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# Towards a Digital Epistemology

Aesthetics and Modes
of Thought in Early
Modernity and
the Present Age

*Second Edition*

**Jonas Ingvarsson**

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Aesthetics and Modes of Thought in Early
Modernity and the Present Age

2nd ed. 2021

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# Foreword

## The Digital Switch: From Causality to Relationships

Today, investments in digital humanities are carried out at many universities all over the world, and research calls that encourage various forms of multidisciplinary database projects, preferably with one foot within the natural sciences and technologically oriented social sciences, are staple goods. The question we must ask ourselves is: How do digital media affect the knowledge production in comparative literature—and in the humanities in general? What new theoretical frameworks do we need to address the digital? What new methods and methodologies are possible? Or can, and maybe even *should*, we just continue as before?

Based on this challenge, Jonas Ingvarsson's heuristic arguments in *Towards a Digital Epistemology* suggest a number of possibilities for the future design of comparative literature and the humanities. The ambition here seems to be that *through* the digital—as a *lens* and *mode of thought*, which Ingvarsson consistently maintains—we afford a new understanding of (and for) comparative literature and the history of the humanities. In short, it is about conceptualizing the technological situation of which we are always already inevitably a part. With ease, at times almost with a cocky elegance, Ingvarsson incorporates an impressive and compelling energy into his argument.

Ingvarsson argues that the consequences of digitization for the humanities are far-reaching, beyond digital tools and mechanical distant reading techniques. Based on a combination of posthumanist-oriented philosophies of technology and media theory, Ingvarsson argues that the digital

affords a new paradigm of knowledge: a *digital epistemology*. The purpose of the book is to elucidate the far-reaching consequences of this digital epistemology.

One crucial point of this epistemology is the shift from *causality* to *relationships*. This also involves an increased awareness of the physical presence and the importance of material practices for knowledge production. Comparative literature must therefore also become a media archaeology, where these material relationships and the researcher's presence in the field, are situated, theorized and investigated. Digital epistemology, and the media archaeological practices in its wake, also include a postdigital perspective, where "analog nostalgia," with its occasional fetish-like relationship with retro techniques and old media, is highlighted by Ingvarsson as "one of the most concrete expressions of media materiality observed through digital epistemology" (ibid.). Ingvarsson's study not only actualizes the trivial truth that media—as Bolter and Grusin (1999) noted in McLuhan's aftermath—remediate older media; he also shows how a remediated medium operates in a contemporary environment. The media archaeological object is made active in a feedback loop in which its history is changed by the contemporary, but where the object's history also influences the contemporary.

Ingvarsson presents two early modern media technologies—cabinets of curiosities and the emblem—to demonstrate that the "concept of digital epistemology can address and frame literary and artistic practices from practically any historical period" (Chap. 1). Here, the haunting activity of the media archaeological object is emphasized, as these forms "will not primarily be treated as historically situated expressions of older world views, but rather as productive *modes of thought*, capable of illuminating our own digital times" (ibid.).

The cabinet of curiosities, Ingvarsson says, like other early modern archives and collections, is not organized according to the principle of provenance that governs the modern archive, according to which objects are sorted by origin. Instead, the curiosity cabinet applies the principle of pertinence, which structures objects according to a material, spatial and, above all, relational order. The cabinet encourages "the crossing of borders, and the affirmation of similarities between nature and culture, between artifact and organic, the grotesque and the beautiful" (Chap. 3). The cabinet's knowledge production is performative and associative, and operates with a contingent and recursive composition of objects rather than with a symbolic and linear logic.

Through analyses of works by, among others, Göran Printz-Påhlson, Johannes Heldén and Olga Tokarczuk, we are shown how the principle of pertinence through the spatial juxtaposition of the poem and the book page "establishes new, perhaps surprising, but not random relationships" (ibid.). Here, the principle of pertinence and a digital epistemology, emphasize that representation is ongoing and performative. In a similar way, the early modern emblem genre is combined with electronic literature and digital interfaces. The emblem's juxtaposition of disparate objects—heading, image, text—does not aim, Ingvarsson says, to generate specific knowledge, not even concerning the often allegorical referential content of the image. The emblematic text, as well as the electronic one, is neither complete nor permanent. The perspective of digital epistemology here makes the emblem and the electronic text, the literary object itself, visible as text machines.

Johannes Heldén's cybernetic eco-poetry is taken here as one example of the topicality of emblems in contemporary aesthetic practice. Contrary to utopian dreams of the internet and the web as the absolute archive, Heldén's poetry emphasizes, precisely by demanding participation and embodiment, information and meaning as ephemeral and incomplete processes. In particular, the slippage between the electronic *Entropy Edition* (2010) and the printed poetry collection *Entropi* (2010) underscores how each participatory configuration also inevitably marks a lost opportunity, while at the same time making clear that it is precisely this lack and loss of obvious meaning-bearing structure ("pattern," in Hayles' terminology) that force new configurations. In this way, according to Ingvarsson, the emblem and the electronic text both, as modes of thought, encourage the reader to "combine and compose, initializing a thought process, rather than reveal something completed", both therefore operating "in line with emblematic epistemology" (Chap. 2).

What comparative literature and the humanities as a whole must do, in order to operate within this paradigm of digital epistemology, is, if not to replace, then at least to supplement meaning content and interpretation with materiality and composition. As Ingvarsson argues, "juxtapositions constitute the pedagogical core of digital epistemology" (Chap. 2). The objective may seem to be to fundamentally challenge the curriculum of comparative literature, arguing a shift from a practice based on provenance and causal relationships to the spatial relations of the principle of pertinence: from interpretation to juxtaposition; from meaningful content and distance to materiality and presence. But the ambition is not—at least not

explicitly—to portray traditional humanities and close reading of canonized objects as a necessarily outdated business. This strict opposition between old and new humanities instead arises, it seems, when digital (as well as non-digital) tools are regarded as neutral and universal processes, which is exactly what a digital epistemology opposes. On the contrary, a digital epistemology is aware that digital tools and forms of expression are historically conditioned, just as the codex and print culture have always been, but also that the tools themselves influence how this condition is expressed. Ingvarsson's ambition is to both promote the digital reading skills that a contemporary media situation produces, and at the same time encourage new perspectives on traditional humanistic educational content.

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# PREFACE AND ACKNOWLEDGMENTS

This volume consists of texts that were written during the course of a research project entitled *Representations and Reconfigurations of the Digital in Swedish Literature and Art 1950–2010* (RepRecDigit, see reprecdigit.se) and financed by the Swedish Research Council (VR) 2013–2018. The majority of these texts have been published in Scandinavian magazines, but they were edited, and combined into four chapters and published in book-length format in Swedish by the Fall of 2018 as *Bomber Virus Kuriosakabinett: Texter om digital epistemologi* (Rojal Förlag). The production of that book has been an integral part of the project, as I have co-operated with digital artist, bookbinder and Rojal Förlag founder Olle Essvik, who continuously explores the relation between new technology and old craftsmanship. The result was a book which was bound by hand in 100 copies, and whose covers were made from used books, discarded from the shelves—a media archaeological recycling. For this English version we are not that lucky, but it is worth pointing out that the very materiality of the first version is indeed part of the argumentation of the pages to follow.

I would like to express my gratitude to Vetenskapsrådet (the Swedish Research Council) for funding, and to my colleagues in this project: Jakob Lien, Cecilia Lindhé and Jesper Olsson. Moreover, in RepRecDigit we decided to co-operate with artists on articles and in seminars, and I am very thankful for their contributions not only to this volume but to the project as a whole: Olle Essvik, Johannes Heldén and Imri Sandström— geniuses! The open access edition of this book was made possible by

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June 2020 and February 2021

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# Digital Epistemology: An Introduction

**Abstract** The notion of digital epistemology as applied in this volume could in some of its applications be understood as an attempt to do digital humanities without being committed to digital tools and objects. This, however, is not a programmatic stance, rather a reminder that the epistemological consequences of digitization can be traced also in texts and artwork that are not "about" digital objects; and without using digital tools to perform the analysis. In this introduction, Cecilia Lindhé (*Digital Humanities Quarterly, 7*(1). http://www.digital-humanities.org/dhq/vol/7/1/000161/000161.html. Accessed May 2020, 2013), Alan Liu (*Theses on the Epistemology of the Digital: Advice for the Cambridge Centre for Digital Knowledge*. http://liu.english.ucsb.edu/theses-on-the-epistemology-of-the-digital-page/. Accessed Apr 2020, 2014) and Marcel O'Gorman (*E-Crit: Digital Media, Critical Theory and the Humanities.* University of Toronto Press, Toronto, 2006) are mentioned as sources of inspiration; media archaeology is identified as an important perspective; and early modern forms and genres such as the emblem and the cabinets of curiosities are presented and suggested as points of reference.

This project started out as an obstinate reflection. Having experienced different forms of digital humanities practices for more than a decade, I started to think about a "digital humanities *sans* digital tools, methods and objects." It must indeed be possible, I thought, to discuss the effects of

digitization on art, literature, or on the production of knowledge in general, not primarily as something related to certain tools or objects. "The digital" within the humanities, for example, could be explored not only in databases, archives and big data, nor in topic modeling and speculative visualizations; neither should the objects of study be restricted to computer games, to electronic works of art or to literary texts and artworks explicitly relating to computerization and other digital expressions. I asked myself: How has digitization affected literary works that in no way treat or depict the digital? And: Can we approach "the digital" as "things to think with" (to paraphrase Sherry Turkle)?[1]

Soon enough, of course, I found out I was not alone—the above quote from Alexander R. Galloway being perhaps the most striking remark in this regard. The result, nevertheless, is this volume, a collection of texts which share the ambition of exploring and probing the concept of *digital epistemology*. It should be stated immediately that the scope of this concept or, rather, of these two words—"digital" and "epistemology"—by far outreaches the ambitions of this volume. However, the very same two words have been guiding the observations made in the chapters to follow.

The notion of digital epistemology as applied in this volume, thus, could—in some of its applications—be understood as the abovementioned "digital humanities *sans* digital tools and objects." This, is not a programmatic stance, though, but rather a reminder that the epistemological consequences of digitization can be traced also in texts and artwork that are not "about" computers, networks or fiberoptic cables; and also without using specialized digital tools to perform the analysis (of course, we still use the computer to search for texts, facts and illustrative examples, and to write down and edit our reflections). But indeed, the following pages will also analyze texts that either treat digital culture as an object, or are digital born electronic works of literature (I am not as stubbornly consequent as Galloway in this regard).

Many have noted—and the humanities of today should perhaps pay wider attention to—the fact that more or less *every* cultural artifact today is digitally permeated in one way or another, in some or many aspects of its processes of production and distribution. For the sake of the argument in this volume, it will thus be necessary to approximate a working definition of how the "digital" in "digital epistemology" (and in some respects, the "analog") should be understood in this particular context.

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[1] I think of Turkle's anthology *Evocative Objects*, which praise the return of the physical object in critical theory. See Turkle (2007).

## 1.1    Digital/Analog

The texts that follow suggest that "the digital" can be regarded as a per-spective, "a lens," or as a starting point for different forms of historical reflection. To clarify this position, the notion of the digital in this context needs to be narrowed down. An obvious observation could be that the digital, in a historical context, somehow follows from, and extrapolates, "the analog," or at least the broadcasting media. That could have been the easy part. However, as has been argued by Jonathan Sterne (2016), analog and digital are not a binary couple. Rather, the concept of "analog" is more or less a construction *derived* from digital culture: "The idea of *ana-log* as *everything not-digital* is in fact *newer* than the idea of the *digital*," Sterne claims (Sterne 2016, 32, his italics). This is a valid, and from a media history perspective very interesting, point. Moreover, as we shall see (and return to), the analog, in its old *Oxford English Dictionary* definitions (presented by Sterne), will actually become a driving force in the notion of digital epistemology. The practice of juxtaposition is indeed *analog* in the sense that it points out "similarities to another unrelated group" (ibid., 34). *Digital* and *analog*, thus, are teaming up in this endeavor.

Another take on digital versus analog is provided by Galloway's book on French philosopher François Laurelle, quoted above. While somehow keeping the binary alive, Galloway not only stresses the point that "digi-tal" primarily is a mode of thought rather than a set of machines, networks or databases, but also notes that it "conjures a relation – a true miracle – between aggregates of things that really should have nothing at all to say to one another" (Galloway 2014, 63).[2]

Today we experience a network of communications media and systems which differs radically from the situation we experienced only a few decades ago. This situation also changes the conditions of how we pro-duce, perceive and distribute data; it changes artistic expressions and our

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[2] Considering the connections to emblem books that the concept of digital epistemology will encourage me to take, the continuation of this quote is interesting: "The digital must transcend the conditions of its own being. It must transcend the fact of its own self-alienation. It is therefore the most *emblematic* form of the transcendental" (ibid. my italics—and of course "emblematic" here is metaphorical, but nevertheless…). The relation between analog and digital in Galloway's account of Laruelle, however, is complex. Later in the book Galloway makes the distinction between analog and digital in terms of "a difference" (digi-tal) in contrast to "an identity" (analog) (ibid., 70). These considerations, though interesting in their own right, fall somewhat outside the scope of this volume.

accumulation of knowledge. To gather this heterogenic change in one single volume would be utterly presumptuous. Moreover, the change itself has a history—the notion, and materiality, of the digital is from a historical point of view far from a homogenic phenomenon. The new order of things, regarding the organizing and handling of information that computers imposed from, say, the 1960s onwards, had an impact on culture and fostered modes of thought that differ radically from the effects of games, social media, ubiquitous computing and intelligent textiles we can observe (and, alas, are being observed by...) today. Here already the notions of "the digital" and "digitization" run into some difficulties (which will be discussed in Chap. 4). "The digital," in the current context, will be approached from a historical and epistemological point of view and, even more restricted, this perspective will be analyzed mostly through aesthetical and (some) pedagogical examples. In this volume, Alan Liu, Cecilia Lindhé and Marcel O'Gorman will work as points of departure for the explorations that follow.

## 1.2   Liu/Lindhé/O'Gorman

In 2014, Professor Alan Liu (Dept. of English, University of California, Santa Barbara) presented a brief blog post suggesting how to approach the notion of "digital epistemology" (Liu 2014).[3] Liu's text operates on another level of abstraction than we will encounter in this volume, but in essence he shares the same objective: digital competences should not be a concern only for those who explore digital objects or electronic culture, nor for those who do big data, text mining or work with the digitization of cultural heritages—rather, and moreover, Liu explains, "digital knowledge should announce an epistemic shift for the academic practice as such" (ibid.). Digitization challenges the core of academic and pedagogical practice, not only by the appearance of new tools and objects, but by the fact that our modes of thought and our way to structure data and knowledge are changing.

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[3] The purpose of Alan Liu's post is to challenge underlying structures for the production and dissemination of knowledge within academia in general, and within the humanities in particular. Digitization must be incorporated within the humanities in a more profound way than through the digital objects we investigate—that is, fan fiction, blogs, games and streams—or through the databases and archives we utilize and systematize, and which for quite some time have been the prime example of what constitutes the notion of "digital humanities."

Cecilia Lindhé's essay "'A Visual Sense is Born in the Fingertips': Towards a Digital Ekphrasis" (Lindhé 2013) stands out as a more distinct point of departure for several of the arguments put forward in this book. In this article she discusses the notion of "ekphrasis" through a "digital lens":

> This article, then, has as its wider scope to deconstruct the filter of printing technologies, with which we look at cultural history, and instead – with "the digital" as a lens in the form of digital literature and art – renegotiate an aesthetic practice that emanates from both rhetoric and print technology. (Lindhé 2013)

Accordingly, I want to highlight one possible path for the digital humanities: the digital as a critical lens on aesthetic concepts and cultural history. Lindhé's argument, which has been indicative for reflections on digital epistemology, is that "the digital" (here represented by digital art and literature) should be considered as a *perspective*, with the same critical potential as for example poststructuralism, gender theory and postcolonialism. She furthermore notes that "digital perspectives on classic concepts could challenge or revise more or less taken-for-granted assumptions in the humanities" (ibid.).

