans le corps où il se donne, définit d’entrée de jeu le système de son énonçabilité.” Foucault, *L’Archéologie Du Savoir*, 170.

³⁰ “An die Stelle historischen Verstehens tritt die Analyse von Materialitäten der Kultur und ihrer Techniken.” Ernst, *Das Rumoren der Archive*, 48.

³¹ Cf. e.g. Kittler, *Grammophon, Film, Typewriter*, 7–33. This cold anti-hermeneutic gaze has been criticised for taking a profoundly anti-political stance, e.g.: “The problem is that such a focus on machines, despite making a very refined point about the technical conditions of perception, does not effectively connect this to themes of political economy, or for instance subjectivity and subjectification. These are technologies that contribute to the archaeology of cognitive capitalism, but such links have not really been elaborated yet.” Parikka, *What Is Media Archaeology?* 133.

³² Assmann, “Canon and Archive,” 103.

³³ Ibid.

the archive, while elements of the archive may be recovered and reclaimed for the canon.”³⁴ Assmann embraces this dynamics between canon and archive, while Ernst seems hell-bent on resisting it.

1.1.3 Archival interpretation, spectrality and heritage

For Derrida, consignation is the archival gathering in a single ideal configuration.³⁵ The archive is not just a container of heterogeneous objects. Via the including procedures of identification and classification, the heterogeneous traces are bound together by their inscription in a system of differences, which bestows upon them a certain belonging³⁶ and a certain genealogical relation.³⁷ We could say that archival consignation establishes, “en rassemblant les signes,”³⁸ a certain domestic relation of kin and kind. And as assemblage of signs, archival configuration is, according to Derrida, inseparable from its hermeneutic aspect.

The act of consignation gathers heterogeneous elements in a whole and, in addition to the distribution of elements within such a whole or home, archival law – the *nomos* of the archival *topo-nomology*, its *oiko-nomia* – decides the permitted level of access. Derrida is aware of the difference between the traditional closed archive and public access, between Ernst’s concepts of archive and library, but considers them two different institutionalisations of the archive.

Access is, for Derrida as for Ernst and Assmann, a matter of interpretation. As already mentioned: “La démocratisation effective se mesure toujours à ce critère essentiel : la participation et l’accès à l’archive, à sa constitution et à son

³⁴ Ibid. 104.

³⁵ “La consignation tend à coordonner un seul corpus, en un système ou une synchronie dans laquelle tous les éléments articulent l’unité d’une configuration idéale.” Derrida, *Mal d’archive, une impression freudienne*, 14. Of course, this configuration is only seemingly ideal as already noted by the younger Derrida: “[L’écriture] crée le sens en le consignat, en le confiant à une gravure, à un sillon, à un relief, à une surface que l’on veut transmissible à l’infini.” Derrida, “Force et Signification,” 24. The inscription is supposed to be the eternally transmissible carrier of an ideal meaning, which is only produced by this inscription although never as entirely present. Cf. also the use of the verb “consigner” in Derrida, Jacques. *La Voix et Le Phénomène*, 26 and 90-91.

³⁶ See Derrida, *De la grammatologie*, 164.

³⁷ See Ibid. 182.

³⁸ Derrida, *Mal d’archive, une impression freudienne*, 14.

interprétation.”³⁹ Constitution and interpretation are aspects that are irreducible to one another but are nonetheless profoundly linked. No constitution, for Derrida, without the interpretations of kin and kind. “Le premier archiviste institue l’archive comme elle doit l’être, c’est-à-dire non seulement en exhibant le document, mais en *l’établissant*. Il le lit, l’interprète, le classe.”⁴⁰ Classification and interpretation establish the archival object as part in a whole. The particular object and that same object as part of an archive are not identical.

The effect of this difference is an aspect of archival interpretation, which Derrida examines via the Freudian notion of “deferred obedience” (“nachträglichen Gehorsams”). In his reading of Yosef Yerushalmi’s *Freud’s Moses, Judaism terminable and interminable*, he quotes at length:

“In writing *Moses and Monotheism* [Freud] belatedly obeys the father and fulfills his mandate by returning to the intensive study of the Bible, but at the same time he maintains his independence from his father through his interpretation. He rejects the “material truth” of the biblical narrative but rejoices in his discovery of its “historical truth.””⁴¹

Freud’s distinction between material and historical truth is crucial. We can say that “material truth” is the notion that the particular object in itself holds a specific authentic meaning, the intended meaning of origin. “Historical truth,” on the other hand, is linked to “un nouveau concept de la vérité”⁴² and thus also a new scholar as interpreter of that truth. The traditional scholar, the scholar of “material truth,” pretends to a constative and theoretical neutrality⁴³, an interpretation of an object unaffected by its new archival consignment. In this regard, we could say that Ernst is a traditional scholar of new “material truth”. He aspires to bringing the constative neutrality of the old archive to the actual archival operations behind the merely

³⁹ Ibid. 15 n.1.

⁴⁰ Ibid. 89.

⁴¹ Yerushalmi, *Freud’s Moses, Judaism Terminable and Interminable*, 78, quoted in French in Derrida, *Mal d’archive, une impression freudienne*, 96.

⁴² Ibid. 67.

⁴³ Ibid. 88.

metaphorical archival aspects of media's technological establishment of material truth and then leaves the haunting hermeneutics of historical truth to others.

For such are the effects of the archival consignation that requires new interpretation, a new concept of truth and a new scholar: “[L]a structure de l’archive est spectrale.”⁴⁴ Like the ghost of Hamlet’s father, the archive is a paradoxical incorporation. It is both present and absent, visible and invisible. Just as the concept of the archive is burdened by the weight of the unthought-of, the archive and all that it contains is haunted by an inadequacy: “l’inadéquation à soi”: “The body is with the King, but the King is not with the body. The King, is a thing.”⁴⁵

This inadequation is the difference between that which leaves the impression and the trace of that impression – between the event and its effects, between the *eidōs* of expression and its impression in writing. This material impression, this *hypomnema*, is the externalisation of memory, which is haunted by the absence of its origin. And this haunted externalisation is then internalised in the archival consignation. Like writing, the archive produces and incorporates its own lack; it is the presence of an absence, which results in the paradoxical spectral incorporation.

A patient reading would bring to light in Derrida’s early work the germinal structure of all of his later notions of the archive and spectrality. Such an engagement would, however, test the patience of the reader of the present argument and I will thus limit myself to referencing this earlier work to the extent that it furthers the argument at hand and then leave the genealogical demonstration to others. But for the present purpose, it is practical to consider consignation, the inclusion in the archive, in the light of *De la grammatologie*: “Penser l’unique dans le système, l’y inscrire, tel est le geste de l’archi-écriture, l’archi-violence [...]”⁴⁶.

The act of consignation, as described in *Mal d’archive*, is haunted by the exact same violence as in *De la grammatologie*. It is the inscription into the system of differences, of classification, “le système des appellations,”⁴⁷ where the ideal configuration is both created and dislocated by this classifying inclusion: “[...] la

⁴⁴ Ibid. 132.

⁴⁵ *Hamlet* as quoted in Derrida, *Spectres de Marx, l’État de la dette, le travail du deuil et la nouvelle Internationale*, 29.

⁴⁶ Derrida, *De la grammatologie*, 164.

⁴⁷ Ibid. 162.

relation généalogique et la classification sociale sont le point de suture de l'archi-écriture, condition de la langue (dite orale), et de l'écriture au sens commun."⁴⁸

This paradoxical incorporation of the *hypomnemata*, this structural spectrality of the archive is what renders both possible and necessary the aspect of heritage: "Un héritage ne se rassemble jamais, il n'est jamais un avec lui-même. Son unité présumée, s'il en est, ne peut consister qu'en *l'injonction de réaffirmer en choisissant*."⁴⁹ Only by rejecting any claim to material truth of the archive and engaging in a never-ending and ever-rejoicing (re-)affirmation of historical truth, can Derrida's new scholar inherit a future which necessarily takes the form of a differed obedience of the past.

We have already noted that Derrida and Ernst differ fundamentally in their notions of interpretation and thus inheritance with regard to the archive. This difference can be further pinpointed with regard to spectrality: "The media-archaeological exercise is to be aware of the fact that at each technologically given moment we are dealing with media not humans, that we are not speaking with the dead but dealing with dead media that operate."⁵⁰ They both focus on inscriptions but where Ernst investigates technological inscriptions and transcriptions of the real, Derrida analyses persistent re-inscriptions of the real as a consequence of the dynamics between consignation, interpretation and heritage, i.e. the non-coincidence of the trace as the opening up of a spectral past from the future (*à-venir*). Ernst examines the operations of the tracing of the trace, Derrida how the trace operates as a consequence of being traced.

1.1.4 The ghosts of their lusts and lives

The archived object speaks of a time that is no longer. Or, rather, the archive holds a multiplicity of voices speaking of a multiplicity of times that never existed in the form of a single consistent origin of the object. As a brief example we could take the first folio edition of Shakespeare's works kept at Oxford's Bodleian Library. This edition is

⁴⁸ Ibid. 182.

⁴⁹ Derrida, *Spectres de Marx, l'État de la dette, le travail du deuil et la nouvelle Internationale*, 40.

⁵⁰ Ernst, *Digital Memory and the Archive*, 183.

responsible for conveying much of that Shakespearean Rag — it's so elegant, so intelligent — to the present day canon.

In 2012, in spite of its being a less than rare edition, this particular copy was the object of a crowdfunding campaign called "Sprint for Shakespeare" seeking the volume's digitisation. The reason for this effort was not to preserve a rare and early source of Shakespeare's works but to preserve the traces impressed upon it: "Its unique marks of wear connect us with the tastes of early readers, and we can see how their hands have worn the pages of *Romeo and Juliet* almost to shreds, while leaving *King John* virtually pristine."⁵¹

Because of the paradoxical incorporation, "l'inadéquation à soi," the archive does not speak with a clear voice, it speaks with several. In addition to the multiple voices of Shakespeare — a collection otherwise published in four folio and several quarto editions, the spectral multiplicity of which is easily visible in the footnotes of the Arden Shakespeare editions — this particular instantiation of an oeuvre in multiple incorporations seems to whisper the desires that let *Romeo and Juliet* win the hearts of Oxford undergraduates by virtue of a certain amount of naughty bits.

Shakespeare himself as well as his oeuvre are spectral archives with multiple murmuring voices. Any engagement with the historical person or its written traces requires affirmations and choices of inheritance: "On n'hérite jamais sans s'expliquer avec du spectre et, dès lors, avec plus d'un spectre."⁵² And such an inheritance again influences the archive: "[...] l'interprétation de l'archive [...] ne peut éclairer, lire, interpréter, établir son objet, à savoir un héritage donné, qu'en s'y inscrivant, c'est-à-dire en l'ouvrant et en l'enrichissant assez pour y prendre place de plein droit. Il n'y a pas de méta-archive."⁵³

We shall return to the question of the meta-archive. For now, let it suffice to see the Derridean notion of heritage as an equivalent, although far from identical, to the concept of canon. They are both results of an engagement with the archival object but where Assmann's canon could be described as what we shall soon call *doxa*, i.e. what is generally accepted but without individual affirmation and choice, Derridean inheritance is the continued individual engagement with the *hypomnemata* in the

⁵¹ Bodleian Libraries, "The Bodleian's First Folio | Sprint for Shakespeare".

⁵² Derrida, *Spectres de Marx, l'État de la dette, le travail du deuil et la nouvelle Internationale*, 46.

⁵³ Derrida, *Mal d'archive, une impression freudienne*, 108.

form of an ever-necessary reaffirmation and choice. What better example of the re-inscription into the archive of archival interpretation, choice and affirmation than the worn pages of the Bodleian first folio copy of *Romeo and Juliet*? The interpretation and heritage of the readers enrich the archive and, in this case, the archive transcends the cover of the particular book on the Bodleian shelves. The inscriptions of desire leave a trace in the entire Shakespearian archive, if the entirety of such a thing may be imagined. They speak of a literary taste and of university life. The ghosts of the readers join the multiple ghosts of author and work in establishing and opening of the archival object and the archive itself.

1.2 Depicting the archive

“Ich glaube, daß dieser von mir nur ein einziges Mal gesehene, in meiner Vorstellung aber immer phantastischer und ungeheuerlicher gewordene Film den Titel *Toute la mémoire du monde* trug und daß er gemacht war von Alain Resnais. Nicht selten beschäftigte mich damals die Frage, ob ich mich in dem von einem leisen Summen, Rascheln und Räuspfern erfüllten Bibliothekssaal auf der Insel der Seligen oder, im Gegenteil, in einer Strafkolonie befand [...]”

Sebald: *Austerlitz* pp. 371-372.

1.2.1 Depiction as object of analysis

Now that we are getting to the beginning of a notion of the archive as commencement and law, as spectre and heritage, let us take the less abstract approach and look at a concrete entity which *could*, if we stick to the notion and abandon the concept, be called an archive. In his short film essay from 1956, *Toute la mémoire du monde*, commissioned by the French Ministry of Foreign Affairs and depicting the old *Bibliothèque Nationale de France* (BNF) in rue de Richelieu in Paris, Alain Resnais engaged in a both humorous and somewhat disturbing depiction of the archives of human memory.

Before we begin, however, we should take pause and consider such a film as *Toute la mémoire du monde* as object of analysis or, rather, as source material for an analysis of the BNF as archive. What weight does this particular filmic statement

have with regard to the present context? We cannot, of course, consider it an objective documentation of the BNF. The film is a trace or an impression of the BNF, but not of the BNF as such. Although it contains facts in the form of department names, content lists and descriptions of procedure, it cannot in and of itself be considered such a fact. The film is a statement with specific conditions of possibility, a historical context, individual and institutional intentions and aesthetic preferences and such diverse material conditions as funding, light and the imperative not to interrupt the daily workings of the depicted library operations. The film is in itself an archive in which its object is present but spectrally as a paradoxical incorporation.

The film was commissioned by the Ministry of Foreign Affairs and distributed by Pleiade Films, but was originally intended as a collaboration with RTF (Radiodiffusion-Télévision Française). The director of the department of periodicals, Jean Prinnet, described the original RTF project proposal in ambiguous tones:

“Nos impressions sont les suivantes : l’ensemble est intéressant, ingénieux, vivant.

Il y a des erreurs, des maladresses. Le ton est plutôt celui de la propagande, voire même à certains moments de la publicité, que celui qui conviendrait à un grand organisme français. [...] Un tel film aurait un intérêt touristique, mais il passerait sous silence ou laisserait à l’arrière-plan un aspect essentiel [...] Si l’on veut que ce film corresponde plus exactement à la réalité, il faut insister davantage sur certaines activités typiques.”⁵⁴

Even before filming, the film was thus caught in a strategic tangle between the national promotional concerns of the foreign ministry, the media concerns of the RTF and the BNF’s concerns regarding public perception and recognition of their work. As stated by initially presumed producer Pierre Neurisse: “Il est donc indispensable de mettre en œuvre le maximum de moyens pour obtenir le film de prestige international qu’un tel sujet mérite.”⁵⁵ And this was all before the intentions of Alain

⁵⁴ Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 120.

⁵⁵ Quoted in *Ibid.* 122.

Resnais came into play, since the director at this point was supposed to be Jacques Baratier.

Analysing the BNF through the eyes of Resnais and all that influenced them, thus falls in line with our general method: analysing the possible conceptualisations of archives, their related imaginaries. It will, for the time being, contribute to the opening of the field of discussion. Hopefully, this particular conceptualising statement will prove its worth as a first introduction to some very concrete library or archival techniques as well as to the political implications of such techniques.

1.2.2 From plethora to pleroma

In the final film, Resnais depicts the BNF in Paris as a fortress and a prison of words, allowing man the freedom to consult only selected treasures via an intricate archival system of storage and retrieval. But the initial image of the BNF is not one of ordered storage and hence facilitated retrieval. The point of departure is indiscernible form and prevalent darkness upon the face of the deep. The opening credits have as their background a focus shot of a camera in the midst of this subterranean chaos. Once the credits are over, the shot pans down and the camera turns to a microphone, thus initiating the voice over: “Parce que leur mémoire est courte, les hommes accumulent d’innombrables pense-bêtes.”⁵⁶

The camera then tracks and pans over piles and jumbles of books, other print material, paintings and a turned-over wheel-less bicycle. The microphone reappears and the voice-over continues: “Devant ces soutes pleines à craquer, les hommes prennent peur, peur d’être submergé par cette multitude d’écrits, par cet amas de mots. Alors pour garantir leur liberté, ils construisent des forteresses.”⁵⁷

⁵⁶ “Toute la Mémoire du Monde (scénario),” 65.

⁵⁷ Ibid.



The film thus begins by clearly stating its own technically constructed nature. The camera is presented quite ostensibly, it almost literally hangs on the words of the microphone – words without an embodied speaker that then seem to come from the recording device itself. Two spotlights connect different shots – the first by conspicuously blinding the camera, the second by taking over the light of the first spot in the first shot and letting it fade out in the second. This initial technical emphasis seems intent on presenting the film as a very particular view of the BNF, and not just as a normal walk through the straightforward yet interesting goings on at a national library. The focus is the technical relation between consignment, interpretation and heritage and the film acknowledges as much emphatically.

Immediately after the mention of fortresses, the film cuts to an external shot of the towered roof of the BNF. Several external shots follow, ending in a handheld walk around one of the domes.



The walking camera then enters the building, walking along pathways, following a library employee walking on a pathway above and below.



This beginning establishes both a vertical and a horizontal axis. The vertical axis traces the tension between the formless deep and the organised summits of institutional power. And the horizontal axis traces the internal distributions between input, storage and output: ingest, index and interested inquiry.

The identity of the chaotic storage of the initial sequence is never made explicit, although the stone walls and the disorderly assemblage of goods indicate a cellar of some sort. In lack of identification, the viewer mainly gets an impression of abundance and neglect. The idea for this initial chaos followed a visit by Resnais and the script writer, Remo Forlani,⁵⁸ to the cellars of the BNF and was expressed in the second version of the film's synopsis, sent to the BNF officials for comments and approval:

⁵⁸ Forlani himself claims that he had very little to do with the writing of *Toute la mémoire du monde*. “[...] je ne suis pour rien dans ce film. Pour rien. [...] le commentaire signé Forlani sera largement réécrit par un autre chic type. Chris Marker.” Forlani, *Toujours vif et joyeux !*, 289–290. Other versions of the story only ascribe the film's final paragraph to Marker (with Jean Cayrol) Liandrat-Guigues and Leutrat, *Alain Resnais, liaisons secrètes, accords vagabonds*, 67, but Resnais himself claimed that only the last phrase was written by Marker and that it was Marker alone: “Alles war von Forlani, bis auf den letzten Satz, der ist von Chris Marker. Deshalb wohl steht er auch im Abspann als »Magic Marker«.” Kämper & Tode, *Chris Marker : Filmessayist*, 212. Marker is only credited under “Avec la collaboration de” as “Chris and Magic Marker.”

“Cette réserve fantastique, cette cave où sont accumulés des objets qui semblent oubliés pour toujours, c’est le dernier sous-sol de la Bibliothèque Nationale : nous sommes donc ici en présence de trésors et ces trésors nous appartiennent. Ces papiers jaunis, ces trésors abîmés ne sont pas perdus. Ils sont là en attente. Le moment va venir où ils seront remis en circulation, où ils seront de nouveau utiles. Mais à quoi pourront-ils bien servir, quel sens y aura-t-il à les restaurer, à les tirer de l’oubli ? [...] Ces objets, ces signes, notre mémoire ne les avait pas catalogués, répertoriés – c’est pourquoi « ils ne nous disent rien ».”⁵⁹

It is difficult to distinguish, here, between genuine excitement on behalf of Resnais and Forlani and strategic flattery of the institution. The claim that in the cellars of the BNF one is necessarily in the presence of treasures seems hyperbolic. But on the other hand, it is easy to imagine the excited encounter with this plethora of miscellanea and the hopes for what the circulation of such treasures may bring. But we should also notice that the silence of the objects, the fact that “ils ne nous disent rien,” springs from the lack of consignation. That which is not yet in the archive is unable to express anything but a spectral murmur.

There is thus a clear sense of both latent potential and need in this description. Even these tattered old books and stacks can once again become useful, but only if the mnemonic failures caused by incomplete indexing and cataloguing are vanquished. And the need for vanquishing this incompleteness is total: “Pour progresser, l’humanité a pourtant besoin de tout connaître. L’humanité a donc besoin d’une mémoire totale et tenue à jour.”⁶⁰ The BNF is clearly haunted by the Derridean archive fever. It desires totality but the less than total index causes the haunting of the cellars. These objects have no voice because they have no archival place, but their very proximity, the very fact that they constitute an accumulation calls for proper consignation. There is an injunction but still no voice. Only when properly

⁵⁹ Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 127–128.

⁶⁰ Ibid. 128.

catalogued will the spectres of the vaults give the injunction voice in a proper imperative of deferred obedience or heritage.

The total memory needed for the progress of humanity is termed an “exemplary memory” in the final film:

“Mémoire exemplaire, la Nationale emmagasine tout ce qui s’imprime en France. [...] Dépareillée, une collection perd sa valeur. C’est pourquoi on s’interdit ici la moindre faute d’inattention. Si un numéro manque il sera réclamé... Même si certains de ces imprimés ne devraient être consulté qu’une seule fois, il faut les conserver. C’est la règle du jeu.”⁶¹

The BNF is ruled by the demand for fullness. It requires “tout ce qui s’imprime en France” and “[t]ous les signes que la main de l’homme a tracés [...]”⁶² We could say that the library as an incomplete collection requesting completion, the filling of every and any lack, constitutes a state of *plethora* aspiring to a state of *pleroma*. The overabundance of material held at the library is nothing if it is not everything. We shall return to the notion of *pleroma*, but for now we should simply define *pleroma* as the fullness of the archive, the point where the spectral incorporation ceases to be paradoxical and the archive fever rages no more. Or to stay with the theological aspects of the term: Pleroma is the moment where the *oikonomia* of the archive is fulfilled and ceases to operate.

The aspiration of *pleroma* is the foundation of what has elsewhere been called *the archival promise*⁶³, which Resnais formulates as follows:

“Ici se préfigure un temps où toutes les énigmes seront résolues, un temps où ces univers et quelques autres nous livreront leur clé. Et cela simplement parce que ces lecteurs assis devant leur morceau de

⁶¹ “Toute la mémoire du monde (scénario),” 69.

⁶² Ibid. 66.

⁶³ “Also key to the newness of the digital is a conflation of memory and storage that both underlies and undermines digital media’s archival promise.” Chun, “The Enduring Ephemeral, or the Future Is a Memory,” 148. “Memory allegedly makes digital media an ever-increasing archive in which no piece of data is lost. This always-thereness of new media is also what links it to the future as future simple, as what will be, as predictable progress. By saving the past, it was supposed to make knowing the future easier.” Ibid. 154.

mémoire universelle auront mis bout à bout les fragments d'un même secret qui a peut-être un très beau nom, qui s'appelle le bonheur.”⁶⁴

The archive promises a future state of full knowledge where the accumulated consultations of universality finally constitute a reign of happiness on earth.

The shift from the destabilising effect of the “désordre initial”⁶⁵ to the domes of the institution and then through the labyrinthine pathways of the BNF takes us, in effect, from the murmurs of unstructured plethora through the process of consignation (indexing and cataloguing) towards the ideal configuration of the archival whole as pleroma under the name of “mémoire totale”, “mémoire exemplaire” or “mémoire universelle.” The totality of interpretation and heritage of this complete memory is called happiness. And in both the first and the second synopses, the aspirations of the archival promise seem to go beyond the one library, the BNF, and hold the potential for an inclusion of all cultural institutions in the ideal pleroma: “On peut penser qu'un jour – tous les hauts lieux de la Culture seront reliés les uns aux autres.”⁶⁶

1.2.3 A plethora of ambiguities

The archival promise is supposedly kept or fulfilled by a certain number of technical procedures, by the technical operations of archival *oikonomia*. The main part of the film depicts the library's techniques of consignation. Of the library's four sources – donations, purchases, exchanges and legal deposit – the last one is of primary importance.⁶⁷ In the first synopsis for the film, legal deposit is presented as a solution

⁶⁴ “Toute la mémoire du monde (scénario),” 72.

⁶⁵ Longtime BNF administrator (1930-1940 and 1945-1964) Julien Cain responded to the first second synopsis by asking that the location of the “désordre initial” not be identified, see Carou, “Toute la mémoire du monde, entre la commande et l'utopie,” 129.

⁶⁶ Ibid. 125. In the margins of this statement, Julien Cain had the good sense and humor to scribble: “obscur - ou banal ?” Ibid. 129.

⁶⁷ It should be noted here, that according to Ernst, legal deposit libraries constitute a sort of middle ground between the library and the archive, in that many depository libraries receive two copies of each item: “one copy for strict conservation (not to be used for current reading, the archival task); the other for functional use in the reading room (the library task). The institution of the *dépôt légal* (once introduced by a French king as an instrument of censorship) in fact smuggles an element of the archive into the library.” Ernst, “Cultural Archive versus Technomathematical Storage,” 65. It should

to the problem of choosing what deserves preservation: “dans l’impossibilité de définir ce qui est le bon grain et ce qui est l’ivraie, il leur fallait tout accumuler.”⁶⁸

The legal aspect of this source, its legal authority, is expressed in the film by references to law and the prison: Conservation is “la règle du jeu”⁶⁹, and the disciplines devoted to establishing the great catalogue “se sont muées en lois”⁷⁰. As already mentioned, the library is constructed as a fortress, certain preserved items are kept separate by “un rempart”⁷¹ and the library is explicitly referred to as a prison: “[C]’est à la Bibliothèque Nationale que les mots sont emprisonnés.”⁷²

This imprisonment within the fortress of the library is performed via indexing and cataloguing: “Puis il est inscrit sur le registre des entrées. Sa fiche signalétique est établie sommairement. Après quoi, prisonnier, il attend que vienne le jour du classement.”⁷³ Once indexed and catalogued, the book is stamped with a unique identifier forever connecting it to a specific place within the library walls: “Pour indiquer qu’un volume est entré à la Bibliothèque Nationale, que plus jamais il n’en pourra sortir, on l’estampille.”⁷⁴

Imprisonment by catalogue is necessarily accompanied by observing the laws of preservation. Keeping the book in its place is more than a question of not losing it. It is also the matter of not allowing the book to fade away in material degradation: “Ces richesses, il nous faut les préserver [...] Des machineries pareilles à celles du capitaine Nemo maintiennent une température favorable au papier, au cuir, au parchemin. [...] De jour et de nuit, les contrôles se succèdent. Coûte que coûte, il faut faire échec à la destruction.”⁷⁵ This somewhat ironic tone, struck by the reference to Jules Verne, culminates when an ornamented leather binding receives a shot from a syringe with the dry voice-over comment: “On vaccine les livres.”⁷⁶ The

also be noted that legal deposit is considered an early adoption of a conscious cultural politics which anticipates a political recognition of cultural heritage: “Une autre initiative s’inscrit d’avanatage dans la préfiguration d’un patrimoine collectif, c’est la création du dépôt des imprimés, le « dépôt légal ».” Chastel and Babelon, *La notion de patrimoine*, 35.

⁶⁸ Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 126.

⁶⁹ “Toute la mémoire du monde (scénario),” 69

⁷⁰ Ibid. 66.

⁷¹ Ibid. 72.

⁷² Ibid. 66.

⁷³ Ibid. 69.

⁷⁴ Ibid. 69.

⁷⁵ Ibid. 71.

⁷⁶ Ibid. 71.

film doesn't quite believe in this procedural production of the book as patient, but the institution does, this specific archive installs and requires such a belief, such an imaginary of internment.

The reference to Captain Nemo is yet another aspect of the film's strategies of alienation, of making the BNF *other* – prison, fortress, hospital, the Nautilus. Similarly, noting that everything must be collected because we never know “ce qui demain témoignera le plus sûrement de notre civilisation,”⁷⁷ the camera rests demonstratively on an edition of *Mandrake le roi de la magie: Guerre dans le monde à X dimensions* published in France in 1949 as the 112th issue of *Aventures et Mystères*. Surrounded by other French translations of American comics, such a focus shot establishes a contrast with the immediately preceding comments about the rediscovered first published piece by Rimbaud. This contrast only contributes to the film's efforts to “convey the uncanny atmosphere within a public institution.”⁷⁸

This contrast invites the question whether the comics were part of the library or merely added to the film by Resnais in order to achieve this uncanny mood, and Liandrat-Guigues and Leutrat confirm that they were, indeed, from Resnais's own collection.⁷⁹ The viewer, of course, does not know this, but the presentation of the comics in piles seems quite incongruous with the otherwise neatly ordered shelves of the catalogued stores. The piled comics seem to recall the unordered plethora in the cellars calling for consignment. The comics enable the personal addition of “X” dimensions to universal memory, the inclusion of absence into the presence of the archive. The irony and alienation established by the *Mandrake* and its *semblables*, is thus not a pejorative depiction of comic books but, rather, the private comic books as a criticism of the high cultural penchants of the archival universality as well as the exclusion of personal inclusion from institutional consignment.

Everything must be collected, imprisoned and preserved. But the ever-growing collection breaks down the walls of the prison and keeps the catalogue in an

⁷⁷ “Toute la mémoire du monde (scénario),” 69.

⁷⁸ Ungar, “Scenes in a Library,” 68. A further aspect of the shot is that comics were not recognised as a specific material subcategory. They were thus stored in either the “Département des Estampes et de la photographie”, the “Département Littérature et art”, the “Département des périodiques” or simply under historical documents in the print section. The question of what will be the most important witness of our time is posed with regard to something which tended to be quite literally lost in indexation. (<https://phylacterium.wordpress.com/2010/09/29/la-bibliotheque-nationale-de-france-et-la-bande-dessinee/#f1>).

⁷⁹ Liandrat-Guigues & Leutrat, *Alain Resnais, liaisons secrètes, accords vagabonds*, 259 n. 84.

eternal state of construction: “Bientôt, cet antique grenier disparaîtra. En effet, depuis vingt ans, les métamorphoses successives tendent à faire de la Nationale la bibliothèque la plus moderne du monde.⁸⁰” And “Avec le temps est né le grand catalogue des imprimés dont le propre est d’être toujours en chantier.”⁸¹

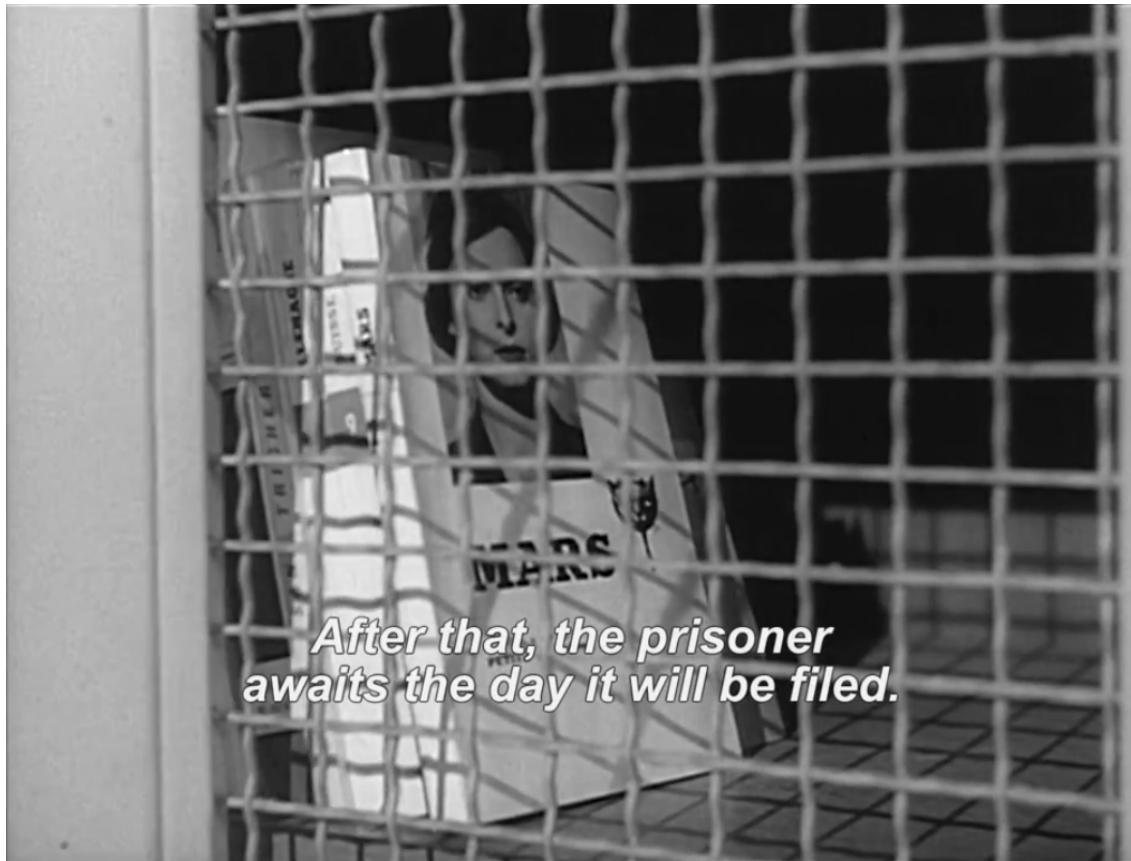
While the walls of the fortress or prison are bursting in the voice-over, the closed and well-guarded structures of the prison remain a clear aesthetic reference in the internal shots of the metallic architecture, the narrow metallic pathways and the slow, measured movement of the library personnel. The first synopsis clearly notes the reference to the Sing Sing Correctional Facility in Ossining, New York: “Nous voici maintenant dans ces couloirs, dans ces réserves dont l’architecture métallique fait penser aux « Sing Sing » des films de hors-la-loi.”⁸² The book, *Mars*, which is the main character in the film’s illustration of the consignment of input via legal deposit to the final placement in the designated spot on the shelf, literally awaits this final journey behind bars.⁸³

⁸⁰ “Toute la mémoire du monde (scénario),” 71.

⁸¹ Ibid. 66.

⁸² Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 126.

⁸³ The idea of following a book through the library process was described already in Prinnet’s comments to the first RTF project proposal: “Si l’on veut que ce film corresponde plus exactement à la réalité, il faut insister davantage sur certaines activités typiques. Par exemple : suivre un livre, une estampe, une médaille, un manuscrit depuis son entrée (Dépôt légal, don, acquisition en vente publique ou autrement, etc...), jusqu’au moment où il est entre les mains d’un lecteur ou présenté dans une exposition en France ou à l’étranger.” Ibid. 120. Resnais chose to adopt the idea but to use a fake book in its execution.



*After that, the prisoner
awaits the day it will be filed.*

Incidentally, the specific book behind bars is yet another part of the self-proclaimed technical construction of the film as well as the personalised intervention in institutional consignment by the fact that it is not an actually published book. Like *Mandrake*, it is a highly personal addition to the institutional collection. The cover claims it to be part of the very real series of travel guides, *Petite Planète*, founded and edited by Chris Marker and published at Editions du Seuil (1954-1958). The actual titles of this series include *Autriche* (1954), *Suède* (1954), *Italie* (1954) etc., whereas the fictional edition in *Toute la mémoire du monde* is entitled *Mars*.

Although many of the books in the *Petite Planète* series were written by acquaintances of Marker – e.g. *Allemagne* (1955) was written by Joseph Rovin who is also visible in the reading room at the end of the film⁸⁴ – this fictional book was supposedly written by Jeannine Garane, who assisted Marker on *Olympia 52* (1952). Even the book's table of contents is a story of its own when it comes to inside

⁸⁴ His name appears on the list of extras as presented in Liandrat-Guigues and Leutrat, *Alain Resnais, liaisons secrètes, accords vagabonds*, 284.

jokes.⁸⁵ The main example of a book entering the eternal and universal memory of the nation is, thus, a tangle of pranks indicating another world, a planet beyond the “small planet” on which we live, and, again, a stark contrast to the sombre seriousness of the library and much of the music.⁸⁶

By hand or by trolley, the guards bring books between input, storage and output. And not only do they patrol the library stores; they also survey the visitors in the reading room. There are two guards surveying or patrolling the reading room. One is visible and walking the aisles looking left and right, the other is hidden behind two bookcases.



⁸⁵ See Ungar, “Scenes in a Library,” 67. Apart from a number of references to Agnès Varda, we see a chapter called “De Wells à Domenach.” We shall return to H.G. Wells in chapter 2, but we should note that Resnais had him in mind when he made the film. Domenach is presumably a reference to French writer Jean-Marie Domenach who in addition to being part of the intellectual milieu of Paris at the time would, incidentally, go on write the 25th volume of the *Petite Planète* series: *Yugoslavie* (1960).

⁸⁶ The most notable and noted change in the musical mood of the film is constituted by the two bar reference to “Singin’ in the rain” when the legal deposit deliveries are carried into the library from the street. See *Ibid.* 66.



This prison theme in both text and image thus contrasts with the archival promise expressed in the final word “bonheur” and this contrast nourishes the ambiguous and at times ironic undertones of Resnais’s film.⁸⁷ This fundamental ambiguity is succinctly expressed in W.G. Sebald’s novel *Austerlitz* where the eponymous main character questions his own experiences at the BNF after having seen *Toute la mémoire du monde*: “Nicht selten beschäftigte mich damals die Frage, ob ich mich in dem von einem leisen Summen, Rascheln und Räuspern erfüllten Bibliothekssaal auf der Insel der Seligen oder, im Gegenteil, in einer Strafkolonie befand [...]”⁸⁸

In Derridean parlance, this tension between the penal colony and the Islands of the Blest, between haunting plethora and fulfilled pleroma, the impossible archival promise which nonetheless remains operative in our interactions with it, is called *archive fever* (*Mal d’archive*). The rule of the BNF archive, the law of the house, the archival *oikonomia*, demands completeness of both past and future via preservation

⁸⁷ An irony which Resnais apparently denied, see Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 138.

⁸⁸ Sebald, *Austerlitz*, 372.

and accumulation. Preservation via environment control and inoculation and the accumulation via legal deposit promise fullness of the archive, even though these exact operations assure that the archive remains open. “On ne pourra jamais l’objectiver sans reste. L’archiviste produit de l’archive, et c’est pourquoi l’archive ne se ferme jamais. Elle s’ouvre depuis l’avenir.”⁸⁹ The past is never fully present, the present is always already fading into the past, and the future is always yet to come. The fever burns because the very efforts to fulfil the desire for fullness undermine *pleroma*: “[Mal d’archive] [c]’est bruler d’une passion. C’est n’avoir de cesse, interminablement, de chercher l’archive là où elle se dérobe.”⁹⁰

Derrida engaged with what I have here called the archival promise of an end to haunting *plethora* in fulfilled *pleroma* via the problem of infinity: “Une mémoire sans limite ne serait d’ailleurs pas une mémoire mais l’infinité d’une présence à soi.”⁹¹ And “Seul l’infini positif peut lever la trace, la « sublimer » [...]”⁹² Such self-presence of infinite memory would be *anamnesis* without *hypomnesis*,⁹³ matter’s immediate rendering of the ideal, direct access to the meaning of the archive. The problem inherent to the archival promise of what Resnais’s film calls “bonheur” is that *pleroma* fulfilled would mean the end of heritage: “L’infini n’hérite pas, il ne s’hérite pas. L’injonction elle-même (choisis et décide dans ce dont tu hérites, dit-elle toujours) ne peut être une qu’en se divisant, déchirant, différant elle-même en parlant à la fois plusieurs fois – et de plusieurs voix.”⁹⁴ This is the archival paradox, the *mal d’archive*: It installs the desire for *pleroma*, Resnais’s happiness of universal memory, but archival *pleroma* means the end of the archive, inheriting everything means inheriting nothing.

1.2.4 The barrier

⁸⁹ Derrida, *Mal d’archive, une impression freudienne*, 109.

⁹⁰ *Ibid.* 142.

⁹¹ Derrida, “La pharmacie de Platon,” 124.

⁹² Derrida, *De la grammatologie*, 104.

⁹³ Derrida, *Mal d’archive, une impression freudienne*, 144.

⁹⁴ Derrida, *Spectres de Marx, l’État de la dette, le travail du deuil et la nouvelle Internationale*, 40.

Toute la mémoire du monde proposes a vertical axis from formless abyss to well-structured “grenier”. The horizontal axis holds the practical operations of consignation as well as the possibility of interpretation: the operations of archival *oikonomia* should produce the ideal unity as pleromatic *opus*, but the horizontal wanderings of the structure operated by the library employees, the prison guards, take in so much material that the “grenier” explodes. The vertical axis between plethora and pleroma in the ideal unity of consignation requires expansion to cope with the level of horizontal ingest: “Pour éviter l’éclatement, perpétuellement elle s’enferme plus avant dans le sol, elle s’élève plus haut dans le ciel.”⁹⁵

But in addition to the work, *opera*, of consignation in service of the ideal *opus* of *pleroma*, the horizontal axis also articulates the encounter between consignation and heritage. The final shot of the film clearly demonstrates this barrier within the horizontal axis, separating the operations of consignation and those of heritage.



⁹⁵ “*Toute la mémoire du monde* (scénario),” 66.

One side of the barrier holds the supposedly complete storage of the written trace of human existence, leaving human memory free to engage in productive or creative manipulations of the stored content. The other side opens onto a completely different existence:

“Et voici le livre en marche vers une ligne idéale,⁹⁶ un équateur plus décisif pour son existence que la traversée du miroir. Ce n’est plus le même livre. À l’instant il faisait partie d’une mémoire universelle, abstraite, indifférente, où tous les livres étaient égaux entre eux, où ils bénéficiaient ensemble d’une attention aussi tendrement glacée que celle de Dieu pour les hommes. Et le voici choisi, préféré, indispensable à son lecteur, arraché à sa galaxie⁹⁷ pour nourrir ses faux insectes croqueur de papier irrémédiablement différents des insectes en ceci qu’ils sont attelé chacun à une besogne distincte.”⁹⁸

Within the realm of consignment, the book on the shelf is but a dormant part of universality. It is abstract potentiality, or, according to the *concept*, it is the archive that may become canon, the archival aspect of the library. The primary signifying elements of content have been abstracted in the index and the catalogue and replaced by ID and location. From the viewpoint of this abstraction, one element is exactly equal to the next and the God-like view of the catalogue cares equally little about them all because all that matters is the administration of creation, the *nomos* of its distribution within the archival *oikos*. The actualisation of the book in the reading room, on the other hand, establishes a completely new and singular existence within the realms of interpretation and heritage.

The book leaves its designated place in storage only when replaced by a spectral supplement, “une fiche prend sa place. C’est son fantôme.”⁹⁹ Maybe this

⁹⁶ This ideal line separates the Labrouste reading room and “Le magasin central” which will become accessible to the public for the first time in 2016: “Inaccessible au public jusqu’ici, le magasin central accueillera, à partir de 2016, dans la nouvelle configuration de la bibliothèque, les collections en libre accès de l’INHA.” (<http://blog.bibliotheque.inha.fr/fr/posts/un-ecrin-pour-les-livres-la-salle-labrouste.html>)

⁹⁷ The published script reads “arraché à sa galerie” but the actual voice-over says “galaxie”.

⁹⁸ “Toute la mémoire du monde (scénario),” 72.

⁹⁹ Ibid.

supplement constitutes the truth of the library book as archival object, since the small piece of paper reduces the book to its abstract coordinates in the catalogue. The difference between the book in its ideal, consigned place, and the book in its singular relation to interpretation constitutes the book as paradoxical incorporation: “Ce n’est plus le même livre.” Just as the archivist produces the archive, thus forever keeping it open, the interpreter constitutes the historical truth of the book by belatedly inscribing it, as nourishment or heritage, in the body of the page-eating reader-insect.

This brings us back to the aforementioned last words of the film: “Et cela simplement parce que ces lecteurs assis devant leur morceau de mémoire universelle auront mis bout à bout les fragments d’un même secret qui a peut-être un très beau nom, qui s’appelle le bonheur.” What does this happiness mean within the ambiguous technical construction of not only the film but also the archive? Sebald’s Austerlitz was not the only one to notice the ambiguities of the film. According to Jacques Doniol-Valcroze, these ambiguities are the reason the film was booed by the Paris audience as it was shown before the premiere of *Pot-Bouille* (1957). In an interview, Resnais mentioned his desire to express the feeling of liberty installed by the library as uncensored communication of thought, but Doniol-Valcroze had the exact opposite impression:

“Ici l’on s’interroge. Resnais cache-t-il son jeu ou a-t-il involontairement réalisé un film qui exprime à peu près le contraire de cette dernière citation? En effet, le suivant dans les couloirs de la Nationale, ce n’est pas une impression de grisante liberté qu’on éprouve mais d’emprisonnement étouffant.”¹⁰⁰

Even the happy actualisation of the book in the reading room seems ambiguous. Finally arrived, the ideal galaxy is broken and the book is consumed by insects bound by desire and surveyed by guards. The utopia expressed in the title, *Toute la mémoire du monde*, is impossible and quite possibly dangerous. Perhaps the ambiguities should be conceived according to a different reading, presented by Youssef Ishaghpour: “*Toute la mémoire du monde* n’est pas un documentaire sur la

¹⁰⁰ Doniol-Valcroze, “La Prisonnière Lucia,” 59.

Bibliothèque nationale, mais l'autoportrait d'Alain Resnais [...]"¹⁰¹ According to such a reading, the film – with the many inside jokes, the presence of his own comic collection and so many friends – becomes a personal act of consignment, Resnais's own archive, based on an interpretation and affirmative heritage of the included elements. In that case, the mentioned happiness of putting fragments together becomes the only happiness possible within the library as a hospital for the treatment of archive fever.

¹⁰¹ Ishaghpour, *D'une Image à L'autre. La Représentation Dans Le Cinéma D'aujourd'hui*, 187.

1.3 Automating the archive

1.3.1 Digitalised libraries

According to the *concept* of the archive, Resnais's barrier between library stores and reading room would delineate the difference between archive and library, archive and canon. As mentioned, Ernst is willing to consider the library's legal deposit an archive, provided the public had no way of gaining access to interpret its content and transform that interpretation into cultural knowledge. Similarly, for Assmann the archive is but reference memory, whereas canon is a matter of working memory. For her, presumably, the reading room would be but one of the many ways in which reference memory could be brought into the circulation of the canon, although the book or its content would need to be consumed by more than one desiring insect for canon to arise.

In the reading room of *Toute la mémoire du monde*, the *hypomnemata* traverse the ideal line between storage techniques and human memory. One is reminded of Friedrich Kittler who chose the RAM/ROM distinction over Mnemosyne as a conceptual instrument for describing the "historischen Stadien der Gedächtnisorganisation."¹⁰² He would no doubt have seen in the related but strictly separate *topoi* of the library stores and the reading room a manifestation of the computer's distinction between storage spaces as "mechanisch betriebene elektromagnetische Gedächtnisse" and working memory as the *topos* of "Adreßarithmetik," where data computation is done.¹⁰³ Interestingly, the parallel of the computer has become anything but metaphoric in the on-going digitalisation of the library which began in the early 1990's.¹⁰⁴

¹⁰² Kittler, "Memories Are Made of You," 187.

¹⁰³ Ibid. 190.

¹⁰⁴ Here and in the following, I will distinguish between "digitalisation" and "digitisation" according to the *OED*: Digitalisation: "2. The adoption or increase in use of digital or computer technology by an organization, industry, country, etc." Digitisation: "1. To convert (analogue data, esp. in later use images, video, and text) to digital form, typically for storage or processing by a computer; to represent in digital form."

Although its electric circuitry had yet to become digital, Resnais's BNF was already to a wide extent a matter of an arithmetic of addresses. The book entered storage via identification, indexation and inclusion in the catalogue without which "cette forteresse ne serait qu'un pays sans route."¹⁰⁵ The catalogue was "le cerveau de la Bibliothèque Nationale"¹⁰⁶ remembering the storage location of each item, "le point précis qui lui est imparti [...]"¹⁰⁷ Calls for retrieval from storage to memory resounded throughout the labyrinthine pathways, "des appels sont lancés. Sans cesse des messages fusent à travers le labyrinthe de ces magasins."¹⁰⁸ Each item passed by the ideal barrier and arrived at its precise destination to be consumed by number or information-crunching insects: "Un dernier contrôle, une dernière vérification de l'identité du livre et de son bulletin. [...] Et le voici choisi, préféré, indispensable à son lecteur, arraché à sa galaxie [...]"¹⁰⁹ The distributions between storage location, catalogue, transmission and target address are clear.

Resnais didn't hesitate to prophesy a different future, however: "Bientôt cet antique grenier disparaîtra. En effet, depuis vingt ans, des métamorphoses successives tendent à faire de la Nationale la Bibliothèque la plus moderne du monde."¹¹⁰ But he was hardly able to grasp the extent of the future metamorphoses, neither of the BNF nor of libraries in general. In the case of the BNF, the antique attic has been replaced by the modern stores of the new main site at Quai François Mauriac, and as for the technical operations of this current BNF, the glum march of Resnais's library officials has been digitalised and automatized.

The new François Mitterrand library site consists of four 20 story towers and 6 underground levels, comprising a grand total of 365.178m² of floor space. At the tempo depicted by Resnais, book transmission by hand-pushed carriage from storage to memory in the form of the ten available reading rooms could take quite a while. In order to bring the transmission latency from storage to barrier down to an average of 20 minutes, the library installed a so-called TAD-system (Transport Automatique de Documents). The TAD basically consists of 7800 meters of rails

¹⁰⁵ "Toute la mémoire du monde (scénario)," 66.

¹⁰⁶ Ibid. 71.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid. 72.

¹⁰⁹ Ibid.

¹¹⁰ Ibid. 71.

carrying 330 baskets, various readers and writers of electronic labels and 1 centralised information system keeping track of the identity and itinerary of the specific tome in the basket.

The metamorphosis of the BNF has been a question of digitalised catalogue and robotised transportation, but any interaction with the books at their shelved location and their crossing of the barrier to the reading room has remained manual. Many libraries have gone further, however. In 1991, The Oviatt Library at the California State University, Northridge (CSUN) inaugurated the first library Automated Storage and Retrieval System (ASRS). Just as the stores of Resnais's BNF were fit to burst, the Oviatt library was experiencing insufficient room for the average acquisition rate of 30,000 volumes per year, and the costs of constructing new library stores in the traditional form proved financially untenable.

A more efficient storage facility was constructed by DEMATIC, an American provider of "material handling systems."¹¹¹ In this case, the ASRS initially had a capacity of 950.000 volumes within an area of 8.000 square feet (ca. 743m²), all retrievable from the circulation desk "less than ten minutes upon request by users of the online computer catalog."¹¹² This automated facility stored only less frequently used volumes. "Books with no circulation in the past three years, periodicals over fifteen years old and no reference materials that are no longer current [...]"¹¹³ The facility now holds 1.7 million volumes in 13.260 steel bins.¹¹⁴ The automatic stores are a matter of Assmann's reference archive rather than of canon.

The facility is a rack structure along six aisles, served by "mini-load cranes." Resnais's BNF adorned its book covers with a round label inscribed with an obscure combination of letters and numbers – "Rondé, ce livre n'échappera à aucune recherche"¹¹⁵ – in order to always identify the relation between the book as object, its location in the catalogue and its placement on the shelves. The Oviatt's ASRS operates via the relation between bar codes on each individual book, the digitalised

¹¹¹ <http://www.dematic.com/en>.

¹¹² DEMATIC, "Case Study - California State University - Oviatt Library. Northridge, California".

¹¹³ Ibid.

¹¹⁴ Oviatt Library, "Oviatt Library - Automated Storage and Retrieval System (ASRS)".

¹¹⁵ This particular phrase is absent from the published "scénario" but should appear after "Une lettre, des chiffres désignent la tablette qu'il occupera dans l'un des magasins" "Toute la mémoire du monde (Scénario)," 71.

library catalogue which handles search and request and, finally, the ASRS database which keeps track of book ID and metal bin.¹¹⁶

There are two types of relation between book and bin. One is equivalent to the old BNF method of keeping the book in a “point précis qui lui est imparti dans le dédale d’un rayonnage long de cent kilomètres.”¹¹⁷ This permanent storage arrangement is used for multiple volume periodicals, Special Collections and Archives, the last two containing “different kinds of materials, including correspondence, diaries, maps, university records, organizational records, photographs, and audio or video recordings.”¹¹⁸ Regular book volumes, however, are kept in random storage. This means that a book is returned to the first available bin and that there is no intended relation of kin and kind within the bin or between bins. Consignation via the hermeneutic establishment of kin and kind has been abstracted from the storage layer and is now strictly confined to the retrieval function of the catalogue. We might say that, from the point of the view of the concept, the library has taken a step towards the archive by relying on a certain aspect of provenance, i.e. the first available bin location at the time of return, and not on its hermeneutic signification and pertinence.

Oxford’s Bodleian – “Before Google, before Amazon, before Wikipedia, and before the British Library, there was the Bodleian Library,”¹¹⁹ the keeper of that naughty rag of Shakespeare’s – has also felt the recurring need to expand their storage space as well as their storage and retrieval technology. After having opened new stores in 1912 and in 1940, respectively, the Bodleian Libraries opened the Book Storage Facility (BSF) in Swindon in 2010. As indicated by the relatively remote location, the BSF mainly holds books that are less frequently in use and thus mainly holds a reference function.

The Bodleian opted against an ASRS and chose a Library Archival System (LAS) developed by Generation Fifth Applications, Inc., also in use at Harvard.¹²⁰ But not unlike the ASRS at the Oviatt, the Bodleian’s LAS enables the relation between a unique barcode ID for each item, a unique barcode ID for a tray holding one or more

¹¹⁶ Heinrich and Willis, “Automated Storage and Retrieval System: A Time-Tested Innovation,” 7.

¹¹⁷ “Toute la mémoire du monde (scénario),” 71.

¹¹⁸ Oviatt Library, “Oviatt Library - Special Collections and Archives”.

¹¹⁹ Heaney and Cannon, *Transforming the Bodleian*, 1.

¹²⁰ *Ibid.* 137.

items and, finally, a unique barcode for a shelf address. Similar to the round labels depicted by Resnais, the Bodleian chose to place its item barcodes on the front, top left corner to facilitate scanning¹²¹, and akin to the BNF this corner label also includes a reference to the shelf position.¹²²

The LAS is a piece of software handling these data correlations, whereas the overall system including hardware and the content of the database is termed the Book Storage Facility Information System (BSFIS), which should then again not be confused with the library catalogue. The catalogue keeps records of the library items and their barcodes, whereas the BSFIS keeps records of the barcode relations enabled by the LAS. Where the library catalogue holds information of kin and kind, the BSFIS thus “contains no bibliographical information, but provides the sole source of information about where individual items are located.”¹²³

Yet another element is needed, however: The resource discovery platform or Online Public Access Catalogue (OPAC), in this case called SOLO (‘Search Oxford Libraries Online’), is, as the name aptly expresses, the public access point to the library catalogue. When a book is requested, SOLO “generates a file of barcodes and associated request information (including requester name, reading room destination etc.).”¹²⁴ This file is then sent to the BSFIS and the retrieval work can begin the transmission from “mechanisch betriebene Gedächtnisse” to the “Adreßarithmetik” of the reading room. Unlike Resnais’s BNF, the BSF has no need for the spectral placeholder of a book gone to the other side. The BSF did practice this spectral supplementation but since the BSFIS keeps track of the intended location of the “point précis qui lui est imparti” in storage, no such supplement is required.¹²⁵ The slip of paper does, however, persist as a companion on the other side of the barrier, indicating the target address, i.e. the reader.

Although the item ID is strictly correlated to a shelf ID, items “stored at the BSF would no longer be sorted in shelfmark sequence; therefore neighbouring items

¹²¹ Ibid. 142.

¹²² It was a point of debate at the Bodleian whether to adopt the American model of having each shelf address in a human readable form with a related random barcode or to translate the human readable address into barcode form. The latter option was chosen, see Ibid. 141.

¹²³ Ibid. 146.

¹²⁴ Ibid.

¹²⁵ Ibid. 143.

were less likely to have any logical relationship to any misplaced item.”¹²⁶ This underlines the Library Archival System (LAS) as a contradiction in terms from the point of view of the Ernstian concept of the archive as strictly opposed to the library (except, of course, in the mitigating case of legal deposit libraries). The BSF is at a remote location in Swindon, inaccessible from the reading rooms of Oxford, and its stores operate in a manner completely distinct from any hermeneutic classification or consultation. The BSFIS is pure archive. Even the library catalogue is, as such, separate from the reader. Only the SOLO OPAC as a specific mediation of the catalogue and the reading rooms retain a library function.

We now have somewhat of a spectrum between the manual proceedings of Resnais’s BNF and the different metamorphoses induced by the digitalisation of its operations: The BNF at the François Mitterrand site has a digital catalogue and the robotised transmission from stores to barrier. The BSF uses manual transmission in the form of manual shelf retrieval and manual transport from Swindon to Oxford twice a day, but it uses a digital archiving system, automating storage control and reader request. The Oviatt introduced a completely automatized retrieval system as well as automated storage for at least a part of its collection, i.e. for the reference part, or what Assmann would call the archive. We can say that the Bodleian has an automated catalogue, the Mitterrand BNF has added automated transmission, and that, in addition to automated transmission and catalogue, the Oviatt has automated storage.

We neither can nor shall go through every significant library automation since the Oviatt in 1991. Suffice it to conclude that automation via digitalisation of Resnais’s horizontal axis has turned the library towards the concept of the archive in two ways: 1. Storage has to a wide extent abandoned physical consignment according to a hermeneutic establishment of kin and kind in favour of random item distribution. 2. Automated storage has to a wide extent been reserved for the reference libraries; meaning that, according to the concept of the archive, what has been digitalised is the archive and not the library/canon, which tends to remain in the open stacks.

¹²⁶ Ibid. 138.

1.3.2 Digitised libraries

So far, we have considered automation via digitalisation of the library operations on primarily the storage side of Resnais's ideal barrier, which to this day remains the physical point of transition between library consignment and heritage. The only aspect of these automations reaching the address arithmetic of the reading room is the OPAC allowing for a virtual gaze into the archival stores. Further efforts have, however, been made in recent years.

A somewhat exuberant rendition of possible strategies behind the full digitisation of library content is given by Robert Darnton who, apart from being the director of the Harvard University Library and thus the library which inspired the LAS choice of the Bodleian, is also a driving force behind the Digital Public Library of America (DPLA), which launched on April 18, 2013. Not unlike the pan-institutional archival promise expressed by Resnais, the DPLA "aims to make available all the intellectual riches accumulated in American libraries, archives, and museums."¹²⁷ During its first year, the DPLA managed to triple its collections to "include seven million books and other objects" not under copyright, accessible from anywhere in the world.¹²⁸

Darnton sees in the technical execution of this project a certain emancipation from the yoke of centralised corporative initiatives such as Google Book Search:

"[...] it is not a vertical organization erected on a database of its own. It is a distributed, horizontal system, which links collections already in the possession of the participating institutions, and it does so by means of a technological infrastructure that makes them instantly available to the user with one click on an electronic device. It is fundamentally horizontal, both in organization and in spirit."¹²⁹

¹²⁷ Darnton, "A World Digital Library Is Coming True!" Notice the reference to "libraries, archives, and museums", an entity often referred to as LAM or, if galleries are invited to the mix, GLAM.

¹²⁸ Ibid.

¹²⁹ Ibid.