Another important contribution to the argument in this volume comes from Marcel O'Gorman, who already in 2006 published the thought-provoking *E-Crit: Digital Media, Critical Theory and the Humanities* (O'Gorman 2006). O'Gorman's argument is that digital culture calls for a new pedagogical approach, a new way to relate the humanities not only to the contemporary digital environment, but also to cultural history. The humanities of today, O'Gorman argues, utilize only a fraction of the potential that digital media offer, more particularly those aspects of digital culture that most resemble print media; that is, databases, archives and scanned books. And, he warns, if the humanists are not aware of this, there is a risk that we will end up being digital archivists rather than critical theorists (ibid., 11).[4]

Regardless of whether you are digitally oriented or not in your academic and pedagogical exercises, it is important to remember that the

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[4] "If humanities scholars do not make a concerted effort to relinquish traditional definitions of literature and scholarship, their professional destiny will be that of 'digital archivist,' and their success will be measured by the size of their supposedly canon-undermining archive projects."

practice of the humanities is not a given constant, but rather a "Gutenbergian" practice, with its roots in a postromantic fantasy about the hero, the genius, the nation and the authentic expression. Of course, this fantasy has been challenged throughout the latter half of the twentieth century (feminism, postcolonialism, structuralism, deconstruction, New Historicism), but digital culture offers us yet a new paradigm, and O'Gorman suggests a shift in academic practice from "hermeneutics" to "heuretics," and from "interpretation" to "invention":

> [T]he result of this "fever for archiving" does not transform the humanities in any significant way or render humanities research more suitable to a culture of computing. New media have done little to alter the practices of humanities scholars, except perhaps by accelerating – by means of more accessible databases – the rate at which hermeneutics can be performed. Once again, I should stress the point that I am interested less in hermeneutics (interpretation) than I am in heuretics (invention). More specifically, this book asks the following question: Just as Ramus's scholarly method had a great influence in shaping a print apparatus that has persisted for five centuries, might it not be possible to invent scholarly methods to shape the digital apparatus? (ibid., 50, see also 98–100)

This quote is interesting, since it touches upon a couple of arguments already hinted at above, but that will be brought forward in Chap. 4, that even the digital of course has a history—different materialities, different epistemologies. Because, in all fairness, we must admit that digital methods have been considerably elaborated even through the decade and a half that has passed since O'Gorman wrote this in 2006. First, different methods of mapping, such as GIS (which stands for Graphic Information System), and various forms of visualization, 3D scanning, open access archives and many more features have all increased the sensibility and variation of digital methods. Second, and connected to the first, it is not really the case that digital archives and their methods primarily supported hermeneutics, but rather that distant reading techniques, developed by the likes of Moretti (2013) and Jockers (2013), served as complementary strategies, actually challenging the very notion of hermeneutics as an instrument in writing the history of literature. On the other hand, O'Gorman still has it right, I believe, when he asks for heuretics and invention, since distant reading may be many things, but has yet to show a more playful and artistic agenda. And he is still right in asking for scholarly

methods to "shape the digital apparatus," since distant reading techniques and different forms of handling big data still seem very alien to many "traditional" humanists.[5]

O'Gorman's attitude to the analytical practice in the humanities could be understood not as an interpretative exercise aiming at a satisfactory (not to mention final) reading of a single work of art (more on his "hypericonomy" method in Chap. 5). Instead, this "digital" approach is concerned with bold juxtapositions and propositions to relate to the work in more productive contexts. The idea is to study a work of art not primarily in order to "explain" it, but rather to see what it—combined with other aspects—can generate. In line with this position, and in line with the metaphors of the digital age, we can address the cultural artifact (the literary text) as a *node* in a network of symbols, functions, materialities and noise.[6]

Following Liu, Lindhé and O'Gorman (and others), this book has the ambition to shed some light on the notion of a (not *the*) digital epistemology. In this context, thus, "the digital" is not primarily regarded as tools (computers, databases, networks) or as objects (fan fiction, archives, Twitter poetry, games, electronic literature), but as a critical, discourse analytical and media archaeological concept, by which we can establish productive perspectives on our aesthetic and cultural environment and—not least—on aesthetic and cultural history.

Moreover, "digital epistemology" is not primarily a tool, or a concept, for establishing causality; it is not about cause and effects, but rather about *relations*. The relation between art and its context, between body and text, between human, machine and environment. And between postmodern and—in this case—early modern modes of thought. These relations are indeed possible to detect all through the history of cultural artifacts, but the concept of digital epistemology will accentuate this media historical perspective even further. New media always remind us of the relation

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[5] But things are happening in this area, too: many scholars have the ambition to merge topic modeling and distant reading techniques with questions put forward by the traditional humanities. For an interesting example, see Andrew Piper (2018).

[6] Of course, this is not a new idea, but was put forward for example in the notion of discourse networks introduced by Friedrich Kittler (1990), and is also in line with the rhizomatic approach to culture and society presented by Deleuze and Guattari (1987). A point that will be suggested in this volume, however, is that both models (those of Kittler and those of Deleuze/Guattari) are congenial (and parallel) to the evolution of digital techniques of storage and dissemination. These theories, alongside for example media archaeology, are in themselves expressions of a digital epistemology. We will return to that.

between old and new. By emphasizing this, I am subscribing to the notion of *recursive historiography*, as proposed by Markus Krajewski in *The Server* (2018). To define this, Krajewski first quotes the mathematical definition of recursion as "returning (to known values); obtained via recourse of what is known."[7] Then he transforms this concept to the media archaeological discourse, noting that it inspires both historical comparisons and a possibility of creating, through iterative juxtapositions, a new historical narrative. And he concludes that "[w]hat is via this recursive procedure is not merely the possibility of connecting two non-simultaneous phenomena but also the ability of a concept to invoke itself" (Krajewski 2018, 158).[8]

In this context, the concept of digital epistemology, as we shall see, not only establishes relationships between early modern and contemporary cultural expressions, but moreover revisits the narrative of digital history from the 1960s to the 2010s. This concept will also highlight new relations between objects within the same category, establishing and trying out new connections between—for example—literary texts. In a post on *Litteraturbanken* ("The Swedish Literature Bank"), a researcher in the history of ideas, Andreas Önnerfors, highlights that the archive of *Litteraturbanken* makes a perfect example of a digital cabinet of curiosities, where texts can be ordered in a way that "facilitates how we can recognize the different voices of the literary texts through the thin walls of time and titles," and furthermore:

> The digital library of *Litteraturbanken* orders the names of the authors carefully, and alphabetically, and in a list – but which physical library should in the next move rearrange all the books so that they suddenly were sorted alphabetically by titles? *Öjungfrun* [Island Virgin], and *Anteckningar om Öl* [Notes on Beer], *Yttersta domen* [The Final Judgement] and *Äktenskap och demokrati* [Marriage and Democracy], *Vivisektioner* [Vivisections] and *Vuer af Stockholm* [Views of Stockholm], are arranged in immediate relations to each other. These thin walls everywhere …. Regardless author or title: the digital reproduces the asymmetric, spectral logic of the curiosity chamber, where the hierarchies between time and space are not totalitarian but transcendent, exceeding. (Önnerfors 2017)

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[7] Kirkness, *Deutsches Fremdwörterbuch, Bd 3* (1977), quoted in Krajewski (2018).

[8] If you engage in adaptation studies (for example the transformation from novel to film) these recursions are commonplace. Every new version not only is changed in relation to the original, the original is also forever changed. You never experience the *Mona Lisa* the same way after having encountered Marcel Duchamp's *L.H.O.O.Q.* For a "recursive" adaptation analysis, see Ingvarsson (2012).

The juxtaposition of digital culture and the cabinets of curiosity will be a recurring motif in this volume.

## 1.3   Epistemology and Early Modern Modes of Thought

In a work which embraces epistemological as well as media archaeological perspectives, Michel Foucault will appear as a given reference; even more so, since the texts in this volume, in their discussions of digital epistemology, make recurring connections between the digital age and early modern modes of thought. Similar connections are explored in *Les Mots et Les Choses*, Foucault's ambitious outline for a history of thought and order from the Renaissance onwards (Foucault 2002). Of vital importance for the ideas brought forward in Foucault's book (and as a point for departure also for this volume) are the categories "order," "episteme," and "archaeology" (we will soon return to the latter category). The notion of order ("l'ordre") is explained by Foucault as follows:

> Order is, at one and the same time, that which is given in things as their inner law, the hidden network that determines the way they confront one another, and also that which has no existence except in the grid created by a glance, an examination, a language; and it is only in the blank spaces of this grid that order manifests itself in depth as though already there, waiting in silence for the moment of its expression. (ibid., xxi)

Order, in this regard, thus points to the relations between objects and the discourse utilized to arrange them. In *Towards a Digital Epistemology*, the order of things, for example in the cabinets of curiosities—or *Kunstkammer* (I will use the terms interchangeably)—and the Renaissance emblem will be related to a number of positions and practices in our contemporary digital age. As for the notion of *episteme*, Foucault suggests the following:

> In any given culture and at any given moment, there is always only one episteme that defines the conditions of possibility of all knowledge, whether expressed in a theory or silently invested in a practice. (ibid., 183)

In the texts that follow, suggestions will be made that digitization indeed has set the conditions for such an episteme, and this, of course, is

also in line with Lindhé's claim that digitization, regarded as a "critical lens," can offer us new perspectives on our age as well as on history (Lindhé 2013). Moreover, Foucault's definition is well in line with the definition of epistemology proposed by historian of science Professor Hans-Jörg Rheinberger, who use the term epistemology "for reflecting on the historical conditions under which, and the means with which, things are made into objects of knowledge" (Rheinberger 2010, 2).

In the context of this volume, both Foucault's and Rheinberger's perspectives contribute to the epistemological approach where we regard digitization as a historically situated phenomenon, which dictates the conditions for how knowledge is produced and presented. Thus understood, epistemology and "modes of thought" are closely related; media and cultural artifacts not only depict our existence but, moreover, determine how we observe it.

### 1.3.1    The Emblem

The concept of "modes of thought"—here associated with "epistemology"—in this study emanates from Peter M. Daly's presentation of the then (1979) recent German reception of the emblem (Daly 1979). Inspired by Albrecht Schöne and Dieter Walter Jöns, Daly suggests that we should separate the emblem as art form from the emblem as a mode of thought.[9] The emblem, considered as a genre, had many forms, but the emblematic (!) emblem consisted of a heading (*inscriptio*), an illustration (*pictura*), and a comment (*subscriptio*). The emblems were mostly gathered in emblem books, an immensely popular genre in the sixteenth and seventeenth centuries, especially in France and Germany, as well as in Belgium and the Netherlands. The *pictura* often could have quite a bizarre or grotesque composition, arguably to catch the attention of the reader and stylistically a remnant from the medieval bestiaries that were one important source of inspiration. The bestiaries displayed many examples of the wonders of God's creation and also contained fables and moralities, and thus can be seen as foreboding not only the emblem books, but also the *Kunstkammer*. The emblem books did not display a fixed set of rules or regulations on what was to be called an emblem. Some books did not contain pictures at all, while some contained pictures only. In some cases

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[9] The emblem as an art form (in relation to its function as a "mode of thought") will be further discussed in the following chapters.

the *subscriptio* only consisted of a few lines, while in others they could be stretched out to several pages. John Manning goes on to point out, and rightly so, the trouble of trying to capture the emblem at all in any definition: "The mistake that so many theoreticians make is that they look for a normative embodiment of form, which denies the very flexibility that gave the genre life" (Manning 2002, 25) (Fig. 1.1).[10]

The emblem genre rises parallel to the evolving industry of book printing, and surely was a good indicator of the skills of the printer, since the emblems naturally often displayed a multimodal character, combining typesetting and woodcuts. Despite the enigmatic and combinatory character of many emblems, however, they should not be treated as riddles or rebuses to be solved, but rather, as pointed out by for example John Manning and Peter M. Daly, as devices to set in motion thought processes, often (obviously) with a moral or religious tendency (Daly 1979; Manning 2002, passim). Thus, the emblematic mode of thought encouraged combination and composition; a call to create, rather than to interpret.

By shifting focus from studying the emblem as a form or genre to regarding it as a mode of thought, Daly suggests, we can approach the emblem not only as a trick of signs and symbols, but moreover as corresponding to biblical, mythological and allegorical presumptions on how the world—according to the consumers of the emblem—was indeed organized. It is not primarily a matter of the "form" of the emblem, nor about any sort of "realism," but rather a reflection of the experiences that the reader—or viewer—of an emblem has (ibid. passim).

This is in line with John Manning's observation that the various expressions of the emblems corresponded to, and embodied, the realities in sixteenth- and seventeenth-century Europe:

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[10] Manning starts this discussion with the following statement:

It is apparent, even at this stage, that we have taken the wrong track. What is an emblem? It's not even a good question. It implies that the answer lies in the same eternal present as the question, and that there is an emblem, a normative type, that the emblem is one thing at all times in all places. (p. 21)

In fact, though, this is not in contradiction to Daly, who clearly distinguishes the emblem as an artistic expression and as a mode of thought.

**Fig. 1.1** Copper engraving probably by Jan Gerritsz Swelinck (born around 1601), after a drawing of Adriaen van de Venne (1589–1662); Public Domain https://commons.wikimedia.org/w/index.php?cwurid=477794

There was literally nothing under the sun that was not emblematic – at least potentially. The four elements, the heavens, fourfooted beasts, birds, fishes, plants, stones and insects could instruct the "eye of understanding." What made this symbolic universe different from the medieval "Book of Nature" *was the active participation of the individual* within the construction of significance. (ibid., 30, my italics)

What Manning points out here is thus, firstly, that the emblem was not only an art form but in fact corresponded to *the observation* of the contemporary environment, of nature and culture. The emblem is thus given epistemological qualities. Second, the author emphasizes here that the emblem, considered as a mode of thought, called for *activity*, in contrast to the more passive interpretation that characterized the Middle Ages' approach to the "book of nature" (for example in the bestiaries) that could be "read" as an appendix to the Bible, proving the greatness of the Creator. This medieval "text" was in some sense finished, which is not the case for the emblematic mode of thought. And while, as Manning and Daly suggest, the seventeenth century established an emblematic epistemology, our own time establishes a digital ditto, with several striking similarities.

### 1.3.2   The Cabinets of Curiosity

The other early modern phenomenon that will be repeatedly addressed in the chapters to come is the cabinet of curiosities. This had its heyday during the sixteenth, seventeenth and eighteenth centuries. They could be designed as huge cabinets with a variety of compartments, drawers and booths, or even occupy entire rooms, like a kind of museum.[11] The collections aimed to create an overview of the accumulated knowledge of the time, and with their combination of manufactured (often bizarre) artifacts and natural or found objects in artistic arrangements, the *Kunstkammer* of course also constituted a monument to their powerful owner. Here, tangible materiality was combined with an associative and artistic practice, which, however, could follow fairly strict principles. In his overview of the cabinets of curiosities in European cultural life, art historian Horst

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[11] For a historical account of the cabinets of curiosities in Europe, see Horst Bredekamp (1995). Bredekamp also outlines a contemporary epistemic shift, where the text and book give way to more multimodal modes of thought, which actualize contemporary aesthetic practices: "[W]e are experiencing a phase of Copernican change from the dominance of language to the hegemony of images" (ibid., 113).

Bredekamp presents a fairly common order for them in the seventeenth century (Fig. 1.2):

*Naturalia* – objects from the natural kingdom as well as ancient sculptures
*Artificialia* – arts and crafts
*Scientifica* – globes, watches, measuring and weighing tools
*Exotica* – odd objects that could also appear in any other category.
  (Bredekamp 1995, 34, and passim)

Some details to observe here: that ancient sculptures belonged to "nature," while arts and crafts are sorted into the same category (which may be understood as corresponding to the Aristotelian notion of *techné*). Bredekamp also highlights the significance Francis Bacon gave to the design of the *Kunstkammer*: Bacon argued for the importance of *play* in the process of relating the various objects to each other, and "play" should
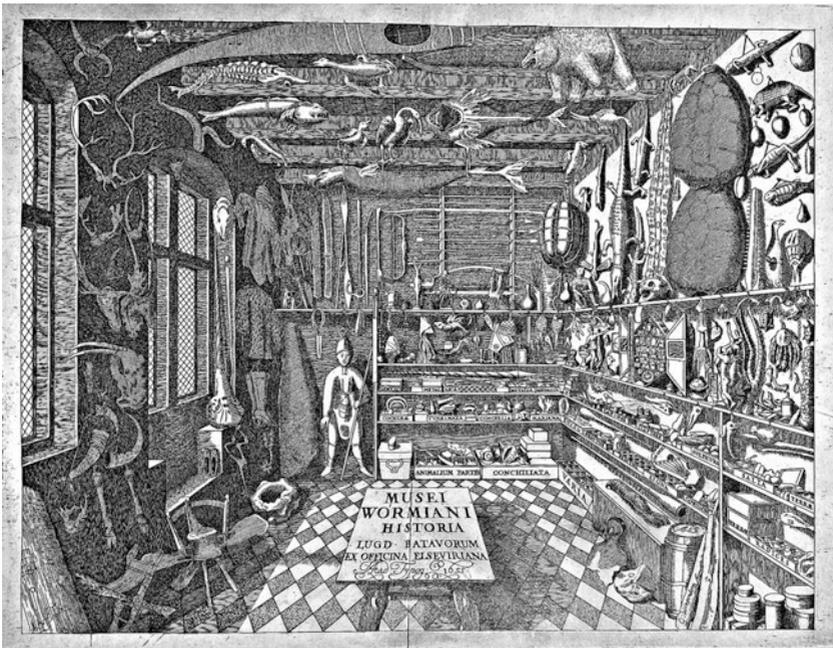


**Fig. 1.2** "Musei Wormiani Historia," the frontispiece from the Museum Wormianum depicting Ole Worm's cabinet of curiosities (Public Domain)

be understood here in a broad sense—associations, jokes, games or letting objects play with one another (ibid., 67). The associative and pleasure-oriented approach seems to be central for Bacon. Elaborating on this "playful" aspect of science, Bredekamp notes that the cabinet's perhaps most important contribution is to situate knowledge not as a hidden core of an expression or person, but as something that arises in free association:

> Reflections of the thought expounded through the Kunstkammer have remained alive in history of style, psychoanalysis, and in iconology – that is, in everything expressing the knowledge that playfulness is a necessary pre-requisite for the mind to be creative and that the essence, the inner core of an effort or a person, has not remained intact in the center or in the linear path to that center, but in free, concomitant phenomena void of obvious purpose. (ibid., 109)

Instead of the straight order of cause and effects, cabinets of curiosity present related phenomena for no apparent purpose, but inspiring creativity and reflection. In an essay on the Museum of Jurassic Technology in Los Angeles, Susan A. Crane also emphasizes the difference between the objects in the *Kunstkammer* and the objects in a museum, where the curiosities were assembled for their individual stories and the cabinet also freely combined fact and fiction (exhibiting many "fake objects," such as unicorn horns), while the museums that emerged in the nineteenth century ordered their objects for the purpose of systematically telling the greater narrative of the nation or of history (Crane 2000, 72). We will return to this in Chap. 3.

### 1.3.3    Epistemology Engines and Recursive Historiography

From the perspective of digital epistemology, digital expressions and phenomena are not studied primarily for their technical benefits, but rather for how they can relate to the production of the episteme of our time, as reflected in culture. This mirrors the reflections on epistemology, technology and embodiment put forward by the philosopher of technology Don Ihde in *Bodies in Technology* (Ihde 2002). Ihde lets technical innovations throughout history serve as objects which bring together human and mechanical agency, leading to the production of knowledge: "My devices," he claims, "will be particular machines or technologies, which provide the paradigmatic metaphors for knowledge themselves" (ibid., 69). Ihde

suggests that this relation between humans and machines should be called *epistemology engines*, a relation which generates questions about how we perceive, obtain and distribute our understanding of the environment.

So, then, what does digital epistemology mean? If we return to Alan Liu's short text—induced by the establishment of a "Centre for Digital Knowledge"—he suggests that a research institute based on these presumptions would have to question the notion of "Centre" itself, "since that form is vested in traditional ways of organizing knowledge production that the digital is currently reinvesting in a wider, differently articulated network of institutions, collectives, and media" (Liu 2014). The tradition of organizing and distributing knowledge is challenged. Liu continues:

> It thus seems clear that a Centre for Digital Knowledge that relies solely on traditional institutional forms – even the now normative "interdisciplinary" form (e.g., a centre that creates weak-tie intersections among faculty in different fields) [sic] – will be cut off from some of the most robust conceptual and practical adventures of digital knowledge. A key test for the proposed Centre for Digital Knowledge, therefore, will be whether it is willing at least on occasion to accommodate non-standard forms of knowledge organization, production, presentation, exploration, and dissemination acclimated to the digital age or open to its networked ethos. (ibid.)

Following Liu, digitization should have consequences for how we organize the very formation of knowledge, once again motivating the concept of digital *epistemology*. This stand also motivates us, along with Friedrich Kittler, to regard digitization as a "discourse network" or a "writing-down-system" (Kittler 1990, passim). Texts and works of art created during the digital (r)evolution of the post–World War II period can be said to reproduce different kinds of digital logic whether or not they are "born digital," and whether or not they explicitly address or describe digitization. A novel, or any work of art, need not be "about" computers to express a digital logic or order of things.

Moreover, and as a consequence of the above, the concept of digital epistemology can address and frame literary and artistic practices from practically any historical period. "Digital" logic, "digital" forms and "digital" modes of thought anticipate digital technology and can therefore be observed in art from different times. This lets us return to, and elaborate upon, the concept of *recursive historiography*, as presented by Marcus

Krajewski above (Krajewski 2018, 158). In the introduction to the anthology *Deep Classics*, historian Shane Butler (2016) points out how our relation to premodern and ancient times for a long time has been characterized by distance, more or less rooted in rhetoric: terms like "ancient times," the "Middle Ages," the "Renaissance" generate a discourse of distancing and progress, which makes us prone to regard the past as a precursor of our own time, instead of realizing that these cultural expressions are perfect representations of their own time and not in need of any "direction" to be so. In so reasoning, he shows how the aesthetic practices of the past also are representations of modes of thought. Butler takes an example from Freud's *Civilization and Its Discontents*, where the famous psychoanalyst draws parallels between ancient Rome and the human psyche: all the historical buildings, the ruins, the ones built after or on top of the older structures, all of them exist de facto as historical objects through which we understand our own times (and the parallel for Freud, obviously, is that our memories function the same way). As Butler points out:

> Riffling fantastically in the archaeological cross-section, Freud joins the city's classical and post-classical architecture into a seamless tradition. As with the unconscious, nothing is ever finally, fully lost here. (ibid., 10)

Another point of reference here could be one of Friedrich Nietzsche's "untimely meditations," more precisely *The Use and Abuse of History*, where the philosopher laments the view of history as something passed, something to reflect upon only for the sake of "Bildung." On the contrary, he claims, the only thing that makes history relevant is its presence in the now, and the presence of the now in history:

> It is true that man can only become man by first suppressing this unhistorical element in his thoughts, comparisons, distinctions, and conclusions, letting a clear sudden light break through these misty clouds by his power of turning the past to the uses of the present. But an excess of history makes him flag again, while without the veil of the unhistorical he would never have the courage to begin. What deeds could man ever have done if he had not been enveloped in the dust-cloud of the unhistorical? (Nietzsche 1909, 11)

Nietzsche and Freud both place emphasis on parallels between, and the presence of, then and now in the now, much the same as T.S. Eliot was to demonstrate with *The Waste Land* some decades later, and this approach

to history also characterizes this volume. Early modern genres and order of things such as the *Kunstkammer* and the emblem will not primarily be treated as historically situated expressions of older world views, but rather as productive *modes of thought*, capable of illuminating our own digital times. By focusing on epistemological rather than intermedia aspects, we can study not only the relation between texts and other media, but also on how our digital culture actually consists in different modes of thought, and how this can generate pedagogical as well as methodological challenges and possibilities. Alan Liu, again, describes this situation as that "the goal is to engage the topic of what it means to 'know' in the digital age in a spirit of serious play – at once disciplined and exploratory of new paradigms" (Liu 2014). Serious play, where we explore what it means to search and find knowledge in and about the world in which we now participate. This also echoes Johanna Drucker's statement in *Graphesis: Visual Forms of Knowledge Production*:

> We have to have a way to talk about what it is we are doing, and how, and to reflect critically and imaginatively if tools of the new era are to be means to think with, rather than instruments of a vastly engineered ideological apparatus that merely has its way with us. (Drucker 2014, 194)

"The tools of the new era": our digital utensils and interfaces are not neutral, but "objects-to-think-with."[12] In a way, this is a cybernetic line of thought—human and machine (and "nature") are agents in a communicating system. In *Graphesis*, thus, Drucker poses the important question

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[12] By extrapolating concepts from Sherry Turkle and Don Ihde, Marcel O'Gorman, in *Necromedia* (2015), explores the concept of "Objects to think with," which informs him in the "critical making" and artistic practice he performs at the Critical Media Lab (CriMeLab) in Waterloo, Ontario. Critical Making, moreover, is a concept launched by (among others) Matt Ratto at the University of Toronto. The idea is that critical theory should materialize in different forms of material design or labs, resulting in something that *is not* primarily a representation of theory, but an actual part of the critical reflection, in order "to use material forms of engagement with technologies to supplement and extend critical reflection and, in doing so, to reconnect our lived experiences with technologies to social and conceptual critique" (Matt Ratto and Robert Ree 2012).

As for O'Gorman, his take on critical making (although he does not label it as such) means that he is mixing analysis with art installations, "to provide scholars with models for engaging in formal experiments with new media for the sake of intervening in the formation of digital culture. But in order to do so … we must learn to think more like engineers or digital artists than like philosophers or critical theorists" (O'Gorman 2012). See also O'Gorman (2015), passim.

about what role digital tools play in how humanities regard their traditional approach to (and dissemination of) their results. A recurring figure of thought for Drucker is that we today have the tools to visualize and problematize research within the humanities in ways that the different fields traditionally have not encouraged. Moreover, she shows how many of these new visualization techniques actually have early modern predecessors. For example, Drucker discusses the notion of "interface" in a way that forebodes some lines of reasoning in this present volume:

> The critical design of interpretative interface will push beyond the goals of "efficient" and "transparent" designs for the organization of behaviors and actions, and mobilize a critical network that exposes, calls to attention, its madeness – and by extension, the constructedness of knowledge, its interpretative dimensions. This will orchestrate, at least a bit, the shift from conceptions of interface as things and entities to that of an event-space of interpretative activity. (Drucker 2014, 178)

Drucker identifies the visual interfaces as something that guides our thought patterns and, in the continuation of this argument, a main topic in *Graphesis* becomes the epistemological effect of our digital forms of representation:

> More attention to acts of producing and less emphasis on product, the creation of an interface that is meant to expose and support the activity of interpretation, rather than to display finished forms, would be a good starting place. (ibid., 179)

When interfaces are regarded as productive meeting places rather than as representations of something already finished, we can start to realize the imaginary potential of digital tools. Invention rather than interpretation, as Marcel O'Gorman suggests, heuretics rather than hermeneutics (O'Gorman 2006, 50 and 99). The emphasis in Drucker's argument lies on materiality: the tradition of humanistic interpretations needs to be vitalized with the (digital) forms for the dissemination that cultural expressions today utilize. Drucker juxtaposes digital visualizations with early and premodern forms, genres and rhetorical modes, although these juxtapositions in her presentation function more as historical footnotes, rather than as epistemological tools.

But, as we shall see, early modern modes of thought can be regarded not only as historical points of reference, but moreover as recursive (in Krajewski's terms) and congenial models for approaching contemporary cultural expressions, while at the same time a broader insight into the functionality of digital interfaces may instruct the understanding of early modern aesthetics.[13] In this volume, phenomena like salon culture, cabinets of curiosities, emblem books and the archival principle of pertinence will be addressed. This approach also leads to reflections upon how the interfaces of the humanities have influenced the content of education, research and communication.

This volume is far from the first to relate digital culture to early modern orders and genres. For example, the *Kunstkammer* is repeatedly taken as a point of reference in regard to digital interfaces. In a thesis from 1996 with the title "The Computer as an Irrational Cabinet," Charles Gere discusses at length why the computer "space" should be related to the cabinet of curiosities, and emblematics, rather than to the traditional museum: "The computer can become a space for a modern 'emblematics,' where elements are juxtaposed in different configurations to engender new meanings." He refers further to "benjaminian techniques of juxtaposition, montage and collage" in order to deconstruct "how we represent object and material culture" (Gere 1996, 84). The thesis then goes on to discuss possible "multimedia" interfaces inspired by the notion of the cabinet.

In *What is Media Archaeology?* Jussi Parikka makes some observations on the same relationship, albeit just *en passant*, but in so doing he emphasizes an important point:

> Indeed, to an extent, one could say that it's not only the curiosity cabinets and such-like that have been a focus of rethinking media and archives through models of heterogeneous order and amazement … but also that *media history itself can become such a curiosity cabinet* – for better or for worse, as the danger lies in being drawn into writing about "curiosities" for their own sake, instead of asking the simple and critical question "why": why is this particular technology important, and what is the argument behind this research into this curiosity of media history. (Parikka 2012, 65, my italics)

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[13] Of course, there are many other expressions and phenomena that could have been addressed to exemplify the relation, or juxtaposition, between early modernity and our own time, as for example title pages, frontispieces and tissue interleaves. Moreover—since media archaeology could be said to question the demarcations between different epochs and -isms—the romantic fragment (not to mention the romantic ruin) could serve as a perfect illustration to computer game aesthetics.

The following pages are an attempt to address this "curiosity of media history," not only observing similarities for their own sake, but also putting them in a productive relationship to each other.

## 1.4    Media Archaeology

In *Friending the Past: The Sense of History in the Digital Age* (2018), Alan Liu discusses the relation to history brought forward by the use of digital tools and perspectives. As in this volume, Liu sees important links between and possibilities for the combination of media archaeology and digital humanities: "What is the sense of history of the network age discoverable through media archeology?" he asks (ibid., 101).[14] He also quotes the introduction to the *Amodern 2* issue on "Network Archaeology":

> Drawing from the field of media archaeology, we conceptualize network archaeology as a call to investigate networks past and present – using current networks to catalyze new directions for historical inquiry and drawing upon historical cases to inform our understanding of today's networked culture. (ibid., 140; and Starosielski et al. 2012)

Once again, Liu touches upon perspectives very close to the ones addressed in this volume, and once again, we operate on different levels of abstraction. Interestingly enough, Liu does not approach this sense of history from an epistemological point of view (which could be expected given his earlier blog post). However, he does some important work in merging distant and close reading techniques, and he discusses the possibility of media archaeology perspectives in the study of both historical and contemporary interfaces (especially in an interesting analysis of "timelines").

By extrapolating Liu's proposals, both in the blog post and in *Friending the Past*, the concept of digital epistemology could be said to establish a multidimensional and media archaeological approach to culture. The media archaeological perspective is shown primarily in the attention directed to the materialities of media, and on the insistence upon a historizing, yet non-linear, perspective. In the following pages this will be apparent when we look at digital history from the 1960s onwards, and when we juxtapose early modern expressions with present digital culture.

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[14] See also http://amodern.net/article/network-archaeology/ (accessed May 2020). The quote, by the way, ends with a footnote—to Liu!

With its roots in discourse analysis and media history (counting Michel Foucault and Marshall McLuhan among its ancestors), media archaeology is well suited to describing these conditions. But it also seems apparent that this theoretical perspective can be regarded as an actual *expression* of the digital epistemology that is examined here, and several factors could be seen as consolidating this argument. For example, search engines such as Google and Bing, as well as library databases, encourage delving into one-year studies, or more or less random juxtapositions between topics or historical moments. The evolution of search engines and digital databases happens to coincide with fatigue concerning the hermeneutical paradigm, which has permeated the academic discourse of modernity—that is, during the last two centuries. Not that media archaeologists should be using Google or Bing more than their hermeneutic colleagues (if they ever were to be divided into two camps), but it becomes apparent that the "epistemology of the internet" is well matched with media archaeological approaches. It is reasonable to suggest—bearing in mind Marshall McLuhan's dictum from *Understanding Media: The Extensions of Man* that the content of every new medium is always another medium—that the media archaeologist's fascination with the (neglected, preferably) materialities of the history of media is both an effect of the possibilities brought forward by new technology, *and* a result of the increasing interest in analog nostalgia and the tactile qualities of media in art, music and literature we have seen in the past decades. In this volume, one argument thus will be that this analog and tactile nostalgia is an *effect of*, rather than a reaction to, digital media. These explorations, combined with a Foucauldian critique of the linearity of historiography, are common denominators for the heterogenous practices that are sorted under the media archaeological umbrella. This critical stance, we may remember, is articulated in *The Archaeology of Knowledge*:

> There are the notions of development and evolution: they make it possible to group a succession of dispersed events, to link them to one and the same organizing principle, to subject them to the exemplary power of life … to discover, already at work in each beginning, a principle of coherence and the outline of a future unity. (Foucault 1972, 21–22)

For the French philosopher these coherences and unities are restrictions rather than representations of a "correct" order. As a consequence, the categories with which we normally describe the progress of cultural

history—that is, epochs, genres, -isms—no longer can be seen as given. On the contrary, in Foucault's analysis they appear as means of power and sorting tools, by which one includes some objects in history and excludes others. One counter-strategy against these tendencies could be (as did Nietzsche, Freud and Foucault) to regard history as something contemporary, the past as an active ingredient in the now—and it is apparent that digital tools have facilitated this approach.