We see here an attempted abolishment of the vertical axis present in Resnais's BNF. In *Toute la mémoire du monde*, as we have seen, the vertical axis was a matter of transforming the formless deep to the summits of institutionally organised universal memory hinging on the catalogue as the brain of the library. The vertical axis culminated in the final shot from above of the barrier between storage and reading room. Darnton's library is explicitly not "a great edifice topped with a dome and standing on a gigantic database."¹³⁰ Without the dome, Darnton hopes for the fulfilment of the promise of cross-institutional pleroma, mentioned in the initial synopses for *Toute la mémoire du monde*: "On peut penser qu'un jour – tous les hauts lieux de la Culture seront reliés les uns aux autres." This horizontal organisational distribution across numerous institutions is presented as a non-profit attack on Google's explorations of various business models.¹³¹

This technical horizontality is achieved by establishing "service hubs" for collection administration, promotion and aggregation at the state level and "content hubs" "located in institutions with collections of at least 250.000 items [...]. Such horizontality reinforces the "democratising" impulse behind the DPLA."¹³² The technical distribution and the fact that it is non-profit and even operated and developed by volunteers, i.e. unpaid labour,¹³³ are all seen as manifestations of an inherently democratic impulse.

This distribution does, however, operate with a certain degree of centralisation, albeit somewhat more abstract. The developed infrastructure "aggregates metadata (catalog-type descriptions of documents) in a way that allows easy searching."¹³⁴ So the cultural institutions have been linked "les uns aux autres," but the aggregations of metadata, without which this distributed fortress would remain but "un pays sans route" still create a centralised catalogue.

¹³⁰ Darnton, "The National Digital Public Library Is Launched!"

¹³¹ Google originally intended to provide a search service making only book excerpts accessible. Google was, however, sued for infringement by copyright holders, and therefore proposed Google books as a subscription service. This proposed settlement was dismissed by the Southern Federal District Court of New York on March 22, 2011 because "it would have given Google a de facto monopoly over the digital versions of so-called "orphan" books [...]" Singer, "Whither the Dream of the Universal Library?"

¹³² Darnton, "A World Digital Library Is Coming True!"

¹³³ "More than a thousand computer scientists collaborated free of charge in the design of its infrastructure [...]" Ibid.

¹³⁴ Ibid.

“The metadata will be aggregated in a repository located in what the designers call the “back end” of the platform, while an application programming interface (API) in the “front end” will make it possible for all kinds of software to transmit content in diverse ways to individual users.

The user-friendly interface will therefore enable any reader [...] to consult works that used to be stored on inaccessible shelves or locked up in treasure rooms [...]. Readers will simply consult the DPLA through its URL, <http://dp.la>.¹³⁵”

This is, of course, dashed practical, and allows a reading room of one’s own to access numerous library stores without waiting at the barrier depicted from above. The focal point of the barrier between storage and reading room has been replaced by the API between “back end” and “front end.” The OPAC system has gone mobile and the reader’s reading screen of choice allows search, retrieval and interpretation in one fell swoop. Interaction with the library stores is open to reinvention as long as it respects the API. But does this, indeed, entail that the dome’s vertical view of the horizontal barrier is gone? As Alexander Galloway has noted, we should be wary of considering any distributed network as the inherent emancipation from hierarchical control: “It is common for contemporary critics to describe the Internet as an unpredictable mass of data — rhizomatic and lacking central organization. [...] protocol is how technological control exists after decentralization.”¹³⁶ The API is as powerful a guardian of the barrier and the reading rooms as any uniformed library official.

A different barrier along a different axis, controlling what can enter consignment, is created by the limits of copyright, keeping “virtually everything published after 1923 out of the public domain.”¹³⁷ But such are obstacles to be overcome, or at least a balance to be struck between public and commercial interest,

¹³⁵ Darnton, “The National Digital Public Library Is Launched!”

¹³⁶ Galloway, *Protocol, How Control Exists after Decentralization*, 8. Galloway’s example of the persistence of hierarchy even in the distributed network of the Internet as based on TCP/IP is this system’s reliance on DNS (Domain Name System) guarding the relations between URLs and IP addresses.

¹³⁷ Darnton, “A World Digital Library Is Coming True!”

between democratisation and commercialisation. Darnton proposes a convergence of utopianism and pragmatism.¹³⁸ On the one hand, “The Digital Public Library of America (DPLA) will make the cultural and scientific heritage of humanity available, free of charge, to all.”¹³⁹ And not satisfied with making it available for interpretation, the DPLA wants to enable heritage, i.e. the individual appropriation of *hypomnemata*: “[Students] will sharpen their sensitivity to language in general, and the lessons they learn will help them gain possession of their cultural heritage.”¹⁴⁰ But on the other hand, this free access of everyone to everything “must be sustainable,” i.e. it must develop according to “the right balance between commercialization and democratization.”¹⁴¹

Interestingly, the promise of *pleroma* is within reach, “[w]e have the technological and economic resources to make all the collections of all our libraries accessible to all our fellow citizens [...]”¹⁴² The only hindrance is copyright: “The main impediment to the DPLA’s growth is legal, not financial.”¹⁴³ A similar statement was made regarding the Norwegian National Digital Library: “The greatest obstacle to making works available to the public in digital form is not related to technology, but rather to copyright issues.”¹⁴⁴



Norwegian Repository Library in Mori Rana, source: <http://www.statsbygg.no/Prosjekter-og-eiendommer/Byggeprosjekter/Nasjonalbiblioteket-Automatlagar-2-Mo/>

¹³⁸ Darnton, “The National Digital Public Library Is Launched!”

¹³⁹ http://dp.la/wiki/Concept_Note

¹⁴⁰ *Ibid.*

¹⁴¹ Darnton, “A World Digital Library Is Coming True!”

¹⁴² Darnton, “The National Digital Public Library Is Launched!”

¹⁴³ *Ibid.*

¹⁴⁴ Takle, “The Norwegian National Digital Library.”

The National Library of Norway, the Repository Library of which has, incidentally, operated via ASRS and random or “chaos storage”¹⁴⁵ since 2003, has launched an effort of not only *digitalising* their storage operations but also *digitising* the library content. Here as well, we see the difference between front end and back end, and its relation to the difference between technology and copyright: “As part of its digitisation strategy, the National Library has developed an archive for digital storage called the Digital Security Repository [...]”¹⁴⁶

This Security Repository is a technical back end, it is an archive serving a library function via an API and certain front ends. Technologically it can handle a wide variety of digital material from any number of institutions. As Darnton noted, the technology is not the problem. The impediment for this archive to serve as a library is copyright. Two specific projects were made possible via “agreements with rights holders regarding distribution over the Internet.”¹⁴⁷ The first one, signed on March 14, 2007, made various literature from and about the High North and northern available. Based on a 2008 evaluation of the High North project, another project, Bokhylla.no struck a deal with Kopinor, a representative of multiple right holder organisations.

On April 23, 2009 a contract was signed relating to “printed books published in Norway during the years 1790-1799, 1890-1899 and 1990-1999, including translated literature. This contract regulated that part of the copyright-protected material covered by the project, up to 50 000 books with an estimated average of 185 pages.”¹⁴⁸ On September 30, 2012, a new contract took effect, relating to “the digital dissemination of printed books published in Norway until and including the year 2000, including translated literature.”¹⁴⁹

Bokhylla.no (*The Bookshelf*) came online in 2009 with 14.000 books from the 1990s and “some 3.500 published much earlier.”¹⁵⁰ In 2006 the Norwegian National Library started digitising its whole collection in order to achieve its vision of being “a living memory bank, [...] a “Multimedia Centre of Knowledge” with a focus not only

¹⁴⁵ See. Sakrihej, “Automatic Storage and Retrieval System for Interlibrary Lending,” 2.

¹⁴⁶ Takle, “The Norwegian National Digital Library.”

¹⁴⁷ Ibid.

¹⁴⁸ National Library of Norway and Kopinor, *Contract Regarding the Digital Dissemination of Books (Bokhylla / The Bookshelf)*.

¹⁴⁹ Ibid.

¹⁵⁰ Skarstein, “The Bookshelf,” 48.

on preservation, but also on mediation.”¹⁵¹ The imaginaries of the exemplary, total and universal memory depicted by Resnais are obviously still operational in its digitised manifestations.

But this total memory is both centralised and distributed. The back end may be distributed as described by Darnton, or it may be centralised as in the Norwegian Digital Security Repository. The front end may be centralised as in the case of DPLA or distributed as in the case of the High North project and the Bookshelf, separated by the ramparts of copyright agreements. But contrary to Darnton’s high hopes, we cannot simply ascribe democratic horizontality to digitised content platforms. The axes and parameters remain the same as those depicted by Resnais, but their instantiations, their metamorphoses are most definitely new.

1.3.3 Amazon

According to Darnton, the state of archival pleroma is now technically attainable. Via the processes of digitalisation and digitisation, we have reached a stage of technological development, where institutional and corporate verticality can be replaced by democratic horizontality. The vertical view of the barrier between storage and memory has supposedly been replaced by the distribution of “service hubs” and “content hubs” in the “back end” that are linked to multiple possible “front ends” via the API.

Digitalisation automated the manual back end procedures depicted by Resnais and it enabled the search and request functions of the OPAC front ends, but the barrier remained as firm as ever. Are we really to believe that the technical characteristics of content digitisation would finally fulfil the potential of pleroma were it not for the legal limitations of copyright? Distributed storage and memory, distributed back end and front end, distributed index and catalogue and the possibility of multiple APIs, render the distinctions, so clearly drawn by Resnais, abstract and diffuse. But just as the archive, according to the notion, remains open

¹⁵¹ Ibid. 52. The quotation marks are a reference to the official strategy of the library, expressed on the website as follows: “It is the ambition of the National Library of Norway to be the nation’s memory and a multimedia centre for knowledge and culture.” <http://www.nb.no/English/About-us/Strategy>

because any attempt of fullness and closure depend on the inclusion of a certain lack, the technical structures enabling the utopian democratising side of Darnton's argument depend on the inclusion of operations from, or at least shared with, the commercial sphere.

The digitalisation of libraries quite openly embraced commercial technologies. The ASRS is a standard technology within Warehouse Management Systems (WMS). In addition to the above-mentioned libraries, such technology has been embraced by another prominent book repository: Amazon. On March 19, 2012, Amazon.com, Inc. announced its acquisition of Kiva Systems, Inc., a provider of material handling technology.¹⁵² This acquisition has enabled a certain transition of warehouse processes within Amazon's "fulfilment centres." In late 2013, Bloomberg Business could still report on "A Day in the Life of an Amazon Package"¹⁵³, and show random storage made possible by digitalised indexing along with automated transmission from packaging to deployment. "A team of workers called "storsers" stash the items, well, anywhere, no rhyme or reason. Products are stowed in the first empty space. It makes for unusual bedfellows: Hello Kitty next to Vans sneakers and Alpine speakers." "Storsers" are matched by "pickers" retrieving ordered products that are then sent by automated conveyor belts to the right truck where packers optimise box room allocation for shipment.

This is, thus, a depiction similar to our earlier descriptions of the Mitterrand BNF and the Bodleian, where interaction with stored objects at node locations is handled by human workers but catalogue consignment and storage transmission are, respectively, digitalised via barcodes and indexes and automated via rails or conveyor belts. Soon after, in early 2014, however, Bloomberg Business could report on "Amazon's New Robot Army" handling 21.000.000 items within a single warehouse. The procedures of stowing and picking are now announced to have been profoundly changed, since "it eliminates the walk." Storsers and pickers no longer head for a specific shelf location, the shelf location comes to them in both cases. The shelves look like small high-rises with items stored on all sides and each shelf is carried atop a small flat robot.

¹⁵² Amazon, "Press Releases - Amazon.com to Acquire Kiva Systems, Inc."

¹⁵³ Bloomberg Business, "A Day in the Life of an Amazon Package."



Image from “Army of Amazon robots ready to help fulfill orders on Cyber Monday.” *latimes.com*.
November 30, 2014.

This procedure makes the Amazon warehouse more akin to the ASRS of the Oviatt or the Norwegian Repository Library in Mo i Rana: Random storage with automated storage and retrieval. The only human contact with items is at the barrier location.

1.3.4 Netflix

Library digitalisation explicitly took inspiration from commercial warehouses but what of digitisation? What of the democratising horizontality inherent to the convergence of digital infrastructures and digitised content described by Darnton as the opposite of commercial interests? Similar to the digitised libraries of *Bokhylla.no* and the *DPLA*, Netflix’s streaming service holds a plethora of digital content, accessible from, potentially, anywhere. Netflix has included in its bulging repositories a wide selection of films, television series, documentaries etc., accessible to the paying customer

within specific countries.¹⁵⁴ The digital ramparts of Netflix thus protect the fortress against gratuitous soliciting and nationals foreign to the approved member states. The reasons for such a double bulwark are no mystery: Paying customers constitute the foundation of the business model and content licensing agreements tend to abide by national borders.

The digital ramparts protect the fortress, but although the repositories are bulging, they are in no danger of cracking. In contrast to Resnais's BNF and other legal deposit libraries, Netflix is not an accumulative archive – there is no promise of *pleroma*. Not unlike the hard drive platters that contain it, the content rotates, i.e. the archive upholds but an ephemeral character of *plethora* via a number of ever-expiring licensing agreements that differ from country to country. And instead of the centralised “*mémoire universelle, abstraite, indifférente*” of Resnais's BNF, sometimes actualised in a call from the reading room, content is deployed in a distributed Content Distribution Network (CDN) consisting of storage pods holding the content most likely to be demanded at that given geographical location.

On June 4, 2012, Netflix announced its own CDN system called “Open Connect.”¹⁵⁵ This distribution of local servers is meant to reduce transmission load and enhance the user's experience of immediate access. Contrary to recurring perceptions of digital infrastructures as immaterial and embedded in “the cloud,” transmission of large digital files from Netflix headquarters in Los Gatos, California, to the suburbs of Europe does require time and resources. Storing oft-requested content at distributed network nodes is a way of alleviating such demand on resources. It operates its own distinction between Assmann's archive and canon.

We shall return to the hardware characteristics of these CDNs but for now, suffice it to recognise in such distributed hardware a parallel to the DPLA “content nodes” described by Darnton. And consequently, that the commercial back end of Netflix is as distributed as the democratising horizontality of the DPLA. The centralised verticality criticised by Darnton, or which should at least be brought into a certain relation of balance with public interest, was exemplified by Google, but

¹⁵⁴ There are, however, several ways in which the geographical restrictions can be circumvented. In this case as in the case of Darnton's *DPLA*, “The main impediment to the [...] growth is legal, not financial.” Darnton, “The National Digital Public Library Is Launched!”

¹⁵⁵ Florance, “Announcing the Netflix Open Connect Network.”

Netflix's commercial deployment of the inherently democratising horizontality was a direct response to similar horizontality in the technical infrastructure of YouTube, a Google subsidiary, as described by Vice President of Content Delivery at Netflix, Ken Florance: "The world's other major Internet video provider, YouTube, has long had its own content delivery network. Given our size and growth, it now makes economic sense for Netflix to have one as well."¹⁵⁶

Unsurprisingly, thus, Netflix shares many of the archival characteristics we have located in Resnais's BNF as well as the different digitalised and digitised libraries. Where the BNF indicated the location of each object by a few numbers and letters, Netflix bestows upon each of its digital items an eight-digit "movieid."

Here for instance the URL for the movie *Sharknado 2* (2014):

<http://www.netflix.com/WiPlayer?movieid=80011866&trkid=50263279&ctx=9%2C6%2C996a7c6d-f2df-43c0-acbf-c89a16fbb9c7-104674131>

The episodes of a television series have sequential ID's but this is presumably more a result of the order of ingest than of the chronology of a narrative or their presumed consumption order. Just as a guest at the BNF requests a book and not its shelf location, the Netflix user is not supposed to interact with the object via the ID but via the other metadata elements such as, most importantly, title and genre, although it is also possible to search for actor and director.

More surprising, perhaps, is the fact that, although technical ingest is decidedly automated according to provenance and thus logistics, Netflix's processes of consignment still remain profoundly hermeneutic. Apart from the standard metadata just mentioned, Netflix orders its objects according to an elaborate tagging scheme called the "Netflix Quantum Theory." Each item is reviewed by a human tagger, adding several "microtags" to its description:

"The Netflix Quantum Theory doc spelled out ways of tagging movie endings, the "social acceptability" of lead characters, and dozens of other facets of a movie. Many values are "scalar," that is to say, they go from 1

¹⁵⁶ Ibid.

to 5. So, every movie gets a romance rating [...]. Every movie's ending is rated from happy to sad, passing through ambiguous. Every plot is tagged. Lead character's jobs are tagged. Movie locations are tagged. Everything. Everyone."¹⁵⁷

In Resnais's BNF, "Ils les trient, les analysent, les classent, les numérotent méthodiquement."¹⁵⁸ Netflix does something similar, except that the final classification is automated. The hermeneutically created tags are but the data from which the so-called "altgenres" are formed algorithmically. Apparently, there are 76.897 of them, including agid=2: "Scary Cult Movies from the 1980s"¹⁵⁹ and agid=69513: "Hindi-Language Con-Artist Comedies." In the case of Netflix, consignation via the establishment of kin and kind is hermeneutic initially, but the transformation of those humanly created data points only gain any sort of understandable meaning after the intervention of their algorithmic aggregation in altgenres.

¹⁵⁷ Madrigal, "How Netflix Reverse Engineered Hollywood."

¹⁵⁸ "Toute la mémoire du monde (scénario)," 66.

¹⁵⁹ Ibid.

1.4 Tracing the archive

1.4.1 Identifying with the archive

With the advent of the digital, both sides of the barrier between storage and memory retain many of the characteristics depicted by Resnais and yet, they have undergone profound metamorphoses, rendering them more abstract and diffuse. One final aspect of these metamorphoses needs to be introduced before we can move on to a historical problematization of these developments with regard to the cultural heritage archive as both a technological and discursive construct.

If the operations of Resnais's BNF as well as the subsequent library metamorphoses via digitalisation and digitisation were intended to facilitate retrieval, the Netflix altgenres are intended for one specific instance of a very specific type of retrieval facilitation: the element of recognition in personalised recommendation. Recommender systems, "if you liked this, you might like that", are widespread these days. The example usually given is Amazon's tracking of search and purchase histories, which enables them to display "Customers Who Bought Items in Your Basket Also Bought" and "Your Recently Viewed Items and Featured Recommendations" when you are logged into your profile on the website.

Netflix once based its recommendations solely on the user's rating of each movie within a five star system in order to build an individualised taste profile based on numeric values. When the actual rating corresponds to the predicted rating, one would consider the taste profile accurate. But Netflix "wanted to highlight our personalization because we pride ourselves on putting the right title in front of the right person at the right time."¹⁶⁰ Altgenres take a vital part in this highlighting since, as commented by the journalist Alexis Madrigal, "It's not just that Netflix can show you things you might like, but that it can tell you *what* kinds of things those are. It is, in its own weird way, a tool for introspection."¹⁶¹

¹⁶⁰ Todd Yellin, Netflix Vice President of Product, quoted in Ibid.

¹⁶¹ Ibid.

Netflix thus emphasises yet another aspect of the archive: the relation to the self. You, the user, are not just presented with a selection of objects “you might like” but also with a formulation, a sensible form, of what these specific objects of insect hunger and desire are. Navigating the interface’s vertical genre listings with horizontal movie options for each altgenre, supposedly becomes an exploration of an impression of the self, left by patterns of former use: “Members connect with these [genre] rows so well that we measure an increase in member retention by placing the most tailored rows higher on the page instead of lower.”¹⁶²

Resnais’s ideal line – the barrier between front end and back end, “un équateur plus décisif [...] que la traversée du miroir” – in effect becomes exactly that: a mirror. “Putting the right title in front of the right person at the right time” is not just a matter of presenting an object of desire, but a matter of doing so in order to create a moment of recognition of the self. This specular aspect is, of course, not solely a characteristic of Netflix. Similar to Netflix, Amazon operates both with a 1 to 5 star evaluation system and algorithmically generated taste profiles. And just like Netflix, Amazon doesn’t just track which items you choose. Via their Kindle platform, they also track which search terms lead to the purchased book, how fast you read, when you pause, what you highlight, and what reading activity follows and at which intervals.¹⁶³ Amazon’s version of Netflix’s presentation of the right title to the right person and the right time could be exemplified by the professor picking up his Kindle version of Jonathan Franzen: *The Kraus Project* and moments later receiving an email recommending related reading.

1.4.2 Hypomnemata and correspondence

This moment of recognition brings the user to what Lacan called “la limite extatique du « Tu es cela ».”¹⁶⁴ The archival barrier becomes an ecstatic limit in the confrontation with the ideal ego, Freud’s *Ideal Ich*, the unified *imago* of the self. But this mirror image is not simply constructed by algorithms. Just as we know that a

¹⁶² Todd Yellin in Ibid.

¹⁶³ Alter, “Your E-Book Is Reading You.”

¹⁶⁴ Lacan, “Le Stade du miroir comme formateur de la fonction du Je,” 97.

waving hand will usually manifest itself in the mirror, the contemporary user knows that actions influence the algorithmically constructed mirror image and as much as a source of joy, the confrontation with how the algorithm perceives you and your actions can equally be a source of sorrow or ironic acknowledgement of one's guilty pleasures: I'm starting with the man in the mirror, I'm asking him to change his ways.

Where we have thus far used the term *hypomnemata*, in a Derridean sense, to mean any archival object, any trace or sign consigned in the ideal archival corpus as opus, Foucault spent a part of his late work on the exact same concept, although from a different perspective:

“En fait, l’hupomnêmata a une signification très précise. C’est un cahier, un carnet. Plus précisément, ce type de carnet était en vogue à l’époque de Platon pour un usage administratif et personnel. Cette nouvelle technologie était aussi révolutionnaire que l’introduction de l’ordinateur dans la vie personnelle. Il me semble que la question de soi et de l’écriture doit être posée dans les termes du cadre technique et matériel dans lequel elle s’est posée.”¹⁶⁵

For Derrida, *hypomnemata* meant the material externalisation of memory, for Foucault, it is an object connected to a very specific practice. For both, it is a matter of technique, but for Derrida it is a technique of inscription while for Foucault it is a technique of the self.¹⁶⁶ For Derrida, any consignment entailed interpretation of *hypomnemata* but not necessarily heritage. For Foucault, the *hupomnemata*¹⁶⁷ were the result of an act of consignment via interpretation with the explicit purpose of continual reinterpretation and heritage: “Ils constituaient une mémoire matérielle des choses lues, entendues ou pensées; ils les offraient ainsi comme un trésor accumulé

¹⁶⁵ Foucault, “À propos de la généalogie de l’éthique: un aperçu du travail en cours,” 1222.

¹⁶⁶ These techniques of the self are what Foucault called *technê tou biou* as part of the caring for the self, *epimeleia heautou*. Foucault’s insistence on *hypomnemata* as a techniques of the self instead of inscription can be read as a direct jab at Derrida’s reading of Plato in *La pharmacie de Platon*: “Il ne faudrait pas envisager ces *hypomnêmata* comme un simple support de mémoire, qu’on pourrait consulter de temps à autre, si l’occasion s’en présentait. Ils ne sont pas destinés à se substituer au souvenir éventuellement défaillant.” Foucault, “L’écriture de soi,” 1238.

¹⁶⁷ We shall distinguish between the Derridean *hypomnemata* and the Foucauldian *hupomnemata* according to their respective preferred spellings of the Greek ὑπομνήματα.

à la relecture et à la méditation ultérieures.”¹⁶⁸ For Foucault there are no *hupomnemata* without the techniques of heritage.

The goal of hupomnesic consignation – based on the interpretation of things seen, heard and read – was reinterpretation via these re-readings and meditations and, finally, heritage in the form of “la constitution de soi.”¹⁶⁹ It was a matter of caring for the self, of *epimeleia heautou*. It was the unification of heterogeneous elements in body and soul thus creating one’s own identity: “Par le jeu des lectures choisies et de l’écritures assimilatrice, on doit pouvoir se former une identité à travers laquelle se lit toute une généalogie spirituelle.”¹⁷⁰ The writer of things read thus goes to encounter the reality of experience and to forge in the smithy of his or her soul the uncreated conscience of individual identity as heritage of its chosen genealogical past.

While, on the one hand, the role of hupomnemata is the construction of the self, i.e. consignation in the specific notebook of a fragmented ancestry the interpretation of which may project a mirror image of heritage (genealogy) to be assumed, on the other, it is to establish the practical means of becoming this image: “constituer un *logos bioèthikos*, un équipement de discours secourables, susceptibles [...] d’élever leur voix et de faire taire les passions comme un maître qui d’un mot apaise le grondement des chiens.”¹⁷¹ If we remember the Lacanian mirror stage and its ecstatic “Tu es cela”, this first construction of self is the individual construction of the *Ich Ideal*, while the second construction of the master, would be the *Ideal Ich*. If we translate this to a later Lacanian vocabulary, it is the little other and the big Other, the “semblable” on the one hand and the point from which the ego is judged on the other.

In “L’écriture de soi” (1983), to which I have primarily been referring, Foucault adds yet another aspect, however. As another example of the *technê tou biou*, Foucault examines correspondence. The letter is another way of self writing but not a simple elaboration of the techniques of *hupomnemata*. More than a training of the self, it is a manifestation and expression of the self in front of the other: “La lettre rend le scripteur « présent » à celui auquel il l’adresse. Et présent non pas

¹⁶⁸ Foucault, “L’écriture de soi,” 1237.

¹⁶⁹ Ibid. 1238.

¹⁷⁰ Ibid. 1242.

¹⁷¹ Ibid. 1238.

simplement par les informations qu'il lui donne sur sa vie, ses activités [...]; présent d'une sorte de présence immédiate et quasi physique."¹⁷² And this manifestation is presented as something visual: "Écrire, c'est donc « se montrer », se faire voir, faire apparaître son propre visage auprès de l'autre."¹⁷³

The whole point of this visual presentation of the constructed self in the form of letter writing is to re-establish the mirror image: "Dans le cas du récit épistolaire de soi-même, il s'agit de faire venir à coïncidence le regard de l'autre et celui qu'on porte sur soi quand on mesure ses actions quotidiennes aux règles d'une technique de vie."¹⁷⁴ The goal is to have the two gazes coincide: the gaze of the self as established via the hypomnesic construction of the big Other and the gaze of the little other of the letter recipient: the hypocritical reader, brother, *semblable* of the subject.

1.4.3 Ethopoiesis and doxopoiesis

Foucault calls both these practices, those of *hypomnemata* and correspondence, *ethopoietic* practices. They are practices through which the subject establishes an *ethos*, i.e. what Foucault has elsewhere characterised as an "attitude": "je veux dire, un mode de relation à l'égard de l'actualité; un choix volontaire qui est fait par certains; enfin, une manière de penser et de sentir, une manière aussi d'agir et de se conduire qui, tout à la fois, marque une appartenance et se présente comme une tâche."¹⁷⁵

Just as consignment entailed an establishment of kin and kind on the storage side of the barrier, i.e. the side of the hypomnesic notebook, *ethos* establishes, on the side of living memory, a belonging and a task, which, incidentally, is what we have here called heritage: a genealogical belonging and the task of deferred obedience. But while the Derridean reading of *hypomnemata* ends with heritage and the Foucauldian version ends with *ethos*, which we shall then consider parallel structures, Foucault's reading of correspondence adds the question of a community

¹⁷² Ibid. 1244.

¹⁷³ Ibid. 1244.

¹⁷⁴ Ibid. 1249.

¹⁷⁵ Foucault, "Qu'est-ce que les Lumières ? 1," 1387.

of values: collective heritage. If the goal of correspondence is to make the other agree with one's own construction of truth as the basis for an *ethos*,¹⁷⁶ then we can say that it engages in a negotiation of a *doxa* understood as the community of values, i.e. correspondence opens up what we could call a *doxopoietic* dimension.¹⁷⁷

What happens in the algorithmic facilitation or, rather, control of archival interaction is, thus, a very specific mode of what Foucault called "l'écriture de soi." Whenever the user selects an object, whether a movie on Netflix, a book on Amazon or a book on the DPLA, this leaves a trace, an inscription, in the database – not in the library catalogue, but a separate database concerning user data and preferences. This is what Felix Stalder and Christine Mayer have, with regard to Google's tracking of search, called "The second index": "This one is not about the world's information, but about the world's users of information."¹⁷⁸

Foucault's *hupomnemata* could conceivably be a practice conducted in the reading rooms of Resnais's BNF where the notes of things read, "indispensable[s] à son lecteur," become digested and transformed into the body and soul of the reader as truth transformed into *ethos*, "les fragments d'un même secret, qui a peut-être un très beau nom, qui s'appelle le bonheur." Contemporary digitalised and digitised archival operations, however, track user interaction, not simply in order to reply to the "appels" from the reading rooms, but in order to guide those "appels," whether simply to guide a search towards "better" results, to guide towards the consultation/consumption of more objects, or towards user retention: "The resulting classifications are designed to influence and manage populations and persons thus directly and indirectly affecting the choices and chances of data subjects."¹⁷⁹

¹⁷⁶ *Ethopoiesis* is described as "la transformation de la vérité en *éthos*." Foucault, "L'écriture de soi," 1237.

¹⁷⁷ The term *doxa* is here used in the sense proposed by Deleuze and Guattari as the identification "à un sujet générique éprouvant une affection commune." Deleuze and Guattari, *Qu'est-ce que la philosophie?*, 138. The term is almost completely absent from Foucault's work. As far as I can ascertain, the only occurrence is made with regard to Deleuze's opposition of *doxa* and paradox in *Logique du sens*, see e.g. Deleuze, *Logique du sens*, 93. Foucault writes: "Si, plutôt que d'admettre avec complaisance sa citoyenneté dans la *doxa*, elle pratiquait méchamment le biais du paradoxe? Si, plutôt que de rechercher le commun sous la différence, elle pensait différentiellement la différence?" Foucault, "Theatrum philosophicum," 956. It is thus important for Foucault that the *doxopoietic* dimension does not end in codified *doxa*. It is the task of *ethos* to avoid such codification. As we shall see in the final chapter, however, the word *doxa* has an additional meaning.

¹⁷⁸ Stalder and Mayer, "The Second Index. Search Engines, Personalization and Surveillance."

¹⁷⁹ David Lyon quoted in *Ibid*.

Within Derrida's notion of the archive, such a second index is inconceivable as distinct from the first index of the archive. As remarked in the beginning of this chapter, for Derrida "Il n'y a pas de méta-archive."¹⁸⁰ For Derrida, any interpretation, any heritage, is simultaneously a re-inscription into the archive, an enrichment of the archive. And he was right. The second index determines our selection and interpretation of hypomnemata. It operates something like a hermeneutic circle between individual and collective interpretations: individual interpretation, an aggregation of all interpretations on record by that same individual and an aggregation of all interpretations by other individuals, i.e. an aggregated collective interpretation.

The second index is distinct from the archival practice of individual interpretation – technically it is a radically separate entity, which is even, usually, opaque to the user. The user rarely has any idea of how the second index influences interpretation apart from its mediated expressions in something like Netflix's altgenres. Nonetheless, this second index haunts the primary index of information. It is the spectral presence of the aggregated reading practices of Oxford students on the pages of Shakespeare's first folio, just as it is the vague spectral impression of other readers' underlining in a Kindle e-book. Where Foucault described a practice of knowingly constructing a self in relation to a Big and a little other, the digitised archive creates the Big and little others behind the user's back via data aggregation.

What is missing in these computational archival practices as compared to its Greek predecessors is the ability for letter writer and letter recipient, the ego and the little other of correspondence, to reject each other's projections of the unified *imago*. This possibility, only hinted at in "L'écriture de soi," Foucault elsewhere called Parresia: "[...] le parrèsiasite met en jeu le discours vrai de ce que les Grecs appelaient l'*éthos*."¹⁸¹ Parresia is a mode of frankness, of telling the truth of one's view of the other; it is the possibility of challenging the mirror image:

"En somme, pour qu'il y ait parrèsia, il faut que, dans l'acte de vérité, il y ait : premièrement, manifestation d'un lien fondamental entre la vérité

¹⁸⁰ Derrida, *Mal d'archive, une impression freudienne*, 108.

¹⁸¹ Foucault, *Le gouvernement de soi et des autres*, 25.

dite et la pensée de celui qui l'a dite ; [deuxièmement], mise en question du lien entre les deux interlocuteurs (celui qui dit la vérité et celui auquel cette vérité est adressée). [...] le parrésiasite risque de défaire, de dénouer cette relation à l'autre qui a rendu possible précisément son discours.”¹⁸²

Within the Foucauldean framework, *parresia* is the structure preventing what we have called *doxopoiesis* from ever attaining a state of codified doxa. *Parresia* is the necessary insistent and persistent negotiation of constitutions of self and community and although *parresia* is most definitely possible within digital communication, in the more restricted domain of archive interaction as depicted by Resnais and our digitalised and digitised metamorphoses, a certain aspect of such *parresia* is eliminated by the second index.

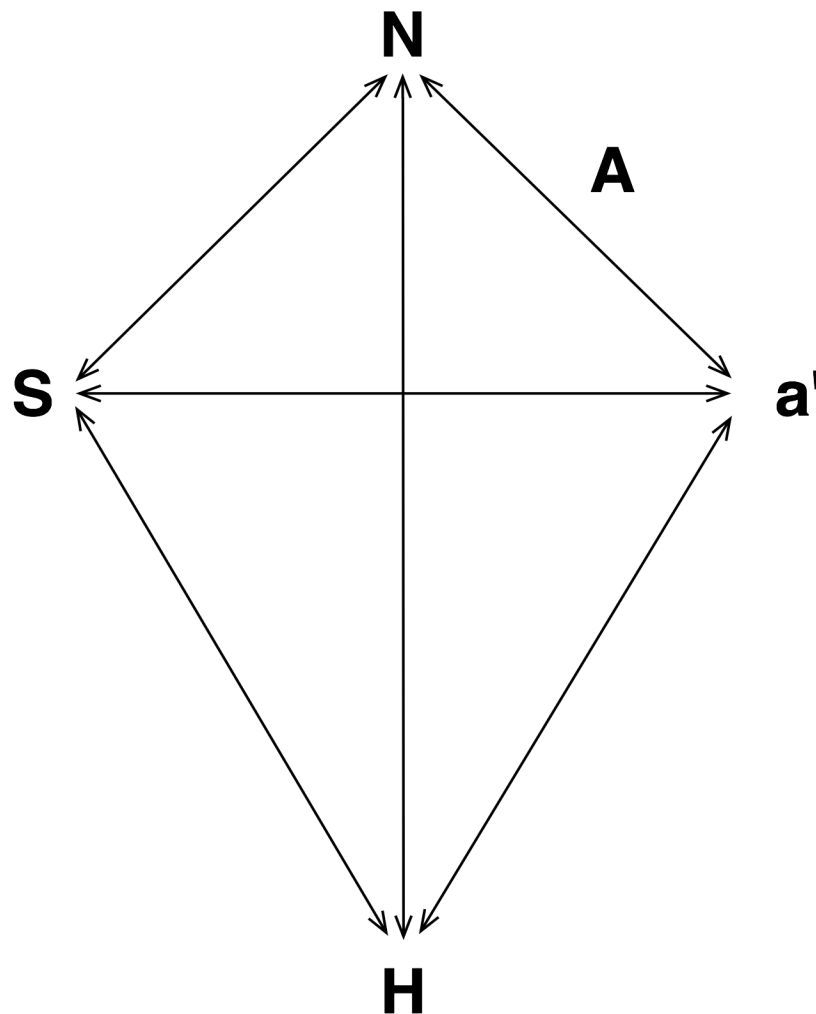
1.4.4 A diagram of relations

We must make yet another effort, and still always another — this is the invisible irony. Our conclusion, barely hinted at, is still only just at its beginning. Archival formations and practices, barriers and mirrors abound and are articulated by various instantiations of consignation, interpretation and heritage. It is time to attempt a summary of the relations that have so far been proposed as part of archival operations, whether manual, digitalised or digitised.

We started out by accepting Derrida's notion of the archive as a topological distribution of elements, the *nomos* allowing for the inclusion of consigned signs and determining the access to this consignation which then again opens the possibility of interpretation and heritage. What then is the topology, the distribution of relations, of this topo-nomological structure of the archive? What is its diagram? Throughout the chapter we have established the relations between

¹⁸² Ibid. 13.

archival law (*nomos*, N), the archival object (*hypomnemata*, H), the subject (S)¹⁸³, the Big other (*Le Grand Autre*, A) constructed by the practice of consignment (including Foucault’s practice of *hypomnemata*), and, finally, the little other (*le petit autre*, a’) of correspondence and the algorithmically generated mirror *image*.¹⁸⁴ In the diagram below, A is oddly situated between N and a’, as the Big other is a slippery entity which can be both the vague faceless presence of the law N and the presence of the law incorporated in the little other a’.



¹⁸³ The word is here taken in the double sense proposed by Foucault: “Il y a deux sens au mot « sujet » : sujet soumis à l’autre par le contrôle et la dépendance, et sujet attaché à sa propre identité par la conscience ou la connaissance de soi.” Foucault, “Le sujet et le pouvoir,” 1046.

¹⁸⁴ The designation of the little other as “a” and the Big other as “A” appear in Lacan’s “schema L”, cf. Lacan, “Le Stade Du Miroir Comme Formateur de La Fonction Du Je,” 66, and Lacan, *Le Séminaire. Livre II – Le moi dans la théorie de Freud et dans la technique de la psychanalyse, 1954-1955*, 284.

The strict concept of the archive considers nothing but the relation INHI. Ernst's cold media-archaeological analysis of "dead media that operate"¹⁸⁵ is focused strictly on the mechanical dominion of N over H or how the real is translated into H by the symbolising N of the recording apparatus. There is no room for S in this perspective other than as the excluded part, and instead of the implicit authority of ethos, A can only take the form of the ἄρχοντες – what Azoulay called the sentries "distancing those wishing to enter" and what Derrida, in addition, described as those with a monopoly of interpretation.¹⁸⁶ Similarly, Assmann's concept of the archive is the relation INHI of non-interpreted cultural reference memory, except she focuses less on the active exclusion of S and considers INHI to be in a state of latency potentially to be actualised as canon by the relation of community ISa'l.

For the concept of the archive, any engagement of S in a relation to H and, further, a relation to a' as *semblable*, would thus bring us into the spheres of library and canon. Ernst's library is the possibility for H to become cultural knowledge and, similarly, Assmann's canon is clearly the possibility for H to circulate in the cultural practices of S and its a' *semblables* outside the well guarded fortress of INHI.

The vertical axis of that well guarded prison of Resnais's BNF connects the unordered, formless deep of the BNF with the clear-cut view of the barrier between storage and memory from the top of the dome. This vertical axis is, of course, still the relation INHI. Resnais's final shot from the dome is the view from N on not only the operations of consignation constituting H as part of the ideal totality of exemplary memory but also on the barrier excluding S and a', keeping them at a distance from the archival operations of INHI and surveying their interactions with H on the side of the reading room.

As was clear from *Toute la mémoire du monde*, the barrier excluding the reader insects from the operations of the archive divides the horizontal axis but this barrier gains its authority from the vertical axis. The horizontal axis ISa'l is divided by INHI and thus renders the position of the other impossible for the *semblable* and reserves it for the sentry, thereby leaving the position of a' to A. If the digitalisation of

¹⁸⁵ Cf. Section 1.1.3.

¹⁸⁶ "Les archontes en sont d'abord les gardiens. Ils n'assurent pas seulement la sécurité physique du dépôt et du support. On leur accorde aussi le droit et la compétence herméneutiques. Ils ont le pouvoir d'*interpréter* les archives. Confiés en dépôt à de tels archontes, ces documents disent en effet la loi : ils rappellent la loi et rappellent à la loi." Derrida, *Mal d'archive, une impression freudienne*, 13.

library operations and the consequent possibility for chaotic storage emphasised an archival aspect of the library, a schism expressed in the term Library Archive System (LAS), the above model illustrates the two sides of the schizophrenic institution: The library giving access to the reader is the Δ NHS (and a' as another instance of S) whereas the archival aspect is the Δ NHA. A takes the place of a' when the relation ISa'l is so patrolled by N that the possibility of *parresia* disappears. This is where the *ethopoietic* relation ISa'l is dissolved in the *doxa* of a purely specular relation of S to an A which is not established by the practice of *hupomnemata* but by the presuppositions of N.

Darnton's hopes for the DPLA revolved around the free access of S to H in a pure relation of Δ HSa'. The only N inhibiting the access to or enjoyment of H is supposedly the law of copyright. One almost gets the feeling that the proposed democratising horizontality of the DPLA as opposed to the corporate verticality of Google would eliminate N altogether, that the uninhibited democratic relation Δ HSa' would simply exclude N from the system. The problem is that Darnton fails to recognise that the distributed infrastructure of the back end does not dissolve the barrier between Δ NHS and Δ NHA. It does not allow for a pure Δ HSa' relation. The protocols embedded in the API allowing for the relation between back end and front end, between Δ NHA and Δ NHS, are as strict an N as ever. Access can be gained but only on the strict codified conditions of the API. And the N governing the distributed locations of the various H is still completely centralised. Furthermore, as we saw in the examples of both the Amazon warehouse and the Netflix streaming platform, the democratising technologies behind the digitalised as well as the digitised libraries are exactly the same as the ones guarding their commercial counterparts.

Derrida's "*archontes*," the A as instantiation of N, were "ceux qui commandait."¹⁸⁷ Galloway has stated something similar in an analysis of mediation as such: "The rulers are the mediators. They arbitrate and exercise dominion in the middle of a kingdom of relations. The mediator is the one who takes care, who directs or leads with attention to the entities at play."¹⁸⁸ The archive is a distribution

¹⁸⁷ Ibid.

¹⁸⁸ Galloway, "Love of the Middle," 65.

of the mediations involved in the relation ISHI. Such a relation always entails the positions of N, A and a'. As was illustrated by Foucault's reading of ethopoietic practices, even the solitary consignment of fragments along ISHI establishes an N and an A, and any mediation between multiple subjects, i.e. any movement towards canon, engages a' in a mirror relation.

Now that we have attempted to diagram the relations inherent to the archive we must engage with the problem of periodization. Which historical breaks have contributed to the specific historical instantiation of archival relations called the digital cultural heritage archive? We will turn our attention to this question in the second chapter.

2. An object of formations¹⁸⁹

In the first chapter we asked concerning the archive as notion, concept, technical construction and related practice and we did so in the Derridean terms of consignation, interpretation and heritage. In this second chapter we shall leave our erstwhile protagonist, Derrida, and the archive as topo-nomological structure and greet Foucault as a new guide. In the latter's vain we shall suppose that the archive does not exist in the form of inherent distributions and relations. If we suppose that it does not exist, then, what can history make of these different events and practices that are apparently organised around this supposed something of the archive?¹⁹⁰

As we have seen in our description of various developments within library and archival technology from Resnais's BNF to Darnton's DPLA, it is difficult to determine what is radically new and what is just a continuation of the archive as it has always been. The general gesture of the first chapter has been to demonstrate similarity. Resnais's BNF and Netflix, the Bodleian and Amazon, they all operate, although in slightly different ways, along the same axes, connecting the same positions. Such similarity only serves the opening of the field of questioning, however. Our main question does not regard archival operations in general, but the phenomenon of the digital cultural heritage archive in particular. This poses a historical problem, which was clearly formulated by Jacques Ellul: "Etant donné que le phénomène technique est une constante de l'histoire des hommes, y a-t-il aujourd'hui quelque chose de nouveau?"¹⁹¹ Is the digital cultural heritage archive, as a specific instantiation of archival operations as described in chapter 1, something new and, if so, to what extent? And which events and practices constitute its historical trajectories?

Given that cultural heritage and its archives are both, in some form or other, constants of human history, is there really anything new here? Ellul proposes two

¹⁸⁹ Parts of sections 2.2.2-2.2.4 of this chapter have previously been published in Andreassen: "Constructing the contemporary via digital cultural heritage."

¹⁹⁰ "[...] supposons que la folie n'existe pas. Dès lors, quelle est donc l'histoire que l'on peut faire de ces différents événements, de ces différentes pratiques qui, apparemment, s'ordonnent à ce quelque chose supposé qui est la folie?" Foucault, *Naissance de La Biopolitique : Cours Au Collège de France (1978-1979)*, 5.

¹⁹¹ Ellul, *La technique, ou, L'enjeu du siècle*, 57.

attitudes towards this question. The first would claim that technological development is a constant in which each innovation corresponds more or less to the others. The development of a stone axe is neither more nor less terrifying than the atomic bomb. Knowing a hawk from a handsaw is fundamentally equivalent to knowing a fox from a fax machine, a serpent from a server and a toad from a touchscreen. Any technological development is just another instance in the steady and never ending succession of technological developments.¹⁹² Contrary to this first attitude, which Ellul calls optimist, the second attitude would claim that in the mid 1950s, when Ellul wrote the first edition of the book in question, we were confronted with something completely new, differing from earlier technical stages not only in quantity but also in quality.

It is interesting from this perspective that the very same literature that names and describes contemporary digital media as “new media” tends to go far back in time to find the resources for their explanation of the present. Galloway, for example, references Aeschylus’s play *Agamemnon* to describe the incompatible dual aspects between which any network oscillates: On the one hand, the “chain of triumph” is the “linear, efficient, and functional”¹⁹³ communication from A to B, it is the accessibility of meaning exemplified by the figures of Isis and Hermes. On the other hand, the “web of ruin,” exemplified by the Furies or the “swarm,” is the “lingering threat of networked forms of being (if not networked vengeance).”¹⁹⁴

Lev Manovich similarly turns to the past, although less distant, to describe the present. He opens *The language of New Media* (2001) by indicating two separate historical trajectories: computing and media technologies. The one is illustrated by Charles Babbage’s “Analytical Engine” (1833), the uncompleted plans for a mechanical arithmetic calculator, the other by Louis Daguerre’s optical reproduction device, the *daguerrotype* (1839). The even earlier invention of the Jacquard loom (1801), however, which could weave elaborate images as instructed by punched cards, is presented as an early convergence of these two later trajectories. This

¹⁹² As expressed by H.G. Wells who will play a significant role in the following: “The modern encyclopædia should bear the same relation to the Encyclopédie or the early Encyclopædia Britannica that a transcontinental railway engine bears to Cugnot’s steam road car.” Wells, *The Work, Wealth and Happiness of Mankind*, 767.

¹⁹³ Galloway, “Networks,” 281.

¹⁹⁴ Ibid. 282.

convergence or inter-translatability becomes pivotal for Manovich's concept of new media: "All existing media are translated into numerical data accessible for the computer. The result: graphics, moving images, sounds, shapes, spaces, and texts become computable, that is, simply sets of computer data. In short, media become new media."¹⁹⁵

As mentioned in section 1.3.1, Kittler reproduces this pattern, although he turns it upside down, when he rejects *Mnemosyne*, goddess of memory and mother of the muses, as a means of reading different storage techniques from antiquity until today in favour of the computer's distinction between ROM (Read-Only Memory) and RAM (Random Access Memory). Kittler, for example, describes both parchment and the blackboard as RAM, since the traces left on the substrate are erasable, while the printing press constitutes a traditional ROM medium, since it would be less than practical to have the printed letters of the book run off and get lost before the feeding of the insects in the reading room.¹⁹⁶

These three examples clearly demonstrate the difficulty of determining when something begins. Ellul proposed the conclusion that, if we examine the intrinsic characteristics of a given technical instance nothing ever changes. In our case, the intrinsic relational characteristics of the archive remain the same across the ages. What does change, however, is the relation between a technology and society: "Ce ne sont pas les caractères intrinsèques qui peuvent nous dévoiler s'il y a quelque chose de changé ou non, mais les caractères de la relation entre le phénomène technique et la société."¹⁹⁷

But how, then, should we analyse the relation between technology and society, between the different techniques and technologies of the digital cultural heritage archive and the community of heirs of its content? Acknowledging the difficulties of writing history and commenting on his own attempts to abandon a view of history as a relation between temporal continuity and the consciousness of the subject in favour of an analysis of the discontinuities that allow isolated entities to appear,¹⁹⁸ Foucault once stated:

¹⁹⁵ Manovich, *The language of new media*, 25.

¹⁹⁶ Kittler, "Memories are made of you."

¹⁹⁷ Ellul, *La technique, ou, L'enjeu du siècle*, 59.

¹⁹⁸ Foucault, *L'Archéologie Du Savoir*, 12.

“Chaque périodisation découpe dans l’histoire un certain niveau d’événements, et, inversement, chaque couche d’événements appelle sa propre périodisation. C’est là un ensemble de problèmes délicat, puisque, selon le niveau qu’on choisit, on devra délimiter des périodisations différentes, et que, selon la périodisation qu’on se donne, on atteindra des niveaux différents. On accède ainsi à la méthodologie complexe de la discontinuité.”¹⁹⁹

In the following we shall examine two different levels of events and their respective periodizations in the attempt to see their convergence in the establishment of the digital cultural heritage archive around the beginning of the new millennium: 1. Technological development as the material condition of possibility of the digital cultural heritage archive, 2. The discourse of cultural politics providing funding and the legitimising vocabulary of the digital cultural heritage archive. We shall leave the academic hopes for utilising these archives and the critical stances toward the new technologies to chapters 3, 4 and 5.

The formations or trajectories of the present chapter will be exemplified by concrete actors, projects and inventions. Such a presentation should not, however, be considered an argument for the pivotal influence of actors, projects and inventions on the historical periodizations. The mind of the genius is not here considered the bringer of the event. The concrete examples should, rather, be seen as manifestations of more general tendencies of the time or, rather, participants in the event. The limits of the present dissertation unfortunately prevent a complete exploration of the many aspects and actors within the respective formations. As an archive of its own, this dissertation will never know *pleroma*. The material covered is fortunately well described within the separate domains, however, so although it is in the nature of any dissertation as well as any other archive to aspire for the fulfilment of *pleroma* in *pleroma*, only the aspects needed to argue for the proposed periodizations are included in the present consignment.

¹⁹⁹ Foucault, “Sur les façons d’écrire l’histoire,” 614.

2.1 Technological development

“Die Technik aber ist offenbar kein rein naturwissenschaftlicher Tatbestand. Sie ist zugleich ein geschichtlicher.”

Walter Benjamin: “Eduard Fuchs, der Sammler und der Historiker” in *Gesammelte Schriften* II · 2 p. 474

2.1.1 1945: Birth of the computer

In spite of the mentioned attempts to read antiquity or the nineteenth century as privileged predecessors to new media, and although the historical roots of the digital clearly reach far back into the depths of history, something new did happen in the period from the late 1930s to the early 1950s, leading to the traditional starting point for the history of the modern computer around 1945.²⁰⁰ Although Manovich’s genealogy is usually acknowledged, the standard account of the birth of the modern computer seems to be constituted by, roughly, the theoretical genesis of computing from Alan Turing’s “On Computable Numbers, with an Application to the Entscheidungsproblem” (1937), John von Neumann’s “First Draft of a Report on the EDVAC” (1945) and Claude Shannon’s “A mathematical theory of communication” (1948) and their concrete instantiations in those cryptically named computers: ENIAC (1944), EDVAC (1949) and UNIVAC (1951) etc.²⁰¹

²⁰⁰ For example, although he does problematize periodization, Paul E. Ceruzzi’s *A History of Modern Computing* takes 1945 as its point of departure. Contrary to our Foucauldian approach, however, Ceruzzi’s account of history as brought about by individual conscious will and creation is about as un-Foucauldian as imaginable, cf. “The “computer age” [...] was not just invented; it was willed into existence by people who wanted it to happen.” Ceruzzi, *A History of Modern Computing*, 15.

²⁰¹ This is, of course, a gross simplification. Jussi Parikka clearly described the predicament of writing a history of computers: “In a way, there is no history of computers, but multiple histories of computer technologies, components, and practices. [...] In short, there is just too much for a *single* history of the computer. Any history of computing becomes suddenly a metaquestion of how to write a history of such complexity.” Parikka, “History of Computers,” 249.

Again, although no one doubts their importance, these works are not manifestations of brilliant lightning from a clear blue sky of ignorance. Alonzo Church had written a demonstration of undecidability (the Entscheidungsproblem) a few months before Turing²⁰². Von Neumann drew enough on the work of John Presper Eckert and John Mauchley to drive a yearlong patent feud. And Shannon's contribution to the "statistical theory of the *amount of information*, in which the unit amount of information was that transmitted as a single decision between equally probable alternatives" should be seen in the general context of the day, where, according to Norbert Wiener, this "idea occurred at about the same time to several writers [...]"²⁰³.

Turing's paper demonstrated the logical foundation of computational machines, which Turing himself called "the universal computing machine" and Alonzo Church soon after dubbed the "Turing machine."²⁰⁴ Turing concluded: "It is possible to invent a single machine which can be used to compute any computable sequence."²⁰⁵ Such universality arises through a specific machine figuration's operation of logical steps on symbols on a string of paper tape where the machine's scanning of symbols can lead to a change in the logical figuration.²⁰⁶

Building on Turing's description, Von Neumann's report described what has come to be known as the "von Neumann architecture." This architecture describes a "stored-program" computer, meaning that it keeps program instructions and data in the same read-write random-access memory (RAM).²⁰⁷ Von Neumann's computer model contained five elements: a central arithmetic element; a logical control unit

²⁰² Augarten, *Bit by Bit: An Illustrated History of Computers*, 1944.

²⁰³ Wiener, *Cybernetics, or the Control and Communication in the Animal and the Machine*, 10.

²⁰⁴ Church, "Review: A. M. Turing, On Computable Numbers, with an Application to the Entscheidungsproblem," 43, see also Dyson, *Turing's Cathedral, the Origins of the Digital Universe*, 250.

²⁰⁵ Turing, "On Computable Numbers, with an Application to the Entscheidungsproblem," 241.

²⁰⁶ It should be noted that Turing's paper was not a proposed computer design but a hypothetical machine used to demonstrate a theoretical solution to David Hilbert's so called *Entscheidungsproblem* regarding the demonstrability of the solvability of logical problems, see Augarten, *Bit by Bit: An Illustrated History of Computers*, 143.

²⁰⁷ It should be mentioned that although he received most of the credit, von Neumann was not the originator of the stored-program computer. John A. P. Eckert and John Mauchly had already arrived at the idea during their construction of the ENIAC and their conception of the EDVAC, cf. *Ibid.* 139.

ordering the logical steps described by Turing; a memory unit which would store both instructions and data; and finally input and output.²⁰⁸

As suggested by its title, Shannon's paper describes the formal structure of information communication systems consisting of five parts:

- “1. An *information source* which produces a message or sequence of messages to be communicated to the receiving terminal. [...]
2. A *transmitter* which operates on the message in some way to produce a signal suitable for transmission over the channel. [...]
3. The *channel* is merely the medium used to transmit the signal from transmitter to receiver. [...]
4. The *receiver* ordinarily performs the inverse operation of the done by the transmitter, reconstructing the message from the signal.
5. The *destination* is the person (or thing) for whom the message is intended.”²⁰⁹

Information here takes the form of *binary digits* (“bits”), what Gregory Bateson famously described as “a difference which makes a difference.”²¹⁰ It is interesting that the *receiver* and the *destination* are necessary elements of the formal structure of information. If we consider message reconstruction as an act of consignation of signal from noise in the *channel*, we can inscribe this process in our diagram from chapter 1, where the rules of reconstruction (N) and the bits of information (H) will always require, as a minimum, a virtual destination (A in the position of a’).

It is possible to consider these three papers as crucial expressions of, first, the birth of computational logics, next, the birth of the contemporary computer as the implementation of those logics in a structure with addressable memory and, finally, the birth of information science. But we can also consider them as instantiations of what Kittler describes as the necessary and sufficient elements of new media: computation, storage and transmission. Kittler saw all three of them in the von

²⁰⁸ See Johnston, “Technology,” 206.

²⁰⁹ Shannon, “A Mathematical Theory of Communication,” 2.

²¹⁰ Bateson, *Steps to an Ecology of Mind, Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*, 321.

Neumann architecture: “Structurally, the bits stored in registers perform logical operations and arithmetical calculations, the multiple busses transport commands, data, and addresses, whereas the RAM supplies storage places for commands, addresses and data.”²¹¹ And this architecture then enables the generalised convergence detected by Manovich in the Jacquard loom. For Kittler, the consequence of this universality of the computer means the end of all media. What made new media new for Manovich, for Kittler meant the transition of media in the plural to media in the singular:

“Vor dem Ende, geht etwas zu Ende. In der allgemeinen Digitalisierung von Nachrichten und Kanälen verschwinden die Unterschiede zwischen einzelnen Medien. Nur noch als Oberflächeneffekt, wie er unterm schönen Namen Interface bei Konsumenten ankommt, gibt es Ton und Bild, Stimme und Text.[...] Und wenn die Verkabelung bislang getrennte Datenflüsse alle auf eine digital standardisierte Zahlenfolge bringt, kann jedes Medium in jedes andere übergehen. Mit Zahlen ist nichts unmöglich. [...] ein totaler Medienverbund auf Digitalbasis wird den Begriff Medium selber kassieren. Statt Techniken an Leute anzuschließen, läuft das absolute Wissen als Endlosschleife.”²¹²

As we shall see several times along the way, such eschatology of media holds its own pleromatic markers, although in this instance not without a certain irony: Nothing is impossible, absolute knowledge engages in its own eternal feedback loop.

2.1.2 The World brain & the Memory Extender

²¹¹ Kittler, “Towards an Ontology of Media,” 30.

²¹² Kittler, *Grammophon, Film, Typewriter*, 8.

During these years when the computer was born, or, rather, went from designating a human to designating a machine,²¹³ two more or less concrete hardware suggestions were made, which have both been considered precursors of contemporary digital archives: H.G. Well's *World Brain* (1938) and Vannevar Bush's *Memex* (1945).²¹⁴ Neither was digital and neither entailed actual computation but they should be seen in the context of the technical dreams and ambitions that, according to historian James R. Beniger, abounded before the formal formulations of computing: "The concepts of information processing, programming, decision, and control and the intellectual stimulation of the relationships among them seemed "in the air" among European and American engineers, mathematicians, and philosophers by the mid-1930s."²¹⁵

As mentioned above, Darnton considered the DPLA "a technological infrastructure that makes [collections] instantly available to the user with one click on an electronic device." A remarkably similar dream was expressed by H.G. Wells when, in 1938, he declared: "The time is close at hand when any student, in any part of the world, will be able to sit with his projector in his own study at his or her convenience to examine *any* book, *any* document, in an exact replica."²¹⁶ While for Darnton, "we have the technological and economic resources," for Wells, "The time is close at hand."

A few years later, in 1945, Vannevar Bush, formulated a similar vision for the problem to which scientists, whose time had been liberated by the end of the war, should turn their attention: "Science has provided the swiftest communication between individuals; it has provided a record of ideas and has enabled man to manipulate and to make extracts from that record so that knowledge evolves and endures throughout the life of a race rather than that of an individual."²¹⁷ One is

²¹³ "The word "computer" originally meant a person who solved equations; it was only around 1945 that the name was carried over to machinery." Ceruzzi, *A History of Modern Computing*, 1.

²¹⁴ Cf. e.g. Hillis, Petit, and Jarrett, *Google and the Culture of Search*, 15, Chun, *Programmed Visions, Software and Memory*, 137., Berners-Lee, *Weaving the Web, the Original Design and Ultimate Destiny of the World Wide Web by Its Inventor*, 5.

²¹⁵ Beniger, *The Control Revolution, Technological and Economic Origins of the Information Society*, 403. It should be noted here, that Wells had no formal knowledge of computation and that Bush was sceptical of the prospects of projects such as the ENIAC, see Augarten, *Bit by Bit: An Illustrated History of Computers*, 137.

²¹⁶ Wells, *World Brain*, 54.

²¹⁷ Bush, "As We May Think."

reminded of the beginning of *Toute la mémoire du monde*: “Parce que leur mémoire est courte, les hommes accumulent d’innombrables pense-bêtes.” Much like the operations of the BNF, Bush proposed a device to avoid drowning in the formless depths depicted at the beginning of Resnais’s film.

Both Wells’ *World Brain* and Bush’s *Memex* are regularly mentioned as forerunners of later digital archives and both were profoundly analogue. When Wells mentioned the student’s “projector,” he imagined the projection of microfilm, referencing that the British Museum had recently made microfilm replicas of 4.000 books published before 1550. And just as Darnton saw the technological road clear for archival *pleroma*, so, too, Wells only scoffed at technological challenges:

“There is no practical obstacle whatever now to the creation of an efficient index to all human knowledge, ideas and achievements, to the creation, that is, of a complete planetary memory for all mankind. And not simply an index; the direct reproduction of the thing itself can be summoned to any properly prepared spot.”²¹⁸

Bush also saw in the medium of microfilm the promise of overcoming the technological challenges that had prevented Leibniz and, later, Babbage from completing their respective plans of calculating machines: “The world has arrived at an age of cheap complex devices of great reliability; and something is bound to come of it.”²¹⁹ The level of technological progress at the time seemed finally to fulfil the archival promise. But in contrast to Wells, Bush is less enthralled by the pleromatic prospects of “the complete planetary memory for all mankind” than he is about the possibility for the individual to safely sail the rising archival seas without risking engulfment. He, too, saw the need to imprison the record in order for humanity to keep its liberty. Extending the record is easy; the challenge is how to consult it. Where Wells focused on centralised storage and access, Bush was interested in individual storage and techniques of retrieval.

²¹⁸ Wells, *World Brain*, 60.

²¹⁹ Bush, “As We May Think.”

For both, such consultation is not just a matter of scientific consignment and interpretation, it is also a matter of heritage: “This is a much larger matter than merely the extraction of data for the purposes of scientific research; it involves the entire process by which man profits by his inheritance of acquired knowledge.”²²⁰ Similarly, for Wells, the necessity of the World brain for a development of the planetary memory of mankind regarded “what we are doing with this precious inheritance of ours [...]”²²¹ This, of course, is not “cultural heritage” in the emphatic institutional sense to which we shall return, but a certain notion of heritage which we can include in our Derridean sense.

Where Wells shrugged off technical detail with a laugh, Bush, an engineer, proposed a desk with screens for scanning and projecting documents. His intent was to leave “repetitive thought” to the machines in order to let humanity get on with the creative side of things. One such machine alleviation of repetitive thought is exemplified by Herman Hollorith’s punched card machine, developed for the 1890 US census and since used for a wide array of bureaucratic purposes. In general, “the creative aspect of thinking is concerned only with the selection of the data and the process to be employed” whereas “the manipulation thereafter is repetitive in nature and hence a fit matter to be relegated to the machines.”²²²

According to Bush, selection is, however, severely inhibited by prevailing indexing systems. The alphabetical or numerical filing of documents in only one location as we saw in the BNF and its library successors is, for Bush, fundamentally at odds with the workings of the human mind which, quite the contrary, operates by association. The *Memex* is therefore “an enlarged intimate supplement to [individual] memory” which, in addition to “the usual scheme of indexing,” would allow the owner to join items into a web of numerous associative trails. Bush proposes the trail example of texts relating to the failed adoption of the Turkish bow in Europe. Each relevant document is thus adorned with a code indicating its association with such a trail and the trail could be called forth on the projection screen and played through at a desired speed.

²²⁰ Ibid.

²²¹ Wells, *World Brain*, 130.

²²² Bush, “As We May Think.”

This associative linking of documents has repeatedly been seen as the precursor to hyperlinking, i.e. digital links between documents or elements thereof. This notion was initially developed by Ted Nelson with regard to his on-going Xanadu project – “The Original Hypertext Project” – founded in 1960, which in a 1972 paper he inscribed as a direct descendant of Bush’s vision.²²³ One could imagine the *Memex* trails as a precursor to Wikipedia where terms of a certain relevance are linked to a page of their own. But although the *Memex* does enable a web of trails it is far from networked. It has the form of a wooden desk with no connectivity for automated document exchange with similar machines.

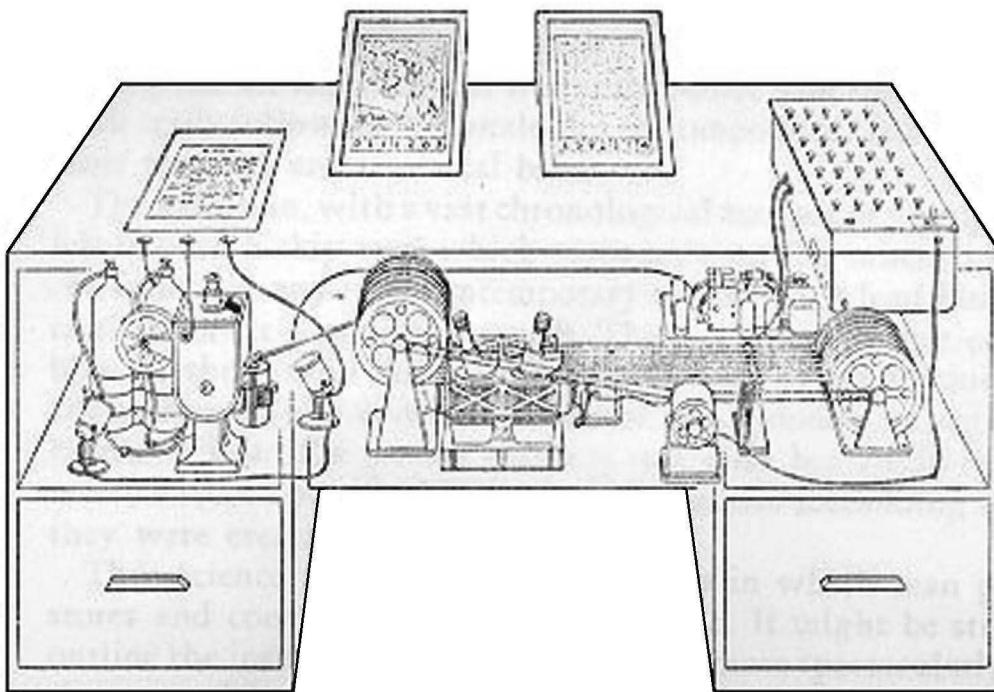


Illustration of Bush’s *Memex* from the reprint of the original article in *Life Magazine*, November 19, 1945.

Exchange is possible but only via microfilm hardcopies that can be carried and manually installed in another isolated machine. Along with the material substrate of microfilm, this non-networked setup is the object of Nelson’s suggestions regarding a “general transmission network [which] will carry requested documents from libraries to users, new documents from users to libraries, and communications

²²³ Nelson, “As We Will Think.”

and documents between users.”²²⁴ Such a general network was, however, not yet technically feasible when Bush wrote his article. The general technologies of networking had to be invented first.

2.1.3 Networked libraries

Twenty years after the publication of Bush’s article on the *Memex*, J.C.R. Licklider published the report *Libraries of the Future* (1965). Only having “heard about Memex and its “trails of references””²²⁵, Licklider was but indirectly influenced by the earlier article. During the book’s editing, however, someone noticed the article’s absence from the references whereupon Licklider finally read Bush’s piece and, ultimately, dedicated the book to him. Licklider recognised in Bush a *semblable* and, like Nelson later on, inscribed himself and his work as heir, as genealogical successor.

Although his optimism seemed more deeply rooted in a concrete technological evaluation and projection, Licklider joined Wells and Bush in deeming the technological obstacles to the fulfilment of archival desire surmountable: “Extrapolation, however uncertain, suggests that the basic “mechanical” constraints will disappear [...] Thus in the present century, we may be technically capable of processing the entire body of knowledge in almost any way we can describe [...]”²²⁶

Licklider shared with Bush the idea that, given the tremendous size of the human record, the necessary invention would free the user to engage with the creative part of thinking and leave the practicalities to the new device:

“It no longer seems likely that we can organize or distill or exploit the corpus by passing large parts of it through human brains.”²²⁷

“[The user] will still read and think and, hopefully, have insights and make discoveries, but he will not have to do all the searching himself nor all the

²²⁴ Ibid. 448.

²²⁵ Licklider, *Libraries of the Future*, xii.

²²⁶ Ibid. 19–20.

²²⁷ Ibid. 28.

transforming, nor all the testing for matching or compatibility that is involved in creative use of knowledge.”²²⁸

Similar to the *Memex*, Licklider’s device was to take the form of a desk, but contrary to Bush, Licklider envisioned a networked version: “[...] the concept of “desk” may have changed from passive to active: a desk may be primarily a display-and-control station in a telecommunication-telecomputation system,” and the stores of knowledge as well as the computational power allowing retrieval and manipulation of relevant information would happen via connection “into the procognitive utility net.”²²⁹

Like Wells and Bush, Licklider was thus clearly thinking of an extension of the human mind but his vision was influenced by a new technological situation. *Libraries of the future* was the report of a research project, launched by the Council on Library Resources in 1961.²³⁰ In October 1962, Licklider took a year’s leave of absence in order to head the Advanced Research Projects Agency (ARPA)’s newly founded Information Processing Techniques Office (IPTO). He did, however, continue to survey the project at a distance and published the book as its final report. At IPTO, Licklider was to have a profound impact on the decision to engage in the development of communication networks and what became the ARPAnet and then the Internet.

In 1960, Licklider had published a paper called “Man-Computer Symbiosis” where he formulated the hope “that, in not too many years, human brains and computing machines will be coupled together very tightly, and that the resulting partnership will think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today.”²³¹ So far, in symbiosis as the perfect extension of the mind, the indirect heritage from Bush was

²²⁸ Ibid. 32.

²²⁹ Ibid. 33. Licklider proposed the term “procognitive systems” instead of the historically burdened “library”: “Since the systems are intended to promote the advancement and application of knowledge, they are “for knowledge,” and thus procognitive systems. When this term is used in the plural, it refers to specialized systems as well as to the general, neolibrary system, and sometimes to successive generations of such systems. When it is used in the singular, it refers to the neolibrary system of the assumed epoch.” Ibid. 6.

²³⁰ Incidentally, The Council on Library Resources was founded in 1956, the year of Resnais’s depiction of the BNF.

²³¹ Licklider, “Man-Computer Symbiosis,” 4.

clear. But six months after his arrival at IPTO, Licklider wrote a memo arguing for the necessity to “develop a capability for integrated network operation.”²³² This hope for a human symbiosis with networked computing should be considered in the context of two concepts much discussed at the time: time sharing²³³ and packet switching – the one relating to computing resources, the other relating to the establishment of a robust network of transmission, i.e. the two sides of Licklider’s proposed “telecommunication-telecomputation system.”

Time sharing was conceived as an alternative to the earlier predominant computing form of “batch processing.” This latter type of processing was sequential in nature and ran a program from start to finish without any possible interaction or interruption. The program and data were fed to input via, e.g., punched cards, and at some point an output would arrive and the next job in line could be entered.²³⁴ Such processing meant queuing individual jobs, which resulted in a lot of wasted time waiting for access to computing resources. If we consider the computational process an archival instance of mechanically interpreting consigned data, the hermeneutic privilege remained in the hands of the *archontic* computer operator and was granted to the users in turns.

Time sharing, on the other hand, allowed multiple terminals to interact with the mainframe computer via such technologies as “polling” and “interrupt.” In the first case, the mainframe would poll the terminals at intervals to see if additional data or instructions were available which could then be inserted in the processing queue. In the case of interrupt, instructions from the terminal could engage and determine the running process and deliver inputs when wanted. The interrupt “makes software “social,” making its performance dependent upon associations with “others” – processes and performances elsewhere. These may be human users, other pieces of software, or numerous forms of phenomena traced by physical sensors such as

²³² Licklider quoted in Lyon and Hafner, *Where Wizards Stay up Late, the Origins of the Internet*, 38.

²³³ Time sharing is first mentioned in Bemer, “How to Consider a Computer.”

²³⁴ An illustration can be found in Stanford student, Ellis D. Kropotchev’s short silent film depicting the “trials and tribulations of batch processing” (1967).
<http://www.computerhistory.org/revolution/punched-cards/2/211/2253>.

weather monitors and security alarms. The interrupt connects the dataspace of software to the sensorium of the world.”²³⁵

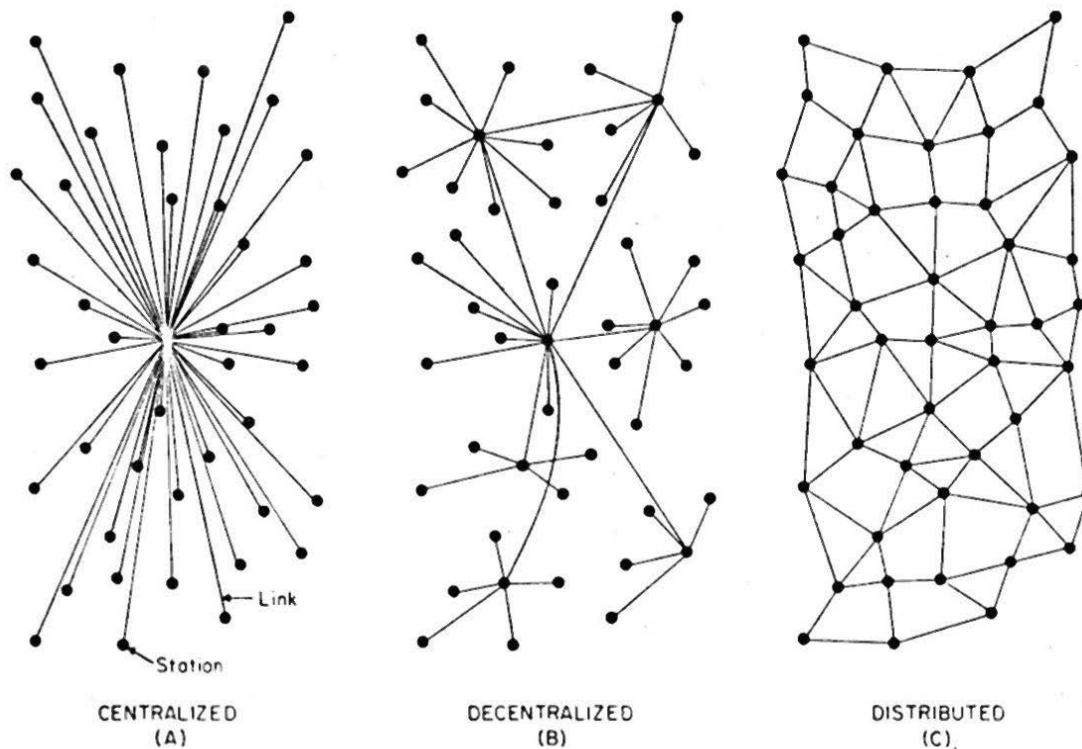
In this sense, both polling and the interrupt can be seen as a redistribution of archontic power. In the first case, the archon actively checks if anyone has anything to add or enquire. In the second, although still strictly limited by the protocols of the computer and network, the interrupt establishes the possibility of actively taking hermeneutic privilege instead of waiting for an open slot in the queue.

In a first step, however, time sharing remained a limited distribution of access as in the case of terminals’ communication with specific mainframes. Packet switching breaks with this paradigm. Enconced within the military horizon of the RAND Corporation, Paul Baran sought a solution to the problem of a potential communications breakdown during nuclear war. If a first enemy strike were to damage the communication infrastructure, how would the nation deploy a coordinated defence or counterattack?²³⁶ Baran’s response was to break up messages into small fragments or packets to be sent along various routes in a distributed network. Should one or several nodes in the network become unavailable, the packet would simply find a different available route on its own and finally reconstitute the message at the receiving end.²³⁷

²³⁵ Yuill, “Interrupt,” 162. As can be deduced from the wording, Yuill uses the term “social” in a Latoureaan vein.

²³⁶ It should be noted that Baran was trying to avoid war, not to help win such a war. The argument was that the inability to continue fighting after being the victim of a first attack would increase the desire to strike first. Baran’s network was to decrease the importance of the first strike. “Indeed, Baran and his colleagues even advocated sharing the packet-switching technology with the Soviets, on the grounds that having survivable communications on both sides would be the most stable configuration of all.” Waldrop, *The Dream Machine, J.C.R. Licklider and the Revolution That Made Computing Personal*, 276.

²³⁷ We should not forget that at more or less the same time, Donald Davies invented a network technology very much similar to that of Baran. Contrary to Baran, however, Davies had no military purpose in mind for his invention. He “simply wanted to create a new public communications network.” The term “packet switching” comes from Davies. Baran had proposed the somewhat more clumsy name “distributed adaptive message block switching.” Lyon and Hafner, *Where Wizards Stay up Late, the Origins of the Internet*, 66–67.



Baran's illustrations of network types, Baran, "On Distributed Communications: I. Introduction to Distributed Communications Networks," 2.

This double invention of distributed computing resources and distributed transmission networks thus seems to have been very much "in the air" when Licklider's research group conceived of its future "procognitive systems."²³⁸ For not only did these systems involve networked terminals, they also re-evaluated our habitual information entities:

"[...] the difficulty of separating the information in books from the pages, and the absence, in books, of active processors, are the roots of the most serious shortcomings of our present system for interacting with the body of recorded knowledge. We need to substitute for the book a device

²³⁸ In the mentioned documents, Licklider makes frequent reference to time-sharing but does not explicitly evoke packet switching. He does however refer to "survivability": "First, for the sake of reliability and what the military calls "survivability," the top-echelon subsystem should be replicated." Licklider, *Libraries of the Future*, 40-41. Survivability was the goal of packet switching, Baran's description of his proposed future systems: "We will soon be living in an era in which we cannot guarantee survivability of any single point. However, we can still design systems in which system destruction requires the enemy to pay the price of destroying n of n stations. If n is made sufficiently large, it can be shown that highly survivable system structures can be built – even in the thermonuclear era." Ibid. 16.

that will make it easy to transmit information without transporting material [...]"²³⁹

Lickliger dissolved the material substrate of the book in its various functions. Its “positive attributes all relate, as indicated, to the display function. The tallies that could be made for the storage, organization, and retrieval functions are less favorable.”²⁴⁰ His interpretative elements were clearly units of facts, answers to concrete questions.²⁴¹ Lickliger himself describes “facts” as “items of information or knowledge derived from one or more documents and not constrained to the form or forms of the source passages.”²⁴² Wells’ reproductions are no longer of interest, only the information they could yield. And Lickliger is less interested in Bush’s individual associative trails between locally stored microfilm documents than in the possibility of a computational association of disembodied data. Where the propositions of Wells and Bush focused on storage, i.e. access to information stored on microfilm, Lickliger’s library project is interested in computation and transmission of fragmented data packets distinct from the traditional library object.

2.1.4 From networks to storage

We have looked at the theoretical foundations of computing and the accompanying visions for either the isolated organisation of knowledge in the individual’s *Memex* or centralisation of all knowledge in a *World Brain*.²⁴³ It may seem odd that the time of

²³⁹ Lickliger, *Libraries of the Future*, 6.

²⁴⁰ Ibid. 4.

²⁴¹ Cf. the examples Ibid. 29.

²⁴² Ibid. 36.

²⁴³ It could be argued that Wells’s *World Brain* is in fact decentralised. He consistently speaks of concentration of knowledge in the *Brain*, and the organisation thus seems centralised, but he does occasionally acknowledge the possibility of something like a decentralised network: “The Encyclopaedic organization need not be concentrated now one place; it might have the form of a network. It would centralize mentally but perhaps not physically. Quite possibly it might to a large extent be duplicated. It is its files and its conference rooms which would be the core of its being, the essential Encyclopaedia. It would constitute the material beginning of a real *World Brain*.” Wells, *World Brain*, 49. Wells acknowledges the possibility of decentralisation but it would only be a decentral distribution of reproductions of centralised knowledge. The organisation of knowledge as such is still completely centralised in a “new centralising and unifying organ, which I have called the Permanent World Encyclopaedia.” Wells quoted in Rayward, “H. G. Wells’s Idea of a *World Brain*,” 560.

computation would foster fantasies of storage. But although computation in the 1940's was mainly applied to specific tasks extensively related to war and science, new forms of material storage of information had proven useful for decades. Hollerith's punched cards had already revolutionised bureaucratic technology.

What the future should hold was contested, however. As Ceruzzi notes, Wallace Eckert who worked with IBM at Columbia University opposed the radical new design of the EDVAC stored-program computer in favour of further "modifications to punched card machines."²⁴⁴ Howard Aiken, who had worked on the IBM Mark I computer, was unable to see the radical innovations within computing as relevant beyond the specific domains already tested. He did not think that "the basic logics of a machine designed for the numerical solution of differential equations [could] coincide with the logics of a machine intended to make bills for a department store."²⁴⁵ In the midst of such multifaceted and contested development, it seems comprehensible that whatever was "in the air" could provide an open space for the projection of fantasies. As Bush said: "*something* is bound to come of it" but what, exactly, was still very much a matter for the imagination.

Licklider's report was written at a time when the basic principles of computing were better known and understood and the network had taken the role of primary contested element.²⁴⁶ After a first successful ARPAnet transmission between UCLA and Stanford Research Institute at 10.30 AM October 29, 1969, the digital network could finally claim technological victory around 1990. And for two reasons. For one thing, December 1990 saw the first running "*WorldWideWeb browser/editor*" running on Tim Berners-Lee's NeXT computer at CERN.²⁴⁷ For another, according to a study performed by Martin Hilbert and Priscila López, 1990 was the year where more than 50% of the worlds telecommunication became digital.²⁴⁸

Again we have the double trajectories of technological development and the visions for how this development could be useful – technologies and imaginaries –

²⁴⁴ Ceruzzi, *A History of Modern Computing*, 25.

²⁴⁵ Aiken quoted in *Ibid.*

²⁴⁶ For a rendition of Baran's problems with persuading AT&T to participate in the development of distributed networks, cf. Lyon and Hafner, *Where Wizards Stay up Late, the Origins of the Internet*, 62–63.

²⁴⁷ Berners-Lee, *Weaving the Web*, 30.

²⁴⁸ Hilbert and López, "The World's Technological Capacity to Store, Communicate, and Compute Information," 63.

two trajectories finally about to converge. In his invention of the World Wide Web and its Hypertext Markup Language (HTML), Berners-Lee recognised a conceptual genealogy in Vannevar Bush and his *Memex*, Ted Nelson's notion of Hypertext and its implementation in what he called *Xanadu* and, finally, Doug Engelbart's proposed NLS (oN Line System). But he claims that "Unfortunately, just like Bush and Nelson, Doug was too far ahead of his time." Berners-Lee mentions Donald Davis and Paul Baran as developers of the technologies behind the Internet, which had existed since the 1970s²⁴⁹ but was "only just becoming pervasive. I happened to come along with time, and the right interest and inclination, after hypertext and the Internet had come of age. The task left to me was to marry them together."²⁵⁰

In our periodization, then, computation had its early development period from the 1930s to the 1950s. The distributed network was contested and developed in the 1960s until around 1990, culminating with the opening of the World Wide Web to free private as well as commercial use in 1993. The next, and for our purposes final, stage is the predominance of digital storage. According to the study by Hilbert and López, 2002 marks the point where the majority of all information on earth was stored digitally.²⁵¹ This indicates a drastic acceleration from 25% digital information in 2000, 50% in 2002 and 94% in 2007 (e.g. hard drives, servers, DVD and Blu-Ray). In comparison, they mention that in 1986, 58% of the world's information was stored on analogue videotapes, 14% on vinyl records, 12 % on analogue audiotapes, 8% on photographic positives and 5% on photographic negatives.²⁵²

²⁴⁹ It should be noted that the term Internet here describes any kind of transmission using the TCP/IP suite (Transmission Control Protocol/Internet Protocol), whereas the World Wide Web as invented by Berners-Lee around 1990 is a network of hypertext documents linked by HTTP (Hypertext Transfer Protocol). The World Wide Web is thus a subsection of the Internet.

²⁵⁰ Berners-Lee, *Weaving the Web*, 6.

²⁵¹ Vastag, "Exabytes."

²⁵² Hilbert and López, "The World's Technological Capacity to Store, Communicate, and Compute Information," 61.

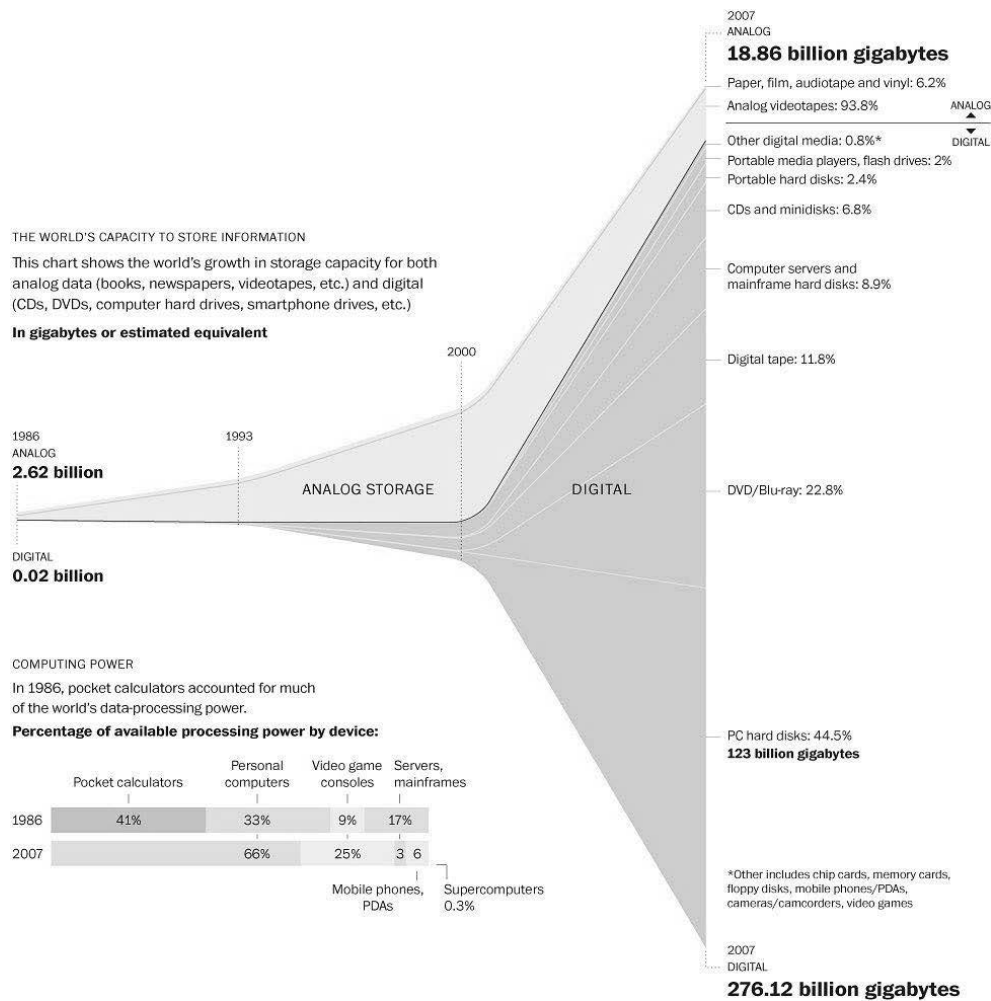


Illustration of the rise in digital storage from Vastag, "Exabytes."

As we shall see, the shift in storage from analogue to digital in 2002 coincides more or less with the advent of the concept of digital cultural heritage. For now, it is interesting to note that the turn of the millennium was the target date for Licklider's future libraries or procognitive systems.²⁵³ He had taken as "the working assumption that there will be $2 \cdot 10^{15}$ bits in 1980 and $5 \cdot 10^{15}$ bits in the year 2000."²⁵⁴ According to Hilbert and López, the actual storage capacity was more along the lines of 2,6 exabytes in 1986, "15,8 in 1993, over 54,5 in 2000, and to 295 optimally compressed exabytes in 2007."²⁵⁵ In order to fully understand the difference, we should remember that one exobyte is 10^{18} bytes and that one byte is eight bits. The number

²⁵³ "The "future," in "libraries of the future," was defined at the outset, in response to a suggestion from the council, as the year 2000." Licklider, *Libraries of the Future*, 2.

²⁵⁴ Ibid. 15.

²⁵⁵ Hilbert and López, "The World's Technological Capacity to Store, Communicate, and Compute Information," 62.

presented by Hilbert and López for 2000 thus corresponds to $4,36 \cdot 10^{20}$ bits, i.e. almost 100.000 times more than predicted by Licklider in 1965.²⁵⁶

2.1.5 Infinite storage

We have already seen some of the archival fantasies that co-occurred with the rise of computation (1930s - 1950s) and networked transmission (1960s-1990s), and we have now almost arrived at the imaginaries of the digital cultural heritage archive as co-occurring with the rise to prominence of digital storage around the beginning of the new millennium. This prominence is the result of a drastic acceleration of the capacity of an invention from the time of transition between our ages of computation and networks. The hard drive as we know it today and which still holds the information in, e.g., Amazon's and Netflix's servers, was first presented in 1956 and thus the same year as Resnais's *Toute la mémoire du monde*. But, as predicted by Licklider, "For several decades, indeed, it seems likely that the limitations on memory size will completely dominate the picture [...]"²⁵⁷

On September 14, 1956 IBM made a press release announcing the 305 RAMAC and the 650 RAMAC, "two electronic data processing machines using IBM's random access memory, a stack of disks that stores millions of facts and figures less than a second from management's reach."²⁵⁸ RAMAC stood for "Random Access Method of Accounting and Control" and the disk stacks in question were the first hard drives – the 350 Disk Storage Unit and the 355 Disk Storage Unit for the 305 and the 650 respectively. The 50 disks of the 350 could store 5 million 6-bit characters

²⁵⁶ In Licklider's defense, it should be noted that his conception of what should be stored was far from more recent notions of multimedia. By limiting his scope to "the facts, concepts, principles, and ideas that lie behind the visible and tangible aspects of documents," or what he called "transformable information," he excluded much of what we would now consider crucial parts of the archive: "Works of art are clearly beyond that scope, for they suffer even from reproduction. Works of literature are beyond it also, although not as far." Licklider, *Libraries of the Future*, 2. For other measurements of the recent growth in digital storage, cf. Gantz and Reinsel, "Extracting Value from Chaos"; Short, Bohn, and Chaitanya, "How Much Information? 2010 Report on Enterprise Server Information"; Zikopoulos, *Understanding Big Data, Analytics for Enterprise Class Hadoop and Streaming Data*. All are referenced alongside Hilbert and López in Kitchin, *The Data Revolution*, 69–70.

²⁵⁷ Licklider, *Libraries of the Future*, 43.

²⁵⁸ https://www-03.ibm.com/ibm/history/exhibits/650/650_pr2.html. We can note that the IBM 650 was the first computer in history to reach a production number above 1000 and it reached nearly 2000 before production ceased in 1962. Cf. http://www-03.ibm.com/ibm/history/exhibits/650/650_intro.html

equivalent to 3.75 megabytes. They spun at 1200 RPM, whereas current hard drives spin at 5400 or 7400 RPM in laptops or stationary computers that haven't already switched to flash storage, and contemporary servers can see rotation speeds up to 10.000 or 15.000 RPM. The radical aspect of this invention was the Random Access. In contrast to the earlier sequential retrieval methods of tape, wire or punched cards, this technology assured that "any piece of data was as accessible as any other."²⁵⁹ If the codex was the first break with the linearity of the scroll, the random access hard drive would support the notion of facts as distinct from books.

The presentation of these new storage devices at the 1958 World's Fair in Brussels was accompanied by yet another imaginary vision of technological development. The IBM computer was presented to the crowd as "Professor RAMAC," described as an "electronic "genius"" with "almost total historical recall and the ability to speak 10 languages [...]" and with the ability to answer user queries regarding history from "[...] the birth of Christ to the launching of Sputnik 1."²⁶⁰ The dream of total historical recall as an instance of archival *pleroma* was thus nourished by the invention of the hard drive. The accessibility of stored data was immediately linked to the personification of omniscience.

The new dominance of digital storage in 2002, thus, entails the technological culmination of a shift that began in 1956.²⁶¹ A shift which was always, however, profoundly linked to cultural imaginaries, or as Matthew Kirschenbaum wrote in his forensic rendition of digital storage: "The question, in other words, is not whether we will have the storage capacity to accumulate copies of every book, film, song, conversation, e-mail, etc. that we amass in a lifetime (yes, eventually) but how do these accumulations, these massive drifts of data, interact with irreducible levels of lived experience?"²⁶² Even after the predominance of digital storage we are still just ever so close to fulfilling the technological conditions of archival *pleroma*. Not quite there, but the solution to the last technological challenges is just around the corner: "yes, eventually." But the overwhelming question, of course, remains the one we

²⁵⁹ Ceruzzi, *A History of Modern Computing*, 70.

²⁶⁰ *The Times* from San Mateo, California on March 22, 1958, p. 23 quoted in Kirschenbaum, *Mechanisms, New Media and the Forensic Imagination*, 76.

²⁶¹ Of course, it didn't simply begin in 1956. Although the presentation was in 1956, the underlying patent (3,134,097) was filed December 24, 1954. And, obviously, much work preceded the patent filing.

²⁶² *Ibid.* 105.

inherited from Ellul about the relation between technology and society, between technology and culture.

2.2 Cultural politics

“Now is the time to move our project, and we must do it in a definite and political way.”

Hendrik Andersen, letter to Paul Otlet, November 11, 1918, quoted in Wright, *Cataloging the World, Paul Otlet and the Birth of the Information Age*, 163.

2.2.1 World brain, World city, World Museum

Well’s notion of a World brain is often mentioned as an early vision of what was to become the digital cultural heritage archive. Contrary to what we have claimed so far, however, Wells’ World Brain was only barely a vision of technology. It was no doubt inspired by the on-going technological development, but in addition to the easy dismissal of technological and financial obstacles to the project, Wells explicitly wanted to leave the specificities in the dark: “for the present it is desirable to leave this project of a World Encyclopaedic organization vague – in all but its essential form and function. [...] If a thing is really to live it should grow rather than be made.”²⁶³ He focused strictly on the essential form and function, and they primarily amounted to a political vision for the role of knowledge in society – a vision which, in the case of Wells, sprang from an Enlightenment notion of the Encyclopaedia.²⁶⁴

²⁶³ Wells, *World Brain*, 52.

²⁶⁴ The entry *Encyclopédie* from the Diderot’s and d’Alembert’s *Encyclopédie* clearly expresses the scope of knowledge organization in terms of human betterment: “Le but d’une encyclopédie est de

Wells explicitly inscribed himself in the heritage from Diderot's *Encyclopédie*²⁶⁵: Diderot made a "heroic effort" which, unfortunately amounted to "hurried summaries"²⁶⁶ altogether insufficient from the point of view of the present described by Wells where "I doubt if in the past the gap was so wide as it is now between the occasions that confront us, and the knowledge we have assembled to meet them."²⁶⁷ The "modern World Encyclopaedia" or World Brain, "should consist of selections, extracts, quotations, very carefully assembled with the approval of outstanding authorities in each subject, carefully collated and edited and critically presented. It would be not a miscellany, but a concentration, a clarification and a synthesis."²⁶⁸ Three times it is described as a "clearing house" – "of misunderstandings,"²⁶⁹ "for the mind"²⁷⁰ and "for universities and research institutions"²⁷¹ – thus clearly indicating the desire to canonise acknowledged truth once and for all on a collective, individual and institutional level, to "*compel* men to come to terms with one another,"²⁷² of establishing "a system of mental control about the globe," and of "directing without tyranny."²⁷³

The goal of the proposed organisation of knowledge is thus a certain political organisation of society – a form of knowledge-based control that would eliminate all forms of strife and disagreement and create "a common interpretation of reality"²⁷⁴ as

rassembler les connaissances éparses sur la surface de la terre ; d'en exposer le système général aux hommes avec qui nous vivons, et de le transmettre aux hommes qui viendront après nous ; afin que les travaux des siècles passés n'aient pas été inutiles pour les siècles qui succéderont ; que nos neveux devenant plus instruits, deviennent en même temps plus vertueux et plus heureux ; et que nous ne mourions pas sans avoir bien mérité du genre humain." Diderot & d'Alembert, "Encyclopédie," 635.

²⁶⁵ "It was the genius of Diderot (1713-84) which first revealed the power and importance latent in these great gatherings of fact and theory. [...] the Encyclopédistes constituted a definite movement towards a new education and a new social life." Wells, *The Work, Wealth and Happiness of Mankind*, 765. In *World Brain*, which he also calls a World Encyclopaedia, however, Wells underlines that the times have changed: "Our present circumstances are altogether different from [those of Diderot]." Wells, *World Brain*, 13. We have more material so a stronger structure and more resources are needed to create "an undogmatic Bible to a world culture. It would do just what our scattered and disoriented intellectual organizations of today fall short of doing. It would hold the world together mentally." Ibid. 14.

²⁶⁶ Ibid. 13.

²⁶⁷ Ibid. 7.

²⁶⁸ Ibid. 13–14.

²⁶⁹ Ibid. 15.

²⁷⁰ Ibid. 49.

²⁷¹ Ibid. 50.

²⁷² Ibid. 16.

²⁷³ Ibid. 23.

²⁷⁴ Ibid. 24.

the basis of a “World Pax.” And since Wells was in no way ignorant of the geopolitical climate at the time of publication of *World Brain*, he presented his political case with a certain urgency: “catastrophe lies ahead”²⁷⁵ so it is a matter of a “New world or nothing.”²⁷⁶ An urgency, which, as forcefully demonstrated by W. Boyd Rayward,²⁷⁷ turns tyrannical in its own way, when it attempts to create what Wells described as “an intellectual authority sufficient to control and direct our collective life.”²⁷⁸

Wells’ proposed guardians of knowledge are clearly supposed to live up to the double meaning of the ἄρχοι as both rulers and guardians of the archive. “The rulers are the mediators,” Galloway said, and Wells meant it literally: “Why should not a dictatorship – not of this or that man, nor of the proletariat, but of informed and educated common-sense – some day rule the earth?”²⁷⁹ This dictator-like rule of common sense was to be guarded by what he at one point called “sources”: “They are the men and women who know best, the men and women who think and express best, the sources”²⁸⁰ that assure unanimity: “there can be no two respectable and antagonistic opinions [...]”²⁸¹ For Wells, the doxopoietic negotiations between the subject and its other are not, as in Foucault’s rendition, supposed to take place along the axis ISa’l with the possibility of *parresia* to break the connection. Instead, the collective relation ISa’l is supposed to be wholly determined by the constitution of a common sense N with regards to the world of H.²⁸²

²⁷⁵ Ibid. 25.

²⁷⁶ Ibid. 32.

²⁷⁷ Cf. Rayward, “H. G. Wells’s Idea of a World Brain.”

²⁷⁸ Wells, *World Brain*, 68.

²⁷⁹ Wells, *After Democracy: Addresses and Papers on the Present World Situation*, 203, cf. Rayward, “H. G. Wells’s Idea of a World Brain,” 569.

²⁸⁰ Wells, *The Work, Wealth and Happiness of Mankind*, 771.

²⁸¹ Wells, *The Shape of Things to Come*, 256, quoted in Rayward, “H. G. Wells’s Idea of a World Brain,” 569. In his earlier work, Wells proposed secluding those not able to accept the ruling order on islands and possibly prohibiting their reproduction, cf. Wells, “Memorandum on the Project of a World Encyclopaedia,” 161–162, Rayward, “H. G. Wells’s Idea of a World Brain,” 566. In 1933, though, he still wrote of eugenics as a way of furthering the indoctrination of the citizen in the social order, cf. Wells, *The Shape of Things to Come*, 426 and Rayward, “H. G. Wells’s Idea of a World Brain,” 567. Finally, in order to purge his technocratic society from “criminals” or “recalcitrants,” he also imagined the tracking of citizens via biometric indexing, cf. Wells, “Memorandum on the Project of a World Encyclopaedia,” 184–185.

²⁸² We have already referred the present use of doxa to Deleuze. Wells’s essentially double motion of the distribution of good sense by the intellectual organ of common sense is what Deleuze called the two sides of doxa: the distribution of or inscription under good sense and the recognition of common sense Deleuze, *Logique du sens*, 93–96. We shall return to this point in Chapter 5.

Again, however, it is important to emphasise that the perception of a direct link between a universal organisation of knowledge and global political doxa were very much “in the air” at the time. Paul Otlet, who is sometimes considered the father of information science,²⁸³ had a similar encyclopaedic vision towards the end of the 19th century. In 1895 in Brussels, along with his colleague Henri Lafontaine, he founded the *Institut International de Bibliographie*, the major goal of which was the development of the *Répertoire bibliographique universel*. At the Grand Pavilion of the Paris world fair in 1900 they presented an excerpt of over two million index cards from the repertoires, which earned them a Grand Prize. In 1897, Otlet described the project as follows: “This repertory will consist of an inventory of all that has been written at all times, in all languages, and on all subjects.”²⁸⁴ The goal of archival pleroma is manifestly present.

Like Licklider, Otlet’s project of cataloguing all the information in the world went as far as imagining the separation of the physical books from their facts. Unlike the computational abstractions proposed by Licklider, however, Otlet’s separation was to be done by hand: “This systematic recording of facts, statistical data and interpretations of them in the final analysis will be work undertaken by only a few individuals: the creation of a kind of artificial brain by means of cards containing actual information or simply notes of references.”²⁸⁵ The technical abstraction and synthesis of knowledge in the bibliography index were, thus, considered an artificial brain. Index cards were originally conceived as the substrate for these facts, but, like Wells and Bush, Otlet soon became fascinated by microfilm. “If one had the necessary resources at one’s disposal all of Human Thought could be held in a few hundred catalogue drawers, ready for diffusion and to respond to any request.”²⁸⁶

Otlet imagined such a centre of human thought in the form of, first, the Palais Mondial, whose “collections will tend progressively to constitute a permanent and complete representation of the entire world”²⁸⁷, and, next, the Mundaneum, a world centre, “réalisant, au degré mondial, et avec la coopération des organismes officiels,

²⁸³ By its mere title Alex Wright’s biography of Otlet implies as much: “Cataloguing the World – Paul Otlet and the Birth of the Information Age.”

²⁸⁴ Otlet quoted in Rayward, *The Universe of Information*, 114, cf. Wright, *Cataloging the World, Paul Otlet and the Birth of the Information Age*, 76.

²⁸⁵ Otlet, *International Organisation and Dissemination of Knowledge: Selected Essays*, 17.

²⁸⁶ *Ibid.* 93.

²⁸⁷ Otlet quoted in Rayward, “Visions of Xanadu,” 240.

les cinq grandes institutions traditionnelles du Travail Intellectuel : Bibliothèques, Musée, Association scientifique, Université, Institut.”²⁸⁸

“Le désir est : Qu’en un point du Globe, l’image et la signification totales du Monde puissent être perçues et comprises; – Que ce point devienne un lieu sacré, inspirateur et coordinateur de grandes idées, de nobles activités; – Qu’il y soit formé un Trésor, fait de la somme des œuvres intellectuelles, apporté comme une contribution à la Science et à l’Organisation Universelle, comme un élément de l’immense Épopée et de l’Aventure magnifique poursuivies à travers les âges par l’Humanité.”²⁸⁹

We should notice the fantasy of concentrating the entire world in a single point. Like a Camera Obscura this one point should internalise all that is external. The pleromatic archive should consign everything. A clear inspiration for this notion is Patrick Geddes’ 1892 purchase of the Short’s Observatory in Edinburgh. This observation tower had been fitted with a periscope and a number of mirrors to operate like a Camera Obscura projecting images of the outside world onto a wooden table in a darkened room²⁹⁰: “The general principle is the synoptic one, of seeking as far as may be to recognise and utilise all points of view—and so to be preparing for the Encyclopaedia Civica of the future.”²⁹¹ Otlet had met Geddes at the 1900 Paris World Fair and they had since corresponded occasionally regarding their common interest in the relation between knowledge organisation and social organisation.²⁹²

²⁸⁸ Otlet and Le Corbusier, *Mundaneum*, 1.

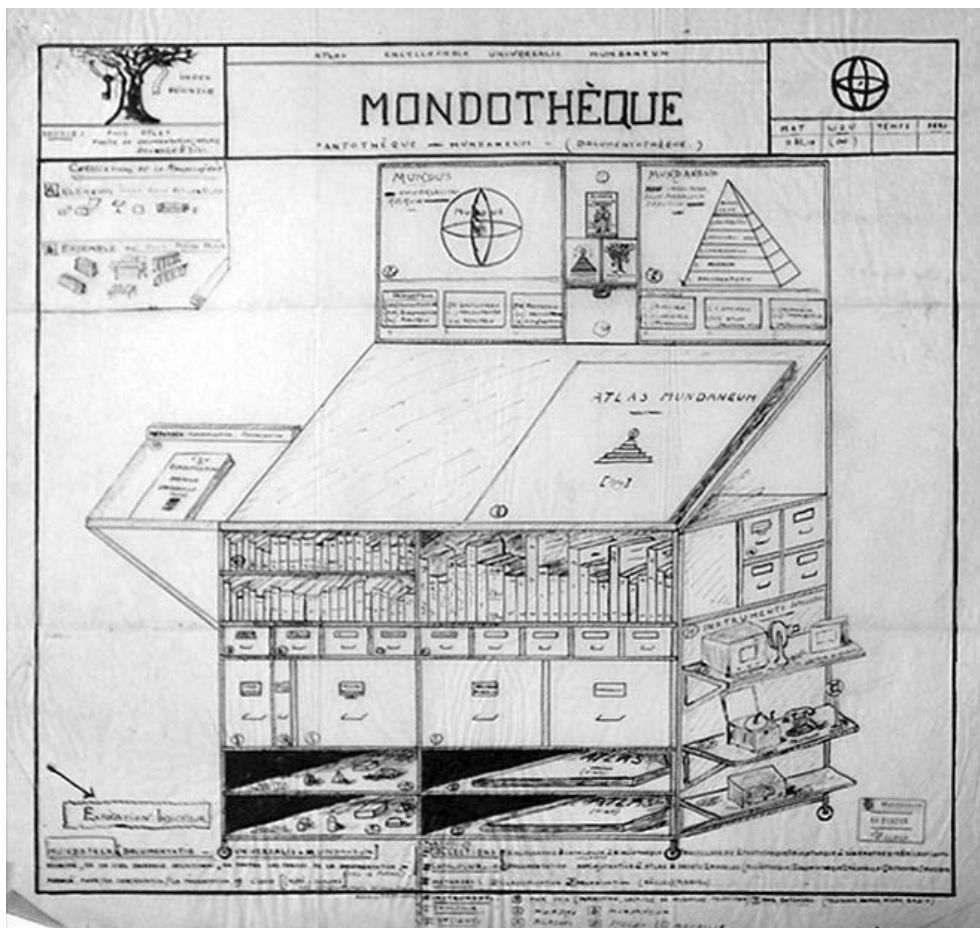
²⁸⁹ Ibid. 42.

²⁹⁰ Cf. Wright, *Cataloging the World, Paul Otlet and the Birth of the Information Age*, 108.

²⁹¹ Geddes, *Cities in Evolution, an Introduction to the Town Planning Movement and to the Study of Civics*, 320. Cf. also Wright, *Cataloging the World, Paul Otlet and the Birth of the Information Age*, 110.

²⁹² It is possible to consider Borges’ famous Aleph as, at least in part, inspired by Geddes’ and Otlet’s fantasies of the camera obscura internalising everything external in a single focal point. We know that Borges was aware of Otlet. The famous passage from “El idioma analítico de John Wilkins,” which Foucault quoted in the introduction to *Les mots et les choses* (p. 7), seems to be a clear ridicule of Otlet and the Bibliographical Institute of Brussels. Immediately after the passage quoted by Foucault, Borges continues: “El instituto Bibliográfico de Bruselas también ejerce el caos: ha parcelado el universo en 1000 subdivisiones, de las cuales la 262 corresponde al Papa; la 282, a la Iglesia Católica

Like Wells, Otlet wanted to go further than the mere index. As quoted above, Wells was not satisfied with just an index; he wanted the ubiquitous accessibility of the “reproduction of the thing itself.” And like Bush, Otlet soon considered an interactive desk as the point of interaction. Otlet proposed the Mondotheque, a microfilm-wielding desk not unlike Bush’s Memex.



Unpublished illustration of the Mondotheque (1941)

What Otlet saw as the reduction of the human record to catalogue drawers and then a desk could, according to Bush, be fit in a moving van: “a total record, in the form of magazines, newspapers, books, tracts, advertising blurbs, correspondence, having a volume corresponding to a billion books, the whole affair, assembled and

Romana; la 263, al Día del Señor; la 268, a las escuelas dominicales; la 298, al mormonismo, y la 294, al brahmanismo, budismo, shintoísmo y taoísmo.” Borges concludes: “He registrado las arbitradiedades de Wilkins, del desconocido (o apócrifo) enciclopedista chino y del Instituto Bibliográfico de Bruselas; notoriamente no hay calificación del universo que no sea arbitratia y conjetural. La razón es muy simple: no sabemos qué cosa es el universo.” Borges, *Otras inquisiciones*, 142–143.

compressed, could be lugged off in a moving van.”²⁹³ But unlike Bush’s desk of 1945, Otlet’s desk of 1934 was networked: “Ici la Table de Travail n’est plus chargée d’aucun livre. A leur place se dresse un écran et à portée un téléphone. Là-bas au loin, dans un édifice immense, sont tous les livres et tous les renseignements, avec tout l’espace que requiert leur enregistrement et leur manutention [...] un Wells certes l’aimerait.”²⁹⁴ Otlet saw kinship in Wells and clearly describes his project as “un véritable cerveau mécanique et collectif.”²⁹⁵

Otlet’s vision, like that of Wells, was based on a political notion of centralisation. As indicated by the name, the networked Mondotheque was connected to the Mundaneum, the centre of all knowledge, which was to be placed in a World city that would house a world government. Otlet was engaged in two projects for such a city: First with Norwegian-American artist Hendrik Christian Andersen and then with Le Corbusier. Andersen’s project was published in 1913 in a substantial volume entitled *Creation of a World Centre of Communication*, with urban plans by the architect Ernest M. Hébrard.

Contact between Andersen and Otlet and Lafontaine was established in 1911 and in February 1912, the two latter wrote Andersen to express the compatibility of their respective visions for the organisation of knowledge, government and urban space: “the center you have dreamed of in its architectural realization, we have imagined in its functional activity.”²⁹⁶

²⁹³ Bush, “As We May Think.”

²⁹⁴ Otlet, *Traité de documentation, le livre sur le livre, théorie et pratique*, 428. This passage refers to the desk before it received the name Mondotheque.

²⁹⁵ *Ibid.* 391.

²⁹⁶ Otlet and La Fontaine, letter to Andersen quoted in Wright, *Cataloging the World, Paul Otlet and the Birth of the Information Age*, 134.



Drawing of the World City from Andersen & Hébrard, *Creation of a World Centre of Communication*

Funding was to come from Scottish-American industrialist and philanthropist Andrew Carnegie and the millions left from King Leopold II's colonial pillaging of the Congo. In November 1913, King Albert I of Belgium expressed the same optimism about the easy inevitability of the project as we have seen in Wells and Bush: "[...] this plan is practical, there is nothing here that cannot be turned into a reality. [...] One day it must exist."²⁹⁷

The outbreak of World War I, of course, hindered the internationalist aspirations of Otlet and his collaborators, which Otlet formulated in his 1914 manifesto *La fin de la guerre*. Here, he envisioned the world as a single territory, united under a "Société des nations" with the motto: "Per Orbem Terrarum Humanitas Unita" – "Humanity United throughout the World."²⁹⁸ Faced with the World War and upon learning about the death in it of his son, Otlet concluded the necessity of his vision: "décrire les conditions d'une Cité humaine supérieure entièrement vouée à la Paix."²⁹⁹ After the war such a project would find its collaborator in Le Corbusier. In 1928, they published a grand plan for a world city in Geneva but the stock crash of 1929 brought an end to their hopes for funding just as the

²⁹⁷ Andersen's diary as quoted in *Ibid.* 143.

²⁹⁸ Cf. *Ibid.* 152–153.

²⁹⁹ Otlet quoted in Levie, *L'homme qui voulait classer le monde, Paul Otlet et le Mundaneum*, 176.

internationalist aspirations for the site to be classified as international territory received a less than favourable response from the Swiss government.

With regards to our archival model from Chapter 1, we should recognise in these fantasies of the deterministic relation between the organisation of knowledge and the political organisation of society the notion, that the correct knowledge relation INHI would engender the correct social relation ISa'l. The knowledge relation is supposedly established by the hermeneutic privilege of the ἄρχοι, Well's sources or Otlet's bibliographical institute, and such canonised "common sense" (N) establishes the mirror in which S and a' can see their supposed ideal image, i.e. for each S the position of a' is taken by A as the representative of N. This is the attempted establishment of doxa via archival pleroma.

2.2.2 The presence of the past

These imaginaries of centralised knowledge as the foundation for centralised world government as well as the imaginaries relating to technological access to such knowledge are more or less contemporary with the first international treaties for preservation of cultural heritage. 1931 saw the *First International Congress of Architects and Technicians of Historic Monuments*, which resulted in the *Athens Charter for the Restoration of historic Monuments*. This was followed in 1935 by the so-called *Roerich Pact (Treaty on the Protection of Artistic and Scientific Institutions and Historic Monuments)*.³⁰⁰ 1954 delivered *The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict* under the auspices of UNESCO. The *Second International Congress of Architects and Specialists of Historic Buildings* took place in 1964 and resulted in *The Venice Charter for the Conservation and Restoration of Monuments and Sites* and the creation of ICOMOS (International Council on Monuments and Sites). And, in 1972, UNESCO adopted *The Convention concerning the Protection of the World Cultural and Natural Heritage*.

³⁰⁰ The draft for the Roerich Pact was approved by the League of Nations but was ultimately ratified by only ten states in the Americas.

These treaties were the first international legal frameworks for such heritage preservation, but the preservation of specific monuments has, of course, been a priority for millennia, although the scope of the preservation effort has varied greatly through the ages. Two conditions of possibility should be mentioned for the rise of international cultural heritage charters in the beginning of the thirties. One is the internationalist scope of the organisation of knowledge just described; the other is the actual institutional foundation for such a scope.

As mentioned, such a scope had been under development throughout the latter half of the nineteenth century but it had lacked the international organisations to support it. In 1910, Otlet and Lafontaine had founded the *Union des Associations Internationales* in the hope of furthering “l’élaboration d’une organisation mondiale, fondée sur le droit, sur le progrès scientifique et technique et sur la libre représentation de tous les intérêts communs à l’humanité.”³⁰¹ In the subtitle to *La fin de la guerre*, Otlet called it a “Traité de paix générale basé sur une charte mondiale déclarant les droits de l’humanité et organisant la confédération des états.” The desire for international organisations to take on the responsibility of the internationalist scope was clear.

The League of Nations was created in 1920 and thus formed the background for Wells’ views of political organisation. He was, however, disappointed. In *The Work, Wealth & Happiness of Mankind* (1932) he described it as potentially “anything or nothing” and emphasised the necessity for a common understanding of universal man before such an endeavour would be fruitful.³⁰² The establishment of doxa would then be the condition of possibility of its own institutionalisation. In *World Brain*, he similarly emphasised the League’s horrible lack of knowledge “about the formative forces of history. [...] [P]ractically nothing had been assembled, practically nothing had been thought out, nothing practically had been done to draw that knowledge and these ideas together into a comprehensive conception of the world.”³⁰³

Under the auspices of the League of Nations, however, a certain institutional foundation for such an internationalist scope had been established. The *Committee on Intellectual Cooperation* was established in order to promote cross-border

³⁰¹ Quoted in Renoliet, *L’Unesco oubliée, la Société des Nations et la coopération intellectuelle*, 11.

³⁰² Wells, *The Work, Wealth and Happiness of Mankind*, 9–10.

³⁰³ Wells, *World Brain*, 4.

dialogue and exchange. As described by historian Akira Iriye: “This committee was the predecessor to UNESCO, with its unabashedly straightforward proclamation that peace among nations hinges on cross-cultural understanding.”³⁰⁴ The naming of this Committee echoes the *Union* established by Otlet and Lafontaine in 1910 and, in a certain way, appears as the intermediary stage between the scope and its institutional formation in UNESCO.

The above mentioned international agreements were thus a result of the international organisations that began to take form, the Hague Convention being the result of the newly formed UNESCO.³⁰⁵ As can be somewhat deduced from the “monuments,” “property” and “buildings” figuring prominently in the titles of the charters, pacts and conventions, this is a strain of cultural politics which, at least initially, focused on the very tangible masses of constructed edifices which had, first, been a task of private and, then, of national engagement. UNESCO’s 1972 convention, however, presented a two-fold change in the previous approach to heritage. First, the convention subsumed both cultural and natural heritage of “outstanding universal value” as crucial constituent parts of the overall term “world heritage of mankind as a whole.”³⁰⁶ Second, the term “cultural heritage” operated its own subsumption:

“For the purpose of this Convention, the following shall be considered as “cultural heritage”:

- monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;
- groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;

³⁰⁴ Iriye, *Global and Transnational History*, 48.

³⁰⁵ UNESCO was formed in 1945 as the successor to the League of Nation’s International Committee on Intellectual Cooperation.

³⁰⁶ UNESCO, “Convention Concerning the Protection of the World Cultural and Natural Heritage,” 1.

- sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.”³⁰⁷

The term “cultural heritage” here subsumes the term “monument” and thus obliterates the distinction between “monument” and “historical monument,” which had been codified by Alois Riegl in his classic text “Der moderne Denkmalkultus - Sein Wesen und seine Entstehung” (1903). According to Riegl, antiquity and the Middle Ages acknowledged only “monuments” or “gewollten Denkmale”, i.e. “diejenigen Werke, die mit Willen ihrer Urheber an einen bestimmten Moment der Vergangenheit (oder einen Komplex mehrerer solcher) erinnern sollen [...]”³⁰⁸ Should the historical occasion of a given monument fade in importance or “Erinnerungswert” for its preservers, the monument’s protection would cease and its materials simply be repurposed for other endeavours.

Around the Italian Renaissance,³⁰⁹ antiquity’s appreciation of intentional monuments was joined by certain “unintentional monuments” or “ungewollte Denkmalen” in obtaining either an artistic or a historical value transcending the specific identifications of “diejenigen, für die sie bestimmt waren und die ein stets gegenwärtiges Interesse an ihrer Erhaltung hatten [...]”³¹⁰ The difference between the intentional and unintentional monument, i.e. between the monument and the historical monument, is, as the names suggest, that the commemorative value of the first is attributed to the monument by its makers, whereas the latter gains its value from the recipients of the monument if they recognise in it elements of historical or aesthetic value.

We can, although somewhat reductively, distinguish three main Riegelian periods in our attitude towards monuments:³¹¹ Antiquity and the Middle Ages were primarily interested in the monuments explicitly meant for their attention and

³⁰⁷ Ibid. 2.

³⁰⁸ Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 145.

³⁰⁹ The French historian of architecture Françoise Choay proposes the 1430s as the crucial moment, cf. Choay, *L’Allégorie du patrimoine*, 36.