Media archaeologists, apparently, find inspiration in Foucault and *The Archaeology of Knowledge*, but they also turn to Walter Benjamin's *Passagen-Werk*, where the physical spaces—the arcades—function as nodes for analyzing a string of related phenomena:

> Method of this project: literary montage. I needn't say anything. Merely show. I shall purloin no valuables, appropriate no ingenious formulations. But the rags, the refuse – these I will not inventory but allow, in the only way possible, to come into their own: by making use of them. (Benjamin 1999, 460)

Benjamin's lines of reasoning, his method (rather than his view of history), is clearly echoed in Foucault's reflections in *The Archaeology of Knowledge*:[15]

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[15] For a discussion on the differences between Foucault's and Benjamin's sense of history, see Paul Mazzocchi (2008) and Paul Aaron Greenberg (2016). Greenberg concludes with the following observation:

> To reiterate, briefly: While he rejects a progressive reading of history, Benjamin nevertheless retains (and even intensifies) the historical materialist promise of human salvation through revolution as politically desirable. Unlike most Marxists, however, he claims that such revolution might have a messianic character. Foucault, meanwhile, calls on genealogical critique to agitate subjects into new relationships with institutions and practices thought to be immobile and ahistorical. This process, he thinks, might allow people to begin to change themselves in order to rearrange the world around them. While Benjamin and Foucault both reject any traditional theory of history as progressive or even linear, their theories generate different implications for political struggle. In particular, they differ in important ways about the possibility and desirability of emancipation.

As for connections between Foucault and Benjamin from a media archaeological perspective, they are more about method, strategies to overturn the narrative of history, rather than the political view of history itself.

> For archaeological analysis, contradictions are neither appearances to be overcome, nor secret principles to be uncovered. They are objects to be described for themselves, without any attempt being made to discover from what point of view they can be dissipated, or at what level they can be radicalized and effects become causes. (Foucault 1972, 151)

The contradictions here work in a "rhizomatic" way rather than as a dialectical synthesis. No secrets, no enigma, only these contradictions we call history. With digital epistemology, digitization is regarded as (different) modes of thought, modes which encourage juxtapositions and treat cultural history as a montage.

In an essay discussing "The World Wide Web as Curiosity Museum," Michelle Henning connects Foucault's archaeology to the "Berlin school of 'media archaeologists'" and also to Benjamin's method:

> The practice of writing history should be, according to Benjamin, not sequential, but based on the establishing of constellations, a collage-like process in which past moments and historical material operate as denaturalizing "shock" to the present. (Henning 2007, 73)

Media archaeologists, thus, possibly inspired by Benjamin's method and Foucault's challenge to historiography, apply different strategies in order to write those alternative histories Foucault calls upon. For example, they may, as does the Finnish media archaeologist Erkki Huhtamo in *Illusions in Motion* 2013, regard the history of media as a more or less literally archaeological endeavor, tracing those technological artifacts that are forgotten, or that never found their way into the histories of arts or media (Huhtamo 2013). Or, as Finnish compatriot Jussi Parikka notes, taking cinema as a case in point: "The emphasis in media archaeology has been on nineteenth-century devices that seem to gesture not only a way towards the birth of cinema, but also to the possibilities of differing routes" (Parikka 2012, 64). Another method is to study very narrow time spans, maybe just one single year (Hans-Ulrich Gumbrecht 1997), and to use the year as a more neutral point of departure in writing history, as in for example *A New History of French Literature* and the accompanying volume *A New History of German Literature*, where entries appear by year and not by subject, genre or epoch (Hollier 1989; Ryan and Wellbery 2004).[16] Another version of this model is to bypass the evolutionary

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[16] For a survey of different approaches to the "one-year-method", see North (2001).

narrative of history by juxtaposing, or contrasting, shorter or longer time spans, as in Friedrich Kittler's groundbreaking study *Discourse Networks 1800/1900* (Kittler 1990) or—on a more humble scale—as in an essay by this book's author on H.G. Wells' and Orson Welles' respective versions of *The War of the Worlds* (Ingvarsson 2012).

## 1.5   THE BOOK

The following chapters approach the notion of digital epistemology from different heuristic angles. In Chap. 2, "Evoking McLuhan's Juxtapositions in the Digital Age: Archaeology and the Mosaic," the media archaeological juxtaposition of then and now is traced to the practice of Marshall McLuhan, and how he contrasted his own time with the Renaissance. But the chapter also points to some important differences between McLuhan and the media archaeology of the digital age. This is followed by some quick examples of recursive juxtapositions between older forms and the digital age. The chapter ends with two contemporary examples of "analog nostalgia."

Chapter 3, "CCC versus WWW: Digital Epistemology and Literary Text," traces "the digital" in literary texts that do not obviously treat digital phenomena, and continues to suggest the use of some early modern genres and orders of things as reference points to (our) contemporary literature. Chapter 4, "'Books Are Machines': Materiality and Agency 1960–2010," approaches digital history in two ways. First, the progression from huge machines to ubiquitous computing is juxtaposed with the technologies of fear, shifting from bombs to viruses, tentatively as a result of the Y2K scare (and as I am writing this, the Covid-19 pandemic is making the virus threat more obvious than ever; the following chapters, though, were written before the outbreak, so I leave it to the reader to make further observations). Second, two Swedish literary experiments, one from 1965 and the other from 2010, are analyzed in their staging of digital technologies and the effect this has on the notion of agency. Finally, in Chap. 5, "Towards a 21st Century Pedagogy for the Humanities," the juxtaposition between digital culture and early modern modes of thought is extrapolated, and the approach here could be regarded as more pedagogical, ending in a list of suggestions for how collaborations could be encouraged between digital humanists and historians of art or literature.

Since my approach is that of offering perspectives, rather than promoting a one-dimensional argument, I will not even try to summarize the

content. Moreover, considering the relative brevity of this work, it is my hope that the reader will not find it all too necessary to have a final repetition of my proposals and perspectives.

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# Evoking McLuhan's Juxtapositions in the Digital Age: Archaeology and the Mosaic

**Abstract** The connections between our own digital age and early modern modes of thought bear resemblance to Marshall McLuhan's method of juxtaposing the age of television with Renaissance culture. By studying early modern modes of thought, we can understand our own technological times better. But also: By critically reflecting upon contemporary technological culture, we will gain new insights into early modern aesthetics and rhetoric, and the epistemological/ontological discourses embracing them. This is a media archaeological approach, where the digital is not primarily seen as a set of gadgets, machines or electronic networks, but rather as *modes of thought*. While pointing out some important differences between McLuhan's approach and media archaeology, the concept of digital epistemology also states some striking similarities—treating media as a lens, or an *interface*, for observing culture, history and society.

## 2.1    The Past and the Contemporary[1]

In a video clip from the website *Marshall McLuhan Speaks* labeled "The Future of the Future is the Present," McLuhan finds his answer in Shakespeare's *Troilus and Cressida*:

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[1] This chapter was written with valuable contributions from Cecilia Lindhé.

29

One touch of nature makes the whole world kin, That all with one consent praise new-born gawds, Though they are made and moulded of things past …. (Shakespeare 1609, quoted in McLuhan 1967a)

McLuhan comments upon this in the following words:

The new is always made up with the old, or, rather, what people *see* in the new is always the old thing, the rearview mirror. The future of the future is the present, and this I something that people are terrified of. (ibid.)

Even McLuhan's own "news," thus, could be said to be old. Indeed, it is fair to argue that the real importance of McLuhan's philosophy lay not in his musings about contemporary media culture, nor in his predictions about the media ecology of the future, although they may be remarkable in their accuracy. As a matter of fact, what his readers and viewers tend to interpret as "predictions" and "prophecies" often, in their striking contemporaneity, were nothing but observations. Let us also be honest and admit that the web tends to preserve those predictions (or observations) that seem accurate, but generously overlooks the vast bulk of statements that simply went haywire (see for example Wolf 1996).

Rather than being a media guru, or an electronic prophet, or the sage of the digital age, Marshall McLuhan first and last, as Elena Lamberti has reminded us, was a professor of English Literature (Lamberti 2012, 7). This observation is confirmed by a very significant feature of McLuhan's work: not the eye to the future, but his recurring observations on history, and the ways in which he repeatedly oscillates between the past and the now, with a special fondness for the later Renaissance and Elizabethan era (and of course for modernist authors such as Joyce, Pound, Eliot and Wyndham Lewis; ibid. passim). In this light, it comes as no surprise that a comment on the future includes "the present" as well as a quote from Shakespeare.

Then again, we already knew this, having read *The Gutenberg Galaxy*, where the author opens his argument with an explanation of how Shakespeare's *King Lear* is indeed all about the restructuring of the senses in the Elizabethan age. And we soon get a sense of why this book relies so heavily upon Shakespeare in its opening pages:

*King Lear* is a kind of elaborate case history of people translating themselves out of a world of roles into the new world of jobs. This is a process of

stripping and denudation which does not occur instantly except in artistic vision. But Shakespeare saw that it happened in his time. *He was not talking about the future. However, the older world of roles had lingered on as a ghost just as after a century of electricity the West still feels the presence of the older values of literacy and privacy and separateness.* (McLuhan 1962, 14, italics added)

This, in turn, is a mere affirmation of the statement in the prologue of *The Gutenberg Galaxy*, where the author claims that "We are today as far into the electric age as the Elizabethans had advanced into the typographical and mechanical age" (ibid., 1). Moreover, in the early pages of *Understanding Media*, the author delivers a string of Shakespearian quotes, opened with the following observation:

A fairly complete handbook for studying the extensions of man could be made up from selections from Shakespeare. Some might quibble about whether or not he was referring to TV in these familiar lines from Romeo and Juliet:
*But soft! what light through yonder window breaks?*
*It speaks, and yet says nothing.* (McLuhan 1964, 9)

But McLuhan's keen interest in Shakespearian explorations of the senses is not only a showcase of literary analysis, nor a provocative speculation, it also sets the standard for his own aesthetic and analytical approach to cultural history, which to a large extent consists in recurring juxtapositions between the electronic age and aesthetic history. Interestingly enough, this feature in his writings seems to have been somewhat overlooked (Lamberti being one major exception, dealing, however, mostly with his modernist roots), although McLuhan's former student, and one of his most articulate critics, Donald F. Theall already in 1971 observed the following:

Paradoxically McLuhan, like Eliot, makes history important by making it here and now. Besides that, however, McLuhan also makes history important by making it the way of understanding the "now". Without discussion of the Greeks, of the Middle Ages, of the Renaissance, and of the intervening centuries, it would not be possible to see what actually is happening in the current period. (Theall 1971, 22)

What should be noted of this historical method, though, is that for McLuhan the Elizabethan era was of interest in a paradoxical way. On the one hand, the process when Gutenberg's invention is interiorized into the sense apparatus of Western Man *is very much like* the process we "now" (in the 1950s and 1960s, that is) experience with the rapid increase of electronic communications. But on the other hand, this restructuring of our senses is *completely different* in the Elizabethan era and our own: the distance of the eye and the separation of mechanics fostered by Gutenberg's innovation versus the intimacy of the tactile media and the inclusion of the Global Village (famously represented by television, which in McLuhan's view is an audio-tactile medium).

Within the broad field of media archaeology, McLuhan's philosophy has had a major, but even here somewhat overlooked, importance. When McLuhan is recognized as one of the founding fathers of media archaeology, it is more likely his observations of the materiality of media that are mentioned, while a philosopher like Michel Foucault often is credited with the theoretical framework pertaining to the historical aspects (the "archaeology" of media archaeology). But it is fair to say that many aspects of media archaeological historiography are rooted in McLuhan's work as well. To clarify this, it is useful to return to some aspects of the media archaeological field.

## 2.2   McLuhan, Media Archaeology and Historiography

The heterogeneous perspectives gathered under the media archaeology banner could be said to have in common a historical focus on the materiality of communication, combined with a (Foucauldian) critique of established lines of historical developments, including genres, epochs and norms. The archaeological attitude can also be understood as a reaction to, and fatigue with, the hermeneutic paradigm that has dominated the academic discourse for almost 200 years. It comes as no surprise (from a media archaeological point of view) that this fatigue is expressed side by side with the development of databases, web browsing and the new possibilities for arranging material in new and productive ways. Media archaeology, then, not only is a useful tool for *describing* digital epistemology, the theory in itself is actually a *congenial expression of* this concept.

One of Foucault's lines of argument is that the categories utilized to describe the progression of cultural history—epochs, genres, -isms and so on—are not a set of given parameters (Foucault 2002, passim). On the contrary, these parameters have emanated from and established power relations, sorting out which objects fit "history" and which do not. A counter-reaction to these tendencies is to regard history as an agent in contemporary times and, vice versa, to observe history through the lens of our contemporary media (Lindhé 2013). This strategy may have its modernist roots in the aesthetics of, for example, T.S. Eliot and Gertrude Stein, but it is obvious that digital tools and resources facilitate this deconstructive practice. In the introduction (Chap. 1) other strategies for establishing alternative histories were mentioned, such as the purely archaeological interest in unsuccessful or forgotten technologies of communication, as well as exploring moments rather than epochs or the progression of history, and, finally, operating with juxtapositions over a smaller or wider time span.

There are obvious connections between many features of media archaeology and McLuhan's media philosophy. But it is important also to note some striking differences between the media archaeology of today and McLuhan's historical determinism. Where McLuhan's version of history with few exceptions was the history of the fittest, and the story of the dominant technologies (the technological, rather than natural selection), his historiographic narrative—regardless of the frequent juxtapositions—also was the history of History (with a capital "H"). His aim was not to question the progress of history, but to put a different, yet radical, angle on the events as they occurred in this History. By stressing the importance of media as an agent of change, McLuhan rewrote the history of communications without altering or challenging its evolutionary narrative. This is important enough, though, and if he did not pay very much attention to the failures of (or in) communication history, it was simply because they, in his view, did not promote enough societal and sensorial change.

Within the field of media archaeology, however, as stated in Chap. 1, major attention is directed to the forgotten or failed technologies of the past, be it Betamax videos from the 1980s or optical signal systems from the mid-nineteenth century. This interest, of course, is driven not only out of curiosity, but also for ideological reasons; inspired by for example microhistory, many media archaeologists will put forward alternative and foreseen agents in the history of communications and of social life (if not necessarily *social change*, on a larger scale). It could also be seen as a

strategy to deconstruct the tendencies of technological determinism fostered in the media philosophies of the Toronto School.[2]

Media archaeological juxtapositions, then, may serve different purposes than in McLuhan's work: sometimes just to avoid the ideological tendencies of historical evolution. But then again, juxtapositions are sometimes utilized in almost the same way as in McLuhan's work: to mirror different epochs and expressions, and to highlight surprising similarities, as well as to stress important differences.

## 2.3    STRATEGIES AND JUXTAPOSITIONS

This is the point where McLuhan and media archaeology both converge with digital epistemology. As mentioned in the first chapter, to approach digital culture from an epistemological point of view means to shift focus from the technology itself to artworks and to the order of things and archives. Instead of exploring big data, databases or tablets, smartphones, applications, networks and other material and technical expressions of digital culture, focus lies on more abstract relations, such as on how literature and art, philosophy and theory somehow correspond to the digital challenge without necessarily mentioning or describing it. In short, digital epistemology means *a shift of the figure/ground relationship of digital culture*.

The figure/ground concept McLuhan derived from ambiguous images used in Gestalt psychology, like the famous Duck/Rabbit or the well-known image with the facial profiles that also form a vase. When McLuhan uses this concept, he wants to point out how, for example, the shift from the description of the content of the media to the medium itself implies such a change in perspective where the foundation and the figure change place. In the same way, accepting digitization as a lens is a shift in how we relate to contemporary culture. "The digital," then, does not primarily consist of objects or tools, but rather indicates a perspective—a perspective *shift*, even.[3]

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[2] The "The Toronto School of Communication Theory" is the label on the tradition from Marshall McLuhan, with roots in scholars such as Harold Adams Innis and Eric A. Havelock, and continued by McLuhan's collaborators and followers, such as Ed Carpenter, Walter J. Ong and Neil Postman.

[3] As presented elsewhere in this book, such perspectives have been proposed by, among others, Alan Liu, Marcel O'Gorman and Cecilia Lindhé. See Chap. 1. "Digital Epistemology: An Introduction."

In order to further clarify what digital epistemology could mean in analytical practice, we can mention some strategies which, as their common denominator, have the use of digital culture as a "lens," rather than as an object or tool (Lindhé 2013). The list is by no means exhaustive, but is rather primarily an indicator of what this perspective can generate:

1. **Reading history in the light of digital culture.** *That is*: Are there certain relations that could be established if we look at history from a digital point of view? Does post–World War II history have a digital materiality that affects how we look at happenings in the past?
2. **Reading analog literature and art as if they were electronic texts.** *That is*: What happens if we analyze for example a nineteenth-century print novel in terms of embodiment, processes, performativity, materiality and even "software," or other buzz concepts in the short analytical tradition of cybertexts and digital culture? Will this encourage a focus not on what an artwork *means*, but what it *does*?
3. **Relating literary texts and artworks to digital history.** *That is*: What does it mean to relate cultural artifacts to the communicational and organizational logic that has been put forward—in different ways—by digital technology since the 1950s?
4. **Explore digital expressions as related to early modern (and premodern) modes of thought.** *That is:* What is the effect of using digitization as a "lens" through which you explore new dimensions of old concepts, genres and cultural artifacts? How can we explore parallels and interconnections between digital expressions and early modern modes of thought; and between digital culture and genres that were popular before the Romantics, before modernity? By emphasizing these qualities within the electronic culture of today, we might discover new aspects of early modern expressions and genres such as salon culture; the archival "principle of pertinence"; the cabinet of curiosities; the emblem, and others. But we might also, and likewise importantly, discover new aspects of digital objects and artworks.

In the concluding pages of this chapter, only the two final approaches will be taken into consideration. What all these aspects of digital epistemology do have in common, though, is that the digital is regarded as a *mode of thought*, rather than as a set of gadgets, machines or electronic networks. To clarify the argument, let us take a brief look at a few juxtapositions between digital and early modern expressions.

### 2.3.1    Salon Culture versus Social Media

Salon culture was an informal yet well-structured meeting place for intellectuals, flourishing in the seventeenth and eighteenth centuries. Conversations and confidences shared space with *tableaux vivants*, lectures, readings, musical entertainment and political intrigues. Salon culture favored the conversation, the diary, the letter, the oral and private genres. You could describe it as an informal channel for culture and information, an early modern file-sharing system.

Usually the hosts of these gatherings were women, and experiments with roles, gender, sexual ambiguity and identity were encouraged. In short, the salon—where art, politics and cultural analyses mix with the private and subjective—shares many characteristics with social media such as blogs and vlogs, Instagram, Facebook, YouTube, TikTok and Twitter: confidences, social and sexual role-playing, informal conversations, online diaries, home recordings, intellectual and political discussions and agitations are shared online in more or less closed communities.

As these similarities encourage further research, it is important also to note important differences. For example, while many social media are actively administrated and their members chosen by invitation or acceptance of their request to join, the social control of the salon was a completely different affair: class, status and cultural positions made all the difference in this environment, while class and status probably will not stop you from interacting with Facebook and Instagram.

Observing these similarities *and* differences, it is fair to assume that by approaching salon culture through the lens of social media, and social media through the lens of salon culture, we will gain new insights into both phenomena.

### 2.3.2    The Principle of Pertinence and the Mosaic of McLuhan

It is interesting to note that many aesthetic expressions, as well as many features of our digital culture (consciously or—more likely—not), seem to adhere to the principle of pertinence, briefly mentioned in Chap. 1 (and further explored in Chap. 3). Before the principle of provenance – with its emphasis on origin and verifiable kinship – became the guiding principle of modernity, applied to archives and museums, the principle of

pertinence was the archival practice that governed the order of things[4] This order—also called the subject order, or dossier system—archived items according to likeness, subject and themes. It is an archival arrangement that may, to our eyes, convey an unstructured impression, but at the same time it offers a more creative and challenging structure and this arrangement seems congenial to how we actually handle information in our digital everyday lives. The etymology behind this archive principle is telling: *pertineo* translates in the *Lewis and Short Dictionary* (Lewis and Short 1849) as "to reach, extend" and "to belong, relate, concern, pertain or have reference to, affect"—a more horizontal, associative and *mosaic* pattern. These distinctive features could obviously be related to McLuhan and his notion of the mosaic structure of his own texts. As Lamberti observes: "McLuhan uses his *mosaic* to question traditional ideas of knowledge and to move the reader from a *linear* (logical, ordered, exclusive) to an acoustic (non-logical, simultaneous, inclusive) perspective" (Lamberti 2012, 32). The expression Lamberti here termed "traditional" could, in the present context, rather be termed "post-romantic" or "modern" (as in "modernity"). McLuhan's own practice, his inviting and juxtaposing style, challenges, just like the principle of pertinence, the logical, dualistic and linear order that modernity had made the standard mode of thought of Western knowledge.

### 2.3.3   Electronic Literature versus the Renaissance Emblem

How does the logic of the webpage, electronic literature, memes or computer games relate to the genre of the emblem? Just like the *digital* in digital epistemology, the emblem and the cabinet of curiosities were not simply genres or forms, they were *modes of thought* (see Chap. 1, and the following chapters). Repeating John Manning's observation that "[t]here was literally nothing under the sun that was not emblematic – at least potentially" (Manning 2002, 130), it is notable that our environment

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[4] See for example Alan Giroux 1989: "Today, pertinence-based classifications are widely discredited in the archival world. It is seen as the anathema to good archival practice" (p. 26), and further: "The common link, or key property, among documents was found within their contents, not outside in their context of creation," p. 27. It was Kristin Veel's thesis, "Narrative Negotiations: Information Structures in Literary Fiction" 2009, that made me aware of these different archival principles.

(artificial or not) is once again—or, is always already—filled with significance. The success of *Pokémon Go* a few years ago is a striking example, as is the ever-expanding plethora of augmented reality (AR) apps, where old ruins can be virtually restored to their former glory just by directing your smartphone to the site. The same can be said of most computer games, where every item, every pixel, is fueled with possible importance. A proverbial conclusion in McLuhanesque language could sound like this: *the diegetic discourse of the ludoverse is emblematic.*[5]

As mentioned in Chap. 1, the emblematic *mode of thought* encouraged combination and composition, a call to *create* rather than to *interpret.* It is not difficult to observe this emblematic structure, as well as the emblematic mode of thought, in works of electronic literature, computer games and—even—in the very structure of most webpages. Electronic texts, such as Johannes Heldén's *The Prime Directive* or J.R. Carpenter's *The Gathering Cloud*, display the same iconic structure as the emblematic emblem: *pictura*, *inscriptio*, *subscriptio* (Heldén 2006; Carpenter 2016). And the mode of thought, to combine and compose, and initializing a thought process rather than revealing something completed, is in line with emblematic epistemology (and—it must be said—so is a lot of traditionally written poetry too, but then again, many poems are indeed emblematic). The same applies to webpages and memes: the combination of *inscriptio*, *pictura* and *subscriptio* represents the very form of the internet. Memes often display a very intricate combination of text, sound and visual elements, and moreover, like the emblem, often allude to contemporary myths and beliefs (it is common that memes challenge taken-for-granted assumptions in politics or popular culture). And while many webpages may have self-contained and rather unenigmatic content, they do (mostly) point out a direction, if not to God or a higher morality, at least to other webpages, or to the new gods and jurors—advertisers, social media.

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[5] And this is where digital epistemology reveals its congenial connection not only to media archaeology, but to theoretical concepts such as object-oriented ontology, speculative realism, and actor-network theory—but that is another essay.

## 2.4  INTERFACE. MOSAIC

As indicated by the above, digital epistemology is a concept applied to approach digital culture as a lens, or an *interface*, vis-à-vis early modern and premodern aesthetics, genres and works of art. Interestingly enough, in *The Gutenberg Galaxy* McLuhan uses the notion of interface in a way that actually is a misunderstanding of the concept. But then again, this mistake leads him to a conclusion that coincides with vital aspects of digital epistemology:

> Two cultures or technologies can, like astronomical galaxies, pass through one another without collision; but not without change of configuration. In modern physics there is, similarly, the concept of "interface" or the meeting and metamorphosis of two structures. Such "interfaciality" is the very key to the Renaissance as to our twentieth century. (McLuhan 1962, 149)

McLuhan's mistake transforms this quote to a media archaeological object in itself. The "interface" McLuhan is referring to is certainly something other than today's "interface." The Swedish translation (by Richard Matz 1967b) used the word "interfas" ("interphase"), but if you search for that term on the web you will stumble upon articles on cell cycles. The English word "interface," though, has a wider meaning and leads to, among other topics, physics. The *Encyclopedia Britannica* states:

> *Interface*, surface separating two phases of matter, each of which may be solid, liquid, or gaseous. An interface is not a geometric surface but a thin layer that has properties differing from those of the bulk material on either side of the interface.

Apparently, an interface is something that separates matter. It is not about systems that collide or pass each other, but the place where different functions meet and to some extent are delimited. That the data industry adopted the concept of interface to describe the zone that both separates and unites users and machines, software and hardware seems logical. But the concept that McLuhan most likely was looking for is interference. *Encyclopedia Britannica* again:

Interference, in physics, the net effect of the combination of two or more wave trains moving on intersecting or coincident paths. The effect is that of the addition of the amplitudes of the individual waves at each point affected by more than one wave.

So, then, what shall we do with this information? The wrongful uses of interference, interface and interphase could be puns, as they appear in the works of Imri Sandström, which we will explore in the coming chapter. McLuhan's mistake, though, opens up a very productive perspective for the media archaeologist. McLuhan's *interface*, then, becomes an intersection between historical and contemporary discourses; the metamorphosis of history when observed through the lens of communications media. Media, then, work as interfaces, not only in relation to the immediate content, but also to the study (and use) of history.

When Elena Lamberti probes "the literary Origins of Media Studies," she directs her attention mostly to McLuhan's modernist influences. And quite rightly so—McLuhan's mosaic definitely goes back to the aesthetics of Pound, Eliot, Joyce and Lewis. But then again, what they did in turn was to bring the early modern, premodern and antique culture to their own times—*What might have been and what has been //Point to one end, which is always present*, as T. S. Eliot points out in "Burnt Norton." Modernism may, after all, emanate from "interfaciality"—that is, from the method of historical juxtapositions—and the mosaic is a very congenial (and *emblematic*) form to present them.

Finally, to operationalize the media archaeological juxtapositions discussed above, we will end this chapter by looking at two works that explore digital technology as well as analog nostalgia. In various ways they juxtapose media historical impacts that at once affirm McLuhan's historical gaze, and the media archaeologist's interest in materiality and margins.

## 2.5    HEGNHØJ AND ESSVIK. MATERIALITY AND ANALOG NOSTALGIA

*The Enemies of Books* is a small book written by William Blades and first published by Trumner & Co. in London in 1881. The book also exists in an exclusive new edition, and we shall return to it soon. Blades is listed on

the title page also as the author of *The Life and Typography of William Caxton*. This Caxton, in turn, is known for having printed the first book in the English language in 1471—*The Recuyell of the Historyes of Troyes*—and for having developed a typeface that survived in modified form even into our day. However, the book *The Enemies of Books*, as the title suggests, describes a series of phenomena that, in concrete terms, threaten the material existence of books. William Blades (1824–1890) himself was a typographer, publisher and book collector, and had a great interest in book history and typography.

So then: Who are the enemies of the book? Blades lists them chapter by chapter: fire; water; gas and heat; dust and neglect; ignorance and narrow-mindedness; bookworms; other insects; and, finally, bookbinders and collectors—no, not even his own trade is free from accusations.

Next to the new edition of Blade's adorable book, I have a box sealed with a rubber band. On the band someone wrote, in Danish: "FORSIKTIG – INDEHOLDER POETSNE," which translates to: "CAUTION – CONTAINS POETS' SNOW." The box has the same color as beige wrapping paper, and a label on the front gives us a title in typed capital letters: *ELLA ER MIT NAVN VIL DU KØBE DET?* (ELLA IS MY NAME WOULD YOU BUY IT?) (Hegnhøj 2014). On the reverse is a similar label with the publisher's note: "These are Ella's left notes, as we found them in the Private behind the secondhand bookstore in a box under Ella's bed." If you open the box you find almost 140 typewritten sheets with a band around it. And here we also find "poet's snow"—circular clippings from a classic hole puncher.

The events described in this prose lyrical children's and teen novel revolve around Ella, whose very poignant account emerges in typewritten diary sheets as an ongoing work in progress, with an almost relentless sad tone of loss. The old cliché of the "found manuscript" reinforces the impression of something lost, almost even before the reading began: What happened? Why has anyone found this? Does the one who wrote this still live? (The real author, Mette Hegnhøj, thankfully is alive and kicking). The narrative describes Ella, who lives behind a secondhand bookstore run by her mother. Ella wants a cat. And suddenly a cat emerges, a lost little rascal that the girl takes for her own and calls Kattekismus (Catechismus) after Luther's catechism—from which Ella ripped pages to

**Fig. 2.1** Mette
Hegnhøj, "Catechismus,
Come back!" (From *Ella
er mit navn, vil du købe
det?* 2014)



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(————————————————————)
(    KOM TILBAGE!    )
(                    )
(     § §            )
(    (≛!≛)       /   )
(    (KATTEKISMUS)   )
(     " "      " "   )
(————————————————————)
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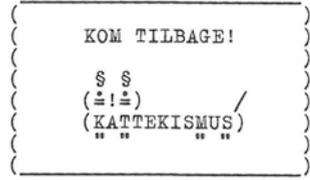
make paper rats. But after nine days, Kattekismus disappears: "Without cat after with cat /is worse than /without cat before with cat. /I know that now" (Fig. 2.1).

Ella's mother claims that her daughter was affected by asthma caused by the cat, but she herself thinks it is the books she is allergic to. In growing frustration, the girl attacks her mother's antique store with a hole puncher—and creates the "poetic snow" that comes with the box. The reader may guess the gloomy truth about the cat's disappearance, but Ella lives in hope. And hidden in this hope is also the longing for a lost father. Mette Hegnhøj's poetic text establishes the sentimentality of loss, not only through the lyrical prose sheets, but also in the materiality that *Ella er mitt navn* exhibits. The author is said to have used nine different typewriters to create the book, so it is not a matter of digital manipulation. Also, the box's "poet's snow" is mechanically made—these really are punch clippings.

The typewriter and hole puncher represent an office and paper culture that we have more or less left behind.[6] These are tools that at their appearance had the potential of positioning women in an initial stage of emancipation, because a woman could enter the labor market as a typist, but at the same time she was so underpaid that she had to work very hard if she did not have the luck to be married. The office, nevertheless, represents increased social mobility for women at the end of the nineteenth century and beginning of the twentieth, a fact that Friedrich Kittler discusses in his familiar Dracula essay—and that is also described as a process with obstacles, in Swedish author Elin Wägner's fine debut novel *Norrtullsligan* from 1908 (translated as *Men and Other Misfortunes* 2002; Kittler 1997; Wägner 2002). Ella's typewriter, in contrast, describes a voluntarily

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[6] On the standardizations of the office and paper culture in Sweden during the twentieth century, see Charlie Järpvall (2016).

chosen enclosure, because after the cat's disappearance she refuses to go out. Only when she seems to have produced enough poet's snow does she leave home. The final word of the narrative is "Ella?" followed by a last typewritten sign bearing the book's title: "Ella is my name. Do you want to buy it?"

The cat's name, Kattekismus, addresses the Danish title of Dr. Martin Luther's catechism: *Katekismus* and *Den lille katekismus*. Considered from a media archaeological perspective, this is more than a pun—Luther's reformation is intimately associated with the establishment of the printing press: "I simply taught, preached, and wrote God's Word; otherwise I did nothing," Luther preached. "And while I slept, or drank Wittenberg beer with my friends Philip and Amsdorf, I did nothing; the Word did everything" (Luther 1522). Moreover, the theses the reformer according to tradition nailed on the church door in Wittenberg find a resonance in the signs and proclamations Ella very innovatively creates, mostly with the x-key on her typewriter: "IN A WAR THE BOOK WILL DIE," for example (Fig. 2.2). She finds a little note in the bookstore: "Ordered goods, it said on the receipt. /And kitten. /Sold is sold Ella." The mother thus claims that she sold the cat and by so doing she buys herself the forgiveness of sins, the receipt being a (probably falsified) letter of indulgence. The literal disintegration of Luther's catechism strengthens the bond between cat and child, and also calls into question an anthropocentric humanism that puts the relationship between humans first, and emphasizes the links between literal education and learned knowledge—where *Luther's Small Catechism* long served as the eye of the needle. But Ella becomes an enemy of books and produces poet's snow.