³¹⁰ Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 145.

³¹¹ Françoise Choay gives a slightly more nuanced account while retaining the Riegelian framework, cf. Choay, *L’Allégorie du patrimoine*.

commemoration. This meant claiming a sort of immortality of a specific genealogical past, its unceasing monumental persistence in the prolonging of the present.

Next, Renaissance Italy gained interest in non-intentional monuments but still favoured monuments with an affiliation to related cultures of antiquity as the recovered source of their true identity. This meant including the achievements of earlier generations in an “Entwicklungsgedanke” from past artefacts to a future destiny which amounted to assuming a notion of genealogical succession in the form of a “kulturellen Nachfolge der stammverwandten antiken Völker.”³¹² This attitude, prevalent until the eighteenth century, acknowledged the passing of time but, nonetheless, attempted to suspend it by granting the past “einen Gegenwartswert für das moderne Leben und Schaffen.”³¹³

Finally, it is not until the nineteenth century and the new prominence of cultural history that an interest in the tiniest minutiae of historical development was established and the historical interest found its modern form: “[...] des Interesses für alle, auch die geringsten Taten und Geschicke selbst der geringsten, von der eigenen Nation durch unüberbrückbare Charaktergegensätze geschiedenen Völker, des Interesses für die Geschichte der Menschheit überhaupt, in deren jedem einzelnen Individuum wir ein Stück unser selbst wiedererkennen.”³¹⁴ In our Derridean terms we could say that these Riegelian periods demonstrate a development from a time where intentional monuments could only survive if they were considered heritage to a modern conception where anything provides the potential mirror for the recognition of the self. And, according to our conceptual framework, such recognition in anything is, of course, not heritage since that would require affirmation and choice. In the final Riegelian period, actual affirmation of a heritage relation of kinship has lost its role as condition of possibility for the survivability of the monument.

In addition to this enlarged scope that allows man to encounter himself where e'er he walk, this last Riegelian attitude is also characterised, at least in its early twentieth century incarnation, by the appreciation of “Alterswert,” i.e. the visible signs of time's passing in the decay of monuments. From the point of view of preservation, this age-value was at odds with the goal of historical value to preserve the

³¹² Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 149.

³¹³ Ibid. 147.

³¹⁴ Ibid.

monument in its given state of decay – neither allowing complete restoration (Neuheitswert) or further decay (Alterswert).³¹⁵ But already for Riegl, developments within the technical means of reproduction and dissemination of artefacts were seen as a way to ease the tension between such opposing values:

“Andererseits darf man aus der stetig zunehmenden Ausbildung der kunsttechnischen Reproduktionsmittel die Zuversicht schöpfen, daß in absehbarer Zukunft (namentlich nach Erfindung einer absolut stichhaltigen Farbenphotographie und einer Verbindung derselben mit faksimilemäßigen Formkopien) möglichst vollkommene Ersatzmittel für urkundliche Originale gefunden werden dürften und damit derjenigen Forderung der wissenschaftlichen Geschichtsforschung, die einzige Quelle eines möglichen Konfliktes mit dem Alterswerte darstellt, wenigstens annähernd Genüge geleistet würde, ohne das Original durch menschliche Eingriffe für den Alterskultus zu entwerten.”³¹⁶

We should notice here, that similar to Wells, Otlet and Bush, Riegl repeats the imminence of the archival promise by seeing “in absehbarer Zukunft” a potential in the techniques of reproduction for the solution to the problems at hand. However, Riegl was neither trying to attain archival plenitude, i.e. the access to the complete human record, nor to solve the related problem of world government. He simply hoped to solve very concrete tensions in conflicting preservation rationalities.

What seems to happen, then, in the 1972 UNESCO convention is a radicalisation of the interest in everything everywhere, detected by Riegl as characteristic of the new century. A radicalisation, which, by a mere definition, abolishes the tensions, Riegl hoped to alleviate by technology. “Outstanding universal value” is now presented as a globally operable category that seems to obliterate the Riegelian distinction between “monuments” as a global phenomenon, inherent to any human cultural formation anywhere, and “historical monuments” as a

³¹⁵ This historical value is what is depicted in *Toute la mémoire du monde* as the vaccination of books: “Coûte que coûte, il faut faire échec à la destruction.” “*Toute la mémoire du monde* (scénario),” 71. Cf. section 1.2.3.

³¹⁶ Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 165.

distinctly occidental phenomenon with a localisable origin in Renaissance Italy. Françoise Choay concludes: “Était ainsi proclamée l’universalité du système occidental de pensée et de valeurs en la matière.”³¹⁷

That such a universalization of a more general and abstract concept of cultural heritage arrived around 1972 should be seen in the technological context described in the first half of this chapter. Just as Licklider formulated the principles for an abstraction of facts from their substrate in books, cultural heritage begins to become detached from the local contexts of its edifice substrates and begins moving toward anything from anywhere which could be ascribed “outstanding universal value,” or, in Riegelian terms: universal historical or aesthetic value. Such abstraction was not complete in 1972, however. It saw a much fuller manifestation in the later treaty regarding Intangible Cultural Heritage as the UNESCO counterpart to World Heritage. Incidentally, the Convention for the Safeguarding of Intangible Cultural Heritage was drafted in 2003, just around the time when digital cultural heritage archives rose to institutional prominence on international as well as supranational and national levels.

2.2.3 Building blocks of the future

The constitution of UNESCO was signed on November 16, 1945 and came into force on November 4, 1946. Since its early beginnings, UNESCO shared Riegl’s interest in the capacity of the latest technologies to both preserve that which could be lost and disseminate that which was not easily accessible: “The Department of Cultural Activities also tries to recommend and promote the use of the most modern methods in the pursuit of its permanent aims — the preservation and enhancement of the cultural heritage of mankind, and the dissemination of culture.”³¹⁸

At this time, UNESCO’s “modern methods” comprised the preservation of art and music reproductions on film, microfilm and records and dissemination was done

³¹⁷ Choay, *L’Allégorie du patrimoine*, 154. Cf. also Choay, “« Trente ans après »,” 21–22.

³¹⁸ UNESCO, *Social Implications of Technical Change - International Social Science Bulletin*, 378–379. Cf. also “modern facilities of transport, radio, photographic reproduction, and so forth are rendering practicable a much more fully succinct and accessible assembly of fact and ideas than was ever possible before.” Wells, *World Brain*, 58–59.

via television, radio and “special vans” bringing reproductions and books to remote locations.³¹⁹ The goal was to enlist the “help of modern technology [...] to encourage a taste for, and knowledge of, the arts, [...] to raise the average cultural level and to promote international artistic exchanges [...] with the object of improving the standard of living of contemporary man.”³²⁰

UNESCO’s “modern methods” did include computers at quite an early stage, although more for scientific work than dissemination. In August 1949 a committee meeting proposed, in addition to an International Brain Institute and an International Social Sciences Institute, an International Computing Centre (ICC). The centre was created in 1951 and in 1952 the decision was made to open the centre in Rome although it did not receive its computer until 1961 – an Olivetti ELEA 6001.³²¹ For many reasons, however, the ICC was never much of a success, and in spite of its new focus and name in the beginning of the 1970s – the new *Intergovernmental Bureau for Informatics* changed its focus to informatics as a means of contributing to UNESCO’s educational mission in non-industrialised countries³²² – it was closed in 1988. Where the ICC started with a scientific focus it thus slowly turned towards education and development, and thus dissemination, in the 1970s.

The promotion of education via modern technology clearly embraced the digital in the late 1980’s and 1990’s where the use of ICT (Information and Communication Technology) figured prominently in many UNESCO documents: “Recognizing the important role that the new information and communication technologies, and particularly informatics, can play in extending educational services to new sections of the population, and in improving the quality and efficacy of the educational process.”³²³

UNESCO’s educational effort explicitly demonstrated the understanding of the past as an untapped potential for driving the present into the future, when, in 1993, UNESCO established a *World Commission on Culture and Development*, claiming that “Genuine development can only be built on the basis of culture, which is its source, its mainspring and its ultimate goal. Ready-made imported development

³¹⁹ UNESCO, *Social Implications of Technical Change - International Social Science Bulletin*, 379.

³²⁰ Ibid.

³²¹ Mounier-Kuhn, “The UNESCO International Computing Center in Rome,” 7–8.

³²² Cf. Ibid. 8.

³²³ UNESCO, “Records of the General Conference (24th Session - 1987 - Resolutions,” 40.

models have collapsed, because they have neglected the circumstances specific to each society, and the untapped potential of cultures.”³²⁴ In spite of a certain metaphorical confusion, culture is clearly presented as: first, a source or potential; second, the driving mechanical force of development; and finally, the goal of this development.

The reason for this final emphasis, on culture as goal, is further illustrated in 1996: “[...] culture shapes all our thinking, imagining and behaviour.”³²⁵ The idea was to implement “culture” in “development strategies” as “a central variable [...] if not the essence itself, of sustainable development, since attitudes and life-styles govern the ways we manage all our non-renewable resources.”³²⁶ Culture is thus crucial to “humankind’s creative capacities in the face of a treasured past and an unpredictable future.”³²⁷

We should note here the similarities between what UNESCO calls “culture” and what Foucault called *ethos*. Both are described as an attitude. Both have to do with life-styles or what Foucault called either aesthetics or techniques of life. Both have to do with the subject’s relation to the world and its resources. But of course, they remain profoundly different. In the case of the Foucauldean *ethos*, S is constructed via the *ethopoietic* construction of A as virtual incorporation of the *hupomnesic* order of truth N and the *doxopoietic* negotiation of communal values in a parresiasitic mirror relation to a’. In the Foucauldean framework, both *ethopoiesis* and *doxopoiesis* are without presuppositions. They remain dynamic in a continuous negotiation of practices and perceptions. In the case of UNESCO’s culture, however, the notion of “development” takes the place of presupposed N and the “culture” of S and a’ should be educated in accordance with that N. The presupposition that H is “culture” gives INHI free reign over ISa’l.

Whereas Riegl presented different commemoration values and strategies of preservation and wondered how to solve their inherent tensions, UNESCO focuses

³²⁴ UNESCO, “27 C/INF.11 - World Commission on Culture and Development (Item 5.5. of the Provisional Agenda),” 1.

³²⁵ UNESCO, “Our Creative Diversity (CLT-96/WS-6) - Report of the World Commission on Culture and Development - Summary Version,” 12.

³²⁶ Ibid. 10.

³²⁷ Ibid.

on the use-value of “a treasured past” (H) in “the educational process”³²⁸ to further “human development” and “human betterment”³²⁹ (Isa’l as determined by INHI). For Riegl, use-value – a subcategory of present-day value – is expressed, for example, in the inhabitability of a house, which, if inhabitable, must not be left to the decay of age-value. For UNESCO, the use-value of heritage is a way of encountering an “unpredictable future.” There are no tensions between conflicting commemoration and preservation values, only the “untapped potential of cultures.” This is the ideological framework into which the term “digital heritage” was inscribed when, in 2001, it first found its firm place within major UNESCO documents such as the *Medium-Term Strategy* and the *General Conference Resolutions*.

The movement from analogue to digital modes of use-value is evident in the way 1952’s coupling of “preservation” and “dissemination” was succeeded by the frequent coupling of “preservation” with “access”: “preservation and continuing accessibility” or “preservation of and permanent access to digitally produced materials.”³³⁰ According to UNESCO, the preserved past should have a “permanent” present-day use-value via access: “The purpose of preserving the digital heritage is to ensure that it remains accessible to the public.”³³¹ And finally, the “digital information life cycle” is described as going “from creation to access.”³³² Access as both the *telos* of creation and the potential for new creative capacities.

UNESCO’s focus on access reorders Riegl’s perception of use-value and age-value. For Riegl believed that use-value would usually triumph over age-value, as it makes no sense to leave a perfectly useful house to decay. However, if use-value were diminished enough, then age-value could reign free: “Nur die gebrauchsunfähigen Werke vermögen wir vollständig unbeirrt durch den Gebrauchswert rein vom Standpunkte des Alterswertes zu betrachten und zu genießen, während wir bei den gebrauchsfähigen stets mehr oder minder daran gehindert und gestört werden [...]”³³³ For UNESCO, however, age-value and historical value’s concern for “authenticity” and “an authentic record” serve the

³²⁸ UNESCO, “Records of the General Conference (24th Session - 1987 - Resolutions,” 40.

³²⁹ UNESCO, “Our Creative Diversity (CLT-96/WS-6) - Report of the World Commission on Culture and Development - Summary Version,” 7.

³³⁰ UNESCO, “Draft Medium-Term Strategy for 2002-2007,” 71.

³³¹ UNESCO, “Records of the General Conference (32nd Session - 2003) - Resolutions,” 75.

³³² Ibid.

³³³ Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 169.

purpose of optimising use-value in the form of the “potential of the heritage” as “the building blocks of the future.”³³⁴ The digital cultural heritage archive focuses on the preserved past as the building blocks of the future that need to be assembled in the present via unfettered access.

2.2.4 Three strategic axes of digital cultural heritage

The goal of preserving the past in order to make it accessible in the present as building blocks of the future manifests itself in the general interest in digital cultural heritage archives from 2001 onwards across UNESCO, the EU and nation states.³³⁵ UNESCO clearly recognises that “the preservation of the digital heritage will constitute an important aspect [...]” of the “[...] endeavour to encourage access to and participation in all forms of intellectual activity [...]”³³⁶ This digital heritage is considered as resources that “are increasingly produced, distributed and accessed only in digital form (born-digital materials) [...]”³³⁷

On the one hand, these statements from the *Medium-Term Strategy* (2002-2007) and the *Resolutions* (2001) inscribe themselves in succession to or kinship with the “Memory of the World” programme, founded in 1992, and, on the other, they lay the ground for the final UNESCO *Charter on the Preservation of Digital Heritage* from 2003.

The name, “Memory of the world,” should remind us of two of our previous objects of analysis: First, in 1903, Henri-Marie Lafontaine, Otlet’s long-time collaborator, wrote a short piece called “Une mémoire mondiale” about his and Otlet’s project of a universal bibliography. Here, Lafontaine expresses the archival promise of *pleroma* as potentially delivered by the “Répertoire Bibliographique

³³⁴ UNESCO, “Records of the General Conference (32nd Session - 2003) - Resolutions,” 75–76.

³³⁵ Writing at the turn of the millennium, Andreas Huyssen locates a shift beginning in the 1980s from “present futures” to “present pasts” and thus “the emergence of memory as a key concern in Western societies.” Huyssen, “Present Pasts,” 21. He sees a reason for this change of focus toward the past in the processes of decolonization, the anniversaries of the Second World War, the Holocaust and the ways in which more recent genocides keep the memory of Holocaust alive, and also in the processes of remembering unleashed by the fall of the Eastern block. The present dissertation’s focus on technological development and the discourse of cultural politics is obviously a simplification and the historical perspectives evoked by Huyssen should be kept in mind.

³³⁶ UNESCO, “Draft Medium-Term Strategy for 2002-2007,” 55.

³³⁷ UNESCO, “Programme and Budget, 2002-2003 (31 C75 Approved),” 71.

Universel” as world memory: “[...] de posséder enfin l’inventaire complet de tout ce que la pensée humaine a produit sous une forme écrite.”³³⁸ According to Markus Krajewski, the term “Memory of the world” was, in fact, coined by Otlet and Lafontaine.³³⁹ And second, of course, Resnais’s film from 1956 does not limit itself to evoking a similar notion in its title *Toute la mémoire du monde*. The term “mémoire du monde” is used numerous times in the preparatory documents³⁴⁰, and as stated above, the library prison promises pleroma in ways reminiscent of Lafontaine’s description: “On y trouve tout ce qui s’imprime en France. Tous les signes que la main de l’homme a tracés [...]”³⁴¹

UNESCO’s “Memory of the world” programme aimed at preserving and providing access to “documentary heritage,” a notion which should “inclure au-delà des manuscrits et des documents précieux et rares de bibliothèques et d’archives, les documents sur tous supports, notamment les documents audio-visuels et les traditions orales [...]”³⁴² We see that Ernst’s diagnosis that the distinction between archive and library is getting lost in the new technologies could also detect symptoms in UNESCO’s pleromatic inclusion of everything precious and rare in either libraries or archive under its own purview. These recommendations from the first meeting remained hesitant towards the new technologies of digitisation, however, and thus agreed on photography as the continued recommended medium of preservation.³⁴³ The overall goals, then, remained compatible with the discourse of UNESCO in

³³⁸ Lafontaine, “Une Mémoire Mondiale,” 206. He continues: “La recherche et la documentation seront également instantanées : la mémoire mondiale sera plus rapide et plus docile qu’aucune mémoire individuelle, quelque parfaite et éclectique qu’on puisse l’imaginer.

Mais le Répertoire Bibliographique Universel ne sera pas seulement cet outil obéissant, il symbolisera encore l’unité humaine, il témoignera sans cesse de l’interdépendance des hommes il montrera à propos de toute choses, des moindres inventions comme des moindres pensées, que la collaboration est constante entre les frères ennemis des diverses races et il les persuadera que l’amélioration commune du sort des individus et des peuples est le résultat de leurs efforts accumulés, trop souvent annihilés par leurs malentendus et leurs hostilités.” p. 208.

³³⁹ Krajewski, *Zettelwirtschaft, die Geburt der Kartei aus dem Geiste der Bibliothek*, 133.

³⁴⁰ “La mémoire du monde existera réellement.” Carou, “Toute la mémoire du monde, entre la commande et l’utopie,” 125. “[...] ce rôle de Mémoire du monde.” Ibid. “Il est donc évident que la Bibliothèque Nationale n’est pas qu’un magasin, que c’est bien un conservatoire de la civilisation écrite. Une mémoire du Monde.” Ibid. 126. “Chaque homme a besoin de recourir à cette somme des connaissances qu’est la mémoire du Monde. Sans elle *tout* serait à réinventer.” Ibid. 128. “Ces documents sont donc une partie de cette Mémoire du Monde. Cette somme géante des connaissances indispensable c’est donc bien ici qu’elle se forme, dans cette cave.” Ibid. 129.

³⁴¹ “Toute la mémoire du monde (scénario),” 66.

³⁴² UNESCO, “27 C/INF.11 - World Commission on Culture and Development (Item 5.5. of the Provisional Agenda),” 12.

³⁴³ Ibid. 8.

1952, although in the form of “preservation” and “access” instead of 1952’s “preservation” and “dissemination.”³⁴⁴

After the turn of the millennium, the 2003 charter on digital heritage recognised the “new [digital] legacy” as an entity under documentary heritage although not reducible to it, i.e. UNESCO recognised that “resources of information and creative expression are increasingly produced, distributed, accessed and maintained in digital form, creating a new legacy – the digital heritage.”³⁴⁵ Something new was at play.

Interestingly, the notion of documentary heritage as guarded by the Memory of the World programme, was updated in 2002. In the original guidelines from 1995, there is very little mention of anything digital. Documentary heritage was presented in addition to natural heritage and cultural sites, and thus in addition to the natural and monumental heritage presented in the World Heritage convention from 1972. Just as reproductions were seen as crucial to dissemination in 1952, in 1995, especially, the compact disk was seen as a promising but still uncertain medium for future access:

“The greatly enhanced access opportunities provided by digital technologies stimulate the development of a range of products such as CD-ROMs, digital tapes and audio CDs. These products will play an important role in providing increased access to documentary heritage, but, owing to uncertainties about their long term survival, will not generally be used as the sole preservation method.”³⁴⁶

The digital is here not just promising because of its potential for global access but also because of the promised compromise between use value and historical value described by Riegl. The 1995 document thus described a pilot project at the National Library in Prague: “Beautiful manuscripts and early printed books are being transferred to digital form to avoid handling of these delicate and endangered documents, and to make them accessible through electronic means.”³⁴⁷

³⁴⁴ Ibid. 2.

³⁴⁵ UNESCO, “Draft Charter on the Preservation of the Digital Heritage - 32 C/28,” 74.

³⁴⁶ UNESCO, “Memory Of The World Programme – General Guidelines To Safeguard Documentary Heritage, CII-9.5/CONF/60211,” 2.

³⁴⁷ Ibid. 19.

In the 2002 guidelines, which then coincide with the rise of the “new legacy” of “digital heritage,” the focus on CD-ROM had been replaced by a focus on the Internet as a means for “much faster streaming of data” and, hence, the ability to overcome “the tyranny of distance.”³⁴⁸ The goal is “democratized, universal access to the whole of documentary heritage”³⁴⁹ and “preservation” is defined as “the sum total of the steps necessary to ensure the permanent accessibility – forever – of documentary heritage.”³⁵⁰ It is emphasised that “Permanent access is the goal of preservation: without this, preservation has no goal except as an end in itself.”³⁵¹ Universal access to the eternal presence of the entirety of heritage, *pleroma*. The use-value of access as the goal of all other commemorative values.

With the documentary notion of the new millennium, we thus see a further generalisation and expansion of the notion of cultural heritage. One that was to manifest itself, as we shall see below, not just within the international scope of UNESCO but also within, e.g., the EU and the Danish national state. Intentional and unintentional monuments, documents and intangible heritage are all subsumed under the regime of universalised “democratising” access to the complete preserved stores as resource.

This strategic construction of universal present access to the eternal presence of the past as resource seems to operate along three axes:

- Unity in diversity by facilitating knowledge of *the other*;
- Regional and national identity through the knowledge of *the self*;
- Entrepreneurial creativity and innovation through the knowledge and possible exploitation of the abundant cultural resources inherited from *our* common forebears

Admittedly, these axes are not new but in the shift from *dissemination* of selections to universal *access* to permanent storage their scope has changed. Neither “special van” nor CD-ROMs are needed, now, to transport reproductions to remote locations.

³⁴⁸ UNESCO, “Programme and Budget, 2002-2003 (31 C75 Approved),” 15.

³⁴⁹ *Ibid.* 14.

³⁵⁰ UNESCO. “Memory Of The World Programme – General Guidelines To Safeguard Documentary Heritage, CII-95/WS-11rev, February 2002.” Paris, 2002, 12.

³⁵¹ *Ibid.*

In fact, both temporal and spatial remoteness seem to have been vanquished altogether: “The digital heritage is inherently unlimited by time, geography, culture or format. [...] The digital heritage of all regions, countries and communities should be preserved and made accessible, so as to assure over time representation of all peoples, nations, cultures and languages.”³⁵² This goal of global representation, this overcoming of “the tyranny of distance” and its beneficial consequences for our relation to *the other*, are not unique to UNESCO but are further expressed as part of a general discourse of cultural heritage in the plans for the European Union’s digital library Europeana: “Improved access to our cultural heritage will create “unity in diversity.””³⁵³

Not surprisingly, the second axis takes “identity” as its watchword and is more prominent in supranational or national contexts, since global identity coincides with the question of “unity in diversity”: “[...] through the meeting, exchanging and sharing that culture entails, it can help to bring the European Union into closer contact with its citizens and a true European identity to take root and find expression.”³⁵⁴ Culture is thus not an expression of identity but that through which identity is constituted. And not just any identity, a *truly European* identity. And such an identity, forged by the hypomnesic organisation mastered by the European Union should establish a closer relation between institutional framework and citizen.

Access to culture as the root of identity is also found on a national level. A 2009 report on the state of digitised cultural heritage in Denmark, for instance, clearly states: “Cultural heritage is of significant importance for the Danish sense of identity in a globalised world, and in these years, the importance of art and culture will increase. The government will therefore continue the work with communicating Danish cultural heritage, nationally and internationally.”³⁵⁵ Although culture provides the foundation for global or international unity in diversity, it also protects supranational and national identities against globalisation.

We have already seen the third axis in UNESCO’s 1996 call for a closer coupling of “culture” and “development.” It finds a more recent expression in a

³⁵² UNESCO, “Records of the General Conference (32nd Session - 2003) - Resolutions,” 75.

³⁵³ Europeana, “Business Plan - 2013,” 5.

³⁵⁴ European Parliament, “i2010: Towards a European Digital Library,” 3.

³⁵⁵ Digitaliseringsudvalget, “Digitalisering Af Kulturarven - Endelig Rapport Fra Digitaliseringsudvalget,” 3.

current UNESCO theme, “Protecting Our Heritage and Fostering Creativity,”³⁵⁶ which in November 2013 fostered UNESCO’s fifth most popular tweet of the month: “Put culture & creativity at the heart of sustainable development & public policy! #supportcreativity pic.twitter.com/dcdCr1zk1B.”³⁵⁷ Preservation and access – also referred to as “safeguarding” and “sharing” – are aimed at supporting “creativity, innovation and the emergence of dynamic cultural sectors.”³⁵⁸ And furthermore: “Both heritage and creativity lay the foundations for vibrant, innovative and prosperous knowledge societies.”³⁵⁹

These three axes also form the three main aims of the EU Horizon 2020 Work Programme for 2014-2015, although in a different order:

“The first aim is [...] to analyse and develop social, economic and political inclusion and positive inter-cultural dynamics in the EU. [...] The second aim is to foster the development of innovative societies and policies in Europe through the engagement of citizens, civil society organisations, enterprises and users in research and innovation [...] The third aim is to contribute to an understanding [...] of its cultural heritage and of its identities in order to strengthen cohesion and solidarity and to encourage modern visions and uses of its past.”³⁶⁰

The first aim corresponds to our first axis of “unity in diversity,” the second is our third axis of creativity and innovation, and the third aim of culture as the basis of identities coincides with our second axis of identity. The formulation of each aim ends with the proclamation of its ability to support a general notion of innovation as bringer of economic growth. The third aim (and second axis) of identity thus concludes: “In these efforts, new technologies and digital cultural heritage should play an important innovative role as they enable new and richer interpretations of our common

³⁵⁶ UNESCO, “Protecting Our Heritage and Fostering Creativity.”

³⁵⁷ UNESCO, “Monthly Report on the Use of UNESCO Public Information Products - November 2013.”

³⁵⁸ UNESCO, “Protecting Our Heritage and Fostering Creativity.”

³⁵⁹ Ibid.

³⁶⁰ European Commission, “HORIZON 2020 - WORK PROGRAMME 2014 – 2015 - 13. Europe in a Changing World – Inclusive, Innovative and Reflective Societies,” 5.

European culture while contributing to sustainable economic growth.”³⁶¹ All strategic axes are subsumed under the overall strategic goal of economic growth.

These three aims of the EU Horizon 2020 are formulated in the context of the current financial crisis. As has hopefully been demonstrated, though, these aims did not appear within the discourse of cultural heritage as a result of the crisis. They are but the culmination of a long development of a cultural heritage discourse, which has gained a global scope along with specific technological developments. A scope that is summed up nicely by Director-General of UNESCO Irina Bokova’s quote from Arjun Appadurai – a quote also used on numerous other occasions by UNESCO, including on Twitter: “Culture is the resource that society needs to move from today to tomorrow.”³⁶²

2.2.5 Access, Evidence, Control

The movement from preservation of intentional monuments to unintentional monuments of particular historic or aesthetic value and, finally, to a generalised notion of heritage of “outstanding universal value” entails certain spatial dynamics. Intentional monuments are decidedly local. Unintentional monuments gradually extend the domain of interest toward the surrounding world and establish hopes to widely disseminate reproductions of that which is otherwise bound to a specific location. And, finally, the “outstanding universal value” of an expanded notion of cultural heritage soon establishes the global reign of universal access.

As we have seen, these imaginaries are not new. In the cases of Wells and Otlet, imaginaries of access to the central stores of knowledge already existed in the beginning of the twentieth century and, even then, inscribed itself in the heritage from Enlightenment. At the time of Wells and Otlet, certain experiments within exhibition design proposed similar ways for art to be projected into the home. In his 1927 description of a *Haus-Pinakotheke*, Laszlo Moholy-Nagy wrote of future radio image

³⁶¹ Ibid.

³⁶² UNESCO, “Address by Ms Irina Bokova, Director-General of UNESCO, on the Occasion of the UNESCO Forum on Haiti, Rebuilding the Social, Cultural and Intellectual Fabric of Haiti UNESCO, 24 March 2010,” 7.

projections: “[...] wenn auch als Quelle entwickelter Verbreitung wahrscheinlich der Radiobilderdienst vorbehalten sein wird.”³⁶³ And only a couple of years later, Frederick Kiesler described a similar contraption under the name *The Telemuseum*:

“Just as operas are now transmitted over the air, so picture galleries will be. From the Louvre to you, from the Prado to you, from everywhere to you. You will enjoy the prerogative of selecting pictures that are compatible with your mood or that meet the demands of any special occasion. Through the dials of your Teleset you will share in the ownership of the world’s greatest art treasures.”³⁶⁴

We can say that the visions for technological access were present before the institutional operationalization of such imaginaries and, after the establishment of such an institutional framework, during a time when the technical limitations of cultural politics dictated dissemination.

We shall return to the notions of image displays and their potential for individual experience and political emancipation but, for now, we should notice a forceful convergence around the beginning of the new millennium of networked technologies and cultural politics in the structure of access: technological access as the condition of possibility for the notion of heritage as resource. In 2006, EU Information Society and Media Commissioner Viviane Reding explained the purpose of the European Digital Library, Europeana: “Information technologies can enable you to tap into Europe’s collective memory with a click of your mouse.”³⁶⁵ This notion was repeated in 2008 as the title of a document on the progress of digitisation and online accessibility of cultural material: “Europe’s cultural heritage at the click of a mouse.”³⁶⁶ It was further echoed in relation to the Norwegian National Digital Library:

³⁶³ Moholy-Nagy, *Maleri, Fotografie, Film*, 23.

³⁶⁴ Kiesler, *Contemporary Art Applied to the Store and Its Display*, 121.

³⁶⁵ “European Commission steps up efforts to put Europe’s memory on the web via a “European Digital Library”” (2006), available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/253>.

³⁶⁶ Commission of the European Communities. “COM(2008) 513 Final – Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Europe’s Cultural Heritage at the Click of Mouse, Progress on the Digitisation and Online Accessibility of Cultural Material and Digital Preservation Across the EU.” Brussels: Commission of the European Communities, August 11, 2008.

“Cultural heritage just a few clicks away.”³⁶⁷ Similarly in the Danish government report on digitisation (2009): “When the cultural heritage is digitised, suddenly it can be made accessible by the click of a mouse.”³⁶⁸ Finally, in addition to the in Section 1.3.2 quoted passage from Darnton, in which he claims that digital collections within a technological infrastructure “makes them instantly available to the user with one click on an electronic device,”³⁶⁹ he emphasises the relation between the digital, the click and access:

“It would be the digital equivalent of the Library of Congress, but instead of being confined to Capitol Hill, it would exist everywhere, bringing millions of books and other digitized material within clicking distance of public libraries, high schools, junior colleges, universities, retirement communities, and any person with access to the Internet.”³⁷⁰

“A click”, “a few clicks”, “one click”, “clicking distance.” We shall return to the abolition of distance inherent to this discourse but, for now, we should note the prevalence of the discourse of access in the convergence of technological development and cultural politics in the digital cultural heritage archive – a prevalence often manifested in the easy access proffered by the click of a mouse.

We should further note that such access does not stand alone. Access to a resource opens a potential for evidence and control. As was already clear in Wells, access to knowledge organised by the “sources” should “be brought into a conscious, effective, guiding and directive relationship to the control of human affairs.”³⁷¹ Access to the well-organised archive should bring cognitive *evidence* and, finally, lead to *control*. The individual student’s imminent ability “to sit with his projector in his own study at his or her convenience to examine *any* book, *any* document, in an exact replica”³⁷² is conceived as inherently related to the submission

³⁶⁷ Takle, “The Norwegian National Digital Library.”

³⁶⁸ Digitaliseringsudvalget, “Digitalisering af Kulturarven - Endelig Rapport Fra Digitaliseringsudvalget,” 7.

³⁶⁹ Darnton, “A World Digital Library Is Coming True!”

³⁷⁰ Darnton, “A Library Without Walls.”

³⁷¹ Wells, *World Brain*, 10.

³⁷² *Ibid.* 54.

to “an intellectual authority sufficient to control and direct our collective life.”³⁷³ The difference between this and Foucault’s practice of *hypomnemata* is, of course, that *ethopoiesis* entails the individual production of such an authority (A) in a *doxopoietic* negotiation of values with the other (a’), whereas the control (N) established via the access to the evidence of H forecloses any such negotiation in the determination of doxa. In Wells, A is the direct projection of N, and since this A, then, holds for everyone, there is no possible *parresia* between S and a’.

As demonstrated, a similar connection between evidence and control prevailed in Otlet’s attempts to organise a world government on the basis of a world organisation of knowledge as presented above. We have, furthermore, seen the later link between access and our three strategic axes of cultural politics that very much appear as similar regimes of control: access to the evidence of culture as behavioural control in the form of the non-antagonistic relation to other (unity in diversity), a stable relation to the self (identity) and entrepreneurial creativity of the subject. The attempt to tap into the potential of the archive and steering it along the three strategic axes turns the archive back toward its cybernetic origins described by Ernst.³⁷⁴ It becomes a matter of controlling potential, of establishing productive and subjective feedback loops. The fullness of the archive, i.e. archival *pleroma*, seems to promise the unobstructed churning of the cybernetic machine, the smooth flows of a society of control.³⁷⁵

³⁷³ Ibid. 68.

³⁷⁴ Cf. The word “cybernetics” is most often related to the Greek word κυβερνήτης meaning “steersman,” but the similar root κυβερνητική means “governance.”

³⁷⁵ “Un contrôle n’est pas une discipline. Avec une autoroute, vous n’enfermez pas les gens mais en faisant des autoroutes, vous multipliez des moyens de contrôle. Je ne dis pas que ce soit cela le but unique de l’autoroute mais des gens peuvent tourner à l’infini et « librement » sans être du tout enfermés tout en étant parfaitement contrôlés. C’est cela notre avenir.” Deleuze, “Qu’est-Ce Que L’acte de Création,” 300.

3. A three-fold Thing³⁷⁶

While chapter 1 described the general topology of the archival relations of consignment, interpretation and heritage, chapter 2 engaged with two historical trajectories: technological development and cultural politics. Chapter 1 described similarities between different archival forms, while chapter 2 demonstrated a more complex intermingling of technological and conceptual developments and related imaginaries converging in the current paradigm of access-based cultural heritage.

Technological development was described via the logical foundation of computation from the late 1930s to the late 1950s, the development of the protocols necessary for networked transmission from the late 1950s to the early 1990s and, finally, the slow movement from the development of the hard drive in the 1950s to the drastic explosion of storage capacity around the beginning of the new millennium.

The side of cultural politics was described via the Riegelian attitudes towards monuments in antiquity, the renaissance and modernity and UNESCO's early efforts were described as a further development in two tempi of Riegl's modern attitude. First, the analogue paradigm of dissemination, i.e. the physical transportation of mechanically reproduced material to remote locations, and second, the digital paradigm of access, i.e. the access via a computer terminal to digitally stored material. This access paradigm was then described as operating along three strategic axes, those of "unity in diversity," identity, and creativity and innovation.

The general topology of chapter 1 can be considered an abstract diagram operated in various ways by different concrete technological, conceptual and imaginary assemblages described in chapter 2. The respective paradigms of analogue dissemination and digital access thus operate within the same diagram. Dissemination is basically akin to Resnais's depiction of the movement from stores to reading room in *Toute la mémoire du monde* and what is still implemented in the digitalised libraries described in section 1.3.1. Access, on the other hand, blurs the

³⁷⁶ This chapter is based on a previously published article: Andreasen: "Digital humanities and the elusive "thing""

imaginary barrier, depicted by Resnais. The physical barrier becomes imaginary in a different sense, it becomes portable, storage is supposedly always already there as resource, the reading room is any- and everywhere. As mentioned briefly in the end of the previous chapter, this universal access nourishes imaginaries of evidence and its potential for control. Let us now turn to this three-fold thing of the digital.

3.1 Digital humanities and the elusive thing

“Ce qu’il y a dans *das Ding*, c’est le secret véritable.”

Lacan, *Le Séminaire. Livre VII*
– *L’éthique de la psychanalyse*, 58

No, digital humanities is nothing new. Let us dutifully mention the name Busa and be done with it. It might have been called something else, it might have been performed on a smaller scale and in simpler ways, but the digital has long since penetrated the perennially thick walls of the ivory tower. The short distance between Busa’s work and the current understanding of digital humanities can be gleaned from Lisa Gitelman’s short summary:

“The field had “a very well-known beginning” in 1949, when Father Roberto Busa sought to use computers in preparing a concordance of the works of St. Thomas Aquinas. More recently the field has had the primary, practical result of designing scholarly resources and publishing them online: editions and collections, certainly, but also tools for data mining, analytics, and visualization.”³⁷⁷

From 1949 to “more recently” without a pause. Busa’s punched card concordance is but the ancestor to our present stage where both objects and tools of analysis have gone digital and online. This would be the optimistic view of historical development, presented by Ellul: Between Busa’s concordance and contemporary digital

³⁷⁷ Gitelman, *Paper Knowledge, toward a Media History of Documents*, 55.

humanities there is but a difference of scale. Such optimism also allows Andrew Prescott to see in the Middle Ages the “direct ancestor of all later alphabetical and searchable tools” for this is when they happened upon the happy notion “that texts could be arbitrarily arranged according to an abstract system such as the letters of the alphabet.”³⁷⁸ Prescott’s example is a much earlier concordance than Busa’s, the first one in fact, compiled to the holy scriptures between 1235 and 1249 by Dominican monks in Paris.

Something *is* new, though, isn’t it? In the quintessential academic acts of reading and writing, the hand once wrote and the eye read. Then, the machine took over the feeding of the reading mind. At some point, in the midst of battle, a machine COLOSSUS read the writing of a machine ENIGMA. Now, the machine not only reads the machine, it reads the reader and writes of its own accord. When the computer reads, it writes elsewhere; but now, in addition, when the eye reads the computer, the computer reads and rewrites the eye and feeds it back into the writing process.³⁷⁹ The colossal ubiquity of read/write operations almost seems to intimate that enigma is no more.

Speaking of the word processor, Derrida once said:

“[...] je me demande tout le temps ce qui serait arrivé à Platon, à Descartes, à Hegel, à Nietzsche et même à Heidegger (qui, au fond, a connu l’ordinateur sans le connaître), s’ils avaient rencontré cette « chose », non seulement comme un instrument disponible mais comme un thème de réflexion. [...] Mais comment auraient-ils interprété une culture qui tend ainsi à être dominée, dans sa quotidienneté même, et à travers tout l’univers, par de tels dispositifs techniques d’inscription et d’archivation ?”³⁸⁰

³⁷⁸ Prescott, “Making the Digital Human.”

³⁷⁹ Services that charge a fee for unlimited access to e-books, movies or music now employ detailed usage data in the production or selection of their content. Netflix, thus, chose to produce the TV series *House of Cards* because of the platform usage data. Cf. Carr, “For ‘House of Cards,’ Using Big Data to Guarantee Its Popularity.” and Streitfeld, “As New Services Track Habits, the E-Books Are Reading You.”

³⁸⁰ Derrida, *Papier machine, le ruban de machine à écrire et autres réponses*, 164.

Taking Paul Valéry, Walter Benjamin and Martin Heidegger as points of departure, this third chapter wonders about the current academic encounter with “cette « chose »” as an object of study, as a tool and the constitution of new practices. The “thing” is presented from the threefold perspective of *access*, *evidence* and *control*: *access* as the newfound availability and emancipation of the digital object, *evidence* as the cognitive approach marshalled in response to the surge of data and *control* as the new ruling practice, whether academic, ethical or critical. In the previous chapters we have already encountered these terms in various ways. The desire for the subsumption of plethora in archival pleroma is a matter of any- and everyone’s access to any- and everything from any- and everywhere. And the result of such pleroma is the evidence of the one true opinion, since “there can be no two respectable and antagonistic opinions [...]” And as we have seen, such an access to the evidence of truth – Resnais’s promise of happiness – entails its own form of control. As Austerlitz pointed out, the Islands of the Blest are remarkably similar to a penal colony.

Access, evidence and control allow us not to grasp but to close in on the “thing,” which seems to have forced us to redefine so many – once steady – pillars of academia: the humanities (digital or not), the archive, the relevance of theory, etc. But if this disciplinary frenzy, this conceptual confusion, is something new, then what is its cause? What is the thing of the something?³⁸¹

There is a general sentiment that it has to do with the digital: “Everyone now accepts that digital technology is changing scholarship.”³⁸² And “[n]o one can seriously doubt that the intercourse of the humanities research community will be digitally organized.”³⁸³ The digital is clearly having a profound impact on every single aspect of scholarship, both on an institutional, theoretical, methodological, conceptual and objective level. “That is, computational technology has become the

³⁸¹ For the link between the “thing” and the Latin word “causa”, cf. Lacan, *Le Séminaire. Livre VII – L’éthique de la psychanalyse, 1959-1960*, 55, and Heidegger, “Das Ding,” 167–168. Throughout the chapter, “the thing” is conceived both in Lacanian fashion as a traumatic encounter with the real and in Heideggerian fashion as the gathering of worlds.

³⁸² Prescott, “Making the Digital Human.”

³⁸³ McGann, “Memory Now.”

very condition of possibility required in order to think about many of the questions raised in the humanities today.”³⁸⁴

If the thing is the digital, then what is the digital thing? Is it the constitutive elements of zeros and ones? Their electromagnetic inscription on spinning platters or solid state drives? Their operationalization via code instructions? Or is it, rather, the executed code as runtime experience and interface? Is the digital best perceived as a cloud-like network of software nodes or the universal archive as the ready availability of all digital objects?

The present chapter proposes a mapping of the on-going frenzy and confusion from the calm conceptual collection of access, evidence and control.³⁸⁵ They each represent a response to the elusiveness of the digital “thing.” *Access* has hopes and fears for the digital object and mostly wants it to stay in its place. *Evidence* tries to study it and gain from it all the knowledge that was so frustratingly unattainable in its arcane analogue ancestors. *Control* seeks to establish new practices that let us harvest from its digital soil academic mastery, personal edification and communal benefit.

3.2 Closing in on the thing

Let us begin with a pre-digital encounter with the “thing.” In 1928, in a manner remarkably similar to the contemporary propositions by Moholy-Nagy and Kiesler as well as those of Wells and Otlet, Paul Valéry expressed amazement regarding the impact of technological development:

“Les œuvres acquerront une sorte d’ubiquité. Leur présence immédiate ou leur restitution à toute époque obéiront à notre appel. Elles ne seront plus seulement dans elles-mêmes, mais toutes où quelqu’un sera, et quelque

³⁸⁴ Berry, *Understanding Digital Humanities*, 3.

³⁸⁵ Any mapping is in its nature woefully incomplete and the present attempt is no exception. Many relevant contributions to the field have been consciously omitted, many unwillingly or simply because of ignorance. Although the ground covered is far from exhaustive, the proposed threefold approach claims to be applicable to the terrain in its entirety.

appareil. Elles ne seront plus que des sortes de sources ou des origines, et leurs bienfaits se trouveront ou se retrouveront entiers où l'on voudra."³⁸⁶

The object will be ubiquitous, it will be available – and fully so (“entiers”) – for pure access. It is difficult to read the following and not think of contemporary streaming services: “il sera merveilleusement doux de pouvoir changer à son gré une heure vide, une éternelle soirée, un dimanche infini, en prestiges, en tendresses, en mouvements spirituels.”³⁸⁷

Whatever your taste or poison – Beethoven or Beyoncé, Brötzmann or Bacharach – Spotify, Wimp, Deezer and its siblings now give any given Sunday its musical fill just as the *Berliner Philharmoniker* application happily notifies your gadget of choice whenever its audience is settling into their seats so that you may privately do the same and virtually join their number. Valéry noted that, at the time, visual phenomena had yet to be mastered in the same way as the audible; but, as demonstrated by services as diverse as Netflix and the Google Art Project, he rightfully predicted: “Cela se fera.”³⁸⁸

Walter Benjamin quoted Valéry at length in the beginning of “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit.”³⁸⁹ The quoted passage, which claims that “Noch die Materie, noch der Raum, noch die Zeit sind seit zwanzig Jahren, was sie seit jeher gewesen sind,”³⁹⁰ simply hovers uncommented *en exergue* before the preface. *Something* has happened as described by Valéry, and Benjamin sets out to trace its consequences with regard to the authenticity of the work of art: Mechanical reproduction depreciates the presence of the object, its aura, because it severs the object’s ties to its history or tradition.³⁹¹ Benjamin, of course,

³⁸⁶ Valéry, “La conquête de l’ubiquité,” 1284.

³⁸⁷ Ibid. 1286.

³⁸⁸ Ibid.

³⁸⁹ Valéry only appears in the last version of the text, which was once known as the “Dritte Fassung” but which the latest critical edition Benjamin, *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit*, has now established as the “Fünfte Fassung”.

³⁹⁰ Valéry, “La conquête de l’ubiquité,” 1284, quoted in Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung,” 472. Some 36 years later, McLuhan was to kill off time and space entirely: “Both time (as measured visually and segmentally) and space (as uniform, pictorial, and enclosed) disappear in the electronic age of instant information.” McLuhan, *Understanding Media*, 138.

³⁹¹ Cf. Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung,” 477.

saw this as a political potential and focused on film's influence on individual apperception, private property and mass mobilisation.

Martin Heidegger, on the other hand, was less hopeful regarding the ability of the then new media to bring near that which is far. While Valéry focused on music and Benjamin on film, Heidegger's essay on *Das Ding* (1951) saw the epitome of these technological developments in television: "Den Gipfel der Beseitigung jeder Möglichkeit der Ferne erreicht die Fernsehapparatur, die bald das ganze Gestänge und Geschiebe des Verkehrs durchjagen und beherrschen wird."³⁹² In this "Teleset" he saw a catastrophe where the technological ability to bring near creates "dieses Gleichförmige, worin alles weder fern noch nahe, gleichsam ohne Abstand ist," a state where "Alles wird in das gleichförmig Abstandlose zusammengeschwemmt."³⁹³ Heidegger thus insists: "Allein das hastige Beseitigen aller Entfernungen bringt keine Nähe; denn Nähe besteht nicht im geringen Maß der Entfernung."³⁹⁴

Thus, we have three readings of technological access to that which was once far away: Valéry's pleasure in mediated spiritual pursuits; Benjamin's recruitment of media's destruction of aura in the service of emancipatory politics; and, finally, Heidegger's insistence that modern media cost us our understanding of actual nearness.³⁹⁵ These are all three aspects of our technologically renewed relation to the *Thing*. Heidegger explicitly tried to rethink *das Ding* with regards to nearness in the new technological era and ended up with his famous fourfold: "Erde und Himmel, die Göttlichen und die Sterblichen gehören, von sich her zueinander einig, aus der

³⁹² Heidegger, "Das Ding," 157.

³⁹³ Ibid. 158.

³⁹⁴ Ibid. 157.

³⁹⁵ It is, of course, dangerous to reduce such multifaceted thinkers to single words or simple attitudes. In spite of his fascination with the nearness of radio, Valéry was less excited with the rich heritage rendered accessible by the museums: "Mais notre héritage est écrasant. L'homme moderne, comme il est exténué par l'énormité de ses moyens techniques, est appauvri par l'excès même de ses richesses." Valéry, "Le problème des musées," 1292. And Bernard Stiegler uses Valéry as his preferred reference for a pessimistic outlook on spirit, as expressed in Valéry, "La liberté de l'esprit," 1081: "Toutes ces valeurs qui montent et qui baissent constituent le grand marché des affaires humaines. Parmi elles, la malheureuse valeur *esprit* ne esse guère de baisser." Cf., e.g., Stiegler, *Mécréance et discrédit*, 15. Likewise, Benjamin's hope for technological progress and the means of reproduction is nowhere to be found four years later in "Über den begriff den Geschichte" in which any notion of "Fortschritt" is emphatically derided. And even Heidegger's generally unwavering critique of technology could be overcome by enthusiasm for television as a means for bringing the Gods near, if it showed the masterful football skills of Franz Beckenbauer and his "Mannschaft", cf. Kittler, "Martin Heidegger, Medien und die Götter Griechenlands - Ent-Fernen heißt die Götter nähern," 390.

Einfalt des einigen Gevierts zusammen.”³⁹⁶ This fourfold is gathered in the thing: “Das Ding verweilt das Geviert. Das Ding dingt Welt. Jedes Ding verweilt das Geviert in ein je Weiliges aus Einfalt der Welt.”³⁹⁷ Unlike an object (*Gegenstand*), Heidegger’s fourfold thing gathers and assembles the high and the low, the eternal and the mortal, the abstract and the material in a specific way. Only by thinking this gathering, this assemblage, are we able to think the thing and its relation to the world as something that concerns and conditions us instead of merely as a resource to be stored and exploited.³⁹⁸

Let us try, then, to consider the thing that seems to be happening within or around the digital humanities as the current academic mode of approaching digital evidentiality. Thinking the thing instead of the object should, hopefully, allow us to circumvent the deluge of questions surrounding the digital – is it this or is it that? – as well as the often comical attempts to patent the best possible terminology or disciplinary approach. Our goal here is to close in on the “thing” via the threefold perspective of *access*, *evidence* and *control* as the specific gathering that both conditions and haunts contemporary humanities and hence our ability to understand something like digital cultural heritage.

3.3 Access

In a certain way, Valéry, Benjamin and Heidegger all took transmission, i.e. access to something via the transmissions of sound and image, as their point of departure. New modes of transmission influenced the spiritual formation of the self, property relations and the mobilisation of the masses and, finally, our cognitive relation to the world. In our day, this access via transmission is, of course, epitomised by the

³⁹⁶ Heidegger, “Das Ding,” 172.

³⁹⁷ Ibid. 173.

³⁹⁸ Cf. Heidegger’s critique of modern technology as the challenging of nature: “Das in der modernen Technik waltende Entbergen ist ein Herausfordern, das an die Natur das Ansinnen stellt, Energie zu liefern, die als solche herausgefördert und gespeichert werden kann.” Heidegger, “Die Frage nach der Technik,” 18. We shall return to this reading of technology in the two last chapters.

distributed digital network: “Inside the dense web of distributed networks, it would appear that everything is everywhere.”³⁹⁹

But is the network, then, the “thing” of the digital? Is the rise to prominence of the distributed network the central paradigm of our contemporary societies, cultures and academic trepidations? And, in that case, what is the network as thing? Is it the rhizome, a collection of protocols, or is it the swarm of the Furies?

The network obviously plays a pivotal role in digital access as its dominant form of transmission, but as was already clear in Shannon, it is nothing but an abstraction, a set of unemployed conventions noted in the RFCs,⁴⁰⁰ without some form of transmitted content, without that *of which* the network is a transmission. Kittler always insisted on the “notwendigen und hinreichenden” trinity of transmission, storage and computation.⁴⁰¹ Sending and receiving via the network requires read/write operations within computer memory and between memory and storage. So, what about storage, access to the digitally stored object?

Apart from transmission, storage and computation, Kittler was fond of another conceptual triplet, that of Lacan’s distinction between the real, the symbolic and the imaginary, which he found expressed in the phonograph, the typewriter and the cinematograph, respectively. Thus, Kittler would to some extent agree with Valéry’s description of the fullness of access to sound – not because there is no possible quality loss but simply because the sound of the real itself inscribed traces in the substratum. When, in July 1877, Edison shouted his famous “Hullo” into the mouthpiece of what was to become the phonograph, the vibrations of his voice left an imprint, which to this day allows a faint echo of that primordial bellow to resound from the past. The real ceased not to write itself, as Kittler would echo Lacan.

Benjamin’s perception of cinema, on the other hand, is that of a break with our commonplace images:

³⁹⁹ Galloway and Thacker, *The Exploit, a Theory of Networks*, 4.

⁴⁰⁰ The RFCs (Request for Comments) are a “document series contain[ing] technical and organizational notes about the Internet. They cover many aspects of computer networking, including protocols, procedures, programs, and concepts, as well as meeting notes, opinions, and sometimes humor.” <http://www.ietf.org/rfc.html>.

⁴⁰¹ Cf. for example, Kittler, *Grammophon, Film, Typewriter*, 353.

“Unsere Kneipen und Großstadtstraßen, unsere Büros und möblierten Zimmer, unsere Bahnhöfe und Fabriken schienen uns hoffnungslos einzuschließen. Da kam der Film und hat diese Kerkerwelt mit dem Dynamit der Zehntelsekunden gesprengt, so daß wir nun zwischen ihren weitverstreuten Trümmern gelassen abenteuerliche Reisen unternehmen.”⁴⁰²

If, for Kittler, the imaginary has “den Status von Kino” because of its flickering mirror edition of the “real” world,⁴⁰³ then, for Benjamin, this ability to produce a new imaginary and new ways of consuming image worlds is the key to the future. If, as Althusser would have it, ideology is the imaginary relation of individuals to their real conditions of existence,⁴⁰⁴ Benjamin’s cinema is, in its very technological form, the foundation of a new critique of ideology. Just as Assmann’s archive destroys the aura of “cultural reference memory,” the new archival operations of Benjamin’s cinema destroy the aura of the prison world of canon.⁴⁰⁵

Finally, Heidegger’s sense of technologically induced loss extended to the typewriter, whose machine writing reduced the word to a means of transmission and effaced the individual character of expression in favour of mechanic standardisation.⁴⁰⁶ Kittler similarly noted the digital as a renewed monopoly of the symbolic and, although Heidegger never experienced the contemporary pervasiveness of the digital, his response to digital inscription can be gathered from his clear statement that philosophy has met its end in the new unification of the sciences in the informational manoeuvres of cybernetics.⁴⁰⁷

3.4 Bits and archives

⁴⁰² Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung,” 499-500.

⁴⁰³ Ibid. 29.

⁴⁰⁴ Cf. Althusser, “Idéologie et Appareils Idéologiques d’État,” 101.

⁴⁰⁵ Cf. section 1.1.2.

⁴⁰⁶ Heidegger, *Parmenides*, 119, cf. also Kittler, *Grammophon, Film, Typewriter*, 26.

⁴⁰⁷ Heidegger, “Zur Frage nach der Bestimmung der Sache des Denkens (30. Oktober 1965),” 623.

What we are getting at is access to the stored object as inscription on a substrate. The voice itself held the pen when its vibrations were etched into Edison's receiving cylinder, and photographed faces impressed themselves on the camera lens with a painful light.⁴⁰⁸ Sound and image on the computer, however, are literally reduced to the symbolic writing of the computerised typewriter; and, thus, much more than the sciences has fallen under the aegis of cybernetics.

Digital inscription does not, of course, consist in the actual writing of "1s" or "0s"; neither is it a simple binary of electrically charged or uncharged locations: "the magnetic patterns on the surface of the disk are not a direct representation of bit values but an abstraction of those values, filtered through a range of encoding schemes [...]"⁴⁰⁹ In addition to the voltage flux reversals indicating the given value (1 or 0), the disc requires inscribed flux reversals to indicate location. Deciphering a hard drive through a magnetic force microscope is, thus, akin to deciphering Morse code without ever having learned the representational system: "What we see here are not simply bits, but patterns of magnetic flux reversals, a number of which may be necessary to constitute a single bit [...]. Thus while bits are the smallest symbolic units of computation, they are not the smallest inscribed unit [...]"⁴¹⁰ Without knowing the encoding scheme, deciphering and, thus, grasping the sense of flux reversals become more than a bit of a challenge.

Digital inscription is meaningless without the law N that governs the semiotic function of flux reversals on the substrate as well as the retrievability of their semantic content H; and we could, therefore, argue that digital inscription is always already an archive. This is a proposition that is bound to annoy the pundit who, like Ernst, detects a current lamentable "conflation of libraries, museums, and archives" and bemoans an "inflation of the term 'archive' [...]"⁴¹¹ Granted, the term is wearing thin and should not be used lightly; but, as noted from Derrida to Ernst and Azoulay, the archive is different after the advent of the digital.

⁴⁰⁸ Cf. "[...] la Photographie — ma Photographie — est sans culture : lorsqu'elle est douloureuse, rien, en elle, ne peut transformer le chagrin en deuil." Barthes, *La Chambre Claire*, 141.

⁴⁰⁹ Kirschenbaum, *Mechanisms, New Media and the Forensic Imagination*, 90.

⁴¹⁰ Ibid. 61.

⁴¹¹ Manoff, "Theories of the Archive from Across the Disciplines," 10. Manoff herself is not such a pundit. On the contrary, she argues for an expansion of the debate concerning the archive.

As already noted by Valéry, the immediacy caused by the time of transmission approaching zero also applies to the time of memory: Works of art can supposedly be restored from the past with no hint of the ghostly horrors that so often haunt such summons. According to Wendy Hui Kyong Chun, this summonable availability of the past is often perceived to assure the future:

“The major characteristic of digital media is memory. [...] Memory allegedly makes digital media an ever-increasing archive in which no piece of data is lost. This always-thereness of new media is also what links it to the future as future simple, as what will be, as predictable progress. By saving the past, it was supposed to make knowing the future easier.”⁴¹²

But the “archival promise” of the complete mnemonic accumulation of the past and the subsequent cybernetic calculation of the future on the basis of this completed data set is an illusion. Digital memory fades. As Chun argues, digital memory is an enduring ephemeral depending on persistent rewriting; and, thus far, even non-volatile memory has limited read-write capacity.⁴¹³

From cathode ray tubes to DRAM, SSDs and RAID^s containing multiple hard drives ever in danger of spinning out of control and into a twirling encounter with the all-too-tactile inscriptions of the real, digital memory is not the assured storage once hoped for. The RAID (Redundant Array of Inexpensive/Independent Disks) is an example of large-scale storage based not on the assumption but on the sure knowledge that participating disks will fail.

Instantaneous access to ephemeral digital inscriptions on networked substrates makes the digital archive a question of time: “Thus, the so-called Internet “archive” becomes radically temporalized. It is rather hypertemporal than hyperspatial, based on the aesthetic of immediate feedback, recycling and refreshing rather than on the ideal of locked-away storage for eternity.”⁴¹⁴ Storage itself then becomes a mode of transmission with data constantly being moved around or rewritten. Access is no longer the simple transmission of an object from one location to another. It is not a

⁴¹² Chun, “The Enduring Ephemeral, or the Future Is a Memory,” 154.

⁴¹³ *Ibid.* 166.

⁴¹⁴ Ernst, “Cultural Archive versus Technomathematical Storage,” 68.

case of Galloway's "chain of triumph." The object itself is a spectral inscription constantly rewritten in a black box that, when opened, reveals nothing legible to the naked eye. And even the right optics reveal only flux reversals indecipherable without knowledge of the encoding scheme. Any act of reading is an act of deciphering, i.e., "[o]bjects exist only upon use."⁴¹⁵

3.5 Code

Digital inscription in transmission, this constant flux of networked read/write operations,⁴¹⁶ is, then, finally, nothing without the computational operationalization of the very same inscriptions. From the encoding scheme to the interface of web applications, the digital operates by code. But, here again, we run into the same problem: What is the code thing? Is it the programmer's source code, compiled machine code, electromagnetic disk inscriptions or possibly the execution of code?

Just as digital inscription requires an encoding scheme in order to make sense, "the complete syntactic and semantic rules of a computer language must be defined and written into any environment designed to interpret, parse, or execute it."⁴¹⁷ Hence, software only works via what Galloway calls its own "meta-medial reflection," which determines the conditions for its execution and, thus, its existence. We see higher-level expressions of these "meta-medial" environments whenever we need to update Flash, Java or Silverlight on our computers. Streaming services have a tendency to rely on these. Netflix, for example, requires Silverlight to stream content, and streaming the concerts of the *Berliner Philharmoniker* requires Flash.⁴¹⁸

But we only ever notice these interpreting layers when they stop working or they themselves announce that it is time for an update. The surface tends to eclipse what goes on in the machine room. Galloway calls this *the occult logic of software*:

⁴¹⁵ Galloway, *Protocol, How Control Exists after Decentralization*, 74.

⁴¹⁶ Cf. "computer reading is a writing elsewhere" Chun, *Programmed Visions, Software and Memory*, 5.

⁴¹⁷ Galloway, "Language wants to be overlooked," 322.

⁴¹⁸ Flash is rapidly disappearing and Microsoft's enthusiasm for Silverlight seems to have waned, so what was the case at the time of writing may very well have changed by the time of reading.

“software hides itself at exactly the moment when it expresses itself most fully.”⁴¹⁹ Or “what you see is not what you get.”⁴²⁰ When gazing at the interface, its surfaces and functions are created and recreated elsewhere. When reading the source code, its ultimate expression, its *telos*, is an execution waiting to happen. Source code is always, in a certain way, on death row.

Chun, on the other hand, would argue that it only becomes source code *after* the execution: “source code only becomes a source after the fact. [...] Source code is more accurately a re-source, rather than a source. [...] Source code becomes a source only through its destruction, through its simultaneous nonpresence and presence.”⁴²¹ The readable source is nothing without its destruction in the executable. Chun’s argument is based on a Derridean perception of writing as spectral. The appearance of the ghost is always a re-appearance; software is always already undead.⁴²²

It is, of course, possible to claim some form of primacy, to hierarchize the “layers” of code. The two extreme positions in this regard are Kittler’s famous statement that “[t]here is no software”⁴²³ and Manovich’s recent reply that “[t]here is only software.”⁴²⁴ For Kittler, it all comes down to operations in the substrate in the form of voltages and logic gates, a position unsurprising for a man who, as we have already mentioned, chose the RAM/ROM distinction over Mnemosyne as a conceptual instrument for describing the history of memory organisation.

Manovich, on the other hand, takes issue with our initial assumption that the “thing” of the digital humanities has something to do with the digital: “None of the new media authoring and editing techniques we associate with computers are simply a result of media “being digital.” The new ways of media access, distribution, analysis, generation, and manipulation all come from *software*.”⁴²⁵ For Manovich, software is *the thing*. As was already apparent in *The Language of New Media* (2001), Manovich is interested in what happens *after* the execution of code, its

⁴¹⁹ Galloway, “Networks,” 292.

⁴²⁰ Galloway, *The Interface Effect*, 69.

⁴²¹ Chun, *Programmed Visions, Software and Memory*, 24-25.

⁴²² Ibid. 25. Cf. also Derrida: “[...] un spectre est toujours un revenant. On ne saurait en contrôler les allées et venues parce qu’il *commence par revenir*.” Derrida, *Spectres de Marx, l’État de la dette, le travail du deuil et la nouvelle Internationale*, 32.

⁴²³ Kittler, “There Is No Software.”

⁴²⁴ Manovich, *Software Takes Command*, 147.

⁴²⁵ Ibid. 148.

resurrection in “the techniques, the tools, and the conventions”⁴²⁶ of the runtime experience or interface.

Both Galloway and Chun explicitly try to negotiate the many aspects of code without reducing them to one primary layer. Spectral or occult, the operationalization of digital inscription in computation is as difficult to pin down as networked transmission and storage were. Deploying our folded notion of the “thing,” we can push the meta-medial reflexivity of code awaiting execution as well as its undead mirror image a bit further and consider the different aspects of source, assembly and binary executable as different reflections of each other that engage in a vivid mirror dance *en abyme*. The different specular images are not equivalent, nor are they reducible to one another. Whether code awaits execution in the electrical circuits of the CPU or only ever awaits execution once the undead walks again matters less. What matters is the dance that reveals its participants in a new light and in new formations as the beat goes on.

3.6 Evidence

The digital thing remains elusive. Whether as transmission, inscription in storage or computation, access is nothing but a dance of shadows. And, yet, access is claimed to cast new light and deliver a new form of clarity: *evidence*. Former editor-in-chief of WIRED and current drone manufacturer, Chris Anderson, even went so far as to claim the death of theory as access to enormous amounts of data will allow it to speak for itself, the archival promise of “big data”:

“The new availability of huge amounts of data, along with the statistical tools to crunch these numbers, offers a whole new way of understanding the world. Correlation supersedes causation, and science can advance even without coherent models, unified theories, or really any mechanistic

⁴²⁶ Ibid. 149.

explanation at all. [...] It's time to ask: What can science learn from Google."⁴²⁷

Access to unfathomable data stores, new computational tools and the networked transmission and distribution of the cloud supposedly open a whole new world in which, with "enough data, the numbers speak for themselves." Although Chris Anderson's comments have a certain evocative power, they provide little demonstrative value. But they are nonetheless interesting because of the imaginaries they express and the impact they had.

Matthew L. Jockers, a frequent collaborator of Franco Moretti, opens his book *Macroanalysis* (2013) with a reference to Chris Anderson's proposition. Surprisingly, Jockers takes its title, "Data Deluge Makes the Scientific Method Obsolete", less as a problematic and contestable provocation than as a given, now finally manifest within the humanities: "Now slowly and surely, the same elements that have had such an impact on the sciences are revolutionizing the way that research in the humanities gets done."⁴²⁸

Interestingly, this digital revolution hinges on two terms, *access* and *evidence*: "massive digital corpora offer us unprecedented *access* to the literary record and invite, even demand, a new type of *evidence* gathering and meaning making."⁴²⁹ The revolution is even an automatic result of access to "both large and easily accessible" data stores: "We have built it, and they are coming."⁴³⁰

Data is not evidence in itself; it becomes evidence when gathered or, in our terminology, consigned. Access to data permits evidence consignment, which then again enables "accessing details that are otherwise unavailable, forgotten, ignored, or impossible to extract;" it allows "the computer to help us see even more, even deeper [...]"⁴³¹ Access enables evidence, which then again enables cognitive access, ultimately expressed by the metaphor of sight.

The digital is clearly not just the bringer of new evidence but also new ways for data to give evidence. But what is the new *Thing* of evidence? Data or, possibly,

⁴²⁷ Anderson, "The End of Theory."

⁴²⁸ Jockers, *Macroanalysis, Digital Methods and Literary History*, 3.

⁴²⁹ Ibid. 8, my emphasis.

⁴³⁰ Ibid. 12.

⁴³¹ Ibid. 27.

metadata? And what is the evidential difference between data and metadata? Jockers begins with metadata as a “wealth of information,” but it seems, nevertheless, to be the next best thing: “In the absence of full text, this bibliographic metadata can reveal useful information about literary trends.”⁴³² In this context, one might consider bibliographic metadata to be the data about the data of the text. But metadata constantly slips back into the role of “data” in references to metadata as “bibliographical data,”⁴³³ “title data”⁴³⁴ and, from the end of the chapter on metadata: “The data discussed in this chapter [...]”⁴³⁵

Bibliographical metadata is “meta-” with regards to “full text” data but becomes data in its own right when serving as the object of study. Yet again, we notice the shadowy mirror dance in which different aspects of the digital thing switch places and reveal different sides of themselves. But the whole point of *evidence* is that data reveal something new, that, “[g]iven enough digital records and enough computing power, a new vantage point on human culture becomes possible.”⁴³⁶ As the subtitle of Aiden and Michel’s book indicates, “big data” itself functions as a lens on human culture.

What, then, is the object of this lens? How does the evidential dance of access to data and metadata cast light on the cultural phenomenon? In a recent article, Franco Moretti refers to Alexandre Koyré’s distinction between a utensil and an instrument, the utensil being a sensory amplification of our common sense appraisal of the world and the instrument a “materialisation of thought ... the conscious realisation of theory,” which allows us to “reach *what does not fall under the domain of our senses* [...]”⁴³⁷ Moretti claims that, within literary analysis, “the protagonist” is a utensil, while “character-space” as the measure of narrative space allotted to a single character, is an instrument. According to Koyré, both Galileo’s telescope and microscope are such instruments.

Big data is the lens through which the computer helps us see, and something like “character-space” could, then, be likened to the adequate direction and focalisation

⁴³² Ibid. 35-36.

⁴³³ Ibid. 54.

⁴³⁴ Ibid. 55.

⁴³⁵ Ibid. 64.

⁴³⁶ Aiden and Michel, *Uncharted*, 12.

⁴³⁷ Koyré as cited in Moretti, “Operationalizing,” 113.

of the gaze, a direction and focalisation based on theoretical lines of questioning that transform the lens from an optical curiosity into an instrument. Chris Anderson expressed the old scholarly desire for the “thing” to stop hiding and reveal itself, but the scholars faced with its ghostly formations recognise that there is more to it than that. Computation does not allow immediate access to the thing-in-itself, thus obliterating theory. The thing, rather, “has theoretical consequences.”⁴³⁸

For Moretti, these consequences are best expressed in the – almost unbearably ugly – concept “operationalizing,” conceived as a “bridge from concepts to measurement, and then to the world. In our case: from the concepts of literary theory, through some form of quantification, to literary texts.”⁴³⁹ Character-space is, thus, an instrument, the “operationalizing” of which produces new categories. It casts, for instance, the “protagonist” to be a “*special instance of the more general category of “centrality”*.”⁴⁴⁰

No doubt, access provides new evidence; but, presented with the character-space visualisations provided by Moretti, one is tempted to grant that it is correct yet still ask whether it is true?⁴⁴¹ Is this really what concerns us in the thing? In a tone reminiscent of the quotes from Heidegger at the beginning of this chapter, Georg Simmel once wrote of the telescope that “das Näher-Herankommen an die Dinge uns sehr oft erst zeigt, wie fern sie uns noch sind [...]”⁴⁴² Evidence as cognitive access via computation of transmitted data storage brings near but, perhaps, at the cost of a certain loss.

If the digital is the reign of the symbolic, as Kittler would have it, then the digital promise of access and evidence aims, as Moretti states it, to reunite the symbolic with the empirical world or, rather, to achieve an adequate symbolic representation of the real. The problem is, though, that the Lacanian real is not that which resists “being caught in the symbolic network, but the fissure within the symbolic network itself. [...] for Lacan the Real – the Thing – is not so much the inert presence that

⁴³⁸ Ibid. 114.

⁴³⁹ Ibid. 104.

⁴⁴⁰ Ibid. 112.

⁴⁴¹ “Gewiß. Das Richtige stellt an dem, was vorliegt, jedesmal irgend etwas Zutreffendes fest. Die Feststellung braucht jedoch, um richtig zu sein, das Vorliegende keineswegs in seinem Wesen zu enthüllen. Nur dort, wo solches Enthüllen geschieht, ereignet sich das Wahre.” Heidegger, “Die Frage nach der Technik,” 11.

⁴⁴² Simmel, *Philosophie des Geldes*, 540.

curves symbolic space (introducing gaps and inconsistencies in it), but, rather, an effect of these gaps and inconsistencies.”⁴⁴³ This is a point that Kittler keeps missing. For Kittler, the Lacanian symbolic is always an inadequate encoding of the Lacanian real; but, for Lacan, the ever improving symbolic “encoding” of the real is exactly what reproduces the real as traumatic Thing, as unknowable abyss. Thus, digital evidence in the sense of access to data as self-evident when observed via the proper instrument is a discourse of truth that eludes itself.

3.7 Discipline

Moretti delivered “operationalizing” as a process “absolutely central to the new field of computational criticism, or, as it has come to be called, of the digital humanities.”⁴⁴⁴ More than simply proclaiming its able entry into the thick of the fray that is the digital humanities, Moretti here airdrops his conceptual fighter into the absolute centre of the battle to determine its outcome.

Manovich claims a similar centrality of his own champion: “Regardless of which new dimension of contemporary existence a particular social theory of the last few decades has focused on — information society, knowledge society, or network society — all these new dimensions are enabled by software.”⁴⁴⁵ Moretti believed his contestant could ensure a bridge between concept and world via measurement in an *adaequatio rei et intellectus*. Manovich, on the other hand, is more interested in the “thing” as the *sine qua non* of everything else of importance these days: “Software is the invisible glue that ties it all together. [...] If we don’t address software itself, we are in danger of always dealing only with its effects rather than the causes [...]”⁴⁴⁶ And, furthermore, “I think of software as a layer that permeates all areas of contemporary societies. [...] our analysis cannot be complete until we consider this software layer.”⁴⁴⁷

⁴⁴³ Žižek, *How to Read Lacan*, 72–73.

⁴⁴⁴ Moretti, “Operationalizing,” 103.

⁴⁴⁵ Manovich, *Software Takes Command*, 8.

⁴⁴⁶ *Ibid.* 8–9.

⁴⁴⁷ *Ibid.* 15.

Maybe academia always did this, but it seems that the digital provokes a special desire to claim one's own approach or perspective as the thing that restores peace to the gap between *res cogitans* and *res extensa*, the thing that lies at the foundation of everything else or the thing singularly best equipped to handle the haunting of the new thing.

N. Katherine Hayles was clearly in marketing mode when, in *How We Think* (2012), she all but trademarked the term "Comparative Media Studies" as a crucial academic approach:

"Comparative Media Studies provides a rubric within which the interests of print-based and digital humanities scholars can come together to explore synergies between print and digital media, at the same time bringing into view other versions of Comparative Media Studies, such as the transition from manuscript to print culture, that have until now been relegated to specialised subfields."⁴⁴⁸

Note that she writes "Comparative Media Studies" in title case, thus evoking the trademark effect. Comparative Media Studies is exemplary in its capacities expressed by terminology such as "provides," "synergy," "bringing into view," "enriches" and "would have wide appeal;" and, finally, she adds: "A principal aim of this book is to excavate these layers, showing through specific case studies what Comparative Media Studies involves."⁴⁴⁹ In other words, the book's main aim is to establish this trademarkable disciplinary entity.

In *Comparative Textual Media* (2013), which Hayles edited along with Jessica Pressman, the brand name "*comparative media studies*" is written in lower case italics and, then, abandoned in favour of "*comparative textual media*" in italics and, later, in the logo form of "CTM" in order to comply with the focus of that particular book.⁴⁵⁰ All this, of course, is nit-picking, but it is an interesting case of disciplinary

⁴⁴⁸ Hayles, *How We Think*, 7.

⁴⁴⁹ *Ibid.* 10.

⁴⁵⁰ Hayles and Pressman, *Comparative Textual Media, Transforming the Humanities in the Postprint Era*, vii.

marketing, especially as “the rapidly emerging field of media archaeology,”⁴⁵¹ a field which, no doubt, holds its own when it comes to marketing tactics, receives no comparative trademark insignia.

James Beniger argues that developments within rationalisation, bureaucracy and information, communication and processing “served to contain the control crisis of industrial society in what can be treated as three distinct areas of economic activity: production, distribution, and consumption of goods and services.”⁴⁵² Beniger claims that, just as industrialisation required theoretical developments to grasp capital, energy and material processing, the information society requires reanalysis of storage, computation, transmission, and control.⁴⁵³

From this perspective, we could, then, compare the numerous attempts to obtain conceptual or disciplinary dominance to Henry P. Crowell, who invented the first fully automatic production of oatmeal. “His plant literally received raw oats at one end and shipped cartons of packaged oatmeal out of the other.”⁴⁵⁴ But the efficiency of this mode of production also drove him to invent “breakfast cereal.” Since his production method produced twice the amount absorbed by the national market, he had to turn to national advertisement to create demand. And, thus, Quaker Oats was born in an attempt to avoid the threats of overproduction by inventing a new field of consumption. Similarly, the sheer efficacy of new modes of evidence demands disciplinary responses to the academic control crisis fostered by the digital thing.

3.8 Control

Access to the new evidence of the digital thing has created an academic crisis of control, inviting frantic scholarly attempts to contain it and profit from it. As I have tried to demonstrate above, the situation has fostered countless questions regarding the ontological and epistemological complexities of the digital. It would, however, be yet another case of *missing the thing* if we only consider the new object of study and

⁴⁵¹ Ibid. xi.

⁴⁵² Beniger, *The Control Revolution, Technological and Economic Origins of the Information Society*, 16.

⁴⁵³ Beniger uses the terms “storage, processing, communication, and control” Ibid. 32.

⁴⁵⁴ Ibid. 265.

the tools and disciplines used to describe it. Galloway argues that the likes of McLuhan, Kittler and Manovich have taken a metaphysical approach to the medium as object and, instead, proposes an ethical approach to the computer-based medium as practice.⁴⁵⁵

Galloway bases this argument on the double meaning of the word *techne*: one as “substrate and only substrate”, another as “technique, art, habits, ethos, or lived practice.”⁴⁵⁶ One considers media as externalisations of man; the other asks the more political question of “middles and interfaces,” i.e., modes of mediation.⁴⁵⁷ One asks the questions of formal characteristics of layers and their primacies (e.g., voltages vs. software) as well as the historical incorporation of one medium into another (print as the content of the telegraph); the other questions the relations of command expressed and executed by the computer.

Not unlike the present chapter, Galloway tries to circumvent the “is it this or is it that?” questions of the digital scholarly sphere. Instead, he seeks out the injunction; he demands a theoretical discourse equal to the action and command structure of the computer. This motivates his proposed shift from thinking the “black box cypher” to thinking the “black box function”.⁴⁵⁸ We should not look for the inherent qualities of the Enigma machine that will allow us to decipher all its operations. Instead of building the COLOSSUS, we should analyse and exploit ENIGMA’s programmability. The political subtext of this media reading is that instead of critiquing ideology we should analyse and exploit the glitches in the society of control.

Although from a manifestly different political position, Bruno Latour has engaged in a similar line of questioning by arguing for a shift of focus from “matters of fact” to “matters of concern,” from *Gegenstand* to *Ding*. Latour accepts the Heideggerian distinction but claims that Heidegger “traced a dichotomy between *Gegenstand* and *Thing* that was justified by nothing except the crassest of prejudices.”⁴⁵⁹ Latour references the 2003 crash of the space shuttle Columbia as the “metamorphosis of an object into a thing,” a matter of fact becoming a matter of concern. But he

⁴⁵⁵ Galloway, *The Interface Effect*, 16-24.

⁴⁵⁶ Ibid. 16.

⁴⁵⁷ Ibid.

⁴⁵⁸ Cf. Galloway, “Black Box, Black Bloc.”

⁴⁵⁹ Latour, “Why Has Critique Run out of Steam?” 234.

criticises Heidegger for a poor understanding of science and technology: “he had only four folds, while the smallest shuttle, the shortest war, has millions.”⁴⁶⁰

While Galloway explicitly deals with the importance of things *not* working, the inoperable as a political countering of computational operability,⁴⁶¹ Latour deploys a mode of technocratic control whose goal is the optimisation of the machine beyond obsolete and troublesome criticism. The problem with Latour is his view of the thing as mechanic assemblage.⁴⁶² If each element of the thing is a fold, then what is the thing but the sum of its folds, the sum of its elements? Latour’s folds include “passions, controls, institutions, techniques, diplomacies, wits,”⁴⁶³ but they remain operational parts in the mechanic assemblage. It is “the problem of composing one body from the multitude of bodies [...]”⁴⁶⁴

Latour retransforms the thing into an object if the inoperable pieces are merely reassembled into a working whole without recognising its haunting spectrality and, thus, its power. The technocratic control deployed is clear in Latour’s use of the word “manage”: “How do [things as assemblages] manage to bring in the relevant parties? How do they manage to bring in the relevant issues? What change does it make in the way people make up their mind to be attached to things?”⁴⁶⁵ The thing as an ever elusive and haunting assemblage of modes of access, evidence and control is most certainly a matter of concern, but definitely not a management of relevance or a choice of attachment.

Instead of Galloway’s political future or Heidegger’s “always already,” Latour seeks to abandon the critique of power in order to *take account* of the present. He wants us to “abstain as much as possible from using the notion of power.”⁴⁶⁶ For

⁴⁶⁰ Ibid. 235.

⁴⁶¹ Cf., e.g., Galloway, “The Unworkable Interface.”

⁴⁶² The following criticism of Latour is limited to his reading of the Heideggerian *Thing* in Latour, “Why Has Critique Run out of Steam?” and Latour, “From Realpolitik to Dingpolitik or How to Make Things Public.” A larger discussion of the Latourean framework in general and his specific conceptualization of the digital in particular are, thus, omitted, as are related philosophical discussions of *the Thing* within Object Oriented Ontology and Speculative Realism in works such as Harman, *Tool-Being*, Heidegger and the *Metaphysics of Objects*, Bennett, *Vibrant Matter, a Political Ecology of Things*, Olsen, *In Defense of Things, Archaeology and the Ontology of Objects*, Morton, *Hyperobjects, Philosophy and Ecology after the End of the World*, Garcia, *Form and Object* and Hansen, *Feed-Forward*. This discussion must, however be relegated to later work.

⁴⁶³ Latour, “Why Has Critique Run out of Steam?” 235-236.

⁴⁶⁴ Latour, “From Realpolitik to Dingpolitik or How to Make Things Public,” 28.

⁴⁶⁵ Ibid. 24.

⁴⁶⁶ Ibid. 29.

Latour, “[r]evolutionary time, the great Simplificator, has been replaced by cohabitation time, the great Complicator.” We are moving towards a world “where more and more elements are taken into account.”⁴⁶⁷ Latour sees “contemporary means and media”⁴⁶⁸ as a way of finally taking account of everything. Everything shall be illuminated; new access to new evidence will enable new control free from the transcendent dominion of such master signifiers as “nature” and “capitalism.”⁴⁶⁹ While Galloway wants to basically hack the society of control by exploiting its vulnerabilities, Latour wants to patch its every vulnerability by including everything in his network. Latour’s *taking into account* is the hope to consign everything so that a new and “better” (I would say “technocratic”) society of control.

For Latour, the media-induced contractions in time and space evoked by Valéry, Benjamin and Heidegger – spiritual edification, political emancipation, and cognitive danger – are replaced by a different injunction: “Give me one matter of concern and I will show the whole earth and heavens that have to be gathered to hold it firmly in place.”⁴⁷⁰ This is the exact problem depicted throughout the present chapter: The desire to hold the thing firmly in place no matter the cost, to control its spectral apparitions by including all aspects in the assemblage, as though such a consignment were possible without including a certain lack.

Though much is taken, much abides; and, perhaps, it is our task to counter this desire to move earth and heaven in the attempt to hold the thing firmly in place by demonstrating that access, evidence and control engage in a seductive dance of shadows in which the thing hides in its very appearance.

⁴⁶⁷ Ibid. 30.

⁴⁶⁸ Ibid. 28.

⁴⁶⁹ Cf. Latour’s critique of the political uses of the word “nature” as a way of establishing the distinction between truth and social world: “Although the world of truth differs absolutely, not relatively, from the social world, the Scientist can go back and forth from one world to the other no matter what: the passageway closed to all is open to him alone.” Latour, *Politics of Nature, How to Bring the Sciences into Democracy*, 11. This analysis is based on a reading of Plato’s cave as the constitution of “two houses”: one being the social life of the ignorant masses, the other being the domain of truth only accessible to the high priests of science. This dominion of an always challenged transcendent truth on social life is, for Latour, the neutralisation of democracy. He therefore proposes to collapse the distinction between the two houses in an analysis of the assemblages of humans and non-humans to allow for politics “conceived as the *progressive composition of the common world*.” Ibid. 18. Latour replicated the argument with regard to “capitalism” in a talk given in Copenhagen on February 26, 2014: “On some of the affects of capitalism.” <http://www.bruno-latour.fr/sites/default/files/136-AFFECTS-OF-K-COPENHAGUE.pdf>

⁴⁷⁰ Latour, “Why Has Critique Run out of Steam?” 246.

3.9 In closing on the thing

This chapter has questioned the “thing” of the digital humanities, the cause of its current conceptual and disciplinary frenzy. The goal of the chapter has not been to proffer a solution, the best possible approach, or the best possible terminology. The goal has been, rather, to demonstrate that the thing cannot be immediately grasped or pinned down, that whenever you think you have it, it turns out to be somewhere else. Rather than operators of the archival promise, the threefold prism of access, evidence, and control should be conceived as but a way of closing in on a thing that remains forever elusive.

The network has often been presented as so central a component of our age that we supposedly live in a network society. But what is the network without the transmitted object? Without the connected nodes of storage and software? Storage is itself a ghostly inscription that seems to evade us even when we try to stare at it through electronic microscopes. And the archives of such digital inscriptions, although they held great promise as the providers of the eternal presence of everything, seem to be far more ephemeral than their predecessors. Finally, computation is a many-layered thing disappearing in a *mise en abyme* between source, assembly and execution.

Access is quite clearly an essential aspect of the digital. But one of the reasons for the frenzy regarding the digital is the new forms of evidence provided by such immense access. Access to data has allowed for a new data object called *big data*. This data is sometimes data and sometimes metadata; one sometimes becomes the other depending on the perspective, but, as part of “the archival promise,” the measurability of data has led to hopes of a pure evidence, a self-revealing of the “thing” that will free us from ever having to deal with theory or models again. Supposedly, we no longer have to model the world; the world will reveal itself to us. But does this new evidential form actually mean access to the thing in itself? Or must we recognise that the new lens on human culture only demonstrates the distance to the thing and that, instead of bringing us ever closer to the real thing, digital symbolisation, in fact, produces the thing as haunting abyss of the real?

The new forms of evidence have yet to settle in a disciplinary framework and there is much competition about providing *the one*, the train of thought or line of questioning that will dominate this new field and enact the instance of *control* in the counting and measuring of new evidence. But this instance of control goes beyond mere academic disciplines. It is also a matter of ethics, of how we relate to others and ourselves via the digital. It is important not to forget that control entails new agencies, ethics and politics. This is also why criticism is crucial with regards to the thing. To obliterate criticism in the name of *the thing*, of a technocratic analytical efficiency that prides itself on the newly won evidential capacities for complexity and, therefore, no longer sees the need for a time of succession, for a future beyond calculation, is exactly to miss *the thing*.

The threefold perspective of access, evidence and control attempts an ever-distant approach. It does not aspire to disciplinary acceptance or dominance, nor do the three terms claim to provide the last word; they merely intimate a way of closing in on the thing while remembering that the digital thing remains ever elusive and that to grasp it is to lose it. To close in on the thing, one needs to leave it in the open.

4. *Scholion*: larm.fm⁴⁷¹

Section 2.2.4 briefly mentioned the Danish 2009 report on the state of digitised cultural heritage in Denmark and emphasised its expression of the strategic axis of national identity. This report was also mentioned in section 2.2.5 with regards to the easy accessibility of cultural heritage via the click of a mouse: “When the cultural heritage is digitised, suddenly it can be made accessible by the click of a mouse.”⁴⁷² The same year as that proud proclamation, the research project LARM received a grant of 25 million DKK from the national pool for research infrastructures. The goal of the project was to build a digital research infrastructure for radio sound, i.e. a digital radio archive with an interface to take advantage of the digital format to develop new research and dissemination formats, i.e. the goals of evidence and access.

The platform of the LARM project is called larm.fm, and it “gives the student access to 1.000.000 hours of radio from DR P1, DR P2, DR P3, DR P4, DR P5, DR P6 Beat, DR P7 Mix, DR P8 Jazz, DR P2 Klassisk, DR Ramasjang, DR Mama, DR Online, DR P5000, The Voice, TV2 Radio, Radio 100FM, Nova FM, Radio 2 and many more.”⁴⁷³

If we accept a notion of cultural heritage as the decision within cultural politics of preserving and making accessible the on-going accumulation of human artefacts and traces as both presence of the past and resource for the future, larm.fm. is quite clearly a digital cultural heritage archive. The purpose is unequivocally expressed as giving access to preserved historical material as resource: “LARM Audio Research Archive is an interdisciplinary project, the goal of which is the production of a digital infrastructure to facilitate researchers’ access to the Danish radiophonic cultural heritage. [...] today, radio broadcasts form an invaluable, yet untapped, source to

⁴⁷¹ This chapter is based on a previously published book chapter: Andreassen: “Det digitale kulturarvsarkiv – medie og dispositiv.”

⁴⁷² Digitaliseringsudvalget, “Digitalisering af Kulturarven - Endelig Rapport fra Digitaliseringsudvalget,” 7.

⁴⁷³ LARM, “Kom Godt I Gang.”

Danish culture and history.”⁴⁷⁴ The notion of “untapped potential” which we saw from UNESCO in 1993 persists.⁴⁷⁵

After the approaches presented in the initial three chapters – the topology of the archive, an archaeology of its historical conditions of possibility within technological development and cultural politics and, finally, the attempt to analyse the archival promise as imaginaries caught in the mirror dance of the three-fold thing – how should one now understand a concrete digital cultural heritage archive? How should one analyse a phenomenon such as larm.fm? It is an infrastructure giving access to a resource via an interface. Is there anything else to say about the digital archive and the interface than that the user can access large quantities of radio sound?

As mentioned in section 3.8, Galloway indicated two quite different approaches to the question of how to analyse an interface. One considers the technical medium, the *techne* of the medium, as object, i.e. as substrate and technique for storage and distribution of information. In this perspective, a stone tablet is characterised by its quality as a comparatively durable medium, which primarily allows for shorter texts. The impression of writing is slow, the tablet is less than ideal for transportation and distribution and the surface is less than forgiving of trespasses against orthography. The specific physical and technical characteristics of the medium thus limit its use. This is what a certain strand of media theory would call the medium’s *affordances*.⁴⁷⁶

The computer, on the other hand, is flexible with regard to length of text and speed of writing, it has a certain capacity for both storage and editing, and the digital format is easily distributed. Galloway emphasises that for this first approach, the medium is exclusively a question of Platonic *hypomnesis*, i.e. materialised or externalised memory in the form of e.g. writing as opposed to the human *anamnesic* memory. The task of this type of analysis thus becomes to describe the formal characteristics of each medium as *hypomnemesic* machine, i.e. machine of inscription.

⁴⁷⁴ LARM, “About LARM.”

⁴⁷⁵ See section 2.2.3.

⁴⁷⁶ The concept comes from the psychologist James Gibson, cf. Gibson, *The Ecological Approach to Visual Perception*, chap. 8.

The other approach does not consider the medium as technical object but, according to the other meaning of the word *techne*, as practice. The medium then ceases to be an object with inherent affordances and characteristics and becomes a structure constituted by its use, by the practices surrounding it and occasioned by it. Instead of the ways in which the medium's mode of inscription determines the cultural heritage archive, this approach considers the ways in which the archive is constituted as the centre of diverse practices related to the inheritance of culture.

While Galloway relates the first approach to the object and the second to practice, this distinction could also be related to two distinct notions of the term *hypomnemata*. In section 1.4.2, we distinguished between the Derridean *hypomnemata* and the Foucauldian *hypomnemata*, the one being the objective trace, the other being the practice related to certain traces. These two sides of the *ὑπομνήματα* correspond to the two sides of the word *techne* indicated by Galloway. One is a matter of technical modes of inscription; the other is a matter of the *dispositif*. This chapter will propose perspectives on *larm.fm* along both axes.

4.1 The medium as massage

The concept of *hypomnesis* found a canonical description in Plato's analysis of writing as a lack in the phenomenal adumbration of the purity of the idea. This is the version vigorously discussed by Derrida and Stiegler in relation to the *pharmakon*. Foucault, on the other hand, chose other sources for his version of the *hypomnemata*. When Galloway mentions the medium as *hypomnesis*, however, he references a quite different media-analytical tradition consisting of McLuhan, Kittler and Manovich, and we could add Wolfgang Ernst for good measure.

Granted, McLuhan did not use the term *hypomnesis* but similar to that tradition he defined media as "extensions of man," i.e. exteriorisations of human practice. These extensions are the pharmacological prostheses that Derrida found

criticised in Plato.⁴⁷⁷ Modern means of transport are thus exteriorisations of the feet and the back, the telephone and the television are exteriorisations of the voice and bodily communication and money is the exteriorisation of human labour.⁴⁷⁸ This also allows him to claim that the content of any medium is another medium. Just as money contains labour, television contains film, film contains the novel, the novel contains the typescript etc.⁴⁷⁹ The extensions of man thus succeed and subsume one another.

Larm.fm can without further ado be described as a digital Internet-based medium, the content of which is the radio medium. The digital platform contains the radio.⁴⁸⁰ But such is, of course, far from a sufficient analysis. In addition to basic archive functions such as storage, search and playback, larm.fm is equipped with annotation functions that allow the researcher to *tag* entire broadcasts and describe or comment upon timeline excerpts of each broadcast. Larm.fm thus contains both the researcher's notebook and the index cards of the analogue archive. The personal notes become a general enhancement of the archived object by their inscription on the digital index card's metadata, which also make them accessible to and useful for others.

Contrary to its analogue predecessors, many digital archives let their users describe the archival objects either by tagging or free form annotation. These annotations let users communicate, directly or indirectly, via inscriptions in the object's metadata. Just as the traces of Oxford student engagement with the first Shakespeare folio speak of past desires, perceptions and perspirations, scholarly

⁴⁷⁷ "Ce que Platon vise donc dans la sophistique, ce n'est pas le recours à la mémoire, mais dans un tel recours, la substitution de l'aide-mémoire à la mémoire vive, de la prothèse à l'organe, [...]" Derrida, "La pharmacie de Platon," 123–124.

⁴⁷⁸ McLuhan, *The Gutenberg Galaxy, the Making of Typographic Man*, 4–5. Stiegler comes from the Derridean strain of this thought of exteriorization that owes a great deal to André Leroi-Gourhan according to whom human memory has always been *hypomnesic*. Or in McLuhanesque terms: There have always been media: "Human memory is originally exteriorized, which means it is technical from the start. It took shape first as a lithic (or stone) tool, two million years ago." Stiegler, "The Industrial Exteriorisation of Memory," 67.

⁴⁷⁹ This string of examples is from Kittler, *Optische Medien: Berliner Vorlesung 1999*, 24.

⁴⁸⁰ The somewhat problematic word "platform" is here used to designate the technical unity of front end and back end, i.e. interface and server-side operations. For a problematization of the term and its related imaginaries with regard to YouTube, cf. Gillespie, "The Politics of 'Platforms'": "This more conceptual use of 'platform' leans on all of the term's connotations: computational, something to build upon and innovate from; political, a place from which to speak and be heard; figurative, in that the opportunity is an abstract promise as much as a practical one; and architectural, in that YouTube is designed as an open-armed, egalitarian facilitation of expression, not an elitist gatekeeper with normative and technical restrictions." (p. 352).

annotations made as mere individual memory aids – “Parce que leur mémoire est courte, les hommes accumulent d’innombrables pense-bêtes” – testify to specific research interests and insights. But such annotations can also be explicit communication between collaborating researchers. By such im- and explicit communication via *hypomnemata*, the traces left in the archive in some sense participate in the hopes Brecht expressed for the radio medium:

“Und um nun positiv zu werden, das heißt, um das Positive am Rundfunk aufzustöbern, ein Vorschlag zur Umfunktionierung des Rundfunks: Der Rundfunk ist aus einem Distributionsapparat in einen Kommunikationsapparat zu verwandeln. Der Rundfunk wäre der denkbar großartigste Kommunikationsapparat des öffentlichen Lebens, ein ungeheures Kanalsystem, das heißt, er wäre es, wenn er es verstünde, nicht auszusenden, sondern auch zu empfangen, also den Zuhörer nicht nur hören, sondern auch sprechen zu machen und ihn nicht zu isolieren, sondern ihn in Beziehung zu setzen.”⁴⁸¹

As noted by Ernst, the clear distinction between archive as inaccessible storage and the library’s occasional distribution in the reading room has ceased. With the advent of the digital, the archive has gone from a medium of storage to a medium of communication. McLuhan is probably most famous for his classic dictum: “The medium is the message.”⁴⁸² He thereby emphasised that media do not neutrally convey a given message. Money, for example, has a crucial influence on the social structure of work. This means that media contain formal characteristics that “massage” society, which he cheerfully and with a certain amount of irony expressed in the title of his book *The medium is the massage* (1967): “Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication. [...] It is impossible to understand social and cultural changes without a knowledge of the workings of media.”⁴⁸³ The formal characteristics of media allow for the inclusion of communication within the realms of

⁴⁸¹ Brecht, “Der Rundfunk als Kommunikationsapparat,” 129.

⁴⁸² McLuhan, *Understanding Media*, 7.

⁴⁸³ McLuhan and Fiore, *The Medium Is the Massage*, 8.

the archive, i.e. they massage communication so that it takes a certain form. In the case of Iarm.fm, it is the hope that the formal characteristics of the medium would massage more traditional research practices in the direction of a creative innovation with regard to the untapped potential of cultural heritage.

4.2 Encryption of reality

To a wide extent, Kittler accepted McLuhan's premise. He acknowledged that the content of any medium is another medium and that the medium is the message.⁴⁸⁴ He does, however, give his own definition of the medium: Storage, communication and computation are the three necessary and sufficient functions of a medium⁴⁸⁵ or, rather, "daß alle technischen Medien Signale entweder speichern oder übertragen oder verarbeiten" and that "der Computer, seit 1936 im Prinzip, seit dem Zweiten Weltkrieg in der Praxis, das einzige Medium ist, daß diese drei Funktionen Speicherung, Übertragung und Berechnung vollautomatisch koppelt [...]"⁴⁸⁶

Similar to McLuhan, Kittler is thus the example of a formalist approach to media: They are technical operations of one or more of the three functions, the trinity of which was first united in von Neumann's architecture. As mentioned in section 3.5, Kittler was so focused on the formal qualities of the material side of media that he declared: "There is no software."⁴⁸⁷ Software is fundamentally electric signals in computer hardware projecting the once separate music playback media or image displays onto the surface of the interface. Software thus has a tendency to hide the electrical hum of the machine room behind a shiny outer shell of images. The graphic user interface makes us forget that, fundamentally, the computer is an electrical typewriter writing electrical messages to itself: "[...] perfect graphic user interfaces, since they dispense with writing itself, hide a whole machine from its users."⁴⁸⁸

⁴⁸⁴ Kittler, *Grammophon, Film, Typewriter*, 8, and Kittler, *Optische Medien: Berlinger Vorlesung 1999*, 24.

⁴⁸⁵ Kittler, *Grammophon, Film, Typewriter*, 353.

⁴⁸⁶ Kittler, *Optische Medien: Berlinger Vorlesung 1999*, 17.

⁴⁸⁷ Kittler, "There Is No Software."

⁴⁸⁸ Ibid.

A machine the operations of which are hidden is often called a *black box*.⁴⁸⁹ Kittler's hidden machine is such an obscured or obfuscated box.⁴⁹⁰ A simple example would be the aforementioned German cryptographic device ENIGMA the complexity of which made it impossible to predict a stable relation between input and output. By May 1941, however, Alain Turing and his team at Bletchley Park had obtained a sufficient understanding of the black box operations of ENIGMA that they were able to decrypt a message with only 24 hours of delay.⁴⁹¹ The black box tended toward a white box. Kittler seemingly wants to repeat Turing's accomplishment and decrypt the machine. He wants to go behind the glittery surface of the interface and understand how the different media relate to one another, influence and subsume one another, how reality is written or writes itself through them.

In addition to the radio's relation to the very first sound recordings described in his *Grammophon, Film, Typewriter* (1986), Kittler can help us understand the digital radio sound of larm.fm as a transformation of the fundamental technical characteristics used to record radio. Audio recordings have gone from a continuous registration of sound, which in a certain sense wrote itself,⁴⁹² to a symbolic encoding of the very same sound. When Edison bellowed his "Hullo!" down the tract of his new phonograph, the needle began etching traces and, thus, the voice itself was leading the pen. A similar transformation has happened within recordings on reel-to-reel tape where electromagnetic patterns succeeded the needle's engraving in the phonograph's wax cylinder. The sound writing of radio recordings has changed, however, and in 1987 the Danish Broadcasting Corporation (DR) started recording its broadcasts on DAT tapes, i.e. in a digital format. The sound ceased to write itself and was, instead, written in zeros and ones by the recording device's encryption of the world.

This transition from analogue storage and potential distribution via archived reel-to-reel tape to digitally stored and accessed sound files is, as we have already

⁴⁸⁹ "*Black boxes*, as Wiener used the term, meant a unit designed to perform a function before one knew how it functioned; *white boxes* designated that one also specified the inner mechanism." Galison, "The Ontology of the Enemy," 246.

⁴⁹⁰ Although not a Kittlerian, Galloway argues for the obfuscating effects of code: "These new black boxes are therefore labeled functions because they are nothing but a means of relating input to output, they articulate only their exterior grammar, and black box their innards. Computer scientists quite proudly, and correctly, call this technique 'obfuscation.'" Galloway, "Black Box, Black Bloc," 243.

⁴⁹¹ Kittler, *Grammophon, Film, Typewriter*, 368.

⁴⁹² Cf. "phonograph" as the contraction of the Greek words "φωνή" and "γράφειν."

seen in the UNESCO documents, a crucial characteristic of IARM.fm as digital cultural heritage archive. Not only does the immediate access to the quite substantial amount of sound, its *plethora*, depend on the digital format because the browsing behaviour related to such immediacy, and to which we have been habituated by the computer and the Internet, would be somewhat impractical to replicate using reel-to-reel tape and archive shelves. The digital form also gives the sound a new visibility, a new form of evidence. The phonograph left a trace, which could be examined under a microscope, and the tape could show the sound waves during playback but the digital file can show the entire broadcast as image, i.e. as waveform or spectrogram. Auditive diachrony is synchronically available as an image, which can then be diachronically perceived or evidenced. This changed media temporality does not only provide new possibilities of navigation because of the visual indication of certain changes in sound characteristics, but it also allows for new possibilities of analysis, because sound characteristics that are only difficultly grasped or described acoustically can be read and demonstrated visually.

4.3 Principles of new media

Lev Manovich describes the medium's material transition to the digital as the first of 5 principles characteristic of "New Media." He calls this first principle "Numerical representation" which means that the new media object consists of quantification and sampling.⁴⁹³ A digital image, for example, consists of a number of samples with each a numeric colour value. Within the colour scheme RGB (Red, Green, Blue) each pixel has three values (one for each basic colour) between 0 and 255. If R, G, and B all hold the value 255 the output colour is white. A triple "0" value will yield the colour black, a pure red has the values 255, 0, 0 etc. The frequency of samples per surface measure determines resolution. When a digital camera boasts its 18 megapixels, it is an expression of the sensors ability to capture 18 million pixels at once. Sound is sampled in a similar fashion with the added complexity of samples per time unit. An

⁴⁹³ Manovich, *The language of new media*, 27–30.

ordinary audio CD will usually be sampled with a frequency of 44100Hz at 16 bit resolution, i.e. 44100 times per second where each sample holds a numeric value of amplitude with 65.536 possible values (-32,768 through 32,767).

Kittler claimed that the digital has led us back to the symbolic regime of the printing press, which was otherwise broken by the early photo-, phono- and cinematographic media. They were characterised by a specific situation where reality itself left a trace in the medium. Digital media have now broken this form of “authenticity” and the world is, instead, only expressed via code encryptions. Manovich shares the same formal interest as McLuhan and Kittler and hopes, so to speak, to penetrate the ENIGMA machine’s settings to understand the construction of its message.

Manovich focuses specifically on “New Media,” the formal characteristics of which – apart from “Numerical representation” – are “modularity,” “automation,” “variability” and “transcoding.” Let us briefly illustrate each of them with regard to larm.fm. The sound of larm.fm is, of course, digital and, thus, a numerical representation of sound. The interface is also digital and consists of digitally coded instructions that generate, for example, the numerical representation of colours finally manifested on the display.

Larm.fm is, next, a profoundly modular structure. On a very basic level, it consists of what Kittler called address arithmetic, i.e. binary instructions to addresses in computer memory. The platform can, however, be considered the combination of many other modular units than the bits of computation, transmission and storage and the pixels of the interface. Larm.fm is the interface manifestation of hidden operational modules gathered in a system called CHAOS (Cultural Heritage Archive Open System).

CHAOS:_

A system of modules

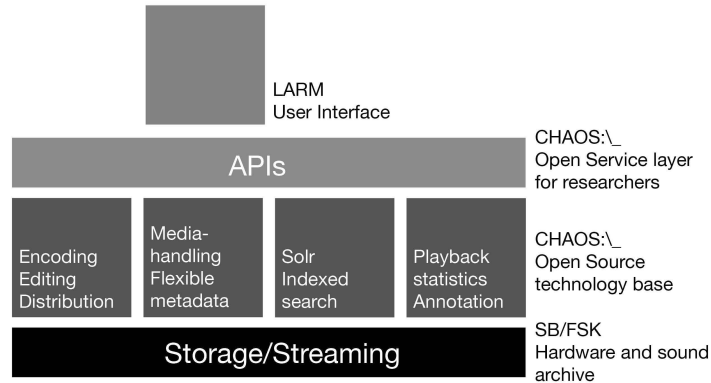
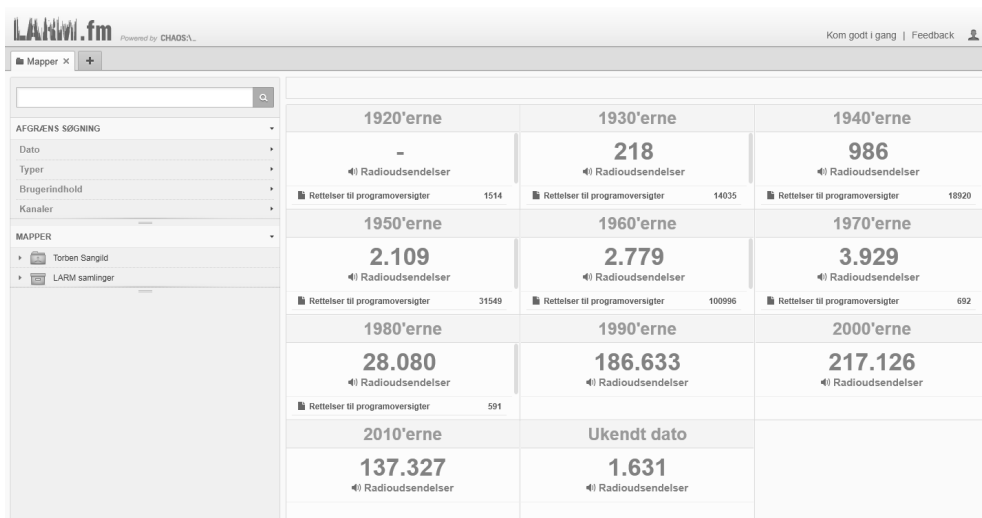


Illustration of the modular structure of CHAOS, replicated after illustration by Andreas Røll Larsen, DR.

These modules handle both automation and variability. When the user opens `larm.fm` in a browser, it presents a calendar overview showing the number of available broadcasts per decade. Adding new broadcasts to the database will make the interface update automatically because the indexation module recognises the time of broadcast from the files' metadata and then updates the interface's indication of number of broadcasts per decade.



The welcome screen of the interface is an example of variability since the screen image differs according to the user. As was the case with our Netflix example, the user interface does not just display available content (in this case, broadcasts per decade); it presents content specifically aimed at the logged-in user profile. If the user has created his or her own folders with his or her own files, they are only available for this one user unless the system has been instructed otherwise. It is thus possible to create collaborative folders only accessible to the designated participants. Similarly, certain annotations can only be seen by their authors. This selective visibility of data and metadata are examples of the variability of the medium. Again, the horizontal accessibility of the system is in no way inherent to the system. The archival law N persists!

Finally, larm.fm is a product of transcoding. For one thing, because the analogue radio sound is digitised. Other analogue forms are imported into the digital world of the interface, however. The aforementioned folders are an analogue metaphor imported into the digital interface: Personal folders appear adorned with a small human silhouette in which the user should supposedly recognise a digital counterpart. This is a collection metaphor, which has long ruled in the computer world as part of the more general “desktop metaphor.”⁴⁹⁴ The larm.fm interface also contains another collection metaphor, however, namely the aptly named “collection” which is illustrated by a small box. Larm.fm’s collection box is thus yet another analogue entity, which has been transcoded into a digital afterlife within the desktop interface paradigm.

Perhaps transcoding is a good common denominator for our three representatives of what Galloway presented as the media perspective on the word *techne*. If the medium is a black box to be decoded, the task must be to understand how a given input is transcoded into an encrypted output. In McLuhan, money could thus be considered a transcoding of work, the transcoding of something concrete into something abstract which then establishes new human relations or messages society in new ways. With regard to our object of analysis we should thus examine

⁴⁹⁴ The desktop as the surface upon which work is performed, documents are opened and folders are displayed goes back to Xerox park in the 1970s but was popularised by the original 1984 MAC desktop.

how digital archive access establishes new forms of research and collaboration. In Kittler, the continuous world, which previously left continuous traces in analogue media, is now transcoded into discontinuous or, rather, discrete encryption which, nonetheless, produces so coherent a vision of the world that it makes us completely forget the machine operations inside the black box. From such a perspective we should examine what goes on behind the software or interface of Iarm.fm just as we should investigate the acoustic and visual characteristics of the digital encryption. Manovich continues in the same tradition and describes the fundamental principles for this digital encryption as transcoding of automatized modular and variable numerical representations. This perspective would require an investigation of how cultural entities from radio broadcasts to interface metaphors appear in new ways in our daily digital lives.

4.4 Cultural heritage as resource

The influence of the digital on our practical interaction with the world and our fellow humans is the crux of the alternative approach to the word, *techne*: the technical as a *dispositif*, which determines practice. There is a fundamental difference, however, in that it is not a direct determination by encryption. In the case of the *dispositif*, the social message is not provided by the determination of INHI over ISa'l. Analysing the *dispositif* would, rather, be an attempt to analyse the power distributions between all the involved positions at once.

A pivotal description of *techne* as practice is found in Heidegger's *Die Frage nach der Technik*, where he criticises the contemporary technical worldview. This approach, what he calls "Gestell," is characterised by the ordering of something as "Bestand," i.e. as accessible resource for a specific purpose. Heidegger's play of words on "Stand," "stehen" and "Stelle" is completely compatible with the general function of "position" in the "dispositif":⁴⁹⁵

⁴⁹⁵ Agamben argues for the Heideggerian concept of "Gestell" as a predecessor to the Foucauldian "dispositif": "[...] il Gestell dell'ultimo Heidegger, la cui etimologia è affine a quella di *dis-positio*, *dis-ponere* (il tedesco *stellen* corrisponde al latino *ponere*)." Agamben, *Che Cos'è Un Dispositivo?*, 19.

“Welche Art von Unverborgenheit eignet nun dem, was durch das herausfordernde Stellen zustande kommt? Überall ist es bestellt, auf der Stelle zur Stelle zu stehen, und zwar zu stehen, um selbst bestellbar zu sein für ein weiteres Bestellen. Das so Bestellte hat seinen eigenen Stand. Wir nennen ihn den Bestand.”⁴⁹⁶

According to Heidegger, the Rhine is now only considered a resource for the hydroelectric plant or the tourist industry while we have completely forgotten how it could be considered according to its own being. *Gestell* thus operates a reduction of the proper being (“was eigentlich währt”⁴⁹⁷) to a being as resource, *Bestand*. *Gestell* and *poiesis* as two radically different modalities of Heideggerian uncovering (“Entbergen”) represent the dynamic difference between “hervorstellen” and “hervorbringen,” one positioning that which is as specific resource and the other assisting in the bringing forth of the potential of being. Contrary to the old wooden bridge that was built across the river to connect its banks, the river is now built into the hydroelectric plant and thereby reduced to its function as stored energy reserve.⁴⁹⁸

Should one transfer Heidegger’s critique of technology to the motives of cultural politics for building digital cultural heritage archives, one would criticise that cultural heritage in its digitally archived form is ordered as standing reserve. For example, the Lund Principles⁴⁹⁹ mentioned “Europe’s cultural and scientific knowledge resources” as “a solid basis for the development of our digital content industries in a sustainable knowledge society.”⁵⁰⁰ Just as the Rhine is built into the hydroelectric power plant so the river can be transformed into energy storage, cultural heritage is, from a Heideggerian perspective, built into the digital cultural

⁴⁹⁶ Heidegger, “Die Frage nach der Technik,” 20.

⁴⁹⁷ Ibid. 55.

⁴⁹⁸ As a parallel to the difference between “hervorstellen” and “hervorbringen,” notice the difference between “gebaut” and “verbaut”: “Das Wasserkraftwerk ist nicht in den Rheinstrom gebaut wie die alte Holzbrücke, die seit Jahrhunderten Ufer mit Ufer verbindet. Vielmehr ist der Strom in das Kraftwerk verbaut.” Ibid. 19.

⁴⁹⁹ “European Content In Global Networks – Coordination Mechanisms For Digitisation Programmes” (2001).

⁵⁰⁰ European Council, “European Content in Global Networks: Coordination Mechanisms for Digitisation Programmes (Lund Principles),” 1.

heritage archive in order to render an untapped resource productive in a specific economy.

Similar to the Lund Principles, Europeana describes cultural heritage as a resource to be exploited via the access to the new archival portals: “These stakeholders, representing libraries, archives, museums, broadcasters, knowledge institutions and creative industries, share the vision that improved access to our cultural heritage will create “unity in diversity” and will underpin a thriving knowledge economy.”⁵⁰¹ As we have already seen in Section 2.2, cultural heritage operates as a resource along the three strategic axes towards what we can now call the double goal of subjectivation and production – subjectivation as peaceful productive entity. Cultural heritage as a resource for production is the idea that cultural heritage can form the basis for the creativity and innovation of the contemporary knowledge economy, which, apparently, is so crucial these days, i.e. our third strategic axis. This idea of production is, for example, manifested in *hackathons* and encouragements to *remix* cultural heritage, where programmers, designers or just creative users should invent new applications of the preserved material – the dusty archival objects should be transformed to marketable creativity.

Cultural heritage as the basis for subjectivation, on the other hand, is the idea that users’ interaction with a given heritage will establish “the good subject,” i.e. the peaceful and responsible citizen who acknowledges the establishment of his or her own inheritance as well as that of the *other* and, hence, does not get all too destructive ideas. We saw this goal of subjectivation in our two first strategic axes: unity in diversity and national or supranational identity. First, access to the world’s collected cultural heritage will create “unity in diversity” via knowledge of those who are different from one self, i.e. the unity of S and a’. This is the assumption that knowledge via the traces H of those we do not understand will assure peaceful global coexistence.

In spite of this global respect for the other’s distinctive cultural character, the notion of subjectivation also entails another aspect, the claim of the second strategic axis that some cultural heritage is more important than the rest. Thus, the open letter of April 28 2005 written by the heads of state of France, Poland, Germany, Italy,

⁵⁰¹ Europeana, “Business Plan - 2013,” 5, cf. section 2.2.4.

Spain and Hungary to the president of the European Union, Jose Manuel Barroso, indicates that European cultural heritage is particularly valuable.⁵⁰² Cultural heritage as subjectivation thus contains the notion of cultural heritage as nourishment for national or regional identity as *different* from others. Subjectivation thus operates on a universal plane of “unity in diversity” as well as on a supranational plane where, for example, the EU seeks acknowledgement of and identification with Europe’s distinctive cultural wealth and, finally, on a national plane, where the feeling of national identity should be secured against a globalised world. The national scope of the content of Iarm.fm is clearly linked to this last aspect of subjectivation, the second strategic axis of national identity.⁵⁰³

4.5 Institutional survival

This notion of “subjectivation” is, of course, not part of the Heideggerian vocabulary but should, rather, be read within the Foucauldian tradition, which is usually considered the origin of the present notion of the *dispositif*.⁵⁰⁴ Foucault defines the *dispositif*, somewhat loosely, as the answer to a strategic necessity to position certain heterogeneous elements in a specific relation to one another.⁵⁰⁵ Heidegger’s hydroelectric power plant would be the strategic unification of a specific need for energy, the engineering knowledge necessary for its exploitation, the technical construction of the power plant, the redistribution of the local livelihoods etc.

⁵⁰² Chirac et al., “Lettre Des Chefs d’État et de Gouvernement Au Président de La Commission Européenne, Monsieur José Manuel Durão Barroso.”

⁵⁰³ Cf. the quote presented in section 2.2.4: “Cultural heritage is of significant importance for the Danish sense of identity in a globalised world, and in these years, the importance of art and culture will increase. The government will therefore continue the work with communicating Danish cultural heritage, nationally and internationally.” Digitaliseringsudvalget, “Digitalisering af Kulturarven - Endelig Rapport Fra Digitaliseringsudvalget,” 3. This report is an expression of the cultural politics that funded the LARM project the same year as the report’s publication.

⁵⁰⁴ Foucault’s notion of the *dispositif* has its own origins, of course. Agamben indicates the link to Heidegger’s *Gestell* but especially emphasises the possible origin in Jean Hyppolite’s reading of Hegel and Hegel’s links to the theological notion of *oikonimia*, cf. Agamben, *Che Cos’è Un Dispositivo?* Matteo Pasquinelli, on the other hand, traces the origin of the *dispositif* to another one of Foucault’s teachers: Georges Canguilhem, cf. Pasquinelli, “What an Apparatus Is Not: On the Archeology of the Norm in Foucault, Canguilhem, and Goldstein.”

⁵⁰⁵ Foucault, “Le jeu de Michel Foucault,” 299.

The digital cultural heritage archive could then be described as a dispositif which, apart from its potential application for transforming cultural heritage into an untapped potential for productivity and subjectivation – or, simply, “productive subjectivation” – provides the strategic foundation for institutional survival. The digital format seems to provide a threat for the relevance of libraries, archives and museums. Why go to the library if books can just be found for free on the Internet? What is the purpose of even the DPLA if users themselves scan and upload books more efficiently than the institutions? What is the purpose of Resnais’s fortress if the barrier between storage and reading room can be easily transgressed via the smart phone in your pocket?

The international research partnership OCLC Research, whose participants count the Danish Royal Library as well as the British Library, is an example of an organisation that takes as its explicit goal to handle the very challenges posed by the new information technologies:

“Our users — the scholars, students, and citizens at-large for whom we maintain our collections — seem increasingly unaware of what we have and how they might use it because they are becoming accustomed to going elsewhere to discover what exists, even if these means provide only a surrogate for the “real” thing.”⁵⁰⁶

Hence, the promotion of digital cultural heritage serves the opening of new possibilities for the threatened institutions. A publication from the American group of museums and research centres, the Smithsonian Institution, formulates the digital as a strategic opportunity: “In fact, the digital revolution offers museums, archives, and libraries a golden age of opportunity, because they are ideally suited for a world in which learning is informal and centered on inspiration and self-motivation.”⁵⁰⁷ And in addition to the possibilities of the new technical massage of society, the already burgeoning archives have been charged with a new aspect of legal deposit. The different institutions charged with the preservation of cultural heritage are now

⁵⁰⁶ Michalko, “Libraries, Archives, and Museums,” 77–78.

⁵⁰⁷ Clough, *Best of Both Worlds*, 9–10.

confronted with new horizons where their stores should not only contain the hasty accumulation of heritage but also the new accumulation of what is *born digital*. The new archival responsibility and the new forms of user interaction open this “golden age of opportunity.”

With what we could call the ingenuity of the dispositif, and what Foucault called a “[p]rocessus de perpétuel remplissement stratégique,”⁵⁰⁸ the threat of the digital age can be turned into a golden age. This is the field of possibility opened by Henry P. Crowell’s efficient production of oatmeal to invent breakfast cereal and Hayles’ attempt to navigate the potential of the digital to establish a trademarkable disciplinary entity in order to obtain a favourable position within the new academic landscape.⁵⁰⁹ Within this perspective, Iarm.fm could, on the one hand, be seen as the defensive response to the threat against Danish academia of being left behind the wave of digital humanities discussed in chapter 3 but also, on the other, as the offensive navigation of current funding policies where, as beautifully put by Siegfried Zielinski, the “magic word *digital*” seemed like the “alchemists’ formula for gold.”⁵¹⁰ Since cultural politics have indicated digital cultural heritage as untapped potential for the future, it is in the obvious interest of institutions to tap such potential in their own way in their funding applications.