Yes. Let us return to *The Enemies of Books*. My copy is thus a new edition, published by Rojal Förlag, in Gothenburg, Sweden (Essvik 2018). Behind this small publishing house we find the artist and bookbinder Olle Essvik, who in several different projects merges the digital with the tactile; cultural history meets new technology. Rojal's edition of Blade's book is accompanied by a small booklet describing the process of creation. As a bookbinder, Essvik searches the internet for books on books, and finds a very expensive copy of William Blade's book in a British antique store. The artist orders the book, scans the pages and prints the sheets. Essvik is searching the web again, this time for descriptions of bookbinding machines. He starts from these and constructs a bookbinding apparatus,

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X       XXXXX  X       X       X   X   XXX     X    XXX
X       X      XX      X       X   X   X   X   X   X    X
X       X      X X     X       X   X   X   X   X   X
X       XXX    X   X   X       XXX     XXX     X   X   XX
X       X      X     X X       X   X   X   X   X   X    X
X       X      X      XX       X     X X     X X   X    X
X       XXXXX  X       X       X     X X     X X    XXX
```

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            XXX   X   X     X     X
          X   X   X   X    X X    X
          X       X   X   X   X   X
          XXX   XXX   XXXXX   X
              X   X   X     X   X   X
          X   X   X   X   X   X   X   X
          XXX   X   X   X     X   XXXXX
```