4.6 Societal control

⁵⁰⁸ “[...] une réutilisation immédiate de cet effet involontaire et négatif dans une nouvelle stratégie, qui a en quelque sorte rempli l’espace vide, ou transformé le négatif en positif [...]” Foucault, “Le jeu de Michel Foucault,” 299-300.

⁵⁰⁹ Cf. section 3.7.

⁵¹⁰ The full quote seems spot on: “[...] with the magic word *digital*, media systems were established that the decision makers did not understand. This was another reason they called the process a revolution. The digital became analogous to the alchemists’ formula for gold, and its was endowed with infinite powers of transformation. All things digital promised to those who already possessed wealth and power more of the same and, to those who possessed nothing, that they could share in this un-bloody revolution without getting their hands dirty. Governments and administrations opened their coffers when the magic word – even better if coupled with the menetekel *Internet* – appeared in grant applications.” Zielinski, *Deep Time of the Media, toward an Archaeology of Hearing and Seeing by Technical Means*, 32.

Along with the above-mentioned national, supranational and international strategies for subjectivation and production, such institutional survival strategies would constitute vectors within Deleuze's reading of the Foucauldian dispositif. Deleuze emphasises that the dispositif is the enmeshing or assemblage of what can be seen, said, done and been (possible subjective positions) in a given society at a given time.⁵¹¹ Moreover, he underlines that our dispositifs have changed. We no longer live in what Foucault called disciplinary societies where the subject during a lifetime passes from one mould to the next: family, school, barracks, hospital, prison, factory etc. No, we now live in a control society.⁵¹²

Such a society differs from the separate moulds of the disciplinary society by promoting free modulations between institutions and spheres. The subject never finishes anything and slithers like a snake between different instances. The subject even ceases to be an individual and, instead, becomes a "dividual" – a constantly changing construction of discrete data. As we have already seen in our analysis of both the technological development necessary for digital cultural heritage archives and the related documents of cultural politics, such control societies are founded on modulations of access:

"Félix Guattari imaginait une ville où chacun pouvait quitter son appartement, sa rue, son quartier, grâce à sa carte électronique (dividuelle) qui faisait lever telle ou telle barrière; mais aussi bien la carte pouvait être recrachée tel jour, ou entre telles heures; ce qui compte n'est pas la barrière, mais l'ordinateur qui repère la position de chacun, licite ou illicite, et opère une modulation universelle."⁵¹³

Resnais's barrier between storage and reading room is no longer the clear distinction between moulds where the subjective positions of library operator and reading room insect are formed. The transformation from dissemination between moulds to access as universal modulation is clear in the digital archive – both in terms of access but

⁵¹¹ Deleuze, "Qu'est-ce qu'un Dispositif," 316–317.

⁵¹² Cf. Deleuze, "Qu'est-ce qu'un Dispositif" and Deleuze, "Post-Scriptum sur les Sociétés de Contrôle."

⁵¹³ Ibid. 246.

also in the abstraction of the heritage object from the substrate of the book or the local monument to basically anything of “outstanding universal value.”⁵¹⁴

In December 2013, the British Library made more than one million images accessible to the public. In spring 2015, the Danish National Gallery (DNG) made 25.000 images of artworks available in the “Public Domain” on their website for sharing, remixing or any other context, including commercial purposes. Similarly, the Rijksmuseum in Amsterdam “intends to digitize all one million objects in its collection [...]”⁵¹⁵ Today, 25 per cent of the museum’s collection, including all of its paintings, are freely available for download in high-resolution on rijksmuseum.nl, with new images being added every day. These initiatives fall within what the Danish National Gallery tends to call “Sharing is Caring”⁵¹⁶ and what, similarly, head of the Rijksmuseum’s image department, Cecile van der Harten, calls “sharing is the new having.”⁵¹⁷

Whereas the Danish National Gallery and the Rijksmuseum both make their content accessible on their respective websites, the British Library decided to publish their images via Flickr Commons instead of, for example, the open archive platform Archive.org. This poses certain questions regarding the dispositival exploitation of cultural heritage as resource within control societies. Flickr is a Yahoo-owned platform and it is not clear how the users’ “creative” interaction with the content will be tracked and used for commercial and advertisement purposes. By publishing the image collection on Flickr, cultural heritage explicitly positions itself within the domain where companies like Google and Facebook operate by collecting data about user behaviour for the optimisation of targeted advertisement. Here we see that in spite of cultural politics’ discourse of subjectivation, the individual users cease to be national, regional or international citizens with respect for own and others’ identity and, instead, become the *dividual* of the database, the desubjectivised subject as aggregated data constellation. This is the subsumption of subjectivation under productivity that we saw in the EU’s Horizon 2020.⁵¹⁸

⁵¹⁴ Cf. section 2.2.2.

⁵¹⁵ Heyman, “A Museum at the Forefront of Digitization.”

⁵¹⁶ Sanderhoff, *Sharing Is Caring, Openness and Sharing in the Cultural Heritage Sector*.

⁵¹⁷ Quoted in Heyman, “A Museum at the Forefront of Digitization.”

⁵¹⁸ Cf. section 2.2.4.

Even in the cases of the self-published image collections of the DNG and the Rijksmuseum, however, such a transformation is clear. In addition to the educational value of public domain collections, curator of digital museum practice at the DNG, Merete Sanderhoff, underscores the financial benefits of “supporting and harnessing people’s cognitive surplus”⁵¹⁹: “Using digital methods of distribution caused the exposure and visibility of collections to skyrocket.”⁵²⁰ Here, the digital is clearly not the bringer of what we have called heritage but the shop window allowing increased commercial activity. The mention of harnessing cognitive surplus is a reference to Clay Shirky’s notion of the inherent generosity of the digital:

“The harnessing of our cognitive surplus allows people to behave in increasingly generous, public, and social ways, relative to their old status as consumers and couch potatoes. The raw material of this change is the free time available to us, time we can commit to projects that range from the amusing to the culturally transformative. If free time was all that was necessary, however, the current changes would have occurred half a century ago. Now we have the tools at our disposal, and the new opportunities they provide.”⁵²¹

The disciplinary moulds no longer exist and it is possible for tiny reserves of unproductive time to be harnessed for productive purposes determined as productive by the dispositif. From Otlet, Wells, Bush and onwards, the time was close at hand, the tools were laughably close to reality. Shirky, and with him Robert Darnton, are now right. The tools are currently at our disposal. Minute reserves of free time can now be rendered productive.

The formalist media approach to the concept of *techne* explores the development and operations of those tools, whereas the dispositival approach to *techne*, the question of practice, explores the consequences for our subjective positions and possible practices. As is clear from this brief *scholion*, the dispositival

⁵¹⁹ Sanderhoff, *Sharing Is Caring, Openness and Sharing in the Cultural Heritage Sector*, 33.

⁵²⁰ Ibid. 56.

⁵²¹ Shirky, *Cognitive Surplus, Creativity and Generosity in a Connected Age*, 63.

approach invariably poses the question of politics. The question, of course, is the political consequences of the availability of these new tools.

In the tradition from Guattari as referenced by Deleuze above, Maurizio Lazzarato recently argued that the knowledge or information economy, depicted and celebrated by Shirky and the mentioned documents of cultural politics, was rendered obsolete with the financial crisis of 2007 and that capital has turned to a protection of “creditors and owners of “securities””⁵²² and the production of indebted man as the only possible subject position:

“As the crisis wrought by repeated “financial” debacles has worsened, capitalism has abandoned its rhetoric of the knowledge or information society along with its dazzling subjectivations (cognitive workers, “manipulators of symbols,” creative self-starters and luminaries).”⁵²³

As we saw in our rendition of the documents of cultural politics and especially the EU’s Horizon 2020, however, the cultural knowledge industry as a mean against the crisis persists – if nothing else as the illusionary attempt to dress indebted man in robes of creative action. The discourse of creativity persists to maintain the illusion that individual agency is still possible in the age of the neoliberal “[p]rocessus de perpétuel remplissement stratégique” of crisis.

Of course, Iarm.fm as digital cultural heritage archive is seemingly far from such insidiousness. What can be wrong with giving research access to historical radio material and facilitating such access by collaborative tools? On the one hand, not much. But on the other, Iarm.fm as a useful and admirable initiative should not make us forget that its funding comes out of the exact same discourse of cultural politics that has been described in this dissertation. And although there is no tracking of users to a commercial end, even Iarm.fm tracks user behaviour to understand interface interaction and thus let it feed back into the system design. Google Analytics, the web analytics tools provided by Google to optimise user interaction as

⁵²² Lazzarato, *Signs and Machines, Capitalism and the Production of Subjectivity*, 10.

⁵²³ *Ibid.* 9–10.

determined by site provider's goals, was thus implemented on the site – not for commercial but for research purposes.

One of the tracking parameters of Google Analytics is “conversions”: “A conversion is a customer action that has value to your business, such as purchase, downloading an app, visiting a website, filling out a form or signing a contract. Online and offline actions are called conversions because a customer's click translated – or converted – to business.”⁵²⁴ The evidence provided by access should feed back into the control of the user interaction afforded by access. Any digital platform walks an awkward tightrope between the pitfalls of access, evidence and control and even so laudable an initiative as *larm.fm* cannot be considered exempt from the strategic lines of the *dispositif*. Especially when the success of the afforded research practices, their institutional hosts and their possible societal value are constantly active in the operational elaboration of the *dispositif*.

⁵²⁴ Google Support, “Understanding Conversion Tracking.”

5. A community of Memory⁵²⁵

We have now looked at the digital cultural heritage archive as 1. A kingdom of topological relations between the subject (S), the other (a'/A), the *hypomnemata* (H) and the archival *nomos* (N); 2. An object of historical formations where technological development and cultural politics converge in different ways, culminating in the “new legacy” of digital cultural heritage around the beginning of the new millennium; 3. A three-fold thing in a mirror dance *en abyme* between access, evidence and control, which produces promises and imaginaries when considered as a way to grasp the thing firmly in place but only allows a proper diagnosis when left in the open; 4. Larm.fm was presented as a concrete instance of a digital cultural heritage archive where the two meanings of the word *techné* intermingle and allow us to see different aspects of the platform.

It is now time to focus on the already mentioned relation between the archival organisation of knowledge and political organisation, the aspect which, although treated along the way, was left hanging so long ago when section 1.1.1 promised to return to Azoulay’s concept of civil media. We have seen that this relation between media and civility – between archival and political organisation or between the media and the dispositival versions of the word *techné* – tends to inspire different imaginaries regarding the fullness of the archive and the societal and subjective constitution of citizens.

Azoulay describes the civil archive in terms that should now seem familiar and immediately diagnosable on the basis of our historical analysis: “a civil archive of photographs that suspends the rule of the existing archives [...] reconstructing the photographs as shared documents of a potential history.”⁵²⁶ In the civil archive, sharing is caring. “Radical changes brought about by the new social (civil) media”⁵²⁷ makes the archival possibility of sharing a potential history, in and of itself, a potential for political emancipation. The opposite of this emancipatory civil archive is

⁵²⁵ Parts of sections 5.3-5.10 of this chapter have previously been published in Andreassen: “Constructing the contemporary via digital cultural heritage.”

⁵²⁶ Azoulay, “Archive.”

⁵²⁷ Ibid. cf. section 1.1.1.

then “a non-civil archive, in which the photographs have turned from shared documents into icons that serve the archive’s sovereign.”⁵²⁸ These icons are products of a “constituent violence” determining “the law of what may be seen and what may not.”⁵²⁹ They constitute the photograph as the identification of “This is X”⁵³⁰ which then strips it of the plurality that otherwise serves as the foundation for a communal renegotiation of “the rule of existing archives,” i.e. the archival N.

Azoulay thus presents us with the dichotomy between photographs as shared documents and photographs as icons. And curiously, the difference seems to depend on “[...] a new archival contract, “signed” by users without the sentries’ consent. [...] turning the archive into a platform for the rehabilitation of a community.”⁵³¹ She posits a civil contract as a direct correlation between a community’s engagement with the hypomnesic material H and the possibility for a reconfiguration of this material’s archival distribution N, a new *grid*:

“Traces of the constituent violence preserved in the archive can either be preserved untouched, preserving the law of the archive, or be reconfigured and re-conceptualized through a new grid, whose

⁵²⁸ Ibid.

⁵²⁹ Ibid.

⁵³⁰ Ibid. Section 1.1.1 criticised Azoulay’s reading of Derrida. She also seems to err slightly in her reading of Barthes’ “Ça a été”: “When we say “This is X” we are actually applying a name, category or concept to the photograph. In order to do so we first strip the photograph of the plurality inscribed in it, and reduce it to the “this” that is there in the photograph or, in Roland Barthes’ famous words, to “This was there.” Thus, when we say “This is X,” we are actually saying “X was there.”” Ibid. The problem with this reading is her emphasis on the *adaequatio* “this = X.” For Barthes, on the contrary, “Ça a été” is not the establishment of identity but the fact that *something* was there which escapes that very identity: “Le nom du noème de la Photographie sera donc : « Ç-a-a-été », ou encore : l’Intraitable. En latin (pédantisme nécessaire parce qu’il éclaire des nuances), cela se dirait sans doute : « *interfuit* » : cela que je vois s’est trouvé là, dans ce lieu qui s’étend entre l’infini et le sujet (*operator* ou *spectator*); il a été là, et cependant tout de suite séparé ; il a été absolument, irrécusablement présent, et cependant déjà différé. C’est tout cela que veut dire le verbe *intersum*.” Barthes, *La Chambre Claire*, 120–121. Also, the temporality of the photography is not, according to Barthes, the archival constituent violence of “this is what happened” but, rather, the archival horror of a captured future which is now past, it is the grammatical aorist: “Je lis en même temps : *cela sera* et *cela a été*; j’observe avec horreur un futur antérieur dont la mort est l’enjeu. En me donnant le passé absolu de la pose (aoriste), la photographie me dit la mort au futur.” Barthes, *La Chambre Claire*, 150. The problem for Barthes, in both cases, is the presence of an absence, the only partial presence of a past and its future that both are no more.

⁵³¹ Azoulay, “Archive.”

consequences affect the way one is governed, as well as the ways one shares the world with others.”⁵³²

Reconfiguring the grid via interaction with its content supposedly restores the plurality of meaning of the archival object that was ripped from it by the consignment of the sentries of the non-civil archive. And such plurality re-enables the injunction, the call for action, of the archival objects: “Photographs bear traces of a plurality of political relations that might be actualized by the act of watching, transforming and disseminating what is seen into claims that demand action.”⁵³³

In the terminology proposed throughout this dissertation, the relation of community |Sa'l, i.e. “the ways one [S] shares the world [H] with others [a'],” is determined by the possibility for that relation to reconfigure INHI. A non-reconfigurable INHI is characteristic of the sovereign determination of the non-civil archive. The non-civil archive is the sovereign violent consignment of H as an icon constituted in accordance with the determinations of N, whereas the civil archive is the possibility for H to take part in grids determined by a communally negotiated N, or for the restored plurality of H to enable a reconfigured N. This restoration of hypomnesic plurality seems to depend on both the possibilities of civil consignment and interpretation provided by new media access to archives and the specific hypomnesic characteristics of photography.⁵³⁴ Communal sharing thus seems to depend on the correct dispositival use of the archive's as well as the hypomnemata's formal characteristics, the ones that allow archival pleroma via access/dissemination: It is a matter of “our public right to access everything in the archive.”⁵³⁵

⁵³² Ibid.

⁵³³ Azoulay, *The Civil Contract of Photography*, 25–26.

⁵³⁴ There is a Benjaminian strain to this argument: “[...] Benjamin proposed a new perspective on photography's beginnings. The origin, he suggested, was the appearance of a professional community.” Ibid. 90. “In the early 1930s, Walter Benjamin wrote that “photographic records begin to be evidence in the historical trial. This constitutes their hidden political significance.” The images under discussion are evidence, incontrovertible evidence, of destruction, humiliation, injury, manslaughter, abuse, suffocation, suffering, misery and injustice. They are the basis for seeing everything, despite the case that not everything could be seen.” Ibid. 195. The specific potential of photography springs from the technical community of photography as well as photography's supposedly inherently emancipatory form of *evidence* via its exhibition-value: “In der Photographie beginnt der Ausstellungswert den Kultwert auf der ganzen Linie zurückzudrängen.” Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung,” 485. The exhibition-value of H rebels against the traditional cult-value of N.

⁵³⁵ Azoulay, “Archive.”

Just as Resnais's description of happiness was based on the fulfilment of archival operations in the ideal pleromatic opus of the archive via actualisation in the reading room, Azoulay's call for action to rehabilitate community goes via such total actualisation. She thus seems to consider Resnais's barrier, i.e. the division of ISA'l by INHI, the obstacle to fulfilment in the rehabilitation of community: "The spatial administration of the movements of archive users is a means for preventing the complete fulfillment of the right to (the) archive."⁵³⁶ Only when N ceases to hinder access as the right to both consign and interpret, and thus "enables us to overcome the limit set on the concept of citizenship by the nation-state," can a new N be created as the community of all governed, who "are *equally* not governed within this space of photography, where no sovereign power exists."⁵³⁷ Paradoxically, it is the inherent law N of the photographic H that it is without sovereign N. This right to the archive is manifested in a form of universal citizenship made possible by universal access and universal representation that seem to allow for an N without N – a communal reconfiguration of N without the sovereign aspect of N:

"Against the political order of the nation-state, photography – together with other media that created the conditions for globalization – paved the way for a universal citizenship: not a state, but a citizenry, a virtual citizenry, in potential, with the civil contract of photography as its organizing framework. Citizenship in the citizenry of photography asks not to be stopped at borders and plays a vital political role in making sure other cultures are accessible, in all of their prestige or misery, deeming local cultures to be worthy of documentation and public display. Photography, being in principle accessible to all, bestows universal citizenship on a new citizenry whose citizens produce, distribute, and look at images."⁵³⁸

The *access* to all cultures, their documentation and display, or, rather, their *evidence*, is thought to neutralise the *control* of the nation-state, its sovereign constitutive

⁵³⁶ Ibid.

⁵³⁷ Azoulay, *The Civil Contract of Photography*, 25.

⁵³⁸ Ibid. 134.

violence, in favour of a new form of control based on *sensus communis* as disagreement within agreed-upon boundaries.⁵³⁹ Although communally negotiated, as opposed to sovereignly dictated, the “organizing framework” of the “civil contract of photography” is an N that requires the fullness of both photographic representation H, i.e. consignation, and the fullness of “our” access to H, i.e. interpretation, in order to enable the heritage that is the new universal citizenship between all governed and not just those who are included in society as citizens as opposed to those who are excluded as “other.” Like Resnais’s happiness, then, actualisation of the library stores via consignation and interpretation in the reading room seem to produce, more or less automatically, full heritage in the form of the unity in diversity of a “universal citizenship,” or what we have so far called doxa.

5.1 Archival pleroma

As should be clear, Azoulay’s critical take on photography shares certain fundamental characteristics with the imaginaries that we have located within the cultural heritage discourse of cultural politics. By relating the right to access everything in the archive, what she calls “the fulfillment of the right to (the) archive,” with a universal citizenship of *hypomnemata*, of which she happens to prefer photography because of its supposed globalising nature and inherent lack of sovereign N, Azoulay establishes the same relation between archival fullness and unity in diversity that we saw in the first strategic axis of the cultural heritage discourse of cultural politics.

Azoulay’s criticism thus participates in the dispositif, or *oikonomia*, which links the archival promise with societal organisation, i.e. the digital cultural heritage

⁵³⁹ “The photographs are part of the tools that enable us to rehabilitate the *sensus communis* and construct around it a common community of negotiation, in the framework of which we are able to agree on the boundaries of disagreement.” Ibid. 261. We should remember from Section 2.2.1 that Deleuze considered the *sensus communis* one of the two aspects of *doxa*. The *sensus communis* would then be the framework through which the new good sense can be distributed, cf. Deleuze, *Logique du sens*, 93–96.

archive as dispositif within the realm of cultural politics.⁵⁴⁰ So far, we have talked about heritage as either choice and affirmation with regards to the spectrality of hypomnemata or as the ethopoietic constitution of the self via the practice of hypomnemata. This ethopoietic aspect has been coupled with the relation to the other (a') in a doxopoietic negotiation of truth, or what in the dispositif of the digital cultural heritage archive would be the coupling of possible *ethopoiesis* via archival pleroma with doxa as the fulfilled result of *doxopoiesis*. We shall now call this the link between archival and political pleroma⁵⁴¹ and we shall approach this as the question of the possibility for a community of technologically mediated memory.

In order to clearly formulate this coupling, however, it would be useful to first recapitulate and then elaborate the notion of *pleroma* which, in Section 1.2.2, we described as “the fullness of the archive, the point where the spectral incorporation ceases to be paradoxical and the archive fever rages no more. Or to stay with the theological aspects of the term: *Pleroma* is the moment where the *oikonomia* of the archive is fulfilled and ceases to operate.”

As we saw in section 1.2, Resnais's *Toute la mémoire du monde* performs a vertical movement from indiscernible form and prevalent darkness upon the face of the deep in the library cellars to the summits of institutional power in its domed view of the well-ordered rows of tables and chairs in the Labrouste reading room. This vertical axis is established and maintained by the horizontal library operations that

⁵⁴⁰ It is thus no surprise that, in 2014, Azoulay contributed to a symposium organised by The Human Rights Exhibition Project related to UNESCO's Human Rights Exhibition, the description of which should require no further comment: “The Human Rights Exhibition Project is a research and curatorial initiative based on the archive of UNESCO's travelling Human Rights Exhibition from 1949. This exhibition was the first international event designed to visualise and disseminate the Universal Declaration of Human Rights. The Project is designed to open up the archive to public access and further research, displaying its richness and variety, and to encourage critical debate about the role of human rights today.” The Human Rights Exhibition Project: <http://www.exhibithumanrights.org/>.

⁵⁴¹ The link between doxa and pleroma is well established within theology. Deleuze emphasised the link between the double aspect of doxa – “bon sens” and “sens commun” – and God: “C'est dans cette complémentarité du bon sens et du sens commun que se noue l'alliance du moi, du monde et de Dieu [...]” Ibid. 96. Within the present terminology, this would, of course be the alliance between S, H and N. Apart from the meaning taken from Deleuze, i.e. doxa as the affective response to the world of the generic subject, doxa has a different and older meaning: the glory of God as distinct from the administration of his reign. Agamben sees in the Deleuzian meaning a modern (a-)political extrapolation of the theological sense: “La democrazia contemporanea è una democrazia integralmente fondata sulla gloria, cioè sull'efficacia dell'acclamazione, moltiplicata e disseminata dai *media* al di là di ogni immaginazione (che il termine greco per gloria – *doxa* – sia lo stesso che designa oggi l'opinione pubblica è, da questo punto di vista, qualquosa di più che una coincidenza).” Agamben, *Il regno e la gloria. Per una genealogia teologica dell'economia e del governo. Homo sacer*, 280.

promise to transform the library objects from chaotic heap to collective happiness, or what we have called the archival promise of a movement from *plethora* to *pleroma*.

Plethora, of course, basically just means an excessive amount of something, but *pleroma*, directly translated, means “fullness.” Although they have the same root (*plethein* in Greek also means to “be full”) they are two different forms of fullness. It is the difference between plenty and plenitude. As a religious term, *pleroma* has been used in many ways, the gnostic and its Pauline editions being the more famous ones, but for the purpose of the present argument we shall skip the otherwise tremendously interesting history of the concept from early Christianity to Hegel and onwards and, for now, simply say that the *pleroma* which we have traced so far is the eschatological version, i.e. the fullness of time when God will be “all in all” (“*πάντα ἐν πᾶσιν*,” 1 cor. 15:28), when the *oikonomia* of the world, i.e. the administration of the godly reign, is brought to an end in the presence of God in everything: “For it pleased *the Father* that in him should all fulness [*πᾶν τὸ πλήρωμα*] dwell.” (Col. 1:19). Everything shall dwell within the confines of the law of consignation and, hence, the confines cease to exist. As mentioned by Galloway and Thacker: “Inside the dense web of distributed networks, it would appear that everything is everywhere.”⁵⁴²

We already saw the pleromatic tendencies of Well’s *World Brain*: “The time is close at hand when any student, in any part of the world, will be able to sit with his projector in his own study at his or her convenience to examine *any* book, *any* document, in an exact replica.”⁵⁴³ As mentioned, “The time is close at hand,” along with the repeated uses of “any” or “every,” are recurring elements of what we have called the archival promise, but which we could also call the eschatological archival *euangelion*, the happy declarations of imminent archival *pleroma*. The biblical reference would be Mark 1:15: “The time is fulfilled [*πεπλήρωται ὁ καιρὸς*], and the kingdom of God [*βασιλεία τοῦ Θεοῦ*] is at hand: repent ye, and believe the gospel [*εὐαγγελίῳ*].” It is the evangelic announcement of the fulfilled kingdom of relations, i.e. relational unity, in the eschatological moment of *pleroma*.

⁵⁴² Galloway and Thacker, *The Exploit, a Theory of Networks*, 4., cf. section 3.3.

⁵⁴³ Wells, *World Brain*, 54, cf. sections 2.1.2 and 4.6.

Otlet expressed an even more obviously eschatological promise of archival pleroma in the final words of his *Traité de documentation* (1934):

“Être partout, tout voir, tout entendre et tout connaître, mais cela n’est-ce pas la perfection et la plénitude que l’homme, en souverain hommage et souverain bien, attribua à son Dieu lui-même. Par ces instruments d’ubiquité, d’universalité et d’éternité, l’homme se sera donc rapproché de l’état de divinité, de l’état présumé être celui des élus devant Dieu, c’est-à-dire la contemplation radieuse de la Réalité Totale.

Tout cela, rien moins, plus peut-être, se trouve en puissance dans le Livre !”⁵⁴⁴

Where Valéry saw the conquest of ubiquity in the transmission of sound, Otlet proclaims such an imminent conquest via the potential of the book. He repeats the pleromatic markers of “tout” and then goes all the way by referring to “plénitude,” “ubiquité,” “universalité,” “éternité,” “Réalité Totale” and, finally, the involvement of God in this plenitude. The archival pleroma of books is that which was once attributed to the pleroma of God in his creation. Nothing less than totality, possibly more, is the promise of the book if the law of consignation N becomes all-encompassing.

Similarly, we saw that although the somewhat more level-headed J.C.R. Lickliger used the modifiers “may” and “almost,” he still deployed the eschatological pleromatic markers of *the time is close at hand* and “everything” in “any way”: “Extrapolation, however uncertain, suggests that the basic “mechanical” constraints will disappear [...] Thus *in the present century*, we may be technically capable of processing the entire body of knowledge in almost any way we can describe [...]”⁵⁴⁵

But as we saw in the case of digitised libraries as presented by Robert Darnton, the time is no longer near, it is actually here now: “We have the technological and economic resources to make all the collections of all our libraries accessible to all our fellow citizens—and to everyone everywhere with access to the

⁵⁴⁴ Otlet, *Traité de documentation, le livre sur le livre, théorie et pratique*, 431.

⁵⁴⁵ Lickliger, *Libraries of the Future*, 19–20, my emphasis.

World Wide Web. That is the mission of the DPLA.” We have actually got the archives now. Licklider saw storage as the main obstacle for his vision and since 2002 digital storage capacity has exploded. But although many of the technological obstacles to *pleroma*, which were already shrugged off by Wells and Otlet, are no longer a problem, one obstacle remains for Darnton: copyright. The technologies of consignment now allow for *pleroma* but copyright is the aspect of archival law (N), which installs the final prohibition. Yet another effort, and still always another — the invisible irony persists.

To sum up, from Wells, Otlet and Licklider to UNESCO, Darnton and Azoulay we see these three aspects: 1. *archival pleroma* obtained by 2. the *dispositifs* of technology and cultural politics and 3. the beneficial consequences for human existence in some form of *political pleroma*, be it unity in diversity, collective identity or individual creativity and innovation. In all cases we have focused on the barrier shown at the end of Resnais’s film, *INHI*, which separates library stores from reading room, archive from canon, i.e. the “untapped potential” from actualisation via “the act of watching, transforming and disseminating”⁵⁴⁶ in the *ISa’l*-relation of the reading room. All imaginaries of *pleroma* desire the abolishment of the barrier in the fulfilment of its operation.



⁵⁴⁶ Azoulay, *The Civil Contract of Photography*, 26, cf. the previous section.

Shot of the Library of Congress from Alan Pakula: *All the president's men* (1976).

Fredric Jameson evoked Resnais's final shot of the barrier as a possible inspiration to another domed shot of a library.⁵⁴⁷ That other shot shows the Library of Congress in Alan Pakula's *All the president's men* (1976). Jameson describes this view as a paradisiac recovery of an impossible vision of totality, "the momentary coincidence between knowledge as such and the architectural order of the astronomical totality itself, [which] yields a brief glimpse of the providential, as what organizes history but is unrepresentable within it."⁵⁴⁸ For Jameson, that providential organising power is, of course, capital. And who could disagree? But for our purpose, it is interesting here, that Woodward and Bernstein, the two reporters trying to solve the puzzle of the Watergate break-in, are doing exactly what Resnais's voice-over was describing: the paper-crunching insects are putting the pieces end to end, the fragmentary call slips that prove White House consultant Howard Hunt's investigation of how to discredit Senator Ted Kennedy.

Shortly after this library scene, Woodward explains his troubles to Deep Throat: "All we've got are pieces, we can't seem to figure out what the puzzle is supposed to look like." In the end, however, they prove Nixon's involvement and Nixon is forced to resign. The final justice of the reassembled puzzle, what Jameson called "the sentimental defence of the constitution with which Pakula's film overtly ends,"⁵⁴⁹ is somehow already present in this view of the concentric circles of the library. The presumed link between the actualisation of organised knowledge and the just equilibrium of the organising power of history is clear. And so is the related extrapolation of such equilibrium in the DPLA as a digitally enhanced Library of Congress, here described by Darnton:

"It would be the digital equivalent of the Library of Congress, but instead of being confined to Capitol Hill, it would exist everywhere, bringing millions of books and other digitized material within clicking distance of

⁵⁴⁷ Jameson, *The Geopolitical Aesthetic, Cinema and Space in the World System*, 80.

⁵⁴⁸ *Ibid.* 79.

⁵⁴⁹ *Ibid.* 82.

public libraries, high schools, junior colleges, universities, retirement communities, and any person with access to the Internet.”⁵⁵⁰

Although Jameson sees in Pakula’s library shot a possible reference to Resnais, such a view of the library is neither new nor unusual. In Well’s aforementioned book *The work, wealth and happiness of mankind*, he displayed the reading room of the British Museum Library in a similar fashion, calling it “a cell of the world’s brain.”⁵⁵¹ I claim that Pakula’s library is closer to that of Wells than to that of Resnais.



(By courtesy of the Trustees)

A CELL OF THE WORLD’S BRAIN: THE CENTRAL READING ROOM OF THE BRITISH MUSEUM LIBRARY

For Resnais’s view is radically different. Although the voice-over formulates the promise of *pleroma*, the overtly technical nature of the film, as constituted by the opening *mise-en-scène* of the camera, the microphone and the spotlights, nonetheless culminates by an unrelenting focus on the barrier. The barrier is what remains. And this barrier is more than just the distinction between the potential of universal memory and its actualisation in the reading insects. As we saw in the quote

⁵⁵⁰ Darnton, “A Library Without Walls,” cf. section 2.2.5.

⁵⁵¹ Wells, *The Work, Wealth and Happiness of Mankind*, 149.

from Sebald's Austerlitz, it is the zone of indistinction between the Islands of the Blest and a penal colony.

What Austerlitz felt in the BNF is what the present dissertation has sought to demonstrate in each and every promise of the happiness of pleroma. The question is whether the persistent happy belief in the fall of the very last practical obstacles for pleroma does not overlook the view from Resnais's domed shot: The view indicating that sinister imaginaries of the pleroma of knowledge tend to engage in insidious imaginaries of political organisation and that the guardians of the archive will always patrol the aisles of the reading room. Resnais's imaginary boundary tends to become a zone of indistinction between, on the one hand, the institutional operations of *consignation* and its aspirations of fulfilling archival *oikonomia*, and, on the other, the individual *interpretation* of archival objects as the foundation of *heritage*, i.e. the construction of the subjective *ethos* but in a state where the reading room is ruled by the exclusion of antagonistic opinions, *doxa*, by the determination of universal happiness as the fulfilment of political pleroma.⁵⁵² The pieces must be put end to end, the puzzle must be solved, and disagreement must only take place within the already agreed-upon limits.

5.2 Political pleroma

Resnais's insisting focus on the barrier that remains underneath the discourse of pleromatic happiness was, of course, already present in our initial Derridean notion of the archive. As mentioned, consignation is the production and incorporation of a lack, the presence of absent origins, keeping the archive from ever attaining pleroma. As Derrida stated, this is the impossibility of Freud's ecstatic dream where "*l'origine alors parle d'elle-même. L'arkhé paraît à nu, sans archive. Elle se présente et se commente elle-même. « Les pierres parlent ! » Au présent. Anamnèse sans hypomnèse !*"⁵⁵³

⁵⁵² Cf. again Wells: "there can be no two respectable and antagonistic opinions [...]" Wells, *The Shape of Things to Come*, 256, quoted in Rayward, "H. G. Wells's Idea of a World Brain," 569.

⁵⁵³ Derrida, *Mal d'archive, une impression freudienne*, 144. This ecstatic dream is, of course, what manifested itself in Chris Anderson's fantasy that with "enough data, the numbers speak for themselves." Cf. section 3.6.

Such an archival pleroma without lack, without its feverish *différance*, finds its political equivalent in the political pleroma, one version of which is what Saint Paul called “*pleroma* of nations [πλήρωμα τῶν ἐθνῶν].”⁵⁵⁴ This would be the first strategic axis of the discourse of cultural heritage within cultural politics, that of “unity in diversity.” Jean-Luc Nancy explicitly referenced this pleroma of nations in his exploration of the possibility for such fullness in the unity, the “*trait d’union*,” of Judaism and Christianity as expressed by the term “*judéo-chrétien*.” His finds in such a conjunction “*toute la question de l’Occident comme totalité et/ou comme dissémination.*”⁵⁵⁵ In Derridean vein,⁵⁵⁶ Nancy sees in this “*trait d’union*” a composition that always already entails its own deconstruction. It is the link that separates. Our becoming global, or universal, is always already haunted by a remnant other. There is always a tension between the *katholiké ekklésia* and the *diaspora*.⁵⁵⁷

While Nancy formulated the problem of a universal union of cultures, exemplified by the union of Judaism and Christianity, and stressed the necessary operation within such unity of a deconstructing “*trait d’union*,” Derrida formulated a similar point with regards to the identity of any particular culture, i.e. the object of our second strategic axis of cultural heritage: “[...] le propre d’une culture, c’est de n’être pas identique avec elle-même.”⁵⁵⁸ This remark was given during at a conference on “*L’identité culturelle européenne*” and was thus an explicit analysis of what we have seen dubbed by EU cultural politics “*a true European identity.*”⁵⁵⁹

“*Quelque chose d’unique est en cours en Europe, dans ce qui s’appelle encore l’Europe même si on ne sait plus très bien ce qui s’appelle ainsi. A quel concept, en effet, à quel individu réel, à quelle entité singulière assigner ce nom aujourd’hui ? Qui en dessinera les frontières ?*”⁵⁶⁰

⁵⁵⁴ (Rm. 11:25).

⁵⁵⁵ Nancy, “*Le Judéo-Chrétien*,” 70.

⁵⁵⁶ The text is a lecture given at a seminar on Derrida, “*Judéités. Questions à Jacques Derrida*” where Nancy focuses on Derrida’s *Foi et savoir* (2001).

⁵⁵⁷ *Ibid.*

⁵⁵⁸ Derrida, *L’autre cap suivi de La démocratie ajournée*, 16.

⁵⁵⁹ Cf. section 2.2.4.

⁵⁶⁰ *Ibid.* 12.

Derrida argued that Europe is divided between *arkhè* and *telos*, origin and perfection.⁵⁶¹ In the present context of cultural heritage, we would say that Europe is divided between the plethora of the archive and the political pleroma of identity. We saw in the European Horizon 2020 that the three strategic axes of cultural heritage were mobilised with regard to the current financial crisis. Derrida's analysis pertains to a different crisis – of identity, culture and spirit⁵⁶² – and presents the heritage of that which is in crisis as an injunction: “La condition de possibilité de cette chose, la responsabilité, c'est une certaine expérience de la possibilité de l'impossible : l'épreuve de l'aporie à partir de laquelle inventer la seule invention possible, l'invention impossible.”⁵⁶³ The impossible invention is the affirmation of the radically other which can never be brought to the identity of the same. European heritage is explicitly formulated as “la mémoire de ce qui porte l'avenir ici maintenant,”⁵⁶⁴ i.e. the memory of an archive that can never find its pleromatic state, an archive that is always in a state of becoming via the consignment of its own other.

With regards to that other aspect of our second axis, that of national identity, Agamben similarly stresses the inherent division of the people.⁵⁶⁵ In his short text “Che cos'è un popolo?” he describes the division inherent to the concept of “the people”:

“Tutto avviene, cioè, come se ciò che chiamiamo popolo fosse, in realtà, non un soggetto unitario, ma un'oscillazione dialettica fra due poli opposti: da una parte, l'insieme *Popolo* come corpo politico integrale, dall'altra il sottoinsieme *popolo* come molteplicità frammentaria di corpi bisognosi ed esclusi; là un'esclusione che si pretende senza residui, qua

⁵⁶¹ Ibid. 29.

⁵⁶² Ibid. 34–37. This, of course, was just after the fall of the Berlin wall.

⁵⁶³ Ibid. 43. This corresponds to the general definition of heritage in Derrida: “[...] l'héritier devait toujours répondre à une sorte de double injonction, à une assignation contradictoire : il faut d'abord savoir et savoir réaffirmer ce qui vient « avant nous », et donc nous recevons avant même de le choisir, et de nous comporter à cet égard en sujet libre. [...] Réaffirmer, qu'est-ce que ça veut dire ? Non seulement l'accepter, cet héritage, mais le relancer autrement et le maintenir en vie.” Derrida, *Papier machine, le ruban de machine à écrire et autres réponses*, 15.

⁵⁶⁴ Derrida, *L'autre cap suivi de La démocratie ajournée*, 76.

⁵⁶⁵ Agamben, of course, engages in a debate with both on multiple levels. For my rendition of Agamben's discussion with Nancy and Blanchot, cf. Andreasen, “Det Stedløse Fællesskab – Utopiske Konstruktioner Hos Nancy, Blanchot og Agamben.” (in Danish). Much has been written about Agamben's relation to Derrida, e.g. Thurschwell, “Specters of Nietzsche.” and la Durantaye, *Giorgio Agamben, a Critical Introduction*, 184–191.

un'esclusione che si sa senza speranze; a un estremo, lo Stato totale dei cittadini integrati e sovrani, all'altro la bandita – corte dei miracoli o campo – dei miserabili, degli oppressi, dei vinti.”⁵⁶⁶

The division between *katholiké ekklésia* and the *diaspora* located by Nancy, is here presented as not just inherent to the universality of the Greek καθολικός, but also to any attempt at creating a national people or collective identity. What is called a people is really a dialectical oscillation between the people of identity and those who are not part of such an identity. This fundamental fracture in the identity of the people designates “l'impossibilità di ogni identità di coincidere con se stessa.”⁵⁶⁷

This fundamental division between the *People* and the *people*, which necessitates the attempts of the *People* to exclude the *people* from its midst in order to achieve political pleroma, and which we witnessed in Nazi persecution of the Jews and which we continue to witness on a daily basis, is the division between naked life and political life, between what Agamben calls *zoe* and *bios*. From Agamben's perspective, such a division is also at play within the third strategic axis of cultural politics, that of the dispositival subjectivation towards productivity in the form of creativity and innovation:

“Vi propongo nulla di meno che una generale e massiccia partizione dell'esistente in due grandi gruppi o classi: da una parte gli esseri viventi (o le sostanze) e dall'altra i dispositivi in cui essi vengono incessantemente catturati. Da una parte, cioè, per riprendere la terminologia dei teologi, l'ontologia delle creature e dall'altra l'*oikonomia* dei dispositivi che cercano di governarle e guidarle verso il bene.”⁵⁶⁸

⁵⁶⁶ Agamben, “Che Cos'è un Popolo?” 31.

⁵⁶⁷ Agamben, *L'uso dei corpi. Homo sacer*, IV, 2, 346. Although Agamben chooses a slightly different path than Derrida, he nonetheless aligns with certain technical terms also found in Derrida, e.g. what Derrida called “de n'être pas identitique avec elle-même” or his use of “non-coïncidence” as in “la non-coïncidence entre l'expression, la *Bedeutung* (toutes deux en tant qu'unités idéales) et l'objet.” Derrida, *La Voix et Le Phénomène*, 101. For Nancy's view on national identity, cf. Nancy, *Identité*. This small book was written in response to the 2009 French debate on “Identité nationale” launched by Éric Besson who then held the ignominious title “Ministre de l'Immigration, de l'Intégration, de l'Identité nationale et du Développement solidaire.” That very debate used a mode of digital consignment as a means of establishing the equation “French = X” by consulting the “people.”

⁵⁶⁸ Agamben, *Che cos'è un dispositivo?*, 21.

The dispositif, according to Agamben, is what transforms the pure potential of living substance, i.e. naked life, into governable identity in the form of the subject.⁵⁶⁹ In our case, it is the dispositival transformation of the untapped potential of the library stores or archives of cultural heritage into what is designated as useful in the individual incorporation of common *doxa* by the N of the *oikonomia*.

While Nancy thus stresses the necessary failure of the first strategic axis of universal identity, both Derrida and Agamben emphasise the necessary failure of our second strategic axis of a particular collective identity – supranational or national. Nancy claims the *a priori* impossibility of a the universal (καθολικός) unity of peoples, i.e. the *pleroma tōn ethnōn*, while Derrida and Agamben maintain the *a priori* impossibility of a *pleroma* within a specific collective identity, or what we could call, with a somewhat inelegant invention in Greek, *pleroma tou dimou* (πλήρωμα του δήμου), or, more plainly, plenitude of the People.⁵⁷⁰ The *a priori* impossibility of the third axis is, finally, proclaimed by Agamben in his definition of the subject as the dispositival division of subject from substance, i.e. the division of *zoe* and *bios*.

As indicated by the *zoe/bios* distinction in relation to both the people and the individual, this division between the subject and substance is the individual manifestation of the division between People and people. And these two divisions meet in the construction of the citizen, i.e. the individual as belonging to the People.⁵⁷¹ This is why Azoulay's insistence on the emancipatory potential of universal citizenry should make us pause. She hopes to drive the force of globalisation (καθολικός) inherent to photography to the pleromatic constitution of a universal citizenry of the people without confronting the division inherent to that

⁵⁶⁹ "Ricapitolando, abbiamo così due grandi classi, gli esseri viventi (o le sostanze) e i dispositivi. e, fra i due, come terzo, i soggetti. Chiamo soggetto ciò che risulta dalla relazione e, per così dire, dal corpo a corpo fra i viventi e i dispositivi." Ibid. 22.

⁵⁷⁰ Agamben's analysis of the term *populus* finds its Greek equivalent in the term *demos*, cf. "When an Athenian democrat said '*demos*' he meant the whole body of citizens, irrespective of the fact that only a minority were able to turn up to meetings; critics of the democracy, on the other hand, especially philosophers, tends to regard the *demos* as the 'ordinary people' in contrast to the propertied class, and in their eyes the Assembly [*ekklesia*] was a political organ in which the city poor, the artisans, traders, day labourers and idlers could by their majority outvote the minority of countrymen and major property-owners." Hansen, *The Athenian Democracy in the Age of Demosthenes, Structure, Principles and Ideology*, 125.

⁵⁷¹ "[...] il complesso dei cittadini come corpo politico unitario (come in «popolo italiano» [...])." Agamben, *Homo Sacer: Il Potere Sovrano e La Nuda Vita*, 30.

pleromatic drive. Or, she hopes for universal consignment of the photographic representation of peoples without acknowledging that consignment always already entails the inclusion of its own lack, it always produces its own *other*. We shall return to the possibility of a different *pleroma*, one that has been called a messianic *pleroma*, according to which the dispositif of citizenry can be brought to a standstill.

5.3 The construction of contemporaneity as kenoma

Just as Derrida stressed the impossibility of archival *pleroma* because consignment always includes its own lack, Derrida, Nancy and Agamben each stress the impossibility of political *pleroma* promised along the three strategic axes of cultural heritage. In spite of the eschatological proclamations that the time is at hand, the technical and the political *pleromata* covered in chapter 2 can have no actual existence. As we have seen, however, the imaginaries of *pleroma* are operational nonetheless – a contradiction in terms since eschatological *pleroma* constitutes the end of the operations of *oikonomia*. If the archival promise is not fulfilled in *pleroma* but the imaginaries of *pleroma* remain operational, nonetheless, what characterises this operation?

The paradox is clear in Chun's formulation of the archival promise: "This always-thereness of new media is also what links it to the future as future simple, as what will be, as predictable progress."⁵⁷² The always there and everywhere of *pleroma* reduces the future to what will be, i.e. to that which *is* already as known future, as calculable extrapolation of the status quo. The future is operational only as a prolongation of the present. We shall call this the *kenomatic* (κένωμα, "emptiness") operation of *pleroma* within the contemporary as the end of time – the operation of *pleroma* in *kenoma*. If *pleroma* is the abode of eschatological eternity, *kenoma* is the abode of the contemporary as the calculable "future simple" without an actual future, and the contemporary is a *kenoma* which, in spite of its imaginaries, will never know *pleroma*. The eschatological presence of *pleroma* must be considered an archival

⁵⁷² Chun, "The Enduring Ephemeral, or the Future Is a Memory," 154, cf. section 3.4.

mythologeme, and it is this mythologeme of *pleroma* that is operational in the kenomatic persistence of *oikonomia*, not *pleroma* itself.

When the cultural heritage discourse of cultural politics insists on cultural heritage as the untapped potential of the past for the future, how is it then possible to argue that it operates the *kenomatic* operation of the mythologeme of a *pleromatic* constitution of the end of time? As described in the presentation of Riegl in Section 2.2, Antiquity and the Middle Ages perceived only certain intentional monuments of the past as immortally and eternally persistent in the present. From the Italian Renaissance and on, various elements of the past gained a present-day value in so far as the achievements of past generations allowed the given present to recognise itself in that past, i.e. to inscribe itself in a specific generational lineage. From the nineteenth century and on, the global past in its entirety offers itself up for identificational recognition, irrespective of any specific generational lineage. Finally, we see a current tendency to conceive of not only cultural artefacts but also “culture” in general as the bountiful stores for both the recognition of others and self and, further, for the production of future innovation and consequent economic growth. It is the cult of the eternally persistent past that as such offers an untapped potential for present-day use-value within the contemporary.

To further investigate the specific construction of the strategic interactions between past, present and future in the kenomatic operations of eschatological *pleroma* in digital cultural heritage archives, it is useful to consider the problematization of the concept of *the contemporary* by Peter Osborne. Though his (2013) investigation of the concept aims at the distinction between contemporary and modern art, his fourfold problematization holds for our purpose as well.

The contemporary, Osborne argues, is an *idea* in the Kantian sense, that is, “its object (the total conjunction of present times) is beyond possible experience [...] and is hence a problem that requires investigation.”⁵⁷³ The *idea* as the representational form of reason, is thus distinct from Kant’s two other representational forms: intuition as the immediate representation of an experiential object through sensibility and the concept as the representation of an experiential object mediated by other

⁵⁷³ Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 22.

representations through understanding.⁵⁷⁴ Such ideas are “heuristic fictions” that may “regulate” experience as long as they are not contradicted by it.”⁵⁷⁵

Apart from UNESCO’s 1952 evocation of “contemporary man,”⁵⁷⁶ the term “the contemporary” is not widely and certainly not emphatically used in the discourse of digital cultural heritage. The “total conjunction of present times” is, however, distinctly operational in the specific ordering of the cultural past as “untapped potential” in order to drive the present into the future – a future which is always already determined by the three strategic axes and thus not a future at all, but an empty future operating under the promise of an imminently fulfilled eternity. And not only do the discourses of archival and political pleroma claim a contemporaneity of global presents, they also claim a contemporaneity of global pasts: “The digital heritage is inherently unlimited by time, geography, culture or format.”⁵⁷⁷ All of time and space are supposedly consigned within the pleromatic archive.

The specific temporal conjunction into which the three strategic axes of cultural politics are deployed constitutes the operational field of the cultural heritage dispositif. The permanent present-day use-value of the past as the heuristic fiction of the unlimited contemporaneity of past and present with regard to an already determined future is what allows for the constitution of cultural heritage as untapped potential.

What Riegl described as the recognition of ourselves in “die geringsten Taten und Geschicke selbst der geringsten, von der eigenen Nation durch unüberbrückbare Charaktergegensätze geschiedenen Völker”⁵⁷⁸ has now presumably been technologically relieved of remoteness. This, again, is what we saw in Valery’s and Otlet’s respective uses of the word “ubiquité” and what Wells in *World Brain* mentions three times as the “abolition of distance.”⁵⁷⁹ The recognition of ourselves and others via the heritage of deeds and events is open for creative innovation – a development which, we will remember, entails the shaping of “our

⁵⁷⁴ Deleuze, *La philosophie critique de Kant*, 14.

⁵⁷⁵ Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 22.

⁵⁷⁶ Cf. Section 2.2.3.

⁵⁷⁷ UNESCO. “Records of the General Conference (32nd Session - 2003) – Resolutions,” 75.

⁵⁷⁸ Riegl, “Der moderne Denkmalkultus, sein Wesen, seine Entstehung,” 147, cf. section 2.2.2.

⁵⁷⁹ Wells, *World Brain*, 27, 28 & 116.

thinking, imagining and behaviour”⁵⁸⁰ as well as the management of “all our non-renewable resources.”⁵⁸¹ The operations of the contemporary as unlimited temporal conjunction are thus a necessary presupposition for the strategic goals of the guardians of cultural heritage. The specific construction of the contemporary as *idea* via the mythologeme of eschatological *pleroma* establishes the terrain for these strategic operations.

5.4 Existential time or standing reserve

The temporal conjunction of cultural heritage is, of course, an idea or fiction contradicted by experience in several ways, and is as such an *epistemological* “problem that requires investigation.” Heidegger delivered one such investigation via an *existential* problematization in which he argued that the present itself “in its presentness, cannot be considered some kind of self-contained temporal receptacle for objects of experience, since it only ex-ists as the differentiation or fractured togetherness of the other two temporal modes (past and future), under the priority of its futural dimension.”⁵⁸²

A common and false conception of time as receptacle containing a past, present and future is only derivative of a more profound temporality, which has “als ontologische Bedingung seiner Möglichkeit die Seinsverfassung der Sorge, das heißt die Zeitlichkeit.”⁵⁸³ Care (*Sorge*) is here characteristic of Dasein which, in its character of thrown projection (*geworfener Entwurf*), “wesenhaft in seinem Sein *Zukünftig* ist [...]. [N]ur Seiendes, das als zukünftiges gleichursprünglich gewesend ist, kann, sich selbst die *ererbte*⁵⁸⁴ Möglichkeit und *augenblicklich* sein für »seine Zeit«. Nur eigentliche Zeitlichkeit, die zugleich endlich ist, macht so etwas wie Schicksal, das heißt eigentliche Geschichtlichkeit möglich.”⁵⁸⁵ From a Heideggerian perspective, sharing can never be caring within the temporal conjunction of the

⁵⁸⁰ UNESCO, “Our Creative Diversity (CLT-96/WS-6) - Report of the World Commission on Culture and Development - Summary Version,” 12, cf. Section 2.2.3.

⁵⁸¹ Ibid. 10, cf. section 2.2.3.

⁵⁸² Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 23.

⁵⁸³ Heidegger, *Sein und Zeit*, 385.

⁵⁸⁴ My emphasis.

⁵⁸⁵ Ibid.

contemporary since caring is, in its very being, Dasein's singular and futural "Entwurf" as a chosen reaction to its "Geworfenheit." Dasein is "für seine Zeit" because it is a determined (*entschlossen*) reaction to it. And the inherited conditions into which Dasein is thrown only become heritage via this auto-determination (*Entschlossenheit*) of Dasein's Sorge: "Damit bezeichnen wir das in der eigentlichen Entschlossenheit liegende ursprüngliche Geschehen des Daseins, in dem es sich frei für den Tod ihm selbst in einer *ererbten*,⁵⁸⁶ aber gleichwohl gewählten Möglichkeit *überliefert*."⁵⁸⁷

This Heideggerian heritage is not a past as resource with regard to the future of progress. For Heidegger, temporality is "Dies dergestalt als gewesend-gegenwärtigende Zukunft einheitliche Phänomen,"⁵⁸⁸ i.e. a fundamental temporal disjunction, and not as claimed by the ordinary and "vulgäre Seinsverständnis," "das Sein des Welt-Geschichtlichen im Sinne des ankommenden, anwesenden und verschwindenden Vorhandenen [...]."⁵⁸⁹ Time always already is as auto-determined becoming with relation to a past and not as the coming and going of presents. Nor is time in any way unlimited in this passing, it is directed towards its own end in death. Being "für »seine Zeit«" is an articulation and singular constitution of time itself, a specific singular temporality, and not the inscription of the self in the linear passing of time or in the eternal presence of past time.

From this perspective, the very specific strategic construction or implementation of the past in the present as a driving force with regard to future progress must, rather, be described as the ordering of culture as the later Heidegger's "standing reserve" (*Bestand*), i.e. a resource reduced to its ready availability with regards to a specific purpose. As we saw in section 4.4, this would be creativity and innovation as modes of actualising the "untapped potential of culture" in the production of a specific future (economic growth). The past as *Bestand* allows for no future since it is reduced to its latent availability in storage. *Bestand* is

⁵⁸⁶ My emphasis.

⁵⁸⁷ Ibid. 384.

⁵⁸⁸ Ibid. 326.

⁵⁸⁹ Ibid. 389.

that which “herausgefördert und gespeichert werden kann.”⁵⁹⁰ And as storage, its actualisation is already predetermined.⁵⁹¹

The past as resource, i.e. *Bestand*, has no future for it is ordered as readily available storage for actualisation with regard to a specific purpose. Heidegger’s critique of the technical attitude of “Enframing” (*Gestell*) which orders a given entity as standing reserve (*Bestand*) gives a new perspective on Riegl’s rendition of recognition of the self in the tiniest detail of cultural history and thus on our criticism of the discourse of cultural heritage. The human ordering of the entirety of being as standing reserve seemingly lets humanity meet only itself in the world and never allows for the meeting of the self in its proper being as becoming: “Indessen begegnet der Mensch heute in Wahrheit gerade nirgends mehr sich selber, d.h. seinem Wesen.”⁵⁹² The temporal conjunction operated via cultural heritage as *Bestand* is thus the basis for the establishment of a space where nothing happens. Blanchot elegantly expressed this in his criticism of another operator in such a temporal conjunction, the paperback, as 1. access of the people to culture and 2. the ready availability of the totality of culture for everyone:⁵⁹³ “Qu’il y ait des événements intéressants et même importants et que cependant rien ne puisse avoir lieu qui nous dérange, telle est la philosophie de tout pouvoir établi et, par derrière, de tout service de culture.”⁵⁹⁴

5.5 Empirical time or imaginative disavowal

Next, the temporal conjunction of an unlimited past in an unlimited present is contradicted by experience on *empirical* grounds: “There is no socially actual shared subject-position of, or within, our present from the standpoint of which its relational totality could be *lived* as a whole, in however epistemologically problematic or

⁵⁹⁰ Heidegger, “Die Frage nach der Technik,” 18.

⁵⁹¹ This predetermination is the nature of *techne* as “Gestell.” The opposite is *poiesis* as a bringing forth which does not foreclose a different purpose: “Sie entbirgt solches, was sich nicht selber hervorbringt und noch nicht vorliegt, was deshalb so, bald anders aussehen und ausfallen kann.” Ibid. 17.

⁵⁹² Ibid. 31.

⁵⁹³ Blanchot, “Les grand réducteurs,” 82.

⁵⁹⁴ Ibid. 79.

temporal-existentially fragmented anticipatory form.”⁵⁹⁵ This is another way of stating the three impossibilities of the strategic axes proclaimed by Nancy, Derrida and Agamben in Section 5.2. The temporal conjunction of global cultural heritage operates *as if* this totality were an actual empirical entity liveable both as a resource for unity in diversity and collective identity and as an individually accessible potential affording personal edification and development towards creative productivity.

Such a *pleromatic* entity is an operative fiction, a speculative horizon that amounts to a disavowal of politics in its postulation of a unity of heterochronous objects as *Bestand*. It obliterates the possibility of any fundamental disagreement or dispute of history in favour of the tranquillity of undisputed identity and creative potential. Simultaneously, it is also a productive act of imagination positing this tranquil historical coexistence as a given. Or, in the specific case of global cultural heritage, the productive act of imagination of a heritage “inherently unlimited by time, geography, culture or format”⁵⁹⁶ disavows all political disputes within that unlimited sphere in favour of the community of peacefully coexisting individuals engaged in creative and innovative pursuits.

Osborne points out that the “fiction of the contemporary” is becoming “progressively contracted” in the rapid succession of “generations.”⁵⁹⁷ On the one hand, such a contraction or abolition of temporal distance in the fulfilment of time renders our notion of *hypomnesic* heritage from chapter 1 impossible. In the case of Derrida’s emphasis on Freud’s deferred obedience towards his father in the affirmation of historical truth instead of material truth⁵⁹⁸ and the case of Foucault’s selection of fragments of truth as the affirmation of a spiritual genealogy in the constitution of the self,⁵⁹⁹ such heritage requires temporal distance for affirmation to operate. Eternal presence renders the generational aspect of heritage impossible. Jan Assmann’s (2010) distinction between “communicative memory” as a non-institutional, disembodied memory reaching “no farther back than eighty years, the

⁵⁹⁵ Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 23.

⁵⁹⁶ UNESCO, “Records of the General Conference (32nd Session - 2003) - Resolutions,” 75, cf. section 2.2.4.

⁵⁹⁷ Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 24.

⁵⁹⁸ Cf. section 1.1.3.

⁵⁹⁹ Cf. section 1.4.2.

time span of three interaction generations”⁶⁰⁰ and “cultural memory,” institutionalised and guarded by specialists, reaching “back into the past only so far as the past can be reclaimed as “ours”,”⁶⁰¹ thus seems slightly out of date. When everything is technically available as untapped potential, such a distinction collapses in the universal *hypomnesic* accessibility of everything in the now of the contemporary. Neither the individual nor the collective can claim heritage when confronted with such temporal fulfilment.