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XXXX    XXX     XXX    XXXXX  X       X       XXXX     XXX X
X   X   X   X   X   X   X      XX      X       X   X   X    X
X   X   X   X   X       X      X X     X       X   X   X   X X
XXXX    X   X   X   XX  XXX    X   X   X       X   X   X   X X
X   X   X   X   X   X   X      X     X X       X   X   X X    X
X   X   X   X   X   X   X      X      XX       X   X   X    X
XXXX    XXX     XXX    XXXXX  X       X       XXXX    X XXX
```

**Fig. 2.2** Mette Hegnhøj, "IN A WAR THE BOOK WILL DIE" (From *Ella er mit navn, vil du købe det?* 2014)

the parts of which he prints on a 3D printer. With this machine, he binds 200 copies of the book and sells it as a conceptual work of art. An expression, if you so wish, of love for the book's enemies. Many people believe that the very concept of digitizing is an enemy to the book, but what we are witnessing here is how digital technology is specifically used to maintain a craft which is gradually languishing. Media history as a media archaeological loop.

Hegnhøj and Essvik, two literary projects that in different ways deconstruct the classic book format—one by using typewriters and putting the book in a cardboard box together with punch clippings; the other by recreating an antiquarian book using a scanner and a 3D-printed bookbinding machine. Hegnhøj does not flirt with digital culture; on the contrary, the

production process is strikingly analog (or non-digital)[7]—nine typewriters, real punches, papers in a box, rubber cord. But it is still our own contemporary age of digitization that give a special nimbus to Hegnhøj's method. Of course, the workload would have been more or less the same, and the narrative content of the story would have been interpreted in a similar way, if *Ella er mit navn* had been published 30, 50 or 75 years ago. But as an artistic and tactile expression, our digital environment is decisive for how the text is perceived.[8] Essvik's strategy for merging digitization and cultural history is of a completely different nature. With great zeal he explores (in several projects) the relationship between new technology and old crafts, or constructs computer games of Samuel Beckett and Franz Kafka.[9]

In both cases, we are dealing with expressions of what we today call "analog nostalgia"—a concept that mainly circulates in postdigital and media archaeological research (and which we will explore further in Chap. 3). This fascination for the analog can be expressed in the reuse of various retro techniques, for example—as in Hegnhøj's and Essvik's works—by emphasizing the paper and the book as media with certain material qualities, or reproducing sounds of crackling vinyl on sound recordings. Analog nostalgia should not be seen as an escape from our digital age, but rather as paying attention to the materiality that has always characterized all media expressions, from the embodiment of the ancient rhetoric and the tactility of the codex to digital culture's at once virtual and presence-creating tendencies.

Today's technologies, thus, can become tools for reapproaching history, and actually rewriting it, in ways both McLuhan and media archaeology have suggested—although their approaches to this rewriting probably would differ. Both Hegnhøj's and Essvik's works offer us the opportunity to reflect upon media history and media materiality, and thus they point out something important: that juxtapositions constitute the pedagogical core of digital epistemology (Fig. 2.3).

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[7] As explained in Chap. 1, "analog" and "digital" are not symmetrical entities, not a binary couple.

[8] Hegnhøj, Mette (2017) published the book *En prik og en streg* (A Dot and a Line). The instruction that followed was: "There are no pictures in this book. And that's because you are supposed to lie on your stomach while someone reads it to you – and simultaneously draws the stories on your back!" More tactility in the digital age.

[9] For an overview of Essvik's works, see https://www.jimpalt.org/ and http://www.rojal.se/ (accessed April 2020).
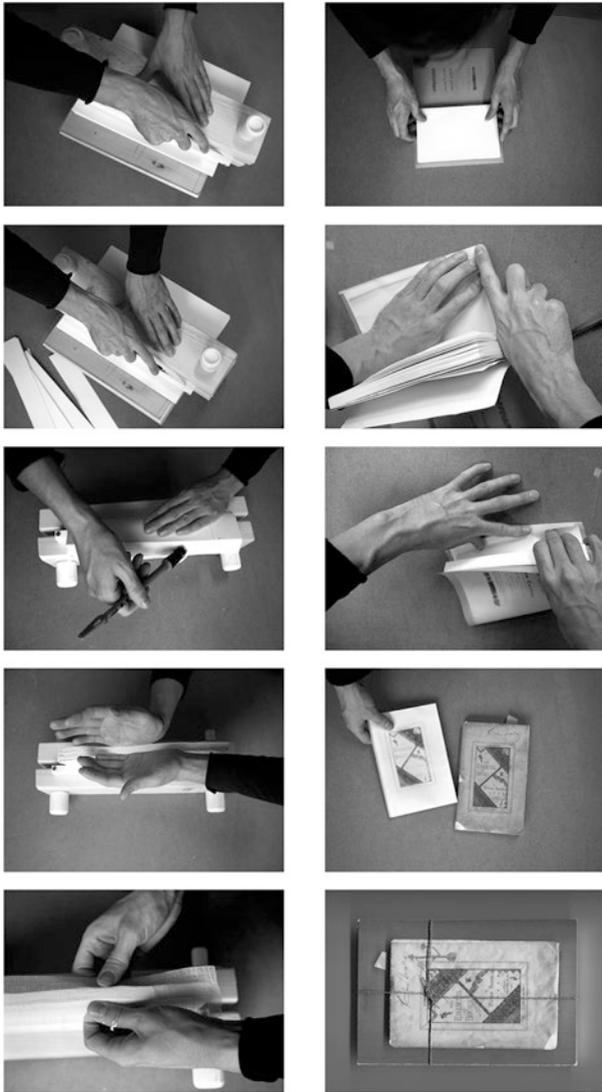
**Fig. 2.3** Olle Essvik, pictures describing the making a new copy of William Blade's book with a binding machine constructed with the help of a 3D printer (From *The Enemies of Books* 2014)

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# CCC versus WWW: Digital Epistemology and Literary Text

**Abstract** This chapter explores the concept of digital epistemology as a mode of thought. The digital is approached as a "lens" (Lindhé, *Digital Humanities Quarterly, 7*, nr 1. http://www.digitalhumanities.org/dhq/vol/7/1/000161/000161.html. Accessed Apr 2020 (2013)), focused on the relation between cultural history, literary texts and digital discourse. Examining examples from different literary texts, from the 1960s to the 2000s, this chapter establishes a media archaeological juxtaposition between digital culture and early modern modes of thought such as the *Kunstkammer*, the emblem, the fragment, and also the archival principle of pertinence. The chapter argues that digital epistemology possesses a dual function: enhancing the reading of art and literature in the light of digital culture, and inviting a reconsideration—and even restoration—of the impact of early modern aesthetics.

## 3.1 The Mechanical Hand

In a remarkable piece of prose lyric from 1966, the Swedish author Göran Printz-Påhlson (1931–2006) lends his voice to Charles Babbage:

> No man can add an inch to his height, says the Bible. Yet once I saw the detective Vidocq change his height by circa an inch and a half. It has always been my experience that one ought to maintain the greatest accuracy even in small things.

No one has taught me more than my machine. I know that a law of nature is a miracle. When I see the dragonfly, I see its nymph contained in its glittering flight. How much more probable is it that any one law will prove to be invalid than it will prove to be sound. It must happen in the end: that wheels and levers move accurately but that the other number will appear, the unexpected, the incalculable, when the nymph bursts into a dragonfly. I see a hand in life, the unchanging hand of The Great Effacer.

Therefore, be scrupulous and guard your reason, in order that you may recognize the miracle when it occurs. I wrote to Tennyson that his information was incorrect when he sang 'Every minute dies a man, /Every minute one is born.' In fact, every minute one and one-sixteenth of a man is born. I refuse to abandon this one-sixteenth of a man. (Printz-Påhlson 2011, 165, in Robert Achambeau's translation)[1]

This reflection has a full title that almost makes for a piece of prose lyric in itself: "Sir Charles Babbage Returns to Trinity College after having commissioned the Swedish mechanic Scheutz to build a difference engine. On the bank of the River Cam he gazes at the Bridge of Sighs and contemplates the life of the dragonfly." Already the title, thus, seems to suggest some sort of information overload, if not in its content (the reader may have quite some use for this background) but in relation to common title practices. Moreover, the poem has as its subject a machine that produces other overloads—in the end "one-sixteenth of a man."

The Swedish original where this poem was published in 1966, *Gradiva och andra dikter*, has on its cover a photography of a mechanical hand, which at first glance looks like some form of prosthesis. The back cover explains that the photo is of "the mechanism in the hand of the 'musicienne,' the piano playing doll, which Henri-Louis Jaquet-Drotz displayed on an exhibition of automata in Paris 1783." Is this the hand of the poet? Poetry as an automated process? The Death of the Author?

The original collection is divided into four parts: the first one, in the form of a play, is a paraphrase on the German author Wilhelm Jensen's novella *Gradiva* from 1902 (which, obviously, has lent the poetry collection its name); part 2 contains poems about, among others, the Rosenberg couple accused of espionage, the (Swedish/Amercian) union martyr Joe Hill, Gustave de Beaumont and Alexis de Tocqueville, and the escape artist Houdini; part 4 is a short suite which under the headline "Summary"

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[1] Printz-Påhlson's poems are translated by Robert Achambeau. I have taken the liberty of adding two commas in the above-quoted text. All other translations from Scandinavian languages are by me. See also Printz-Påhlson (1966, 57).

contains three poems written in English about the comic characters Superman, Bringing Up Father and The Katzenjammer Kids. If this did indeed make up a "summary" it may be as a comment upon the meta-poetic and cross-border character of the collection. The author comments in a footnote that "I have called *Summary* the section where I gather three poems in English about comic characters, in order to argue, for sure, that you don't have to be less serious when you write about Superman, Bringing Up Father or The Katzenjammer Kids, than when you write about the Rosenbergs" (Printz-Påhlson 1966, 69).

But it is part 3 of the book that is of particular interest to us, since here we find mechanical dolls, monsters and machines. The title of this section is "The Automata" ("Automaterna") and it contains six prose lyric texts, the first dedicated to the abovementioned French watchmaker and constructor of automata Jaquet-Drotz; thereafter a reflection in the words of Mary Shelley's "Man-Made Monster"[2]; this is followed by a poem called "Formula Transition," inspired by the programming language Fortran; and the text quoted in the opening of this chapter is about Charles Babbage, the man behind the difference engine and the analytical engine, both considered pioneering steps towards the construction of the modern computer. The Automata section proceeds with a short text about the mechanical doll Olimpia (from E.T.A. Hoffmann's romantic novella *The Sandman*) and the suite ends with the poem "Turing Machine," where this theoretical construction is juxtaposed with "other kinds of machines … more abstract automata, stolidly intrepid and inaccessible, eating their tape in mathematical formulae"(Printz-Påhlson 2011, 162; 1966, 59). But these machines, so the poem tells us, "imitate within the language"— so maybe this, as the front cover photo, could be seen as another metaphor for the poet.

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[2] At the end of the poem, the author lets the "monster" utter the following words:

> For myself, it seems as if my background and construction limit the possibilities for the successful development of my personality in socially acceptable forms. Evidently, I must choose between two possible careers: either to seek self-expression in the pursuit of crime – within which vast and varied field of activity sexual murder ought to offer unsurpassed opportunities for a creature of my disposition – or during my remaining years quietly to warm my hands at the not altogether fantastically blazing but nonetheless never entirely extinguished fires of scholarship. (Printz-Påhlson 2011, p. 166; 1966, pp. 54–55).

What makes the Automata suite interesting is that it provides a concrete—and early (1966)—example of the representation of the digital in Swedish literature, while at the same time serving as a suitable gateway to the digital epistemology discussed in this volume. The representation of the digital is found explicitly in the Fortran poem, but indirectly also in the passages about Babbage and the Turing machine, since both of these names represent innovations and theoretical perspectives fundamental to the construction of the modern computer. However, the entire short section, which thus thematizes automata and other similar artifacts (such as Frankenstein's monster), can be seen as a manifestation of the more abstract, epistemological dimension examined in this book. Although the majority of the Automata texts do not explicitly deal with computers or digital technology, they nevertheless can clearly be seen as expressions of a discourse in which the digital marks its presence even when it is not articulated: Why write about Shelley, Babbage and eighteenth-century automata in 1966? Or, for that matter, why do poetry of cartoon comics? The latter could, of course, be related to the enthusiastic reception of pop art in the 1960s (Warhol, Lichtenstein, Fahlström, etc.), but also—or precisely because of this—be seen as a perspective shift away from the book's hegemonic status as a literary communicator, to a more complex cultural discourse, where media, technical artifacts and popular expressions occupy the same position as "the sunset" and "the sea."[3]

Let us now move forward, to the Swedish 1990s.

## 3.2    THE LITERARY TEXT: OPERATION CCC

The heading of this chapter may seem a little enigmatic. Here is an explanation:

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[3] "The poem about the beautiful sunset has run into some problems," wrote the Danish critic Staffan Hejlskov Larsen (1971, 172). Maybe he was thinking of the Swedish poet Göran Palm, who in 1964 made a sensation with his poem "Havet" ("The Sea"). In a free English translation:

> I stand in front of the sea.
> There it is.
> There is the sea.
> I look at it.
> The Sea. Well.

It's like at the Louvre. (Palm 1964)

> When the three books were written I did have a computer, but my search for information did not go through search engines, googling or by any other ether devices. No http://www. WorldWideWeb – but rather http: //ccc. CarCargoCollections.[4] The body instead of the ether. I am not saying this to heroize an older, more artisan mode of production, but to give a reasonable historical record. And to cast a suspicion that the way of writing or the choice of mediation already was inherent in the air I was breathing, that others had already begun with something I did not know of (but still somehow was affected by). (Gunnar D. Hansson 2009)

The quote comes from a lecture in 2008 by the Swedish author and professor in comparative literature Gunnar D. Hansson. In the 1990s he had written a number of books, *Olunn*, *Lunnebok* and *Idegransöarna*, dealing with (in turn) mackerels, puffins and yews. By the year 2008 these books were released in a compilation volume (Hansson 2008), and that was the reason for Hansson's reflection, which may serve as some kind of poetics in reverse.

These books are remarkable in many ways, not least in their structure. Since Hansson was an established poet, the titles ended up in the poetry section of bookstores, but they could just as well have been categorized as prose, documentary literature, folklore research, sagas, encyclopedias, travelogues and so on. Around the topic of each volume, the author presents poems, essays, prose, facts, tales, tables and speculations, but all this in the complete absence of summary syntheses, conclusions or overall reasoning. How do you summarize a mackerel, anyway? Or, as British botanist Alan Mitchell says, speaking about the yew: "There is no theoretical end to this tree, no need for it to die" (Hansson 2009). Clearly, there is something unsorted and encyclopedic about these texts. They become archives, but hardly sorted according to the post-romantic principle of provenance—by cause and origin, that is—but rather by the more associative order we stumbled upon in previous chapters: the *principle of pertinence*—to which we will return soon.

So, we look for expressions of a "digital epistemology" and find it in a formal order, or "disorder," in books about mackerels, puffins and yews. In the case of the trilogy, the author himself suggests that there was something outside his own conscious creation which influenced the arranging of his texts, "something I did not know of (but still somehow was affected by)." What his self-insight confirms is that what he envisioned in the early 1990s was not intentionally related to digital technology, but that he is aware that

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[4] Originally it read "http://BBB:BilBåtBibliotek," which stands for car, boat and library.

his books in their very form and structure nevertheless came to embody some of the characteristics of the new media (that Gunnar D. Hansson by that time had translated, and introduced to the Swedish public, Walter J. Ong's *Orality & Literacy* may have helped his self-observation).

There are, of course, more examples. In the "CCC era" Swedish author Gabriella Håkansson published her debut novel, the sequential story *Operation B* (from 1997, with a digital sequel published on the Bonnier website as *Operation SnabelBeta* – "snabel-a" being the Swedish word for the "at" sign, the title would translate to something like "Operation Bat Sign").[5] The first part of the novel describes a woman who has been married to a man for several decades, before she finally—and as part of an ongoing research project—simply kills him, since the investigation is over. The notion of reckless science, which in this way brutally affects people's lives, constitutes a stark contrast to the 1990s' most radical postmodern notions that "everything" is "text." At the same time, Håkansson's novel is largely playing with the notions of text and narrative.

It is, indeed, an obscure "Operation" that holds the novel's fragments together. A conspiracy? Or simply the conditions for power? Or an allegory about the task of writing novels when the great Narrative no longer has an end—"the end of history?" In Håkansson's case, moreover, the absence of an end became literal when new sequences were published on the internet, in what may have been the first network-based work in Sweden published by an established publisher (Bonnier). One of these "digital sequences" relates a slideshow (yet another obsolete technology) presented by a psychiatrist. The case she presents is about a man who has become obsessed with repairing the sewer at his summer cottage, and as a result has lost his family—and his sanity. The therapy suggested is to build small models of the living room where the pipe system is actually finished, after which the man is allowed to build a slightly larger model, and so on to more and more models, the last of which is at a natural size. The treatment method is described as a success. But what happens when the representation can no longer be separated from "reality," the original? Is it the reality that is lost—or is it the representation? Will fiction disappear, or will we (as did many in the 1990s) rather argue that everything consists of stories? Of text? Gabriella Håkansson's 1990s were greatly influenced by these issues—we saw it in Cultural Studies insisting that "everything" is a story, and in the pedagogs' ever-expanding notion of text and of course the oft-cited, and misunderstood, Derridean phrase *il n'y as pas de*

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[5] The link to *Operation SnabelBeta* was, unfortunately, broken long ago.

*hors-texte*. The story of the summer cottage does not differ from the summer cottage. The research project does not differ from life.

From a digital perspective, can we perhaps turn the problem upside-down and ask ourselves if instead it is our representations that are always already reality? This, of course, may be considered an epistemological fact, but our digital habits further emphasize this—the representations we create are constantly ongoing. The original concept of mimesis also included *methexis*, participation (Sypher 1968, xviii; Kelty 2016). An imitation was not primarily a representation, it meant performing something, a participation, just as in many of today's digital forms of expression; and also in the rudimentary interactive text that *Operation SnabelBeta* resulted in.[6]

To summarize this far, by reading through the looking glass of digital epistemology, we can detect traces of digital order, and digital structures, in texts that do not explicitly deal with computer technology, but rather display themes and orders that can be productively related to their digital environments.

## 3.3   Postdigitality and Analog Nostalgia

The fact that the digital "exists everywhere" has its origin in the observation that our environment is built on "code" rather than "codex" (although these are not binary concepts, since most codices today rely on code). This generates notions—and staging—of our entire existence as actually translatable and reproducible. As Rasmus Fleischer points out in his *Det postdigitala manifestet* ("The Postdigital Manifesto"), the only thing that keeps the music alive is the copying; that is, reproduction. Each listen to a CD or a downloaded file actually creates a new copy at the moment of playback (Fleischer 2009, 53).[7] The boundary between copy and original is challenged, a fact that leading market forces, for obvious reasons, resist by all

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[6] Gabriella Håkansson has told that she had big plans, and got some pledges from the publisher, regarding her digital sequel. Gradually the publisher curbed its enthusiasm, and in the end there remained some clickable chapters, a rudimentary hypertext (private conversation).

[7] The full quote reads:

All use of digital information means that the information is deleted. If a computer program fails to erase the tracks, the computer hangs up and in the worst case has to be restarted. All digital files will be deleted sooner or later. This is too staggering to think about in one's everyday interactions with computers. … A digital file cannot be made permanent except by incessant copying. Without being copied further, it is impossible for a digital file to survive even half as long as an old gramophone record.

means possible. But this insight also makes us aware—or makes us suspect—that our own identities are not that original, either. William S. Burroughs' experiment with tape recorders in the 1960s, and the conclusion that we all, our speech, our bodies, are always already pre-recorded, looks uncomfortably prophetic (Burroughs 1962). Try to say something new at a party, something you never said before. If, in the 1960s, this could be received as a striking but nonetheless curious observation, the same statement in our own—posthumanist, digital—era becomes an existential reality.

The observation of these phenomena has given rise to the "postdigital" condition that inspired Fleischer's manifesto. That being said, it is important to realize that this is not to be confused with an "anti-digital" attitude, nor a notion of something to surface "after" the digital. Rather, the notion of the postdigital expresses an awareness that digitization has created certain phenomena and artifacts which cannot easily be incorporated into the traditional capitalist logic that is often regarded as associated with digital culture (as long as it does not threaten its own interests). It is also about letting us understand that the digital cannot be realized without analog receptors in the form of text, sound, light and so on; this is the starting point for an analysis of the complex and—as we observed in Chap. 1—non-binary relationship between digital and analog culture.

One expression of a postdigital approach to cultural production is what has come to be called "analog nostalgia," which was mentioned in the previous chapter. The concept of analog nostalgia has been attributed to Laura Marks and was launched around 2000. In the essay "Analogue Nostalgia and the Aesthetics of Remediation" from 2014, Dominik Schrey parallels the phenomenon with the ruin cult and fragment aesthetics of the eighteenth and nineteenth centuries (Schrey 2014; see also Marks 2002).[8] In a prolongation of Marks, Schrey claims that analog nostalgia is partly that digital technology is used to emphasize the analog, and partly that it is the "noise" rather than the "signal" that is noticed:

> [T]he phenomenon is not about the refusal of digital technologies, but exclusively about the digital remediation of analogue aesthetics within the

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[8] Ruin romanticism and fragment aesthetics, albeit not early modern, are two highly interesting art historical concepts in the light of digital epistemology. Moreover, it has to be said that early modernity is *not* an end in itself here; rather, it is the recursive (see Chap. 1) oscillation between different historical moments and genres that is in focus. It will be interesting, in coming projects, to further explore both these romantic phenomena as well as premodern forms and classic rhetoric through the digital lens.

digital. To put it in terms of communication theory, analogue nostalgia is directed towards the noise, not the signal. In the broadest sense, it operates as a strategy of re-enchanting an object through aesthetic defamiliarisation [sic] as it is characterised by deliberate imperfection. (Schrey 2014, 34)

Of course, it is in this "noisy soundscape" that we also identify the rattle of the machine, relive the shortcomings of Dolby B, feel the weight of the book and connect the vinyl player through Bluetooth or the computer's USB port. Analog nostalgia, thus, is one of the most concrete expressions of media materiality observed through digital epistemology.

Examples of this materiality from our own twenty-first century can be found in the Swedish poet Johan Jönsson's astonishingly extensive collection of poems, which must almost be described in terms of a postdigital and poetic epistemology: *Mot, vidare, mot* (2014, "Towards, further, towards") counts 1562 pages and *med.bort.in.* (2012, "with.away.with.") counts 1244 pages (Jönsson 2012, 2014). Another expression of this materiality is Swedish journal *OEI*'s monumental relation to paper consumption, publishing issues that are so dense as to almost oppose distribution.[9] Whether or not these works are produced with "the digital" in mind, their mere presence among pdf files, smartphones, websites and snapchats makes for a brutal statement that definitely differs from how the same products would have been perceived 50 years earlier. Through their manifest materialities these expressions establish media archaeological access points where concepts such as "digital" and "analog" can be further problematized.[10]

Former Swedish Academy member Lotta Lotass is another writer who stubbornly drives an analog nostalgic campaign. Her neo-modernist approach of presenting literary fiction in a box of pamphlets, as in *Den vita jorden* ("The White Soil" or "The White Earth", 2007), or as a 50-meter-long telegram strip containing one single sentence, as in *Fjärrskrift* ("Teleprints" 2011), is a tangible expression of a postdigital discourse. It is notable that many of Lotass' texts contain a lot of technology (many explorers, many technological advances), but digital technology is mostly absent on the explicit level of the texts. However, it is not a case of Lotass

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[9] For example, *OEI* #53–54, "Dokument, Dispositiv, Deskription, Diskurs," counts 1280 pages, while *OEI* #63–64, "Strata, geologisk tid, jordkonst/Land art i Sverige," counts a humble 688 pages. It has happened more than once that the editors have asked subscribers to collect the journal at the office, since they are too expensive to send by mail.

[10] On the relation between analog and digital, see the introductory Chap. 1.

creating these works to "challenge," "resist" or even "relate to" her digital contemporary—digital epistemology establishes its own relationships (moreover, Lotass has created digital works as well). What seems to characterize Lotass' prose, however, is the almost demonstrative *lack* of networks. Sometimes (like in *Den vita jorden*) it seems that the text itself lacks a common network. Make it a box instead.

## 3.4    DIGITAL. TACTILE. CABINET

> **(DO NOT** touch the objects
> The surface absorbs
> salt, dirt and fat.
> Do not touch.
> The acids of the skin
> causes oxidation.):
> …

These lines are translated from the Finland Swedish poet Ralf Andtbacka's (2008) collection of poetry *Wunderkammer* (Andtbacka 2008, 18). This poem—probably an *objet trouvé*, and as such possibly a note from a museum somewhere—establishes a paradox. Twice, the reader is prompted not to touch the objects. But by this very gesture—the injunction *not* to touch—a tactile dimension is established in these brief lines. "We will not ever come closer, and yet more distant, to the thing-in-itself," as Swedish critic Mattias Pirholt notes in a review (Pirholt 2010). It is an observation of tactility that is enhanced by the information about our fingers, as *index* and *digit* (Peters 2016). Fingers (*index, digit*) are not only digital, but also contain salt, dirt and fat, and they carry acid which may cause oxidation. The human touch is a chemical laboratory.