Nonetheless, we must acknowledge that in the context of digital cultural heritage archives, the rapid succession of technological generations is itself the necessary mechanical foundation of the fiction of eternity. The current Executive Director of Darnton’s Digital Public Library of America, Daniel J. Cohen, states: “historians, archivists, librarians, and museum curators, even those strongly committed to the long-term preservation of recent history, enter uncharted waters when they try to save the past digitally.”⁶⁰² Far from the fetish of unfettered access to the eternally preserved artefact, the digital object requires “a special set of eyes, often unique hardware, and an accompanying operating system and application software, to view or read them properly.”⁶⁰³ As Wendy Chun argued, far from fulfilling “the archival promise” of a calculable “future simple” the digital format is but an “enduring ephemeral.”⁶⁰⁴

5.6 Geopolitical time and the task of the archive

In the very construction of temporality as the contemporary, the supposed limitless presence of digital heritage objects projects an imaginary global present which actively disavows any possible dispute, disagreement or strife. It projects the doxa that Wells and Otlet called, respectively, a “World Pax” and “La fin de la guerre” under the motto “Per Orbem Terrarum Humanitas Unita.”⁶⁰⁵ Yet there are many

⁶⁰⁰ Assmann, J. “Communicative and Cultural Memory,” 111.

⁶⁰¹ Ibid.

⁶⁰² Cohen, “The Future of Preserving the Past,” 15.

⁶⁰³ Ibid.

⁶⁰⁴ Chun, “The Enduring Ephemeral, or the Future Is a Memory,” 148-150. Cf. section 3.4.

⁶⁰⁵ Cf. section 2.2.1.

potentially antagonistic relations within this projected unity. For example, different postcolonial temporalities involve “not just temporal, but equally, indeed, in certain respects primarily – spatial” antagonisms.⁶⁰⁶ This, of course, poses a *geopolitical* problem, and consequently, it poses a *task*. We shall define *task* as the task of the previously mentioned attitude of *ethos* defined by Foucault: “je veux dire, un mode de relation à l’égard de l’actualité; un choix volontaire qui est fait par certains; enfin, une manière de penser et de sentir, une manière aussi d’agir et de se conduire qui, tout à la fois, marque une appartenance et se présente comme une tâche.”⁶⁰⁷

The task is to choose a relation to “l’actualité” as distinct from the determinations of history. Foucault asks the question of “le présent” or “l’actualité” in two identically titled texts on Kant: “Qu’est-ce que les Lumières,” to which Osborne’s analysis is deeply although quite silently indebted.⁶⁰⁸ Foucault reads Kant against the traditional presentation of conditions of possibility of truth in general and, instead, engages with Kantian Enlightenment as “la question : « Qu’est-ce que c’est que notre actualité? Quel est le champ actuel des expériences possibles? ”⁶⁰⁹ Such ontology of the contemporary (actualité) entails a relation to the present against history:

“Je veux dire que ce travail fait aux limites de nous-mêmes doit d’un côté ouvrir un domaine d’enquêtes historiques et de l’autre se mettre à l’épreuve de la réalité et de l’actualité, à la fois pour saisir les points où le changement est possible et souhaitable et pour déterminer la forme précise à donner à ce changement.”⁶¹⁰

Such an ethical task of “une critique pratique dans la forme du franchissement possible”⁶¹¹ is thus a reaction against the imaginary act of the contemporary as the constitution of a coherent whole of history, whether national, supranational or

⁶⁰⁶ Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 25.

⁶⁰⁷ Foucault, *Qu’est-ce que les Lumières* 1, 1387. Cf. section 1.4.3.

⁶⁰⁸ Osborne only once mentions the “problem of the definition of the historical present – which Foucault picked in the late 1970s, in a quasi-existential mode, with his idea of a ‘critical ontology of the present’.” Osborne, *Anywhere or Not at All, Philosophy of Contemporary Art*, 249 n. 22.

⁶⁰⁹ Foucault, *Qu’est-ce que les Lumières* 2, 1506.

⁶¹⁰ Foucault, *Qu’est-ce que les Lumières* 1, 1393.

⁶¹¹ *Ibid.*

international. It is the reaction of *ethos* against *doxa*; *ethos* as the para-doxical reaction to the conditions of history. In this regard, instead of Foucault, Osborne explicitly references the young Nietzsche's notion of the "Unzeitgemäße" which undoubtedly plays a pivotal role in Foucault's notion of "l'actuel".⁶¹²

"So viel muss ich mir aber selbst von Berufs wegen als classischer Philologe zugestehen dürfen: denn ich wüsste nicht, was die classische Philologie in unserer Zeit für einen Sinn hätte, wenn nicht den, in ihr unzeitgemäss — das heisst gegen die Zeit und dadurch auf die Zeit und hoffentlich zu Gunsten einer kommenden Zeit — zu wirken."⁶¹³

For Nietzsche, history serves not a consolidation of time, but a challenging of the present not as a predetermined future of progress but in the hope of a time to come.

This was also Deleuze's point when, still referencing Nietzsche, he located the untimely (*intempestif / actuel*) as the other side of Foucault's archaeology: the diagnostics that bring archaeological analysis of what we have ceased to be into an emancipatory relation to our own becoming.⁶¹⁴ This, finally, is the crux of Agamben's argument when he references Barthes for explicitly bringing the Nietzschean notion of the untimely in relation to "*il contemporaneo*."⁶¹⁵ For Agamben, to be contemporary is never to belong to or coincide with one's time. This opening of time, this con-temporaneity as being "for one's time" and not just engulfed in it, rather,

⁶¹² Foucault mentions Nietzsche as one of several philosophers working within the described critical tradition; see Foucault, *Qu'est-ce que les Lumières* 2, 1507.

⁶¹³ Nietzsche, "Unzeitgemässe Betrachtungen – Zweites Stück: Vom Nutzen und Nachteil der Historie für das Leben," 247.

⁶¹⁴ Deleuze, "Qu'est-ce qu'un dispositif," 322–323. Nietzsche's formulation of the untimely as quoted above played a central role in Deleuzian philosophy from the earliest works to the late readings of Foucault, c.f. in *Différence et répétition*: "A la suite de Nietzsche, nous découvrons l'intempestif comme plus profond que le temps et l'éternité : la philosophie n'est ni philosophie de l'histoire, ni philosophie de l'éternel, mais intempestive, toujours et seulement intempestive, c'est-à-dire « contre ce temps, en faveur, je l'espère, d'un temps à venir »." Deleuze, *Différence et répétition*, 3. It should be noted, however, that "intempestif" only becomes synonymous with "actuel" in the later works. In his 1962 book on Nietzsche, "intempestif" is on the contrary synonymous with "inactuel," cf. Deleuze, *Nietzsche et la philosophie*, 122, due to the French translation of Nietzsche's *Unzeitgemässe Betrachtungen* as *Considérations inactuelles*.

⁶¹⁵ "Una prima, provvisoria indicazione per orientare la nostra ricerca di una risposta ci viene da Nietzsche. In un appunto dei suoi corsi al Collège de France, Roland Barthes la compendia in questo modo: "Il contemporaneo è l'intempestivo." Agamben, *Che cos'è il contemporaneo?*, 8.

necessarily entails a challenging of the projection of a community of peacefully coexisting individuals engaged in creative and innovative pursuits.

Osborne thus evokes the geopolitical task of countering the unifying operations of the *idea* of the contemporary. The present dissertation has argued that in spite of the *a priori* impossibility of *pleroma* (archival or political), it is nonetheless paradoxically operational as a foundational mythologeme in the operations of the kenomatic contemporary as the open territory into which the three strategic axes of the cultural politics of cultural heritage are deployed. Now, the tradition from Nietzsche, Foucault, Deleuze and Agamben evoke the necessity of a time different from such kenomatic *oikonomia* of *pleroma*.

5.7 Grid vs. Vortex

The problematization of “the contemporary” has demonstrated the *idea* or mythologeme of *pleroma* in the contemporary as the presupposition that allows for the constitution of cultural heritage as the terrain of untapped potential for the three strategic axes of cultural heritage discourse. It has shown that this potential rests on a specific temporality of *Bestand* that ignores the possibility of a more fundamental *existential* temporality claimed by the earlier Heidegger. The *empirical* problem of a contemporary conjunction of temporalities beyond any liveable subject position then showed the projection of the fictional conjunction of time as the negation of any political disagreement and dispute with regards to the past. And finally, this disavowal of politics was claimed to be a *geopolitical* task, a task which – according to the tradition running from Nietzsche via Foucault and Deleuze to Agamben – must consider contemporaneity as being out of time and “for time” in order to bring about a time to come instead of the contemporary as the contraction of the past in the present with regards to a future without becoming in the persistent *kenomatic* operations of the imaginaries of *pleroma*.

The digital cultural heritage archive should thus be positioned as a battlefield of temporalities: A battle between a universal and a singular temporality within the archival contemporaneity of ever-present pasts and an all-too present future, the

temporal conjunction of heterochronous objects and the global conjunction of collectives. In order to understand the privileged role of the digital archive within this discursive formation, we must now consider the temporal constructions of more specific archival orders. Or rather, staying within discourse analysis, we should contextualise our reading of Azoulay's civil archive and consider the attribution of potential to certain archival configurations not by the cultural heritage discourse of cultural politics but by critical discourse. If the digital cultural heritage archive holds a specific promise as articulated along the lines of Azoulay's civil archive, how does the digital archival order honour that promise?

Aby Warburg's *Atlas Mnemosyne* and André Malraux's *Musée imaginaire* have both been referenced as paradigmatic archival forms of great promise ultimately fulfilled by their digital successors.⁶¹⁶ Similar to Azoulay, who claimed the inherent potential of her preferred kind of *hypomnemata* for a reconfiguration of the grid and thus of the N of community, Warburg and Malraux supposedly propose archival reconfigurations N that allow for the emancipation of H and thus hold specific potentials for knowledge creation and a sense of human collectivity. W.J.T. Mitchell's and Georges Didi-Huberman's respective analyses of specific arrays, albums and atlases have both attempted to distil the fundamental characteristics of these two exemplars.

In a recent lecture entitled *Madness and Montage - Symptom and Symbol from Aby Warburg to A Beautiful Mind*,⁶¹⁷ Mitchell deploys a spatial dialectics between *grid* and *vortex* as a way of describing image arrays: *grid* representing rational Cartesian space and *vortex* as an expression of transformation, vertigo and

⁶¹⁶ "[...] almost every major museum claimed and still claims that its Web site is André Malraux's museum without walls." Chun, *Control and Freedom, Power and Paranoia in the Age of Fiber Optics*, 23, and "[...] digitization has been trumpeted as a way for libraries finally to fulfil their mission: to accumulate and provide access to human knowledge. Digital archives are allegedly H. G. Wells's "World Brain" and André Malraux's museum without walls, among other dreams, come true." Chun, *Programmed Visions, Software and Memory*, 137. "In other words, similarly as the photographic and new image cultures in the early part of the twentieth century forced not only a rethinking of perception but also of collection, memory, and organisation as was evident for example in Aby Warburg's work [...], now software cultures demand a rethinking of similar extent." Parikka, "Archives in Media Theory: Material Media Archaeology and Digital Humanities," 90. See also Berry et al., *Imaginary Museums, Computationality & the New Aesthetic*.

⁶¹⁷ Mitchell, "Madness and Montage - Symptom and Symbol from Aby Warburg to A Beautiful Mind."

madness.⁶¹⁸ Mitchell is less interested in the attempts to transform multiple images into “unified artistic compositions,” e.g. Gerhard Richter’s *Atlas* (1964-1995) and Robert Morris’ *Scatter Piece* (1968-1969), that could in themselves hint at, respectively, the grid and the vortex. Rather, Mitchell wants to examine the “provisional assemblage,” the operations behind the production of “image knowledge.”

Mitchell highlights two notable exceptions to the “normal practice in art history” of controlling the display of image arrays in relation to a predetermined discourse or interpretation, i.e. the determination of H in accordance with a predetermined N: Warburg’s *Atlas Mnemosyne* and Malraux’s *Musée imaginaire* instead acknowledge the provisional character of the assemblage. One common characteristic of these two arrays or assemblages, which renders them especially relevant to the present context, is that – similar to Riegl’s tentative technological solution to the tension between historical value and age value⁶¹⁹ and UNESCO’s increased use of “the most modern methods” in their pursuit of “preservation and dissemination” and, later, “preservation and access”⁶²⁰ – they both consist of photographic reproductions.

⁶¹⁸ Mitchell’s lecture is studied here in two versions, one given in Berlin on April 10 2014 and one in Copenhagen on April 23 2014. The Copenhagen edition was experienced in person while the Berlin edition was watched on the website of the conference Image Operations: <https://www.ici-berlin.org/event/571/>. Quotes from the Copenhagen edition are taken from an unpublished handout of the lecture’s manuscript.

⁶¹⁹ Cf. section 2.2.2.

⁶²⁰ Cf. section 2.2.3.



Maurice Jarnoux: *André Malraux chez lui*, (1953)

Although the distinction was never explicit, one got the impression that, according to Mitchell, Warburg tended towards the vortex while Malraux tended toward the grid. Maurice Jarnoux's famous depictions of the latter in his home (*André Malraux chez lui*, 1953) shows the floor covered by a nice grid of reproductions for his *Musée imaginaire*, a grid brought to only the slightest degree of turbulence around the feet of the organising mastermind. On the other hand, although Warburg's plates do have a certain grid-like distribution, Mitchell quoted Didi-Huberman for saying that Warburg's goal was to set art history in motion:

“To create a *knowledge-montage* was [...] to reject the matrices of intelligibility, to break through the age-old guardrails. This movement, with its new “allure” of knowledge, created the possibility of vertigo. [...] The image is not a closed field of knowledge; it is a whirling, centrifugal field. It is not a field of knowledge like any other [...]”⁶²¹

⁶²¹ Ibid. quoting Didi-Huberman, “Knowledge: Movement (The Man Who Spoke to Butterflies),” 13. The original French version of the passage can be found in Didi-Huberman, *Phalènes, Essais sur l'apparition 2*, 115.

Mitchell ended his lecture by showing the art installation *T_Visionarium*, which “offers the means to capture and re-present televisual information, allowing viewers to explore and actively edit a multitude of stories in three dimensions.”⁶²² The digital installation demonstrated how the current enormous capacity for capturing, storing, displaying and manipulating data can move from grid to vortex in an instant. As Mitchell concluded: “If we are to study the totality of the world’s images, we had better get used to vertigo.”⁶²³

5.8 *Album vs. Atlas*

Mitchell’s dialectics between grid and vertigo operate between synchronous order and productive madness, one based on simultaneity, the other on futurity. Any image array will interface between the two with Malraux a bit more on the side of the grid and Warburg more on the side of the vortex. Mitchell’s distinction establishes a spectrum in which the two articulate in varying ways. Similarly, Didi-Huberman spends the better part of a recent book, *L’Album de l’art à l’époque du « Musée imaginaire »* (2013), presenting a fundamental conflict between Malraux’s *Album* and Warburg’s *Atlas* as two opposing ways of approaching pictorial heritage.

Didi-Huberman perceives Warburg’s *Atlas* – with its arrays of heterogeneous reproductions indistinctly related to a given theme or *Pathosformel* – as a fundamental complexity which can never be resolved in a unifying concept, a complete archive or a strict classification⁶²⁴:

“C’est le pari que les images, assemblées d’une certaine façon, nous offrirait la possibilité – ou, mieux, la *ressource* inépuisable – d’une relecture du monde. [...] Le *Bilderatlas* [...] offrait [...] un appareil à remettre la pensée en mouvement là où l’histoire s’était arrêtée, là même

⁶²² *T_Visionarium*, “Project Overview.”

⁶²³ Mitchell, “Madness and Montage - The Picture Atlas as Symptom and Therapy from Aby Warburg to A Beautiful Mind.”

⁶²⁴ Didi-Huberman, *L’œil de l’histoire : Tome 3, Atlas ou le gai savoir inquiet*, 20.

où les mots faisaient encore défaut. Il fut la matrice d'un désir de reconfigurer la mémoire en renonçant à fixer les souvenirs – les images du passé – dans un récit ordonné, ou pire, définitif.”⁶²⁵

This imaginative *perpetuum mobile* is thus “notre héritage, l'héritage de notre temps”⁶²⁶ – a heritage that is both aesthetic and epistemic in that the new aesthetic forms entail a new approach to knowledge. As has hopefully been demonstrated, such a heritage must also necessarily be political.

For Didi-Huberman as for Mitchell, Warburg represents an articulation between grid and vortex, between “*raison et déraison*.”⁶²⁷ Didi-Huberman is, however, explicitly critical of Malraux and his *Album* for snapping the images too firmly to the grid, for losing sight of the “mad” end of Mitchell’s spectrum.⁶²⁸ Although Malraux claimed that, contrary to the determination of the traditional museum, his *Musée imaginaire* was an interrogation,⁶²⁹ Didi-Huberman accuses Malraux of instantly answering his own questions.⁶³⁰ If Malraux claims his *Album* to be what Mitchell called a “provisional assemblage,” Didi-Huberman claims that this provisionality is directed solely towards a “unified cultural composition.” In spite of the intended

⁶²⁵ Ibid. 20-21.

⁶²⁶ Ibid. 21.

⁶²⁷ Ibid. 22.

⁶²⁸ Didi-Huberman is mainly critical of the later Malraux of the *Musée imaginaire* and onwards. He sees in Malraux’s earlier writings from the 1930s an emancipatory challenging of the past, which he calls “bien pensé,” whereas the later Malraux turns into a “bien pensant” mainly interested in preserving his own position as organising mastermind. A critical rereading of the earlier Malraux as a challenge of its description as “bien pensé” would be valuable but surpasses the scope of the present dissertation. A brief indication, however: Didi-Huberman sees in Malraux’s recurring dictum “l’héritage ne se transmet pas, il se conquiert,” (e.g. Malraux, “L’Œuvre d’art,” 1190, and Malraux, “Sur l’héritage culturel,” 1198) a Benjaminian constellation able “das Kontinuum der Geschichte aufzusprengen” Benjamin, “Über den Begriff der Geschichte,” 702. But even in the 1930s, Malraux saw any heritage reproduction and thus decontextualisation as a means of conquering the reproduced fragment under the banner of humanist universalisation: “Humanistes parce que universalistes.” Malraux, “Sur l’héritage culturel,” 1196. Such a decontextualizing reproduction is clearly inspired by Benjamin, but where Benjamin wanted to politicise art as a fragmentary or, even, destructive, response to the fascist rendering aesthetic of politics, Malraux countered fascist nationalism with universalism: “Il est dans la nature du fascisme d’être la nation et dans la nôtre d’être le monde.” Malraux, “L’Œuvre d’art,” 1189. Already in the 1930s, this universalism depended on the transmission of reproductions, which immediately after the war found its expression in a speech to UNESCO: “Pour la première fois, le Musée imaginaire ouvert sur la terre entière nous met en face de l’héritage du monde. [...] héritiers de tout le passé [...]” Malraux, “L’homme et la culture artistique,” 1207. Or as formulated in the early version of *Le Musée Imaginaire* in *Les Voix du silence*: “Ce domaine – qui s’intellectualise tandis que l’inventaire et sa diffusion se poursuivent, et que les moyens de reproduction s’approchent de la fidélité – c’est, pour la première fois, l’héritage de toute l’histoire.” Malraux, “Les Voix du silence,” 240.

⁶²⁹ Malraux, *Le musée imaginaire*, 176.

⁶³⁰ Didi-Huberman, *L’album de l’art à l’époque du musée imaginaire*, 31.

dialogue between reproductions of artefacts from the remotest as well as the most familiar cultures, this dialogue was never allowed to go astray, dissolve into nonsense or get stuck in irresolvable tension or conflict. It was always brought back to “une synthèse stylistique ou spirituelle que fonde sa notion d’« art » ou de « création » universels.”⁶³¹

The *Musée imaginaire* is the authoritative accumulation and presentation of timeless genius. It is open in so far as new or unknown old works of genius can be added, but closed with regard to a historical challenge of universal human essence. It is thus a re-sacralisation; the reproduced work is included in the church of universality. And this re-sacralisation is quite literal, in so far as many of the works included in the *Musée imaginaire* are former religious sculptures wrenched from their erstwhile cultic context and re-inscribed into the cult of universal cultural heritage.⁶³²

Where Walter Benjamin would have argued for the technologically induced decontextualization of the reproduced work of art as potential emancipation from tradition in the passage from cult-value to exhibition-value,⁶³³ Malraux re-inscribes the object in the universal eternity of the eschatological *pleroma* manifest in the *Album* form of his *Musée*. For Malraux, the emancipation of mechanical reproduction is what allows the possible decontextualization and subsequent inclusion in universality: “[...] la reproduction délivre leur style des servitudes qui le faisaient mineur.”⁶³⁴ Mechanical reproduction salvages the artefact from its contextual limitations in order to include it in the universal family album: “[...] la photographie en noir « rapproche » les objets qu’elle représente, pour peu qu’ils soient apparentés.”⁶³⁵

Malraux’s praise of the present presence of the accumulated past in the universal eternity of cultural heritage can be gleaned in crystalline form from a speech to Gaullist intellectuals in Paris on March 5, 1948: “Et dans cette salle, ce soir, nous pouvons dire sans ridicule : « Vous qui êtes ici, vous êtes la première

⁶³¹ Ibid. 41.

⁶³² Malraux was familiar with such wrenching from his youth when in December 1923, after an unfortunate investment in the Mexican mining industry, he sought to alleviate his financial ruin by stealing devata statues from the Cambodian ruins of Banteay Srei.

⁶³³ Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung.”

⁶³⁴ Malraux, “Les Voix du silence,” 213.

⁶³⁵ Ibid. 212.

génération d'héritiers de la terre entière. »⁶³⁶ All of earth can be included in the family album and the room is invited to be the first descendants of that arch-generation. The obvious question would be: What about those who were not present in the Salle Pleyel that evening?

5.9 Profanation

Didi-Huberman accuses Malraux of re-sacralising the decontextualized artefact and praises Warburg for his archival vertigo, "C'est un mouvement qui requiert toutes les dimensions anthropologiques de l'être et du temps."⁶³⁷ Blanchot captures re-sacralisation quite well in one of his essays on the *Musée imaginaire*: "[Q]ui regarde les statues gothiques ? nous; les autres les invoquaient. La disparition de la prière a eu pour conséquence de faire apparaître les monuments et les œuvres, de faire de la peinture un art à la portée de nos yeux."⁶³⁸ We no longer invoke, we look, study and appreciate, and, according to Malraux, this gaze brings the artefact into to that other temple: the museum as archive of the universal essence of man.

As is not unexpected from an accusation of re-sacralisation, Didi-Huberman finds salvation in a gesture of profanation. At more or less the same time as Malraux was photographed at home surrounded by photographic reproductions for his *Musée imaginaire*, Chris Marker and Alain Resnais presented a short film entitled *Les Statues meurent aussi* (1953).⁶³⁹ In a style reminiscent of Malraux's photographic reproductions, Marker and Resnais show various African artefacts, scenes from African and western culture and various western appropriations of African culture. Similar to *Toutes les mémoires du monde*, the film consists of a series of shots accompanied by music and a voice-over:

⁶³⁶ Malraux, "Les Conquérants - Postface," 273.

⁶³⁷ Didi-Huberman, "Savoir-Mouvement (L'Homme Qui Parlait Aux Papillons)," 14.

⁶³⁸ Blanchot, "Le Musée, l'Art et le Temps," 25.

⁶³⁹ Parts of the movie were censored until 1963, i.e. also during Malraux's tenure as minister for cultural affairs from 1959. Incidentally, Resnais married Malraux's daughter, Florence, the year of his resignation from the ministry in 1969.

“Quand les hommes sont morts, ils entrent dans l’histoire. Quand les statues sont mortes, elles entrent dans l’art. Cette botanique de la mort, c’est ce que nous appelons la culture. [...] Un objet est mort quand le regard vivant qui se posait sur lui a disparu. Et quand nous aurons disparu, nos objets iront là où nous envoyons ceux des nègres : au musée.”⁶⁴⁰

The museum is a sacralising mausoleum that wrenches the cult object from its origins and forces it into the history of art. Aleida Assmann described the dynamics between archive and canon, i.e. between “cultural reference memory” and “cultural working memory.” But the museum is an archival instance which, although it pretends to transfer objects from the obscure archival depths of un-consigned *plethora* into a world canon of glorious *pleroma*, actually destroys the discursive aura of the object and thereby relegates it to a universal reference archive without memory.⁶⁴¹

“[...] ce pays de la mort où l’on va en perdant la mémoire. [...] Classés, étiquetés, conservés dans la glace des vitrines et des collections, ils entrent dans l’histoire de l’art. Paradis des formes où s’établissent les plus mystérieuses parentés : nous reconnaissons la Grèce dans une tête africaine vieille de plus de 2000 ans, le Japon dans un masque de l’Ogoué, et encore l’Inde, les idoles sumériennes, nos Christs romans, ou notre art moderne.”⁶⁴²

⁶⁴⁰ Marker, *Commentaires*, 11.

⁶⁴¹ Cf. Section 1.1.2. A recent criticism of UNESCO’s ‘World Heritage’ listing as the transformation of a city into a mausoleum uses the term UNESCOcide: “UNESCO’s ‘World Heritage’ listing is the kiss of death [...] with the loftiest intentions: to preserve – unaltered – a ‘legacy’ of humanity.” D’Eramo, “UNESCOcide,” 47. Agamben performs a similar analysis of Venice as a made up corpse: “Solo in questo modo si può spiegare la mancanza di amore dei veneziani per la loro città. Non sanno né possono amarla, perché amare una morta è difficile. È più semplice fingere che sia viva, coprirne le membra delicate ed esangui con mascherature e belletti per poterle esibire a pagamento ai turisti.” Agamben, *Dell’utilità e degli inconvenienti del vivere fra spettri*, 18–19. For Agamben’s description of the sacralising function of the museum and the “World Heritage” listing as well as the need for profanation cf. Agamben, *Profanazioni*, 96–98.

⁶⁴² Marker, *Commentaires*, 19–20.

The kinships of the museum, unhindered by geographical or cultural distance, supposedly allow for the identification of any individual with universal man. In the temporal conjunction of past and present in the museum, man recognises only himself. This is the realm of universal consignment as the realm of death. And in this “Classés, étiquetés, conservés” we should recognise the similar expression from *Toute la mémoire du monde*: “Ils les trient, les analysent, les classent, les numérotent méthodiquement.”⁶⁴³ Such reverberations only add to the ambiguities of the relation between the library stores and the reading room, between the happiness of a completed puzzle and the realm of death that is even the imaginary museum.



Les Statues meurent aussi.

Les statues meurent aussi stresses the problem that this universalising celebration of culture glosses over: the very real oppression, exploitation and

⁶⁴³ “*Toute la mémoire du monde* (scénario),” 66.

estrangement behind the accumulation of artefacts. A black woman is shown in front of a shop window displaying African statues and shortly thereafter a white man is shown teaching a young black man how to make cheap reproductions of African art objects. In spite of the hopes of Benjamin, the age of mechanical reproduction – the challenging of cult-value or value of tradition by exhibition-value – has not challenged the ruling class or private property; it has only reinforced white hegemony and black estrangement.



Les Statues meurent aussi.

The end of the film affirms the possibility of the black artist to say No! Whether in the boxing ring or on the concert stage, the black artist tries to literally strike back, to “rendre les coups que reçoit son frère dans la rue.”⁶⁴⁴ It shows a black man with a

⁶⁴⁴ Marker, *Commentaires*, 24.

camera aimed directly at the screen, which for Didi-Huberman indicates the conquest of reproducibility:

“Il ose même saisir d’un appareil photographique pour constituer lui-même l’historicité de ses luttes ou bien l’état de nos propres cultures, accédant ainsi à la maîtrise de la reproductibilité et à la possibilité de nous regarder, dans tous les sens possibles de cette expression.”⁶⁴⁵

Didi-Huberman clearly sees in the recapture of mechanical reproduction a possibility for a challenging of the universal time of the Album, i.e. a temporal dispute otherwise disavowed by the projection of universal time by the contemporary discourse of cultural heritage.⁶⁴⁶ Such a challenge entails the possibility of technical consignation to look back at us, in every sense of the expression. It is the possibility of the relation to the other enabled by Foucault’s correspondence. This new conquest of technical consignation allows for the specular relation to be broken, for man to see something different from himself in the world. This was the *parresiatric* moment of truth evoked by Foucault as the ethical dissociation from what we have called *doxa*.⁶⁴⁷ The conquest of the means of re-sacralisation is presented a way to profane their end in *doxa*.

Didi-Huberman thus presents the challenging of universal time in *Les Statues meurent aussi* as a mode of profanation akin to Warburg’s *Atlas* – the only resolution to a conflict which he describes by referencing Benjamin: The conflict between universal and singular time is described by Benjamin’s distinction between *Universalgeschichte*, whose “Verfahren ist additiv: sie bietet die Masse der Fakten auf, um die homogene und leere Zeit auszufüllen,”⁶⁴⁸ and *materialistische*

⁶⁴⁵ Didi-Huberman, *L’album de l’art à l’époque du musée imaginaire*, 166-167.

⁶⁴⁶ I here take Malraux as a protagonist of the discourse of cultural heritage. And not without reason. Both before, during and after his tenure as minister for cultural affairs from 1959 to 1969, Malraux had a profound influence on UNESCO, e.g. via numerous speeches from 1936 and even until twenty years after his death where UNESCO played a recording of a 1960 speech of his in his honour. UNESCO states: “Mr. Malraux, who praised the “act by which man snatches something from death,” formulated for the first time the concept of the universality of cultural heritage, which thereafter would stand at the heart of UNESCO’s actions in the field of culture.”
<http://www.unesco.org/bpi/eng/unescopress/96-210e.htm>.

⁶⁴⁷ Cf. section 1.4.3.

⁶⁴⁸ Benjamin, “Über den Begriff der Geschichte,” 702.

Geschichtsschreibung, which locates a “von Spannungen gesättigten Konstellation”⁶⁴⁹ enabling the relation of a specific now with a specific past in an emancipatory break with the steady flow of progress.⁶⁵⁰

This distinction between *Universalgeschichte* and *materialistische Geschichtsschreibung* also holds for Benjamin’s own notion of cultural heritage. Only on few occasions does he reference a notion of cultural heritage directly but he always does so in a consistent manner. As mentioned in section 3.3, Benjamin’s perception of cinema, as expressed in “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit,” is that of a technical break with our commonplace images. This emancipatory potential also entails a destruction of the value of tradition of cultural heritage: “Sein [der Film] gesellschaftliche Bedeutung ist auch in ihrer positivsten Gestalt, und gerade in ihr, nicht ohne diese seine destruktive, seine kathartische Seite denkbar: die Liquidierung des Traditionswertes am Kulturerbe.”⁶⁵¹

While this destruction of the value of tradition is compatible with Malraux, Benjamin emphatically resists any universalising accumulation of heritage in a storage or index. Benjamin later uses the French “*héritage culturel*” to translate the word “Kulturgüter” in “Über den Begriff der Geschichte”: “Die Beute wird, wie das immer so üblich war, im Triumphzug mitgeführt. Man bezeichnet sie als die Kulturgüter. Sie werden im historischen Materialisten mit einem distanzierteren Betrachter zu rechnen haben.”⁶⁵² Finally, the term “Menschheitserbe”⁶⁵³ is used in direct relation to Benjamin’s diagnosis of a poverty of experience: “Erfahrungsarmut: das muß man nicht so verstehen, als ob die Menschen sich nach neuer Erfahrung sehnten. [...] Sie sind auch nicht immer unwissend oder unerfahren. Oft kann man

⁶⁴⁹ Ibid. 702–703.

⁶⁵⁰ Didi-Huberman, *L’album de l’art à l’époque du musée imaginaire*, 171. For Benjamin, of course, progress is founded in the catastrophe that is the status quo: “Der Begriff des Fortschritts ist in der Idee der Katastrophe zu fundieren. Daß es »so weiter« geht, ist die Katastrophe.” The passage appears in both “Zentralpark,” 673 and *Das Passagen-Werk 1*, 592. Progress is what, in “Über den Begriff der Geschichte,” keeps the Angelus Novus fixed in place, blocking any view towards the future and hinders the saving of the ever increasing ruin heap of the past: “Dieser Sturm treibt ihn unaufhaltsam in die Zukunft, der er den Rücken kehrt, während der Trümmerhaufen vor ihm zum Himmel wächst. Das, was wir den Fortschritt nennen, ist dieser Sturm.” Benjamin, “Über den Begriff der Geschichte,” 698.

⁶⁵¹ Benjamin, “Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung,” 478.

⁶⁵² Benjamin, “Über den Begriff der Geschichte,” 696, for the French translation: Benjamin, “Paralipomena - Über den Begriff der Geschichte,” 1263.

⁶⁵³ E.g. in Benjamin, “Erfahrung und Armut,” 219.

das Umgekehrte sagen: Sie haben das alles »gefressen«, »die Kultur« und den »Menschen« und sie sind übersatt daran geworden und müde.⁶⁵⁴

In all cases the required reaction to cultural heritage is that of dissociation or to step back: “Und nun wollen wir einmal Abstand halten, zurücktreten.”⁶⁵⁵ Universal re-sacralisation in the ever-growing archival fortresses renders experience itself impossible. What is missing from experience is not the object but the capacity to establish a true historical relation or, rather, constellation to the fragment of history. It is therefore the task of the scholar, what Derrida would call a new scholar, to oppose any inventory of heritage:

“Und es ist Sache der Denker und Forscher, welche noch eine Freiheit der Forschung kennen, von der Vorstellung eines ein für alle Mal verfügbaren, ein für alle Mal inventarisierten Bestandes an Kulturgütern sich zu distanzieren. Ihnen besonders muß es am Herzen liegen, einen kritischen Begriff der Kultur dem »affirmativen Kulturbegriff« entgegenzusetzen.”⁶⁵⁶

Such a critical reaction is also attributed to materialist historiography: “Der historische Materialist rückt daher nach Maßgabe des Möglichen von ihr ab. Er betrachtet es als seine Aufgabe, die Geschichte gegen den Strich zu bürsten.”⁶⁵⁷ Brushing history against the grain should not be read as merely the rewriting of history. It should be read as the bringing about of a different history, a profanation of any re-sacralisation in the “Triumphzug.” We shall return, soon and in conclusion, to what such dissociation from cultural affirmation of culture, which once and for all has been indexed and rendered accessible, may mean.

⁶⁵⁴ Ibid. 218. This passage inspired the title of Alain Brossat’s excellent book on culture as a means to eliminate politics: *Le grand dégoût culturel*: “[...] une définition provisoire de ce qu’est la culture aujourd’hui : elle est cet élément liant ou cette surface de remplissage qui, dans nos sociétés, va se former là où l’on ne se trouve ni dans la zone ou la sphère de l’action (la praxis, la politique), ni dans celle de la fabrication ou de la production (la *poiesis*, le travail), ni dans celle de la création (l’œuvre, l’art). Elle est cet élément plastique, ou liquide, cette pâte molle qui comble les interstices, remplit le vide.” Brossat, *Le grand dégoût culturel*, 119. This definition is absolutely acceptable for the present dissertation, provided the specification that it is only a filling of the void to the extent that the void is filled with void.

⁶⁵⁵ Benjamin, “Erfahrung und Armut,” 219.

⁶⁵⁶ Benjamin, “Ein Deutsches Institut Freier Forschung,” 525.

⁶⁵⁷ Benjamin, “Über den Begriff der Geschichte,” 697.

5.10 A coming community of memory

Both Warburg's *Atlas* and Malraux's *Album* have been seen as forerunners for contemporary digital archives and Mitchell correctly locates their unification in something like the *T_Visionarium*, the interface of which (large curved screens from floor to ceiling) can visually change display types from grid to vortex by the push of a button. The interface is designed for the mastery of reproduction, for the vortical reconfiguration of the grid. For what is the digital archive but the zone of indistinction where grid and vortex coincide? Even beyond the interface, at a very material level, digital memory and storage, from the Williams Tube over spinning hard drives to current solid state drives, have always been characterised by a grid either flickering, fading or in rapid motion.⁶⁵⁸

The digital archive is, in its modes of preservation as in its modes of access, a grid in movement and it seems that this digital whirling of the grid inspires new archival hopes in both the powers of re-sacralisation and those of profanation. But when the grid's vortical movement is the condition of possibility for the universal history of cultural heritage, can it then still be said that "assemblées d'une certaine façon," images or cultural artefacts truly offer us the possibility "ou, mieux, la ressource inépuisable – d'une relecture du monde"⁶⁵⁹? Does the archival distribution of *hypomnemata* in and of itself turn Warburg's images into dynamic challenges of "toutes les dimensions anthropologiques de l'être et du temps"⁶⁶⁰?

Is it indeed possible to attribute inherent aesthetic, epistemic or political characteristics to a specific organisation of cultural artefacts? And is the digital interface's ability to strike back by partaking "à la maîtrise de la reproductibilité," to "constituer lui-même l'historicité de ses luttes ou bien l'état de nos propres cultures," not rather an aid to adopt Malraux's pose at home where the grid only whirls at the feet of the organising mastermind? Is the attempt to find emancipation in the

⁶⁵⁸ Chun, "The Enduring Ephemeral, or the Future Is a Memory," cf. Section 3.4 and the argument regarding the swift passing of generations as condition of possibility for archival eternity in Section 5.5.

⁶⁵⁹ Didi-Huberman, *L'oeil de l'histoire : Tome 3, Atlas ou le gai savoir inquiet*, 20-21.

⁶⁶⁰ Didi-Huberman, "Savoir-Mouvement (L'Homme Qui Parlait Aux Papillons)," 14.

characteristics of the “media that created the conditions for globalization,”⁶⁶¹ the global contemporary of universal heritage, and the faith in the dispositif to finally deliver on the emancipatory promise of Benjamin’s reproduction, not just other ways of inscribing oneself in the dispositif? Is not the *T_Visionarium* as the “means to capture and re-present televisual information, allowing viewers to explore and actively edit a multitude of stories in three dimensions,” exactly the present day culmination of Malraux’s re-sacralisation where any vertiginous rearrangement of the provisional assemblage is re-inscribed in the *Album* of the database?

It is necessary, here, to insist on the distinction between the attribution of inherent epistemological, existential, empirical and geopolitical force to a given technological archival order (grid/vortex, album/atlas) and the specific constructions of the contemporary as, respectively, universal and singular time. In a digital age, Warburg’s *Atlas* as archival distribution cannot be considered an inherently good model of materialistic historiography. It can most certainly be considered a tool for such a historiography, a trace of its maker’s singular practice. Yet we should be wary of generalising its historiographical qualities beyond that specific instance of practice, especially as a mechanically reproducible mode of profanation. This will just snap the vortex back to the grid.

Claiming a specific archival distribution as the presupposition for a specific construction of an emancipated contemporary must be abandoned as pure mimicry of the discourse of cultural heritage. Hoping for emancipation via a different and better dispositival fulfilment of eschatological pleroma, both archival and political, will only contribute to the kenomatic persistence of the empty time of the contemporary. We should remember that the discourse of cultural heritage desires nothing but the archive as the undepletable resource for a rereading of the world which Didi-Huberman saw in Warburg’s *Atlas*. Indeed, in spite of his tendency to attribute inherent emancipatory powers to the Warburgian image array, Didi-Huberman does seem to acknowledge the need for a radical rejection of a claimed causality between archival distribution and a new construction of the contemporary: “Depuis que les

⁶⁶¹ Azoulay, *The Civil Contract of Photography*, 134, cf. the beginning of this chapter.

frères Lumière ont filmé leur *Sortie d'usine*, il est devenu facile de filmer les petites gens. Toute la question est de savoir comment.”⁶⁶²

How to move from the empty time of universal history as construction of the contemporary, what we have called the *kenomatic* operations of eschatological *pleroma*, to a materialist historiography of the temporal tensions of constellation, what we have called the geopolitical task, is not a question of arrays or archival order nor of recapturing mechanical reproduction to master one's own story. Recapture is always already the capture of the *dispositif*. The contemporary as being *for* one's time, as described in the tradition from Nietzsche via Foucault and Deleuze to Agamben, neither springs from the correct (re-)configuration of the archive as medium nor from the correct usage of the archival *dispositif*. In the age of digital reproduction, reconfiguration has become easy. The question is “knowing how” – not how to use the *dispositif* but how to profane it, to render it inoperable: “La profanazione è il controdispositivo che restituisce all'uso comune ciò che il sacrificio aveva separato e diviso.”⁶⁶³

Profanation is neither the destruction of the sacralising apparatus of archival consignment, i.e. the destruction of digital cultural heritage archives, nor is it the “correct” access to and use of its content in the reading room.⁶⁶⁴ Determining such a “correct” use will still put the pieces together to complete the puzzle, although with a different image, and thus always seek fulfilment in *pleroma*. Profanation brings the past out of its role as *Bestand* or eternally present use-value. Profanation seeks to render the discourse of cultural heritage inoperable by freeing the past from its necessary re-inscription along the three strategic axes and to establish the possibility for new use that is not a presupposed use-value. This can only be done via a problematization of the *pleromatic* drives of the archive and its *kenomatic* operation in the unified temporal conjunction of the contemporary to which the discourse of cultural heritage contributes – a conjunction which, because of its eschatological nature, renders any future impossible.

⁶⁶² Didi-Huberman, *Peuples exposés, peuples figurants*, 198.

⁶⁶³ Agamben, *Che cos'è un dispositivo?*, 28.

⁶⁶⁴ “Non si tratta semplicemente di distruggerli, né, come suggeriscono alcuni ingenui, di usarli nel modo giusto.” Ibid. 24.

The indistinction between presupposed use-value and the potential for new use not amenable to re-sacralisation must be clarified by “the contemporary” as what Deleuze considered the critical diagnostics of Foucault’s archaeology. Deleuze repeatedly stated: “Il y a une archéologie du présent,”⁶⁶⁵ an archaeology leading “aux couches désertes de notre temps qui enfouissent nos propres fantômes, aux couches lacunaires qui se juxtaposent suivant des orientations et des connexions variables.”⁶⁶⁶ Such an archaeology is the basis for a diagnosis of the present and the condition of possibility for the contemporary to be not just a temporal conjunction of universal time in eschatological pleroma, but an opening of time in the contemporary as the non-identity of the present.

We need an archaeology of the digital archive as well as the discourse of cultural heritage to provoke an *experimentum monumenti* – an experience of the conflicting presents of the past, the heterochronicity of monuments and the possible temporality of community as irreconcilable with the eternal presence of the past and the universal essence of man. An *experimentum monumenti* that is irreconcilable with the re-sacralising museum of cultural heritage, “ce pays de la mort où l’on va en perdant la mémoire.” Only such an archaeological experience and its ensuing diagnosis of the contemporary will enable us to be “for our time,” act counter to our time, on our time and, let us hope, for the benefit of a time to come.

Earlier in this chapter, the Benjaminian opposition between empty universal time and the “Jetztzeit” of the constellation⁶⁶⁷ was briefly mentioned as the opposition between eschatological and messianic pleroma. The imaginaries of the digital cultural heritage archive, i.e. of the digital link between archival and political pleroma, claim that the obstacle keeping archival oikonomia from eschatological pleroma is but an exception in the line of inevitable progress toward the presence of God – “C’est la règle du jeu,”⁶⁶⁸ Resnais said. Now, that we are once again faced with the technical nourishment of the archival promise as we have seen in the new legacy of digital cultural heritage, we should acknowledge the task of bringing about this

⁶⁶⁵ Deleuze, *L’image-temps*, *Cinéma 2*, 317, Deleuze, *Foucault*, 58, Deleuze, “La vie comme œuvre d’art,” 132.

⁶⁶⁶ Deleuze, *L’image-temps*, *Cinéma 2*, 317.

⁶⁶⁷ “Die Geschichte ist Gegenstand einer Konstruktion, deren Ort nicht die homogene und leere Zeit, sondern die von Jetztzeit erfüllte bildet.” Benjamin, “Über den Begriff der Geschichte,” 701.

⁶⁶⁸ “Toute la mémoire du monde (scénario),” 69, cf. section 1.2.2.

different pleroma. This would not be the “Réalité Totale” of Otlet⁶⁶⁹ and his various companions but the constellation of past and present where the restitution of the past can only be the past as non-identical with itself in a similarly non-identical present. And such a past, which opens a future and not an eternity, can never be brought about by the oikonomia of the archival dispositif but only outside such oikonomia, or, rather, against such oikonomia, by profaning it and rendering it inoperable and open for new use.

This is the messianism proposed by Benjamin towards the end of “Über den Begriff der Geschichte”: “Die Jetztzeit, die als Modell der messianischen in einer ungeheuren Abbreviatur die Geschichte der ganzen Menschheit zusammenfaßt [...]”⁶⁷⁰ And such an abbreviation is what Agamben, in his reading of Saint Paul, termed messianic pleroma: “Il *pléroma* messianico [...] è [...] un’assolutizzazione della *katargesis*.”⁶⁷¹ In the Aristotelian distinction between *dynamis* and *energeia*, i.e. the distinction between the potential of the library stores and its actualisation in the ideal opus (Greek: *ergon*) of happiness in the reading room, *katargesis* is what renders the eschatological oikonomia inoperable.⁶⁷² The messianic is thus in its own way the name of profanation. Against the impossible and thus forever failed eschatological pleroma and its persistence in the oikonomia of the kenomatic contemporary, the messianic indicates the caesura where the pleromatic drive dividing potential and actualisation along the ideal line of the barrier between storage and reading room, dividing *zoe* and *bios*, substance and subject, is brought to inoperability:

“Il messianico [...] non rappresenta una nuova e più universale identità, ma una cesura che passa attraverso ogni identità – tante quella dell’ebreo che quella del gentile. L’«ebreo secondo lo spirito» e il «gentile secondo la carne» non definiscono una identità ulteriore, ma soltanto l’impossibilità di ogni identità di coincidere con se stessa – cioè la loro

⁶⁶⁹ Cf. section 5.1.

⁶⁷⁰ Benjamin, “Über den Begriff der Geschichte,” 703.

⁶⁷¹ Agamben, *Il tempo che resta. Un commento alla Lettera ai romani*, 102.

⁶⁷² “Inoperable” as without the operation that exhausts potential in the work (opus): “Katargéo è un composto di argós, che deriva a sua volta dall’aggettivo argós, che significa «inoperante, non-in-opera (a-ergos), inattivo». Il composto vale quindi «rendo inoperante, disattivo, sospendo dall’efficacia» [...]” Ibid. 91.

destituzione in quanto identità: ebreo come non ebreo, gentile come non gentile. (È verisimilmente secondo un paradigma di questo genere che si potrebbe pensare una destituzione del dispositivo della cittadinanza.)⁶⁷³

The dispositif of global citizenship is but another form of a more universal identity within political pleroma. The profaning *katargesis* of messianic pleroma would be the impossibility of thinking cultural heritage as the accumulation of “Kulturgüter” in the archive and its actualisation in the service of a progress that is but the kenomatic *oikonomia* of an imagined eschatological pleroma in the empty time of the contemporary. It is the task of the new scholar of a critical concept of culture to blast free of such servitude. “Die Geschichte muß gegen den Strick gebürstet werden. Die Kulturgeschichte als solche fällt weg: sie muß in die Geschichte die Klassenkämpfe integriert werden.”⁶⁷⁴

⁶⁷³ Agamben, *L'uso dei corpi. Homo sacer, IV, 2*, 346. For the analysis of what Agamben calls “il taglio di Apelle” in relation to the Pauline unification of gentiles and Jews and thus Agamben’s reading of Nancy’s “trait d’union,” see Agamben, *Il tempo che resta. Un commento alla Lettera ai romani*, 52–55. Agamben nicely sums up his reading of the “people” with regards to Paul as follows: “Il popolo non è né il tutto né la parte, né maggioranza né minoranza. Esso è, piuttosto, ciò che non può mai coincidere con se stesso, né come tutto né come parte, ciò che infinitamente resta o resiste in ogni divisione, e – con buona pace di coloro che ci governano – non si lascia mai ridurre a una maggioranza o a una minoranza. E questo resto è la figura o la consistenza che il popolo prende nell’istanza decisiva – e, come tale, esso è l’unico soggetto politico reale.” Ibid. 58-59.

⁶⁷⁴ Benjamin, “Paralipomena - Über den Begriff der Geschichte,” 1240.

Coda – A tale of two biennials

The preceding pages have questioned concerning the digital cultural heritage archive and traced certain imaginaries relating to the archive, its technical foundation and instantiation and its political and academic strategies. These imaginaries have been formulated as springing from an archival promise – a promise of what can be attained with regard to knowledge and social organisation if only the archive achieved its fullness. These imaginaries have been conceptualised as the promise of archival and political plenitude as operating within the three-fold structure of access, evidence and control and along the three strategic axes of unity in diversity, collective identity and subjective creativity.

The described historical development found its point of culmination around 2002, when UNESCO could proclaim the “new legacy” of digital heritage. Even though the new legacy is now supposedly in place, safely preserved and accessible within admirable archives such as IARM.fm, the imaginaries relating to the oikonomia of archival and political plenitude continue to haunt. Although we now have the tools and the archives, the promise of plenitude is still operational as something to be fulfilled. This dissertation was prepared and written from March 2012 to August 2015. During that period, two instalments of the International Art Exhibition of *la Biennale di Venezia* were presented. Both carried titles and themes distinctly related to the present examination. The first, curated by Massimiliano Gioni in 2013, was called *The Encyclopedic Palace* and was inspired by Italian-American artist Marino Auriti’s hopes to build a 136-story building across sixteen blocks in Washington D.C to contain all the world’s knowledge. The second, curated by Okwui Enwezor in 2015, is called *All the World’s Futures* and is “devoted to a fresh appraisal of the relationship of art and artists to the current state of things.”⁶⁷⁵ The title of the first should remind us of Wells’ *World Brain* and Otlet’s twin projects for a centralisation of all knowledge in a single edifice in a single world city.⁶⁷⁶ The title of the second

⁶⁷⁵ Enwezor, “All the World’s Futures.”

⁶⁷⁶ Cf. section 2.2.1. Auriti’s palace even shows certain aesthetic similarities to the palace envisioned by Hendrik Christian Andersen and Ernest Hébrard in collaboration with Otlet.

should evoke a conscious dynamic inversion of Resnais's title *Toute la mémoire du monde*.⁶⁷⁷ Instead of universal memory, it is now a question of all possible futures.

Although a model of Auriti's never constructed *Palazzo Enciclopedico* stood proud at the very beginning of the *Arsenale* exhibition, the edifice itself did not provide the theme for the biennial. Of interest was, rather, the imaginaries expressed in it: "the dream of universal, all-embracing knowledge" and the hope "to fashion an image of the world that will capture its infinite variety and richness."⁶⁷⁸ Gioni clearly considered the dreams of Auriti and his *semblables* as "delusions of omniscience" but nevertheless engaged with such delusions by acknowledging the biennial form in general and the 2013 Venice version in particular as based on "the impossible desire to concentrate the infinite worlds of contemporary art in a single place: a task that now seems as dizzyingly absurd as Auriti's dream."⁶⁷⁹

The archival oikonomia and its promise of pleroma are deemed absurd but persist, nonetheless. Clearly, acknowledging the absurdity of the dream of archival pleroma as an impossible desire does not prevent engagement with archival oikonomia. The catalogue formed "le cerveau de la Bibliothèque Nationale"⁶⁸⁰ in *Toute la mémoire du monde*, and at the 2013 biennial "Catalogs, collections, and taxonomies form the basis for many works on view [...]"⁶⁸¹ Furthermore, Gioni's own presentation of the exhibition seems almost like an index or catalogue with endless lists of participating names and works. Gioni presents the encyclopaedia of his exhibition in an almost feverish attempt to include everything in his archive, which reminds the reader of Blanchot's beautiful criticism of beautiful names:

"Inlassablement, nous édifions le monde, afin que la secrète dissolution, l'universelle corruption qui régit ce qui « est », soit oubliée au profit de cette cohérence de notions et d'objets, de rapport et de formes, claire, définie, ouvrage de l'homme tranquille, où le néant ne saurait s'infiltrer et

⁶⁷⁷ Cf. section 1.2.

⁶⁷⁸ Gioni, "The Encyclopedic Palace."

⁶⁷⁹ Ibid.

⁶⁸⁰ "Toute la mémoire du monde (scénario)," 71, cf. Section 1.3.1.

⁶⁸¹ Ibid.

où de beaux noms – tous noms sont beaux – suffisent à nous rendre heureux.”⁶⁸²

Gioni’s happy participation in the beautiful absurdity of fashioning a safe image of the world sprang from the desire to explore the “power of the imagination” inherent to these obsessions: The powerful imaginaries trying to establish relations between representations of organised knowledge and the complexity of the world, and between their ethopoietic and doxopoietic roles in “the representation and perception of the self” and “the subjective within the collective.” We have traced these imaginaries within the notion and the concept of the archive, from the beginning of the twentieth century to the convergence of technological development and the discourse of cultural heritage in the “new legacy” of digital heritage around the beginning of the new millennium. Further, we have described the desires and imaginaries related to the digital “thing” as we have located the multifaceted and ever elusive dance *en abyme* of the digital and its various manifestations in the concrete archive of *larm.fm*. Finally, we have explored the imaginaries within critical discourse of certain inherent emancipatory characteristics of specific archival orders.

For Gioni, the role of imagination in “the constant challenge of reconciling the self with the universe, the subjective with the collective, the specific with the general, and the individual with the culture of her time” seems “even more necessary and even more desperate” when faced with the current “constant flood of information,” “the blend of information, spectacle, and knowledge that is characteristic of the digital era.”⁶⁸³ The digital and its capacity for producing, transmitting and storing information truly appear to not only inspire but also necessitate new imaginaries.

Imagination as the creation of new and singular images seems be the *thing* for Gioni. Images serve to organise knowledge and shape our experience but “What room is left for internal images – for dreams, hallucinations and vision – in an era besieged by external ones? And what is the point of creating an image of the world when the world itself has become increasingly like an image?” It seems as though

⁶⁸² Blanchot, *L’entretien Infini*, 46. This happiness evoked by Blanchot would be an excellent description of the happiness that concludes *Toute la mémoire du monde*.

⁶⁸³ Gioni, “The Encyclopedic Palace.”

The Encyclopedic Palace and its multiple personal imaginary museums⁶⁸⁴ are intended to create new images to counter the ones externally imposed and predetermined. They should illustrate and examine “a condition we all share: we ourselves are media, channelling images, or at times even finding ourselves possessed by images.” We are all media and the dispositif has grown legs and started to walk. This condition seems unproblematic for Gioni as long as new images are created and the show goes on. The kenomatic operations of pleroma are fine as long as the empty operations of the contemporary are nourished with new images.

While Gioni’s introduction to his exhibition took Auriti’s 1955 patent filing as its historical point of departure, Enwezor chose the first Venice biennial in 1895, the year where Otlet and Lafontaine founded the *Institut International de Bibliographie* in order to establish their *Répertoire bibliographique universel*. Otlet and Lafontaine’s desires sprang from a decidedly internationalist aspiration of peaceful world government and, similarly, the first biennial at the *Giardini* was without national pavilions.⁶⁸⁵ Enwezor sees the Venice biennial as existing at the “confluence of many socio-political changes and radical historical ruptures across the fields of art, culture, politics, technology, and economics.”⁶⁸⁶ Just as Beniger argued that developments within what became computing “served to contain the control crisis of industrial society,”⁶⁸⁷ Enwezor seems to perceive the arrival of the Venice biennial as the response to a specific historical configuration: “[...] the institution of la Biennale di Venezia arrived on the world stage at a significant historic period, at a point when forces of industrial modernity, capital, emergent technologies, urbanization, and colonial regimes were remaking the global map and rewriting the rules of sovereignty.”⁶⁸⁸

The biennial rose out of a certain confluence, it bears its traces and it is uniquely suited to take account of what has happened since, i.e. the historical accumulation of those traces. *En exergue*, before the beginning of his text proper, Enwezor quotes the Angelus Novus-passage from thesis IX of “Über den Begriff der

⁶⁸⁴ The term “imaginary museum” is used both with regard to Auriti’s *Palazzo* and Cindy Sherman’s curatorial contribution.

⁶⁸⁵ They did, however, arrive in 1907.

⁶⁸⁶ Enwezor, “All the World’s Futures.”

⁶⁸⁷ Beniger, *The Control Revolution, Technological and Economic Origins of the Information Society*, 16, cf. Section 3.7.

⁶⁸⁸ Enwezor, “All the World’s Futures.”

Geschichte.” “Surveying these epic events from the vantage point of the current disquiet that pervades our time, one feels as if summoned by Paul Klee’s painting *Angelus Novus*.”⁶⁸⁹ Enwezor finds in the spectral *Angelus* the injunction to take account of the “State of things”: “How can the current disquiet of our time be properly grasped, made comprehensible, examined, and articulated?” Although no explicit reference is made, Enwezor is here decidedly Latourean. The exhibition should be considered a “Parliament of Forms,” a somewhat obvious reference to Latour’s concept of a Parliament of Things.⁶⁹⁰ This parliament is intended to *properly grasp* the historical complexity as accumulated in the present of the contemporary.

Section 3.8 criticised Latour’s use of the word “manage” as a means of control: “How do [things as assemblages] manage to bring in the relevant parties? How do they manage to bring in the relevant issues? What change does it make in the way people make up their mind to be attached to things?”⁶⁹¹ The Parliament of Things is such an assemblage of assemblies; it is a way of taking account of assemblages and assemblies and thus constitutes Latour’s way of rethinking the political as a more subtle control of relations far from such “simplifying” notions as power and revolution. For Enwezor, the Parliament of Forms is a way of delving into “the *contemporary* global reality as one of constant realignment, adjustment, recalibration, motility, shape-shifting.”⁶⁹² It is a mapping of relations as a way of giving evidence in order to, finally, obtain a controlling handle on chaos.

The parliament is not open to everyone, however, it is inhabited solely by the invited: “[...] the 56th Exhibition will solicit and privilege new proposals and works conceived specifically by invited artists [...]” but it will also “activate works that are already existing.” Both the new and the old are consigned alike within the realm of the contemporary but only according to the archontic power of the curator at whose feet the grid is brought in motion. In Enwezor’s words one can almost hear a spectral echo of Malraux at the Salle Pleyel: “Et dans cette salle, ce soir, nous pouvons dire sans ridicule : « Vous qui êtes ici, vous êtes la première génération d’héritiers de la

⁶⁸⁹ Ibid.

⁶⁹⁰ See for example Latour, *Nous n’avons jamais été modernes, essai d’anthropologie symétrique*, section 5.5.

⁶⁹¹ Latour, “From Realpolitik to Dingpolitik or How to Make Things Public,” 24.

⁶⁹² Enwezor, “All the World’s Futures,” my emphasis.

terre entière. »⁶⁹³ Those invited have the privilege of giving account of the global state of things. Those invited to the parliament of forms, “[t]hese projects, works, and voices, like an orchestra will occupy the spaces of the La Biennale and pre-occupy the time and thinking of the public.” The N of the biennial archive consigns the H of art to not only occupy space but *pre-occupy* the time and thinking of ISa’l.

Such a Parliament of Forms and its legal operation of a State of Things is, again, an empty operation, it is a kenomatic oikonomia: “a spatial and temporal manifestation that is relentlessly incomplete, structured by a logic of unfolding [...] It will be a dramatization of the space of the exhibition as a continuous, unfolding, unceasing live event.” Logically structured, unfolding but never complete, unceasingly live: kenomatic oikonomia. It aspires for pleroma in a grasp of “contemporary global reality” but, similar to Gioni, Enwezor seems to acknowledge that the eschatological end of time is not imminent but nonetheless operational in the empty, never-ending unfolding. A beautiful, or, rather, horrifying, example of this signature live-ness is the live reading of Marx’s *Capital*. The work is celebrated for its ability to captivate thinkers and artists and “In *All the World’s Futures*, the aura, effects, and specters of Capital will be felt in one of the most ambitious explorations of this concept and term.” The live readings will “gradually expand into recitals of works, songs, librettos, readings of scripts, discussions, plenaries [...]” and in the room the artists come and go, talking of Michelangelo. “On n’hérite jamais sans s’expliquer avec du spectre et, dès lors, avec plus d’un spectre”⁶⁹⁴, Derrida wrote, but the injunction is to choose and affirm, not to let the multiple voices recede into cacophony.

An inspiration for this “epic display of orality” is the initial injunction for a full reading of *Capital* in *Lire le Capital*: “But some day it is essential to read *Capital* to the letter. To read the text itself, complete, all four volumes, line by line [...]”⁶⁹⁵ Finally, learning how to read *Capital*. To the letter! Freud’s ecstatic dream where “l’origine alors parle d’elle-même. L’arkhé paraît à nu, sans archive. Elle se présente et se commente elle-même. « Les pierres parlent ! » Au présent. Anamnèse sans

⁶⁹³ Malraux, “Les Conquérants - Postface,” 273, cf. Section 5.8.

⁶⁹⁴ Derrida, *Spectres de Marx, l’État de la dette, le travail du deuil et la nouvelle Internationale*, 46. See section 1.1.4.

⁶⁹⁵ Althusser, Balibar, and Rancière, *Lire le capital 1*, 10. quoted in translation in Enwezor, “All the World’s Futures.”

hypomnèse !”⁶⁹⁶ Enwezor only mentions Althusser and Balibar among the authors. This would be a reference to the second edition from 1968. In the first edition from 1965, there were, of course, others, Rancière prominent among them. Along with Pierre Macharey and Robert Establet, Rancière’s contribution had been removed from the second edition. They were no longer invited to the parliament deciding on the state of Marx. After 1968, Rancière famously distanced himself from Althusser, but he also distanced himself from the book, stating “What arrogance! Who were we to tell people how to read Marx?”⁶⁹⁷ Who were they to provide the N, or act the A as incorporation of N, for the otherwise *ethopoietic* practice of hupomnemata?

Just as Ernst criticised Foucault for writing “archive” but practicing “library,”⁶⁹⁸ one could criticise Enwezor for writing Benjamin but practicing Latour. In the manner described by Blanchot with regard to Malraux: The disappearance of prayer made painting an art within the reach of our eyes, it made the works accessible for appraisal, for a taking into account.⁶⁹⁹ Public access to the pre-established evidence of The Parliament of Things should make it possible to control the relentlessly incomplete logic of the unfolding of the world. But the wrenching from their erstwhile cultic context of auratic objects liberates only to re-inscribe them as storable resource (*Bestand*) in the contemporary cult of universal cultural heritage or, in the case of *la Biennale*, contemporary art.

Benjamin himself seems now to have become such a resource, one accessible for contemporary creative and innovative exploitation in the biennial (short) circuit.⁷⁰⁰ As argued in section 5.9, Benjamin’s injunction was exactly not a taking account of the state of things, an index or accumulation, but a stepping back from “the contemporary global reality” as the catastrophe of the status quo. This is the sad irony of Enwezor’s title: taking account of the state of things without the

⁶⁹⁶ Derrida, *Mal d’archive, une impression freudienne*, 144, cf. Section 5.2.

⁶⁹⁷ Rancière, conversation in person.

⁶⁹⁸ Cf. section 1.1.2.

⁶⁹⁹ Cf. section 5.9.

⁷⁰⁰ One of the more fortunate instances of Lacanian wordplay was his rendition of the current prevalent discourse, or what would be “le discours courant” in French, as “le disque-ourcourant,” see Lacan, *Le Séminaire. Livre XX – Encore, 1972-1973*, 35–36. The analytical discourse with its construction of new master signifiers is exactly what breaks with the empty repetition of short-circuiting discourse. Similarly, the presented notion of an archaeology of the present is exactly what allows the diagnosis to establish a break with the status quo, although the presented notion of profanation disallows the reestablishment of master signifiers.

desire to break free from them has little to do with any future worthy of the name. In contrast to Enwezor's Latoureaan appropriation of Benjamin, the present dissertation has presented Benjamin's stepping back as an archaeology of the present to form the basis for a diagnosis of the present with the explicit goal of profanation, of breaking with the contemporary in order to bring about a time to come. But when *all* the world's futures are inscribed in the contemporary, little hope is left. In Enwezor's consignation, the Angelus Novus sees itself among the ruins. Its desire to turn back and save the ruins – to profane them by bringing them out of the operations of the re-sacralising winds of progress, which fix the ruins as readily available *Bestand* in the temporal conjunction of the contemporary – is itself re-inscribed in the kenomatic operation of a progress without future.

Two lessons should be learnt from these two biennial presentations. First, it is not necessary to believe the imaginaries of pleroma for them to be kenomatically operational. Like Gioni, UNESCO doesn't believe in pleroma. The World Heritage listing is clearly and explicitly a selection that will never consign everything. And no one, apart from possibly Chris Anderson, would believe that the full evidence of digital access and the related possibilities for control would actually manifest themselves. As Gioni pointed out, such imaginaries are absurd, Baudrillard even called them obscene,⁷⁰¹ but they remain operational nonetheless. Within the oikonomia of pleroma, plethora will know only kenoma.

Second, it is distinctly possible and all too prevalent to evoke profanation in the service of re-sacralisation. In Benjamin, the ruins are not those of Riegl's "Alterswert" open for appraisal and aesthetic pleasure to the cult of the monument. Nor are they, as in Hegel, the necessary means for the eschatological pleroma of the *Weltgeist* as "die substantielle Bestimmung, der absolute Endzweck, oder was

⁷⁰¹ "Si tout cela était vrai, nous serions vraiment dans l'obscénité, c'est-à-dire dans la vérité nue, dans la prétention folle des choses à exprimer leur vérité. Heureusement, leur destin nous protège car au comble des choses, lorsqu'elles vont se vérifier, toujours elles se réversibilisent, et retombent dans le secret." Baudrillard, *L'autre Par Lui-Même*, 32. "Le discours de vérité est tout simplement impossible. Il s'échappe à lui-même. Tout s'échappe à soi-même, tout se joue de sa propre vérité, tout s'échappe du côté de la séduction. La rage de déshabiller la vérité, d'arriver à la vérité nue, celle qui hante tous les discours d'interprétation, la rage obscène de lever le secret est exactement proportionnelle à l'impossibilité d'y arriver jamais." Ibid. 64.

dasselbe ist, [...] das wahrhafte Resultat der Weltgeschichte [...]”⁷⁰² And they are not the fragments to be assembled in an account of the contemporary state of things. The heart-wrenching sadness of the Angelus springs from its impotence to derail this short-circuiting train of history. The power for such derailment belongs to messianic restitution of the past, not in eschatological but in messianic pleroma. And such restitution is the relation of every instant to the messianic community which knows no conjunction or disjunction, no “trait d’union,” and in which all legal and social presuppositions are rendered inoperable,⁷⁰³ i.e. where the dispositival separation of potential and actualisation, of *zoe* and *bios*, is no longer possible and only the Form-of-Life⁷⁰⁴ as pure means without end remains.⁷⁰⁵

It seems that it is exceedingly difficult to avoid participation in the oikonomia of pleromatic imaginaries and not to re-inscribe the newly profaned under a new determination governing potentiality by consignation in the archival State of things. Both biennials rightly ask concerning the archive and its relation to the future but they fail to actually sufficiently distance themselves from the operations in question and simply end up illustrating them. And not just by the images they contain. The biennials themselves become an image of the kenomatic operation of pleroma in the contemporary. Their investigations become symptoms instead of a diagnosis.

In the *kenomatic* operations of eschatological *pleroma* in the contemporary there seems, indeed, always to be time to wonder “Do I dare” and, “Do I dare?” Time to turn back and descend the stair, to count the steps that lead to the future although such counting and accounting re-inscribes all the world’s futures into the empty operations of the contemporary in which the word “future” only operates its own foreclosure. We should, rather, seek a different time, the time that remains, the time

⁷⁰² Georg W F. Hegel, *Vorlesungen über die Philosophie der Weltgeschichte Die Vernunft in der Geschichte*, 80, see Löwy, *Fire Alarm: Reading Walter Benjamin’s “On the Concept of History,”* 64–65.

⁷⁰³ See Agamben, *Il regno e la gloria. Per una genealogia teologica dell’economia e del governo. Homo sacer*, 271.

⁷⁰⁴ “Noi abbiamo pensato finora la politica come ciò che sussiste grazie alla divisione e alla articolazione della vita, come una separazione della vita da se stessa che la qualifica di volta in volta come umana, animale o vegetale. Si tratta ora di pensare invece una politica della forma-di-vita, della vita indivisibile dalla sua forma.” Agamben, *L’uso dei corpi. Homo sacer, IV, 2*, 263.

⁷⁰⁵ Cf. “la sfera dei mezzi puri [...] (cioè dei mezzi che, pur restando tali, si emancipano dalla loro relazione a un fine) come sfera propria della politica.” Agamben, “Avvertenza,” 10. We could translate the emancipation from a relation to an end as the emancipation from any possible re-inscription as *Bestand*.

where the question “Do I dare disturb the universe?” can emphatically be answered:
By all means, and as pure means, let us disturb the universe.

Bibliography

- Agamben, Giorgio. "Avvertenza." In *Mezzi Senza Fine : Note Sulla Politica*, 9–10. Torino: Bollati Borlinghieri, 2008.
- — —. *Che cos'è il contemporaneo?* Roma: Nottetempo, 2008.
- — —. *Che cos'è un dispositivo?* Roma: Nottetempo, 2006.
- — —. "Che cos'è un Popolo?" In *Mezzi Senza Fine : Note Sulla Politica*, 30–34. Torino: Bollati Borlinghieri, 2008.
- — —. *Dell'utilità e degli inconvenienti del vivere fra spettri*. Venezia: Corte del Fontego, 2011.
- — —. *Homo Sacer: Il Potere Sovrano e La Nuda Vita*. Piccola Biblioteca Einaudi. N. S., Filosofia, 305. Torino: Piccola biblioteca Einaudi, 2005.
- — —. *Il regno e la gloria. Per una genealogia teologica dell'economia e del governo. Homo sacer*. Vicenza: Neri Pozza, 2007.
- — —. *Il tempo che resta. Un commento alla Lettera ai romani*. Torino: Bollati Boringhieri, 2000.
- — —. *L'uso dei corpi. Homo sacer, IV, 2*. Vicenza: Neri Pozza, 2014.
- — —. *Profanazioni*. Roma: Nottetempo, 2005.
- Aiden, Erez, and Jean-Baptiste Michel. *Uncharted: Big Data as a Lens on Human Culture*. New York: Riverhead book, 2013.
- Alter, Alexandra. "Your E-Book Is Reading You." *The Wall Street Journal*, July 19, 2012.
<http://www.wsj.com/articles/SB10001424052702304870304577490950051438304>.
- Althusser, Louis. "Idéologie et Appareils Idéologiques d'État." In *Positions*, 67–125. Paris: Editions Sociales, 1976.
- Althusser, Louis, Étienne Balibar, and Jacques Rancière. *Lire le capital 1*. Petite collection Maspero. François Maspero, 1973.

- Andersen, Hendrik Christian, and Ernest M Hébrard. *Creation of a World Centre of Communication*. Paris, 1913.
- Anderson, Chris. "The End of Theory: The Data Deluge Makes the Scientific Method Obsolete." *WIRED*, 6 2008.
http://www.wired.com/science/discoveries/magazine/16-07/pb_theory.
- Andreasen, Torsten. "Constructing the contemporary via digital cultural heritage." *Fibreculture Journal* 24 (2015): 33–58.
- — —. "Det Stedløse Fællesskab – Utopiske Konstruktioner hos Nancy, Blanchot og Agamben." *Øjeblikket*, no. 50 (2009).
- — —. "Digital humanities and the elusive "thing"." *MedieKultur: Journal of media and communication research; Vol 30, No 57* (2014).
- — —. "Det digitale kulturarvsarkiv – medie og dispositiv." *Radioverdener: Auditiv kultur, historie og arkiver*, edited by Erik Granly Jensen, Jakob Kreutzfeldt, Morten Michelsen & erik Svensen, 243-263. Aarhus: Aarhus Universitetsforlag, 2015.
- Assmann, Aleida. "Canon and Archive." In *A Companion to Cultural Memory Studies*, edited by Astrid Erll, Ansgar Nünning, and Sara B. Young, 97–108. Berlin: de Gruyter, 2010.
- Assmann, Jan. "Communicative and Cultural Memory." In *A Companion to Cultural Memory Studies*, edited by Astrid Erll, Ansgar Nünning, and Sara B. Young, 109–18. Berlin: de Gruyter, 2010.
- Augarten, Stan. *Bit by Bit: An Illustrated History of Computers*. New York: Ticknor & Fields, 1984.
- Azoulay, Ariella. "Archive." *Political Concepts*, 2015.
<http://www.politicalconcepts.org/issue1/archive/>.
- — —. *The Civil Contract of Photography*. New York: Zone Books, 2008.
- Baran, Paul. "On Distributed Communications: I. Introduction to Distributed Communications Networks." Santa Monica, CA: RAND Corporation, 1964.
http://www.rand.org/pubs/research_memoranda/RM3420.
- Barthes, Roland. *La Chambre Claire*. Paris: Editions de l'Étoile, Gallimard, Le Seuil, 1980.

- Bateson, Gregory. *Steps to an Ecology of Mind, Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Reprint. Aronson, 1987.
- Baudrillard, Jean. *L'autre Par Lui-Même*. Galilée, 1987.
- Bemer, Robert W. "How to Consider a Computer." *Automatic Control Magazine*, March 1957.
- Beniger, James R. *The Control Revolution, Technological and Economic Origins of the Information Society*. Cambridge, Mass: Harvard University Press, 1986.
- Benjamin, Walter. *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit*. Edited by Burkhardt Lindner. Berlin: Suhrkamp Verlag, 2013.
- — —. "Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit - Dritte Fassung." In *Gesammelte Schriften, Band I · 2*, 471–508. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. *Das Passagen-Werk 1 – Gesammelte Schriften Band V · 1*. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Eduard Fuchs, Der Sammler und der Historiker." In *Gesammelte Schriften, Band II · 2*, 465–505. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Ein Deutsches Institut Freier Forschung." In *Gesammelte Schriften, Band III*, 518–26. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Erfahrung und Armut." In *Gesammelte Schriften, Band II · 2*, 213–19. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Paralipomena - Über den Begriff der Geschichte." In *Gesammelte Schriften, Band I · 3*, 1223–66. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Über den Begriff der Geschichte." In *Gesammelte Schriften, Band I · 2*, 691–704. Frankfurt am Main: Suhrkamp Verlag, 1991.
- — —. "Zentralpark." In *Gesammelte Schriften, Band I · 2*, 655–90. Frankfurt am Main: Suhrkamp Verlag, 1991.
- Bennett, Jane. *Vibrant Matter, a Political Ecology of Things*. Duke University Press, 2010.
- Berners-Lee, Tim. *Weaving the Web, the Original Design and Ultimate Destiny of the World Wide Web by Its Inventor*. HarperSanFrancisco, 1999.

- Berry, David M., ed. *Understanding Digital Humanities*. Basingstoke: Palgrave Macmillan, 2012.
- Berry, David M., M Dieter, B Gottlieb, and L Voropai. *Imaginary Museums, Computationality & the New Aesthetic*. Berlin: Transmediale, 2013.
- Blanchot, Maurice. "Le Musée, l'Art et Le Temps." In *L'Amitié*, 21–61. Paris: Gallimard, 1981.
- — —. *L'entretien Infini*. Paris: Gallimard, 1969.
- — —. "Les Grands Réducteurs." In *L'Amitié*, 74–86. Paris: Gallimard, 1981.
- Borges, Jorge Luis. *Otras inquisiciones*. Obras completas de Jorge Luis Borges. Buenos Aires: Emecé, 1960.
- Brecht, Bertolt. "Der Rundfunk als Kommunikationsapparat." In *Gesammelte Werke 18 - Schriften zur Literatur und Kunst I*, 127–34. Frankfurt am Main: Suhrkamp, 1982.
- Brossat, Alain. *Le grand dégoût culturel*. Paris: Seuil, 2008.
- Bush, Vannevar. "As We May Think." *The Atlantic*, July 1945.
<http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/>.
- Carou, Alain. "Toute la mémoire du monde, entre la commande et l'utopie." *1895. Mille huit cent quatre-vingt-quinze. Revue de l'association française de recherche sur l'histoire du cinéma*, no. 52 (2007): 116–40.
- Carr, David. "For 'House of Cards,' Using Big Data to Guarantee Its Popularity." *The New York Times*, February 24, 2013, sec. Business Day / Media & Advertising. <http://www.nytimes.com/2013/02/25/business/media/for-house-of-cards-using-big-data-to-guarantee-its-popularity.html>.
- Carr, Nicholas. *The Big Switch, Rewiring the World, from Edison to Google*. New York: Norton & Co, 2008.
- Ceruzzi, Paul E. *A History of Modern Computing*. 2. ed. London, Eng: Cambridge, Mass, 2003.
- Chastel, André, and Jean-Pierre Babelon. *La notion de patrimoine*. Paris: Liana Levi, 1994.
- Chirac, Jacques, Aleksander Kwasniewski, Gerhard Schroeder, Silvio Berlusconi, José Luis Rodriguez Zapatero, and Ferenc Gyurcsany. "Lettre Des Chefs

- d'État et de Gouvernement Au Président de La Commission Européenne, Monsieur José Manuel Durão Barroso," April 28, 2005. http://www.assemblee-nationale.fr/13/europe/rap-info/i4450.asp#P570_62086.
- Choay, Françoise. *L'Allégorie du patrimoine*. Nouv. éd. rev. et corr. Paris: Seuil, 2007.
- — —. "« Trente ans après »." In *Le culte moderne des monuments: Son essence et sa genèse*, by Alois Riegl, 21–22, Édition revue et augmentée. Paris: Seuil, 2013.
- Chun, Wendy Hui Kyong. *Control and Freedom, Power and Paranoia in the Age of Fiber Optics*. Cambridge, Mass: MIT Press, 2006.
- — —. *Programmed Visions, Software and Memory*. Cambridge, Mass: MIT Press, 2011.
- Chun, Wendy Hui Kyong. "The Enduring Ephemeral, or the Future Is a Memory." *Critical Inquiry* 35, no. 1 (September 2008): 148–71.
- Church, Alonzo. "Review: A. M. Turing, On Computable Numbers, with an Application to the Entscheidungsproblem." *J. Symbolic Logic*, no. 1 (March 1937): 42–43.
- Clough, G. Wayne. *Best of Both Worlds: Museums, Libraries, and Archives in the Digital Age*. Smithsonian Books, 2013.
- Cohen, Daniel J. "The Future of Preserving the Past." *CRM: The Journal of Heritage Stewardship* 2, no. 2 (Summer 2005): 6–19.
- Commission of the European Communities. "COM(2008) 513 Final – Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Europe's Cultural Heritage at the Click of Mouse, Progress on the Digitisation and Online Accessibility of Cultural Material and Digital Preservation Across the EU." Brussels: Commission of the European Communities, August 11, 2008.
- Darnton, Robert. "A Library Without Walls." *NYRblog*, October 4, 2010. <http://www.nybooks.com/blogs/nyrblog/2010/oct/04/library-without-walls/>.
- — —. "A World Digital Library Is Coming True!" *The New York Review of Books*, May 22, 2014. <http://www.nybooks.com/articles/archives/2014/may/22/world-digital-library-coming-true/>.

- — —. “The National Digital Public Library Is Launched!” *The New York Review of Books*, April 25, 2013.
<http://www.nybooks.com/articles/archives/2013/apr/25/national-digital-public-library-launched/>.
- de la Durantaye, Leland. *Giorgio Agamben, a Critical Introduction*. Stanford University Press, 2009.
- Deleuze, Gilles. *Différence et Répétition*. Epiméthée. Paris: Presses universitaires de France, 1968. <http://catalogue.bnf.fr/ark:/12148/cb42361731z>.
- — —. *Foucault*. Paris: Minuit, 1986.
- — —. *La philosophie critique de Kant*. 7. éd. Paris: Presses Universitaires de France, 1963.
- — —. “La Vie Comme œuvre D’art.” In *Pourparlers*, 129–38. Paris: Editions de Minuit, 1990.
- — —. *L’image-temps, cinéma 2*. Paris: Editions de minuit, 1985.
- — —. *Logique du sens*. Collection critique. Paris: Les Éditions de Minuit, 1969.
- — —. *Nietzsche et la philosophie*. Paris: PUF, 1962.
- — —. “Post-Scriptum sur les sociétés de contrôle.” In *Pourparlers*, 240–47. Paris: Editions de Minuit, 1990.
- — —. “Qu’est-ce que l’acte de création.” In *Deux Régimes de Fous*, 291–302, 2003.
- — —. “Qu’est-ce qu’un Dispositif.” In *Deux Régimes de Fous*, 316–25, 2003.
- Deleuze, Gilles, and Félix Guattari. *Qu’est-ce que la philosophie?* Paris: Editions de minuit, 1991.
- Derrida, Jacques. *De la grammatologie*. Paris: Les Éditions de Minuit, 1967.
- — —. “Force et Signification.” In *L’écriture et La Différence*, 9–49. Collection “Points.” Paris: Éditions du Seuil, 1967.
- — —. “La pharmacie de Platon.” In *La dissémination*, Reprint., 69–197. Seuil, 1972.
- — —. *L’autre cap suivi de La démocratie ajournée*. Paris: Éditions de Minuit, 1991.
- — —. *La Voix et Le Phénomène*. Paris: Presses universitaires de France, 1967.
- — —. *Mal d’archive, une impression freudienne*. Paris: Galilée, 1995.

- — —. *Papier machine, le ruban de machine à écrire et autres réponses*. Paris: Galilée, 2001.
- — —. *Spectres de Marx, l'État de la dette, le travail du deuil et la nouvelle Internationale*. Galilée, 1993.
- Diderot, Denis, and Jean le Rond d'Alembert. "Encyclopédie." In *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers. Tome cinquième, Discussion-Esquinancie*. Briasson etc: Samuel Faulche, 1755.
- Didi-Huberman, Georges. "Knowledge: Movement (The Man Who Spoke to Butterflies)." In *Aby Warburg and the Image in Motion*, by Philippe-Alain Michaud. Cambridge & London: MIT Press, 2004.
- — —. *L'album de l'art à l'époque du musée imaginaire*. Paris: Hazan - Louvre éditions, 2013.
- — —. *L'oeil de l'histoire : Tome 3, Atlas ou le gai savoir inquiet*. Paris: Les Editions de Minuit, 2011.
- — —. *L'oeil de l'histoire : Tome 4, Peuples exposés, peuples figurants*. Paris: Les Editions de Minuit, 2012.
- — —. *Phalènes - Essais sur l'apparition : Tome 2*. Paris: Les Editions de Minuit, 2013.
- — —. "Savoir-Mouvement (L'Homme Qui Parlait Aux Papillons)." In *Aby Warburg et L'image En Mouvement*, by Philippe-Alain Michaud, 8–20. Paris: Macula, 1998.
- Digitaliseringsudvalget. "Digitalisering Af Kulturarven - Endelig Rapport Fra Digitaliseringsudvalget." Kulturministeriet, 2009.
<http://kum.dk/servicemenu/publikationer/2009/digitalisering-af-kulturarven/>.
- Doniol-Valcroze, Jacques. "La Prisonnière Lucia." *Cahiers Du Conéma*, décembre 1957.
- Dyson, George. *Turing's Cathedral, the Origins of the Digital Universe*. Allen Lane, 2012.
- Ellul, Jacques. *La technique, ou, L'enjeu du siècle*. Édition : [2e éd. rev.]. Paris: Economica, 2008.
- Enwezor, Okwui. "All the World's Futures." *La Biennale Di Venezia*, 2015.
<http://www.labiennale.org/en/art/exhibition/enwezor/>.

- Eramo, Marco D'. "UNESCOcide." *New Left Review*, II, no. 88 (August 2014): 47–53.
- Ernst, Wolfgang. "Cultural Archive versus Technomathematical Storage." In *The Archive in Motion*, edited by Eivind Røssaak, 53–73. Oslo: Novus Press, 2010.
- — —. *Das Rumoren Der Archive: Ordnung Aus Unordnung*. Merve, 2002.
- — —. *Digital Memory and the Archive*. Edited by Jussi Parikka. Minneapolis: University of Minnesota Press, 2013.
- — —. "Dis/continuities: Does the Archive Become Metaphorical in Multi-Media Space?" In *New Media, Old Media: A History and Theory Reader*, edited by Wendy Hui Kyong Chun and Thomas Keenan, 105–24. New York: Routledge, 2006.
- — —. *Im Namen von Geschichte : Sammeln, Speichern, Er/Zählen : Infrastrukturelle Konfigurationen Des Deutschen Gedächtnisses*. München: Fink, 2003.
- Europeana. "Business Plan - 2013," 2013.
- European Commission. "European Commission steps up efforts to put Europe's memory on the web via a "European Digital Library," 2006.
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/253>
 (accessed June 15, 2015).
- European Commission. "HORIZON 2020 - WORK PROGRAMME 2014 – 2015 - 13. Europe in a Changing World – Inclusive, Innovative and Reflective Societies," 2014.
http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-societies_en.pdf.
- European Council. "European Content in Global Networks: Coordination Mechanisms for Digitisation Programmes (Lund Principles)." European Council, 2001. ftp://ftp.cordis.europa.eu/pub/ist/docs/digicult/lund_principles-en.pdf.
- European Parliament. "i2010: Towards a European Digital Library," 2007.
<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A6-2007-0296+0+DOC+PDF+V0//EN>.

- Florance, Ken. "Announcing the Netflix Open Connect Network." *Netflix US & Canada Blog*, June 4, 2012. <http://blog.netflix.com/2012/06/announcing-netflix-open-connect-network.html>.
- Forlani, Remo. *Toujours vif et joyeux !: Histoire vraie*. Édition : Denoël. Paris: Denoël, 2003.
- Foucault, Michel. "À propos de la généalogie de l'éthique : un aperçu du travail en cours." In *Dits et écrits II, 1976-1988*, 1202–30. Quarto. Paris: Gallimard, 2001.
- — —. *L'Archéologie Du Savoir*. Paris: Gallimard, 1969.
- — —. "L'écriture de soi." In *Dits et écrits II, 1976-1988*, 1234–49. Quarto. Paris: Gallimard, 2001.
- — —. *Le courage de la vérité - Cours au Collège de France (1983-1984)*. Paris: Seuil, 2009.
- — —. "Le jeu de Michel Foucault." In *Dits et écrits II, 1976-1988*, 298–329. Quarto. Paris: Gallimard, 2001.
- — —. *Les Mots et Les Choses – Une Archéologie Des Sciences Humaines*. Paris: Gallimard, 1966.
- — —. "Le sujet et le pouvoir." In *Dits et écrits II, 1976-1988*, 1041–62. Quarto. Paris: Gallimard, 2001.
- — —. *Naissance de La Biopolitique : Cours Au Collège de France (1978-1979)*. Hautes études. Paris: Gallimard, 2004.
- — —. "Qu'est-ce que les Lumières ? 1." In *Dits et écrits II, 1976-1988*, 1381–97. Quarto. Paris: Gallimard, 2001.
- — —. "Qu'est-ce que les Lumières ? 2." In *Dits et écrits II, 1976-1988*, 1498–1507. Quarto. Paris: Gallimard, 2001.
- — —. "Sur les façons d'écrire l'histoire." In *Dits et écrits I, 1954-1975*, 613–28. Quarto. Paris: Gallimard, 2001.
- — —. "Theatrum philosophicum." In *Dits et écrits I, 1954-1975*, 943–67. Quarto. Paris: Gallimard, 2001.
- Galison, Peter. "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision." *Critical Inquiry* 21, no. 1 (October 1, 1994): 228–66.

- Galloway, Alexander R. "Black Box, Black Bloc." In *Communization and Its Discontents: Contestation, Critique, and Contemporary Struggles*, edited by Benjamin Noys, 237–49. Minor Compositions. New York: Automeia, 2011.
- — —. "Language Wants To Be Overlooked: On Software and Ideology." *Journal of Visual Culture* 5.3 (2006): 315–331.
- — —. "Love of the Middle." In *Excommunication, Three Inquiries in Media and Mediation*, by Alexander R. Galloway, Eugene Thacker, and McKenzie Wark. Trios. Chicago & London: The University of Chicago Press, 2013.
- — —. "Networks." In *Critical Terms for Media Studies*, 280–96. Chicago & London: The University of Chicago Press, 2010.
- — —. *Protocol, How Control Exists after Decentralization*. Cambridge, Mass: MIT Press, 2004.
- — —. *The Interface Effect*. Cambridge, UK: Polity Press, 2012.
- — —. "The Unworkable Interface." *New Literary History* 39, no. 4 (2008): 931–55.
- Galloway, Alexander R., and Eugene Thacker. *The Exploit, a Theory of Networks*. Minneapolis: University of Minnesota Press, 2007.
- Gantz, John, and David Reinsel. "Extracting Value from Chaos." Framingham, MA: IDC, 2011.
- Garcia, Tristan. *Form and Object: A Treatise on Things*. Edinburgh: Edinburgh University Press, 2014.
- Geddes, Patrick. *Cities in Evolution, an Introduction to the Town Planning Movement and to the Study of Civics*. London: Williams & Norgate, 1915.
- Gibson, James J. *The Ecological Approach to Visual Perception: Classic Edition*. Classic ed edition. New York; Hove, England: Psychology Press, 2014.
- Gillespie, Tarleton. "The Politics of 'Platforms.'" *New Media Society*, no. 12 (2010): 347–64.
- Gioni, Massimiliano. "The Encyclopedic Palace." *La Biennale Di Venezia*, 2013. <http://www.labiennale.org/en/art/archive/55th-exhibition/gioni/>.
- Gitelman, Lisa. *Paper Knowledge, toward a Media History of Documents*. Sign, Storage, Transmission. Duke University Press, 2014.
- Hansen, Mogens Herman. *The Athenian Democracy in the Age of Demosthenes, Structure, Principles and Ideology*. <<The >>ancient World. Blackwell, 1991.

- Hansen, Mark B. n. *Feed-Forward: On the Future of Twenty-First-Century Media*. Chicago ; London: University of Chicago Press, 2015.
- Harman, Graham. *Tool-Being, Heidegger and the Metaphysics of Objects*. Open Court Publishing Company, 2002.
- Hayles, Katherine, and Jessica Pressman. *Comparative Textual Media, Transforming the Humanities in the Postprint Era*. Minneapolis: University of Minnesota Press, 2013.
- Hayles, N. Katherine. *How We Think: Digital Media and Contemporary Technogenesis*. University of Chicago Press, 2012.
- Heaney, Michael, and Catriona Jeanne Cannon, eds. *Transforming the Bodleian*. Berlin: Walter de Gruyter & Co, 2012.
- Hegel, Georg W. F. *Vorlesungen über die Philosophie der Weltgeschichte Die Vernunft in der Geschichte*. 6th ed. Philosophische Bibliothek. Felix Meiner Verlag, 2013.
- Heidegger, Martin. "Das Ding." In *Vorträge und Aufsätze*, 157–80. Günther Neske, 1954.
- . "Die Frage nach der Technik." In *Vorträge und Aufsätze*, 9–40. Günther Neske, 1954.
- . *Parmenides*. Frankfurt am Main: Vittorio Klostermann, 1982.
- . *Sein Und Zeit*. Tübingen: Max Niemeyer Verlag, 2001.
- . "Zur Frage nach der Bestimmung der Sache des Denkens (30. Oktober 1965)." In *Reden und andere Zeugnisse eines Lebensweges 1910-1976*, 620–33. Frankfurt am Main: Vittorio Klostermann, 2000.
- Heinrich, Helen, and Eric Willis. "Automated Storage and Retrieval System: A Time-Tested Innovation." In *2012 IFLA Conference Proceedings*, 2012. <http://conference.ifla.org/past-wlic/2012/102-heinrich-en.pdf>.
- Heyman, Stephen. "A Museum at the Forefront of Digitization." *The New York Times*, May 13, 2015. <http://www.nytimes.com/2015/05/14/arts/international/a-museum-at-the-forefront-of-digitization.html>.
- Hilbert, Martin, and Priscila López. "The World's Technological Capacity to Store, Communicate, and Compute Information." *Science* 332, no. 6025 (April 1, 2011): 60–65.

- Hillis, Ken, Michael Petit, and Kylie Jarrett. *Google and the Culture of Search*. Routledge, 2012.
- Huyssen, Andreas. "Present Pasts: Media, Politics, Amnesia." *Public Culture* 12, no. 1 (2000): 21–38.
- Iriye, Akira. *Global and Transnational History: The Past, Present, and Future*. Basingstoke: Palgrave Macmillan, 2012.
- Ishaghpour, Youssef. *D'une Image à L'autre. La Représentation Dans Le Cinéma D'aujourd'hui*. Paris: Denoël/Gonthier, 1982. <http://www.decitre.fr/livres/d-une-image-a-l-autre-9782282302157.html>.
- Jameson, Fredric. *The Geopolitical Aesthetic, Cinema and Space in the World System*. Indiana University Press, 1992.
- Jockers, Matthew Lee. *Macroanalysis, Digital Methods and Literary History*. Urbana, IL: University of Illinois Press, 2013.
- Johnston, John. "Technology." In *Critical Terms for Media Studies*, 280–96. Chicago & London: The University of Chicago Press, 2010.
- Kämper, Birgit, and Thomas Tode. *Chris Marker: Filmessayist*. München: CICIM, 1997.
- Kiesler, Frederick. *Contemporary Art Applied to the Store and Its Display*. New York: Brentano's, 1930.
- Kirschenbaum, Matthew G. *Mechanisms, New Media and the Forensic Imagination*. Cambridge, Mass: MIT Press, 2008.
- Kitchin, Rob. *The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences*. Thousand Oaks, CA: SAGE Publications Ltd, 2014.
- Kittler, Friedrich. *Grammophon, Film, Typewriter*. Brinkmann & Bose, 1986.
- — —. "Martin Heidegger, Medien Und Die Götter Griechenlands - Ent-Fernen Heißt Die Götter Nähern." In *Die Wahrheit Der Technischen Welt: Essays Zur Genealogie Der Gegenwart*, 377–90. Berlin: Suhrkamp, 2013.
- — —. "Memories Are Made of You." In *Schrift, Medien, Kognition. Über Die Exteriorität Des Geistes*, edited by Peter Koch and Sybille Krämer, 187–203. Stauffenburg verlag, 1997.
- — —. *Optische Medien: Berlinger Vorlesung 1999*. Internationaler Merve Diskurs, 250. Berlin: Merve, 2002.

- — —. "There Is No Software." [Http://www.ctheory.net/articles.aspx?id=74](http://www.ctheory.net/articles.aspx?id=74), 1995.
- — —. "Towards an Ontology of Media." *Theory, Culture & Society* 26, no. 2–3 (March 1, 2009): 23–31.
- Krajewski, Markus. *Zettelwirtschaft, die Geburt der Kartei aus dem Geiste der Bibliothek*. Kulturverlag Kadmos, 2002.
- Lacan, Jacques. *LE SEMINAIRE. Livre II – Le moi dans la théorie de Freud et dans la technique de la psychanalyse, 1954-1955*. Paris: Seuil, 1978.
- — —. *LE SEMINAIRE. Livre VII – L'éthique de la psychanalyse, 1959-1960*. Paris: Seuil, 1986.
- — —. *LE SEMINAIRE. Livre XX – Encore, 1972-1973*. Paris: Seuil, 1975.
- — —. "Le Stade Du Miroir Comme Formateur de La Fonction Du Je." In *Ecrits I*, 89–97. Paris: Editions du Seuil: Points, 1966.
- Lafontaine, Henri. "Une Mémoire Mondiale." *La Revue: Ancienne Revue Des Revues* 14 (1903): 201–8.
- Latour, Bruno. "From Realpolitik to Dingpolitik or How to Make Things Public." In *Making Things Public: Atmospheres of Democracy*, edited by Peter Weibel and Bruno Latour, 4–31. Cambridge, Mass.: [Karlsruhe, Germany]: MIT Press ; ZKM/Center for Art and Media in Karlsruhe, 2005.
- https://learn.gold.ac.uk/pluginfile.php/212795/mod_folder/content/30/Latour_Weibel_2004_Making_Things_Public_in_Atmospheres_Democracy_p.4-31.pdf?forcedownload=1.
- — —. *Nous n'avons jamais été modernes, essai d'anthropologie symétrique*. Paris: La Découverte, 1991.
- — —. "On some of the affects of capitalism." Copenhagen, February 26, 2014 <http://www.bruno-latour.fr/sites/default/files/136-AFFECTS-OF-K-COPENHAGUE.pdf>
- — —. *Politics of Nature, How to Bring the Sciences into Democracy*. Harvard University Press, 2004.
- — —. "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern." *Critical Inquiry* 30, no. 2 (Winter 2004): 225–48.
- Lazzarato, M. *Signs and Machines, Capitalism and the Production of Subjectivity*. Semiotext(e) Foreign Agents Series. Cambridge, MA & London: Semiotexte, 2014.

- Levie, Françoise. *L'homme qui voulait classer le monde, Paul Otlet et le Mundaneum*. Les Impressions Nouvelles, 2006.
- Liandrat-Guigues, Suzanne and Jean-Louis Leutrat. *Alain Resnais, liaisons secrètes, accords vagabonds*. Cahiers du cinéma, 2006.
- Licklider, J. C. R. *Libraries of the Future*. MIT Press, 1965.
- — —. "Man-Computer Symbiosis." *Human Factors in Electronics, IRE Transactions on HFE-1*, no. 1 (1960): 4–11.
- Löwy, Michael. *Fire Alarm: Reading Walter Benjamin's "On the Concept of History."* New York: Verso, 2005.
- Lyon, Matthew, and Katie Hafner. *Where Wizards Stay up Late, the Origins of the Internet*. Touchstone, 1998.
- Madrigal, Alexis C. "How Netflix Reverse Engineered Hollywood." *The Atlantic*, January 2, 2014. <http://www.theatlantic.com/technology/archive/2014/01/how-netflix-reverse-engineered-hollywood/282679/>.
- Malraux, André. *Le musée imaginaire*. Paris: Gallimard, 1999.
- — —. "Les Conquérants - Postface." In *Malraux: Oeuvres complètes, tome 1*, by André Malraux. Paris: Gallimard – Bibliothèque de la Pléiade, 1989.
- — —. "Les Voix du silence." In *Malraux: Oeuvres complètes, tome IV*, 199–961. Paris: Gallimard – Bibliothèque de la Pléiade, 2004.
- — —. "L'homme et la culture artistique." In *Malraux: Oeuvres complètes, tome IV*, 1201–18. Paris: Gallimard – Bibliothèque de la Pléiade, 2004.
- — —. "L'Œuvre d'art." In *Malraux: Oeuvres complètes, tome IV*, 1188–91. Paris: Gallimard – Bibliothèque de la Pléiade, 2004.
- — —. "Sur l'héritage culturel." In *Malraux: Oeuvres complètes, tome IV*, 1191–99. Paris: Gallimard – Bibliothèque de la Pléiade, 2004.
- Manoff, Marlene. "Theories of the Archive from Across the Disciplines." *Portal: Libraries and the Academy* 4, no. 1 (2004): 9–24.
- Manovich, Lev. *Software Takes Command*. New York: Bloomsbury, 2013.
- — —. *The language of new media*. Cambridge, Mass: MIT Press, 2001.
- Marker, Chris. *Commentaires*. Paris: Éditions de Seuil, 1961.
- McGann, Jerome. "Memory Now." *4Humanities*, 8 2012. <http://4humanities.org/2012/08/jerome-j-mcgann-memory-now-2/>.

- McLuhan, Marshall. *The Gutenberg Galaxy, the Making of Typographic Man*. Reprint. Toronto: University of Toronto Press, 1962.
- — —. *Understanding Media: The Extensions of Man*. Cambridge, MA: MIT Press, 1994.
- McLuhan, Marshall, and Quentin Fiore. *The Medium Is the Massage*. Berkeley, CA.: Gingko Press, 2001. http://www.goodreads.com/work/best_book/1003854-the-medium-is-the-massage.
- Michalko, James. “Libraries, Archives, and Museums: Achieving Scale and Relevance in the Digital Age.” *RBM: A Journal of Rare Books, Manuscripts and Cultural Heritage* 8, no. 1 (March 20, 2007): 75–79.
- Mitchell, W. J. T. “Madness and Montage - Symptom and Symbol from Aby Warburg to A Beautiful Mind.” Copenhagen, April 23, 2014.
- — —. “Madness and Montage - The Picture Atlas as Symptom and Therapy from Aby Warburg to A Beautiful Mind.” Berlin, April 10, 2014.
- Moholy-Nagy, Laszlo. *Maleri, Fotografie, Film*. München: Albert Langen Verlag, 1927.
- Moretti, Franco. “Operationalizing.” *New Left Review*, II, no. 84 (December 2013): 103–19.
- Morton, Timothy. *Hyperobjects, Philosophy and Ecology after the End of the World*. Minneapolis: University of Minnesota Press, 2013.
- Mounier-Kuhn, Pierre-E. “The UNESCO International Computing Center in Rome.” ToE/IE Working Paper 2009_3., 2009. http://www.tensionsofeurope.eu/www/en/files/get/publications/WP_2009_03_Mounier-Kuhn.pdf.
- Nancy, Jean-Luc. *Identité : Fragments, franchises*. Paris: Galilée, 2010.
- — —. “Le Judéo-Chrétien.” In *La Déclosion - Déconstruction Du Christianisme, 1*, 65–87. *Déconstruction Du Christianisme, 1*. Paris: Galilée, 2005.
- National Library of Norway, and Kopinor. *Contract Regarding the Digital Dissemination of Books (Bokhylla / The Bookshelf)*, 2009. <http://www.kopinor.no/en/agreements/national-library/documents/bookshelf-contract--661>.

- National Library of Norway, and Kopinor. *Contract Regarding the Digital Dissemination of Books (Bokhylla / The Bookshelf)*, 2012.
<http://www.kopinor.no/en/agreements/national-library/documents/bookshelf-contract>.
- Nelson, Theodor. "As We Will Think." In *ONLINE 72 Conference Proceedings, Volume 1*, 439–54. Brunel University, Uxbridge, England, 1972.
- Nietzsche, Friedrich. "Unzeitgemässe Betrachtungen – Zweites Stück: Vom Nutzen und Nachteil der Historie für das Leben." In *Sämtliche Werke: Kritische Studienausgabe, Band 1*, edited by Giorgio Colli and Mazzino Montinari, N.-A., 243–334. München: de Gruyter, 1999.
- Olsen, Bjørnar. *In Defense of Things, Archaeology and the Ontology of Objects*. Altamira Press, 2010.
- Osborne, Peter. *Anywhere or Not at All, Philosophy of Contemporary Art*. Verso Books, 2013.
- Otlet, Paul. *International Organisation and Dissemination of Knowledge: Seceted Essays*. Edited by W. B. Rayward. Amsterdam: Elsevier, 1990.
- — —. *Traité de documentation, le livre sur le livre, théorie et pratique*. 1934th ed. Editiones Mundaneum - Palais Mondial, 1934.
- Otlet, Paul, and Le Corbusier. *Mundaneum*. Bruxelles: Palais Mondial, 1928.
- Parikka, Jussi. "Archives in Media Theory: Material Media Archaeology and Digital Humanities." In *Understanding Digital Humanities*, edited by David M. Berry. Basingstoke: Palgrave Macmillan, 2012.
- — —. "History of Computers." In *The Johns Hopkins Guide to Digital Media*, edited by Marie-Laure Ryan, Lori Emerson, and Benjamin J. Robertson, 249–55. The Johns Hopkins University Press, 2014.
- — —. *What Is Media Archaeology?* Cambridge: Polity Press, 2012.
- Pasquinelli, Matteo. "What an Apparatus Is Not: On the Archeology of the Norm in Foucault, Canguilhem, and Goldstein." *Parrhesia*, no. 22 (2015): 79–89.
- Prescott, Andrew. "Making the Digital Human: Anxieties, Possibilities, Challenges." *Digital Riffs*, 7 2012. <http://digitalriffs.blogspot.dk/2012/07/making-digital-human-anxieties.html>.

- Rayward, W. Boyd. "H. G. Wells's Idea of a World Brain: A Critical Reassessment." *Journal of the American Society for Information Science* 50, no. 7 (1999): 557–73.
- — —. *The Universe of Information: The Work of Paul Otlet for Documentation and International Organisation*. Moscow: VINITI for the International Federation for Documentation, 1975. <https://www.ideals.illinois.edu/handle/2142/651>.
- — —. "Visions of Xanadu: Paul Otlet (1868-1944) and Hypertext." *Journal of the American Society for Information Science* 45, no. 4 (May 1994): 235–50.
- Renoliet. *L'Unesco oubliée, la Société des Nations et la coopération intellectuelle*. Paris: Publications Sorbonne, 1999.
- Riegl, Alois. "Der moderne Denkmalkultus, sein Wesen, seine Entstehung." In *Gesammelte Aufsätze*, 139–84. Wien: WUV-Universitätsverlag, 1996.
- Sakrihei, Helen. "Automatic Storage and Retrieval System for Interlibrary Lending." Lyon, 2014.
- Sanderhoff, Merete, ed. *Sharing Is Caring, Openness and Sharing in the Cultural Heritage Sector*. 264 sider, 1. oplag. Statens Museum for Kunst, 2014.
- Sebald, W. G. *Austerlitz*. Auflage: 5. München: Fischer Taschenbuch Verlag., 2011.
- Shannon, Claude. "A Mathematical Theory of Communication." *Reprinted with Corrections from The Bell System Technical Journal* 27 (1948): 379–423, 623–656, n.d. <http://cm.bell-labs.com/cm/ms/what/shannonday/shannon1948.pdf>.
- Shirky, Clay. *Cognitive Surplus, Creativity and Generosity in a Connected Age*. London: Allen Lane, 2010.
- Short, James E., Roger E. Bohn, and Baru Chaitanya. "How Much Information? 2010 Report on Enterprise Server Information." San Diego, Cal.: Global Information Industry Center, 2011. <http://clds.sdsc.edu/sites/clds.sdsc.edu/files/pubs/ESI-Report-Jan2011.pdf>.
- Simmel, Georg. *Philosophie des Geldes*. München & Leipzig: Verlag von Duncker & Humblot, 1930.
- Singer, Peter. "Whither the Dream of the Universal Library?" *The Guardian*, April 19, 2011. <http://www.theguardian.com/commentisfree/2011/apr/19/moral-imperative-create-universal-library>.

- Skarstein, Vigdis Moe. "The Bookshelf: Digitisation and Access to Copyright Items in Norway." *Program* 44, no. 1 (2010): 48–58.
- Stalder, Felix, and Katja Mayer. "The Second Index. Search Engines, Personalization and Surveillance," 2010. <http://felix.openflows.com/node/113>.
- Stiegler, Bernard. *Mécréance et discrédit: Tome 1, La décadence des démocraties industrielles*. Paris: Galilée, 2004.
- — —. "The Industrial Exteriorisation of Memory." In *Critical Terms for Media Studies*, pp. 64–87. Chicago: University of Chicago Press, 2010.
- Streitfeld, David. "As New Services Track Habits, the E-Books Are Reading You." *The New York Times*, December 24, 2013, sec. Technology. <http://www.nytimes.com/2013/12/25/technology/as-new-services-track-habits-the-e-books-are-reading-you.html>.
- Takle, Marianne. "The Norwegian National Digital Library." *Ariadne*, no. 60 (2009). <http://www.ariadne.ac.uk/issue60/takle>.
- Thurschwell, Adam. "Specters of Nietzsche: Potential Futures for the Concept of the Political in Agamben and Derrida.(Giorgio Agamben)(Symposium: Nietzsche and Legal Theory, Part 2)." *Cardozo Law Review* 24, no. 3 (2003): 1193–1259.
- Torrens, Antoine. "La Bibliothèque Nationale de France et La Bande Dessinée." *Phylacterium*. Accessed September 1, 2015. <https://phylacterium.wordpress.com/2010/09/29/la-bibliotheque-nationale-de-france-et-la-bande-dessinee/>.
- "Toute La Mémoire Du Monde (scénario)." *Avant-Scène Du Cinéma*, 1965.
- Turing, A. M. "On Computable Numbers, with an Application to the Entscheidungsproblem." *Proceedings of the London Mathematical Society* s2–42, no. 1 (January 1, 1937): 230–65.
- UNESCO. "27 C/INF.11 - World Commission on Culture and Development (Item 5.5. of the Provisional Agenda)," October 8, 1993.
- — —. "Address by Ms Irina Bokova, Director-General of UNESCO, on the Occasion of the UNESCO Forum on Haiti, Rebuilding the Social, Cultural and Intellectual Fabric of Haiti UNESCO, 24 March 2010," 2010. <http://unesdoc.unesco.org/images/0018/001874/187411e.pdf>.

- — —. “Convention Concerning the Protection of the World Cultural and Natural Heritage.” Paris, 1972.
 - — —. “Draft Charter on the Preservation of the Digital Heritage - 32 C/28.” Paris, 2003.
 - — —. “Draft Medium-Term Strategy for 2002-2007.” Paris: UNESCO, 2001.
 - — —. “Memory Of The World Programme – General Guidelines To Safeguard Documentary Heritage, CII-9.5/CONF/60211.” Paris, 1995.
 - — —. “Memory Of The World Programme – General Guidelines To Safeguard Documentary Heritage, CII-95/WS-11rev, February 2002.” Paris, 2002.
 - — —. “Monthly Report on the Use of UNESCO Public Information Products - November 2013,” 2013.
<http://unesdoc.unesco.org/images/0022/002257/225735e.pdf>.
 - — —. “Our Creative Diversity (CLT-96/WS-6) - Report of the World Commission on Culture and Development - Summary Version,” July 1996.
 - — —. “Programme and Budget, 2002-2003 (31 C75 Approved),” March 2002.
 - — —. “Protecting Our Heritage and Fostering Creativity,” 2014.
<http://en.unesco.org/themes/protecting-our-heritage-and-fostering-creativity>.
 - — —. “Records of the General Conference (24th Session - 1987 - Resolutions.” Paris: UNESCO, 1987.
 - — —. “Records of the General Conference (32nd Session - 2003) - Resolutions.” Paris: UNESCO, 2004.
 - — —. *Social Implications of Technical Change - International Social Science Bulletin*, 1952.
- Ungar, Steven. “Scenes in a Library: Alain Resnais and Toute La Mémoire Du Monde.” *SubStance* 41, no. 2 (2012): 58–78.
- Valéry, Paul. “La conquête de l’ubiquité.” In *Oeuvres II*, edited by Jean Hytier, 1284–87. Paris: Gallimard – Bibliothèque de la Pléiade, 1960.
- — —. “La liberté de l’esprit.” In *Oeuvres II*, edited by Jean Hytier, 1077–99. Paris: Gallimard – Bibliothèque de la Pléiade, 1960.
 - — —. “Le problème des musées.” In *Oeuvres II*, edited by Jean Hytier, 1290–93. Paris: Gallimard – Bibliothèque de la Pléiade, 1960.

- Vastag, Brian. "Exabytes: Documenting the 'Digital Age' and Huge Growth in Computing Capacity." *The Washington Post*, February 11, 2011, sec. Nation. <http://www.washingtonpost.com/wp-dyn/content/article/2011/02/10/AR2011021004916.html?sid=ST2011021100514>.
- Waldrop, M. Mitchell. *The Dream Machine, J.C.R. Licklider and the Revolution That Made Computing Personal*. New York: Viking, 2001.
- Wells, H.G. *After Democracy: Addresses and Papers on the Present World Situation*. London: Watts & Co., 1932.
- — —. *The Work, Wealth and Happiness of Mankind*. William Heinemann, 1932.
- — —. *The Shape of Things to Come*. London: Hutchinson & Co., 1933.
- — —. *World Brain*, 1938.
- — —. "Memorandum on the Project of a World Encyclopaedia." In *The Correspondence of H. G. Wells, Vol. 4*, edited by David Smith. London: Pickering and Chatto, 1998.
- Wiener, Norbert. *Cybernetics, or the Control and Communication in the Animal and the Machine*. 2. ed. Cambridge, Mass: MIT Press, 1961.
- Wright, Alex. *Cataloging the World, Paul Otlet and the Birth of the Information Age*. Oxford University Press, 2014.
- Yerushalmi, Yosef Hayim. *Freud's Moses, Judaism Terminable and Interminable*. Yale University Press, 1991.
- Yuill, Simon. "Interrupt." In *Software Studies. A Lexicon*, edited by Matthew Fuller, 161–67. Massachusetts, MA: MIT Press, 2008.
- Zielinski, Siegfried. *Deep Time of the Media, toward an Archaeology of Hearing and Seeing by Technical Means*. Electronic Culture History, Theory, Practice. MIT Press, 2006.
- Zikopoulos, Paul. *Understanding Big Data, Analytics for Enterprise Class Hadoop and Streaming Data*. McGraw-Hill, 2012.
- Žižek, Slavoj. *How to Read Lacan*. London & New York: W.W. Norton and Company, 2006.

Websites

A Day in the Life of an Amazon Package, 2013.

[https://www.youtube.com/watch?v=8-](https://www.youtube.com/watch?v=8-DgmfMa5Zk&feature=youtube_gdata_player)

[DgmfMa5Zk&feature=youtube_gdata_player](https://www.youtube.com/watch?v=8-DgmfMa5Zk&feature=youtube_gdata_player). Accessed January 28, 2015.

Amazon. Amazon.com

Amazon. "Press Releases - Amazon.com to Acquire Kiva Systems, Inc.," March 19, 2012. <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=1674133&highlight=>. Accessed January 28, 2015.

Bodleian Libraries. "The Bodleian's First Folio | Sprint for Shakespeare." Accessed October 24, 2014. <http://shakespeare.bodleian.ox.ac.uk/the-bodleians-first-folio/>.

DEMATIC. "Case Study - California State University - Oviatt Library. Northridge, California."

http://go.dematic.com/gated_short?doc=http://now.eloqua.com/e/er?s=2102163319&lid=252. Accessed January 28, 2015.

DPLA – Concept Note. http://dp.la/wiki/Concept_Note. Accessed August 31, 2015.

Google Support. "Understanding Conversion Tracking," 2015.

<https://support.google.com/adwords/answer/1722022?hl=en>.

IBM 650 - Workhorse of modern industry. Accessed August 31, 2015.

http://www-03.ibm.com/ibm/history/exhibits/650/650_intro.html.

IBM 650 RAMAC announcement – Press release. Accessed August 31, 2015.

http://www-03.ibm.com/ibm/history/exhibits/650/650_pr2.html

IETF – Request for Comments (RFC). Accessed August 31, 2015.

<http://ietf.org/rfc.html>

INHA. "À la découverte de la salle Labrouste." Text, March 5, 2015.

<http://blog.bibliotheque.inha.fr/fr/posts/un-ecrin-pour-les-livres-la-salle-labrouste.html>.

La Times – "Army of Amazon robots ready to help fulfill orders on Cyber Monday."

latimes.com. November 30, 2014. Accessed August 31, 2015.

<http://www.latimes.com/business/technology/la-fi-tn-amazon-warehouse->

cyber-monday-20141130-story.html

LARM. "About LARM." <http://larm.blogs.ku.dk/about-larm/>.

— — —. "Kom Godt I Gang." <http://larm.fm/komgodtigang.html>.

Larm.fm – <http://larm.fm>

National Library of Norway – Strategy. <http://www.nb.no/English/About-us/Strategy>.

Accessed August 31, 2015

Netflix – Netflix.com

On the Internet of Things nobody knows you're a fridge. Accessed August 31, 2015. <http://www.secmeme.com/2014/02/on-internet-of-things-nobody-knows.html>

Oviatt Library. "Oviatt Library - Automated Storage and Retrieval System (ASRS)." Accessed January 28, 2015. <http://library.csun.edu/About/ASRS>.

— — —. "Oviatt Library - Special Collections and Archives." Accessed January 28, 2015. <http://library.csun.edu/SCA>.

T_Visionarium. "Project Overview."

Http://www.icinema.unsw.edu.au/projects/t_visionarium/, 2008.

The Human Rights Exhibition Project. <http://www.exhibithumanrights.org/>. Accessed July, 27, 2015.

UNESCO – Tribute to André Malraux at UNESCO headquarters. Accessed, August 31, 2015. <http://www.unesco.org/bpi/eng/unescopress/96-210e.htm>

Films

Kropotchev, Ellis D. "The trials and tribulations of batch processing." 1967.

<http://www.computerhistory.org/revolution/punched-cards/2/211/2253>

(accessed March 23, 2015)

Marker, Chris & Resnais, Alain: *Les Statues meurent aussi*, 1954.

Resnais, Alain. *Toute la mémoire du monde*. 1956.

Pakula, Alan J. *All the presidents men*. 1976.

Abstract

The beginning of the new millennium saw the rise of what UNESCO called a "new legacy" of "digital heritage" and we have since witnessed tremendous efforts to build the archives to contain and profit from that legacy. It is, however, not an easy task to describe such a legacy and its archives. What is an archive? What is cultural heritage? How does one inherit culture? And what difference does it make if the archive is digital or not? This dissertation aims to explore the above questions, not to answer them individually, but to ask *concerning* the digital cultural heritage archive by tracing certain imaginaries relating to the archive, its technical foundation and instantiation and its political and academic strategies. These imaginaries are described as springing from an archival promise – a promise of what can be attained with regard to knowledge and social organisation if only the archive were to achieve its fullness. The various imaginaries are conceptualised as the promise of archival and political *pleroma*: an archival plenitude where everything is archived and the archival object reveals itself immediately and a political fulfilment, where society becomes identical with itself and there can be no two respectable and antagonistic opinions. The archival promise is argued to open various strategic domains in ways that require critical scrutiny to break free of the empty operations of *pleroma*.

Resumé (in Danish)

I begyndelsen af det ny årtusind kunne man bevidne ankomsten af det, UNESCO kaldte et "nyt eftermæle" i form af "digital arv," og der er siden gjort store indsatser for at bygge passende arkiver til at rumme den og til at drage nytte af den. Det er dog langt fra simpelt at beskrive en sådan arv og dens arkiver. Hvad er et arkiv? Hvad er kulturarv? Hvordan arver man kultur? Og hvilken forskel gør det, om arkivet er analogt eller digitalt? Afhandlingen søger at udforske disse spørgsmål, ikke ved at besvare dem enkeltvis, men ved at spørge *til* det digitale kulturarvsarkiv.

Afhandlingen sporer visse forestillinger, der knytter sig til arkivet, dets tekniske fundament og udformning, såvel som de relaterede politiske og akademiske strategier. Disse forestillinger beskrives som udspringende af et arkivisk løfte – et løfte om, hvad der kan opnås i forhold til viden og social organisering, hvis bare arkivet kunne nå sin fylde. De forskellige forestillinger begrebsliggøres dermed som løftet om henholdsvis arkivisk og politisk *pleroma*: en arkivisk fylde, hvor alt er arkiveret, og det arkiverede objekt umiddelbart viser sig selv, og en politisk fylde, hvor samfundet bliver identisk med sig selv, og der ikke kan eksistere to acceptable forskellige og modstridende holdninger. Der argumenteres for, at det arkiviske løfte åbner for forskellige strategiske domæner, der fordrer kritisk granskning for at bryde fri af pleromas tomme operationer.