In *Wunderkammer* one finds several reflections on humanity's relation to the objects around us. The motto of the book reads (in Swedish): "There is something odd about things. /How they gather, and silent stay; /how they disperse, if you may." It is poetry that almost could be a textbook example of actor-network theory—the objects are indeed agents in Andtbacka's poetry.[11] And these objects are constantly engaged in new

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[11] Actor-network theory (ANT) is a way of describing our relationship to objects that are not normally attributed agency. For an account of some of the theory's trends, see Latour (2005). In an article explaining some of the theory's premises, Latour (1996) argues:

relationships, not only in language (this is more than language poetry), but rather in the very relation of things to each other, to language, to human beings, to life. Neither are the digital objects excluded—primarily they mark their presence through the playful, neo-modernist typography. But as we shall see, there are also media archaeological points of contact between a digital epistemology and the aesthetics based on the *Wunderkammer* that gave the poetry collection its name.

I have already described some basic characteristics of the cabinet of curiosities in Chap. 1. With Horst Bredekamp—and Francis Bacon—the playfulness of the *Kunstkammer* was emphasized (Bredekamp 1995, 67). In Ralf Andtbacka's *Wunderkammer,* tooCabinets of curiosities, the poetic structure is maintained by this playful materiality—digital as well as tactile—and by negotiating the relation between sorting and association. Andtbacka's collection of poems refers not only through the title, but also in its practice, typographically, thematically and ironically (Malmio 2020), to the cabinet of curiosities as an order of knowledge. But this is also put in relation to digital technology as a system of information management.

It is thus rewarding to read Andtbacka's book in the light of the associative logic of the *Kunstkammer*, but also as an expression of a digital epistemology and, further, to see the *Kunstkammer*'s mode of thought as a congenial expression of this epistemology. As for the expressions of digital technology in Andtbacka's text (Fig. 3.1), they are most evident through the book's typographical playfulness, but also through a list, at the end, of (for the book's research) relevant web pages, sorted in the form of an hourglass and with the supplementary invitation to "record the date when you discover that *all the verses in the poem* are dead" (Andtbacka 2008, 147, my italics). The poet's insistence that the prosaic internet addresses are "verses" in a "poem" establishes another relationship between art and digital culture, and between "life" and "death": a URL or, rather, a *verse* that can "die" must have had a life.

AT [Latour's abbreviation for ANT] has been developed by students of science and technology and their claim is that it is utterly impossible to understand what holds society together without reinjecting in its fabric the facts manufactured by natural and social sciences and the artefacts designed by engineers. As a second approximation, AT is thus the claim that the only way to achieve this reinjection of things into our understanding of the social fabric is through a network-like ontology and social theory.

**Fig. 3.1**   Ralf Andtbacka (From *Wunderkammer* 2008, photograph)

One of the poems in *Wunderkammer* carries the title "Naturalia & artificialia," and thus directly addresses two sorting principles of the cabinets (the other two, according to Bredekamp, being *Scientifica* and *Exotica*; see Chap. 1, and Bredekamp 1995, 34). The poem begins with a classification of a plant, written according to the order established by Carl von Linné: Name; Class; Order; Family; and Place of Growth. Interestingly enough, Horst Bredekamp points out that precisely Linnaeus's sexual system is one of the clearest examples of the new modern order that entered at the same time as the status of cabinets of curiosities started to decline (Bredekamp 1995, 88–91). Enter modernity. Thus, the first lines of the poem juxtapose—consciously or not—two contradictory systems of knowledge: the associative practice of the *Kunstkammer* and the systematic logic of Linné.[12]

Returning to the introductory quote from Andtbacka's book, we see a typographic peculiarity that recurs in the first half of the book::…A colon followed by an ellipsis (and throughout the book these ellipses are repeated). The colon suggests a following paragraph or sentence, often with some informational content. Also, the ellipsis suggests something to be continued. With this tiny typographic detail, the poet fuses disparate elements "in free, concomitant phenomena void of obvious purpose" (again, Bredekamp 1995, 109), whether the reader accepts this or not. Andtbacka thus locates the cabinet to language itself: not only to language but also to typography and—finally—to digital technology. Nevertheless, as previously pointed out, this is not a laboratory for language poets only. The materiality of the *Wunderkammer* is tactile, and epistemological.

## 3.5  The Principle of Pertinence

The organizational principle of the cabinet of curiosities, and Andtbacka's book, once again lead us to one of the observations we made in Chap. 2, and of Gunnar D. Hansson's poetics, namely the *principle of pertinence*. The principle of pertinence (and, consequently, also the *Kunstkammer*) can be seen as an attempt to maintain a divine order, a model of the

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[12] This collision of epistemic systems is similar to the observation made by Norbert Wiener, in the introduction to his groundbreaking work *Cybernetics: or Control and Communication in the Animal and the Machine* (1948). In the opening pages Wiener actually analyzes a German nursery rhyme, which mentions clouds and stars, and he observes that this little song actually combines two different epistemes: astronomy and meteorology (Wiener 1948, 30).

world.[13] The principle of provenance, on the other hand, transforms the archive from a "message" into a resource for these models. As already noted, Susan A. Crane, in her essay about cabinets of curiosities and the Museum of Jurassic Technology, describe the objects in the *Kunstkammer* as telling stories, blending fact and fiction: "[T]he desirability of the curious object lay in its relation to a known or acceptable story" (Crane 2000, 72). The objects in the museum, on the other hand, should be seen as representations, as part of the great national mythmaking: "[T]he historical object participated in a narrative uniting location and experience" (ibid., 76). The archive ordered by provenance, arranged by source and origin, also tells a story about the archive's own creation, a story that differs significantly from those told by the principle of pertinence.

This principle—also, we may remind ourselves, known as the subject principle or the dossier system—coincides with Horst Bredekamp's description of the cabinets' mode of thought: the true expression of an object or a person is discovered in freely associated phenomena, with no obvious connection. In the essay written for *Litteraturbanken* 2017 (see Chap. 1), Andreas Önnerfors also argues for the connection between cabinets of curiosities and the principle of pertinence:

> The digital softens up staggered epochs and makes the texts of the past immediately present, with a potentially acute contemporary relevance. In the digital Wunderkammer, knowledge can be formed through a creative combination of different approaches, which challenges our classic notions of the relationship between text and context. Furthermore, I argued that the digitalisation of the searchable whole of the text also dissolves the classical hegemony of earlier knowledge organizations. (Önnerfors 2017)

Moreover, these tendencies coincide with several of the approaches within the emerging field of media archaeology, and this becomes even clearer by considering the synonyms for English's "pertinence" that *The Merriam-Webster Dictionary* lists: applicability, bearing, connection, materiality, relevance—all of which seem to be relevant to the media archaeological discourse.[14] Not only Google but also many pre- and early modern forms of thought harmonize with this way of arranging and commenting

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[13] Pointed out by Otto Fischer, professor of rhetoric at Uppsala University, private conversation.

[14] See the Merriam-Webster online entry for "pertinence", https://www.merriam-webster.com/dictionary/pertinence (accessed May 2020).

on existence. The recursive move from provenance to pertinence thus becomes a key to the description of a digital epistemology. In light of the principle of pertinence, we can return to texts such as Lotta Lotass' *Aerodynamiska Tal* ("Aerodynamic Figures") from 2001, a catalog of famous aircraft sorted by the years they appear in history (Lotass 2001). Also, Gunnar D. Hansson's *AB Neandertal* (1996, "Neandertal Inc."), builds on the associative principles of the previously mentioned trilogy, but this time the text is arranged alphabetically. Already the title can be read as a compressed "list" which simultaneously marks a beginning and an end: AB, as in the alphabet. Neanderthal, the extinct archaic human species.

The relationship between pertinence, cabinets of curiosities and media archaeology is further strengthened by the fact that it was the Enlightenment and systematic ordering of progressing Modernity that brought an end to the organizational principle of the *Kunstkammer*. Patrick Mauriès writes in *Cabinets of Curiosities* how the escalating interest in optics and telescopes in the eighteenth century was viewed with skepticism among collectors of curiosities, as these tools were devoted to the study of the *particular* and the *individual* object, rather than letting the viewer marvel at the irregularities of creation (Mauriès 2015, 182).[15] The classic cabinet encouraged combinations, the crossing of borders and the affirmation of similarities between nature and culture, artifact and organic, the grotesque and the beautiful. The cabinets that materialized in the nineteenth century with few exceptions exhibit a museum order, where provenance and science are prevailing principles. It is the organizational, and by reason structured, order of modernity that has made its entry:

> The cult of curiosities was a cult of summation, of the sum total of things, of juxtaposition and addition repeated *ad infinitum*; the Age of Enlightenment, to reiterate a contrast that is now time-honoured, adopted a stance at the opposite extreme, placing itself firmly on the side of universality, of a hierarchal world view, and of an assumption of the validity of the

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[15] Patrick Mauriès 2015 (2002), p. 182:

> If he [Emanuele Tesauro] took as his title for his most celebrated work The Aristotelian Telescope (Il Cannochiale aristotelico, Turn, 1675), it was in order – significantly – to lament the fact that the telescope diminished the mystery of creation.

broader categories of reason.[footnote in quotation] After 1750, the collector of curiosities and "patient pedant," as represented by Sir Thomas Browne, was to give way to the Encyclopaedists, who dismissed the naivety and archaic approach of their predecessors with withering scorn … (ibid., 189)[16]

Media archaeology adopts Foucault's (and several other postmodern thinkers') criticism of modernity's trust in reason. Through media-historical juxtapositions, archaeological "finds" and alternative historiographical strategies, modernity appears more or less as a parenthesis, a way of arranging culture and science that has certainly been educational and systematically satisfying, but at the same time exclusive, elitist and not the least arbitrary. This is echoed in a fine formulation by Rasmus Fleischer in his *Det postdigitala manifestet*:

Between the pre-modern and the post-digital, we find, as if folded-in, the whole package that is usually called modernity. A systematic division of such things as body and soul, nature and culture, object and subject, were its characteristics. At the end of the eighteenth century, "culture" was invented as its own sphere, defined as a counterpart to the sphere of industrial production. (Fleischer 2009, 26)

Digital works, so far, are absent in this presentation—but only to clarify that digital epistemology is not necessarily a matter of digital objects. An important ambition with the concept of digital epistemology, however, is to abolish the sometimes still quite sharp distinction between on the one hand digital born, electronic works and on the other hand traditional book culture—or other media, for that matter.

The present text should therefore be regarded as a sketch, as another attempt (I mentioned a few in the first chapter) to put "the digital" in a new light and to connect the (post)digital with early modern culture. As we have seen, media archaeology as a concept shares many of the principles that can be found in some early modern modes of thought, as well as in many of today's digital expressions. Search engines and digital interfaces (in telephones, tablets and computers) as well as electronic works,

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[16] The footnote in the quote refers to Guiseppi Olmi, "Théâtres du monde, les collections européennes des XVIe et XVII siècles," in Roland Schaer (ed.), *Tous les savoirs du monde: encyclopédies et bibliothèques, de Sumer au XXIe siècle*, Paris: Bibliothèque Nationale de France 1996.

computer games and memes exhibit multimodal expressions that expose many similarities to early modern forms. The search engine and the computer desktop are not limited to genres but to function, and they re-examine relationships between cause and effect, materiality and distance, provenance and pertinence. Electronic literature, games and memes blend texts, images and sounds into a multimodal experience that has more in common with the cabinet of curiosities, the emblem and fragment aesthetics than with linear narratives, provenance principles and strict categorizations.

## 3.6    IMRI SANDSTRÖM: LANGUAGE AND THE PRINCIPLE OF PERTINENCE

The Swedish artist and author Imri Sandström's "text box" *Det kommande skallet/The Coming Shall*, from 2017, in this context is an example of both analog nostalgia and (post)digital remediation. Her work also displays features we could describe as a "principle of pertinence of language."[17] By various stagings, Sandström's work establishes an interaction between text and image that, through its activist approach, its *enargeia*, in Cecilia Lindhé's words could be called "ekphrastic"; that is, directed speech that calls for the reader's (or listener's) own creation of images, the viewer's own activity (Sandström 2017; Lindhé 2013).

Sandström works in a variety of formats, such as text in book form, installations, performances, visual and digital art. In 2019 she finished her PhD project in Literary Composition at the University of Gothenburg, with the title *Tvärsöver otysta tider/Across Unquiet Times* (Sandström 2019). In dialog with, among others, the American critic and poet Susan Howe, Sandström in this project mainly focused on installing a number of relations between the history of the Västerbotten region in Sweden and New England, USA. She does this partly through juxtapositions of both these regions, inspired by postcolonial theory as well as by Bakhtin's concept of the chronotope (Bakhtin 1981), but also by bold transformation maneuvers such as various different "counterintuitive" translations with homonymous practices and puns. Thus, Bakhtin's "Chronotope" becomes

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[17] In Kungliga Biblioteket (the Swedish Royal Library) the arrangement of files in accordance with the principle of pertinence was called "the dossier system," which seems appropriate in this case, since Sandström's work, the text box, indeed could be seen as a dossier. Again thanks to Otto Fischer for this information, unpublished conversation.

"Kronotorp" (a small Swedish croft, instituted by the state for colonizing the North), where the notions of time and space in the literary text transform into a postcolonial discourse about the state's desire to control northern labor in the first half of the twentieth century (Sandström 2017, 35–38). Another example of how Sandström plays with homonymous juxtapositions can look like this:

> I översätts till svenskans in. The Swedish word i means in.
> …
> I skogen In the woods
> I skogen I the woods
> [ – – –]
> The English I is pronounced AJ
> Jag, I uttalat *aj* in Swedish
> this is an expression of pain:
> "AJ, det gör ont!"
> "I, it hurts!". (Ibid.)

Sandström's project in this text box—or dossier—embraces several of the aspects that the perspective of digital epistemology brings forth. The very act of publishing texts in a box confirms previously noted strategies for establishing paper and print culture's tactility in our digitized and screen-mediated existence (we have mentioned Lotta Lotass' *Den vita jorden*, Johan Jönsson's poetry collections, the monumental editions of the magazine *OEI*). Moreover, the content of these dozens of small text booklets in turn remediates digital installations that have either been presented as installation performances or published on the author's website (or both).

It is thus a seemingly loosely connected work, characterized by both analog nostalgia and tactility, as well as reuse and reconfiguration of digital installations. "Seemingly," that is, because the project has some very clear nodes. One node is represented by the before-mentioned geographical juxtaposition of New England and Västerbotten, and thereby a "monological" dialog between Susan Howe and Imri Sandström ("monological," since this dialog takes place on Sandström's terms and with well-chosen reuse of text passages by Howe); another node is linguistic labs with homonyms, direct translations and puns (Chronotope/Kronotorp; I/AJ), which in repetitive practices twine the work together.

Sandström's box presents the title and subheading on both sides, in Swedish and English respectively. The full name of the work in English thus reads:

DET KOMMANDE SKALLET
THE COMING SHALL
is a selection of
cross-readings
of
Västerbotten's and New England's
histories and literatures
through texts by poet and
literary theorist
Susan Howe
with specific regard
to
translational writing
across English and Swedish
and
the sound and
performance
of text
as well as the act of
writing
whereby hopes to
unsettle seemingly settled
colonial historical and current
languages and narratives
arise
By
Imri Sandström

This extensive, almost archaic title/subtitle (the thoughts go to the elaborate subtitles of early seventeenth- and eighteenth-century novels) also suggests what the reader of these small booklets can expect.[18] Text

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[18] See for example the first edition of Daniel Defoe's *Robinson Crusoe*: *THE LIFE AND STRANGE SURPRISING ADVENTURES OF ROBINSON CRUSOE, OF YORK, MARINER: Who lived Eight and Twenty years, all alone in an uninhabited Island on the Coast of AMERICA, near the mouth of the Great River of OROONOQUE; Having been cast on Shore by Shipwreck, all the Men perished but himself. WITH An Account how he was last strangely delivered by PYRATES. Written by Himself.* LONDON: Printed for W. TAYLOR at the Ship

becomes sound in the various translation acts; the reader is tempted (or sometimes almost forced) to read aloud. But also, the visual installations of the texts (where a fragment from the Pietist theologian Cotton Mather can be enlarged into absurdum until only cloudy pixels are visible) challenges the normal relationship between language and materiality. Swedish blogger and literary critic Bernur (Björn Kohlström) identified this as follows:

> Writing about writing: this is a performative act, which focuses on the linguistic. Sandström also utilizes the book page, where English and Swedish can run quadruply, but sometimes also left untranslated, or part of an exchange between the untranslatable, where "yet another deviant" becomes "ännu en eljest," without your reacting to something happening in the translation. It is a creative language game performed here. And, as a result, a linguistic leak occurs. (Bernur 2018)

This "leak" works productively and poetically. And even though Sandström's translations cannot be said to be strictly digital maneuvers, they can still be seen as results of both digital and artistic visualizations of the linguistic practice that has been explored both in scenic performances and on the research project's website.[19] Together, these practices form a linguistic cabinet of curiosities in which the words, sounds and meanings are explored and shifted in an associative way, "a writing that in some way transcends," as Bernur writes (ibid.). So, we are back to the principle of pertinence again. To continue in line with Sandström's own puns, we can conclude that the province is not described with provenance.

In the language games and puns presented in works such as *Across* and *The Hiss of History* (represented also as digital performances on the project's website, as well as in the "dossier" *The Coming Shall*), both visual and acoustic aspects of the language are used as starting points for oscillatory and associative movements between the languages to be used and explored. Sandström can approach the language etymologically and lead us to the Greek roots of a word like "history." This, of course, is a traditional humanities approach, based on provenance; that is, origin and derivation. But the overall structure of the project coincides to a much greater extent

in Pater-Noster. MDCCXIX. See: http://www.pierre-marteau.com/editions/1719-robinson-crusoe.html (accessed April 2020).

[19] Sandström's project has continually been updated on the website The Pages, http://www.howeacrossreading.imrisandstrom.com/ (accessed April 2020).

with the "dossier system," the principle of pertinence, since here, too, it is the object itself, not its origin, that establishes new, perhaps surprising, but not random relationships. This can happen if we take the language seriously, something that Sandström unceasingly demonstrates through her provocative direct translations, homophonic parallels, the unsettling of meaning and puns (which always have a serious undertone). We can describe it as an exploration of resonances, similarities and transcendences based on the principle of pertinence.

A congenial description of this principle can be found in one of the authors that Sandström (alongside Susan Howe) most often cites: Gertrude Stein. In "If I Told Him: A Completed Portrait of Picasso," we read the following lines:

> Exact resemblance to exact resemblance the exact resemblance as exact as a resemblance, exactly as resembling, exactly resembling, exactly in resemblance exactly a resemblance, exactly and resemblance. For this is so. (Stein 1924)

History in Sandström's work resembles the word "Hiss," as in "a hissing," like the sound of the snake. Sandström cites the Webster dictionary which describes the sound of a human hissing thus: "To express contempt or disapprobation by hissing." But in *The Hiss of History*, of course, the most irritating "hiss" comes from the masculine subject ("his") who, purely semantically, not to mention actually, has been the dominating subject of history through the centuries. This, as we know, is an observation that has become something of a gender theory commonplace, but which in Sandström's work is thus twisted even further. And this subject is also found in Gertrude Stein's poem:

> He he he he and he and he and and he and he and he and and as and as he and as he and he. He is and as he is, and as he is and he is, he is and as he and he and as he is and he and he and and he and he. (ibid.)

However, it is possible to add yet another twist to this (although Sandström does not mention it herself). Maybe we should change the word History, add the letter T and then get *Thistory*. Using the term Thistory instead of History would be congenial with what we might call a postmodernist credo: that each story told conceals another story. Thistory is always pregnant with *Thatstory*. Here again Gertrude Stein: "Let me recite what history teaches. History teaches." (ibid.)
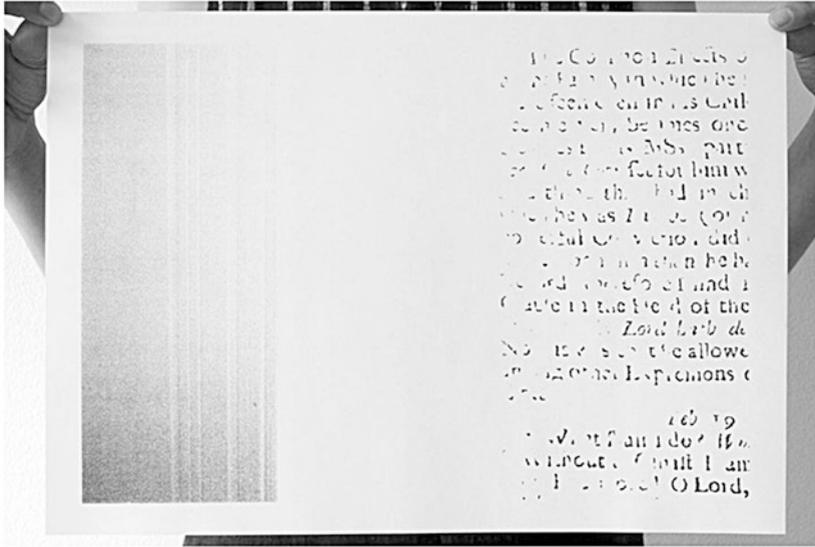
**Fig. 3.2** Imri Sandström, from *Flapping, Flapping, Flapping, Flapping* (2014), screenshot ("This is a photograph of a risograph print of *Flapping, Flapping, Flapping, Flapping*, a digital image based on an excerpt from the Gale ECCO print on demand-version of a scanned version of *Magnalia Christi Americana: or, the ecclesiastical history of New-England, from its first planting in the year 1620. unto the year of our Lord, 1698. In seven books. … By … Cotton Mather, …*", quote from *Flapping, Flapping, Flapping, Flapping*)

The box, *The Coming Shall* (as well as the website), moreover contains the permutation *O You Banner, Flapping, Flapping, Flapping, Flapping* (Fig. 3.2), which can be seen as a media archaeological deconstruction of one of the Puritan priest and author Cotton Mather's books. Sandström describes the visual material of this project as based upon

> a photograph of the lower corner of an entry in a print-on-demand version of a scanned version of *Magnalia Christi Americana: or, the ecclesiastical history of New-England, from its first planting in the year 1620. to the year of our Lord, 1698. In seven books. … By … Cotton Mather …* (Sandström 2017, *Oh You Banner*, 4)

Sandström challenges and permutates this material through a variety of materializations (of a fragment of the scanned version of the page): as

enlarged print; as a risograph print; as a textile flag; and, finally, as a flag trampled in blueberry rice, leaving bloodstain-like imprints. This is an emblematic work in many respects where the headline, visual elements and elaborate comments establish an oscillating relationship, to history, materiality, gender and moral appeal, which at the same time leaves much to the reader/viewer to extrapolate.

## 3.7   *Kunstkammer* Poetics

Three small penguins, maybe 10–12 cm in height, standing on a small shelf. The note beneath them says: "The Basic Forms of Penguin Qi Gong or Settling Yourself in the Ice!" And there is a relatively long narrative displayed behind the penguins. It is a text about polar expeditions, penguins and Qi Gong. Apart from the observation (?) that penguins tend to stand in positions which mimic the positions in classic Qi Gong, the text does not make much sense. The list of references does not make much sense, either. All of them seem to be fake, except the one to the controversial psychoanalyst Wilhelm Reich's work on the Orgone. Whatever has *that* title to do with anything here?

Another item: "Two Parts of a Typewriter on Which Walter Benjamin Wrote His Famous Essay 'The Work of Art in the Age of Mechanical Reproduction'." The story told informs us that when in Dresden, to visit the dancer Mary Wigman, Benjamin continued the work on his famous essay, traveling with his portable typewriter. Unfortunately, the machine broke down, jammed, just at the letter "a" in the word "Kamera." When he obtained a new typewriter, the manuscript shows a change in typing style right at that word. Two fully recognizable references (Benjamin and Kittler) are here paired with two arguably (not to say obviously) fake ones. And even if we ignore the fact that Benjamin did not like typewriters and produced almost every manuscript in handwriting, this story of course is too good to be true.

The *Museum der unerhörten Dinge* (Museum of Unheard [of] Things) in Berlin, where these items are displayed, is really something special. The exhibition catalog describes the museum thus:

> **Museum der Unerhörten Dinge** is
> a "Literary Cabinet of Curiosities"
> founded and curated by Roland Albrecht,
> located between house numbers 5 and 6

> on Crellestraße in Schönenberg, Berlin
> The museum displays unique things
> and their unheard (of) stories,
> all categorized according to weight,
> and holds the record of being
> the most visited museum in Berlin
> (if one offsets the number of visitors
> to the square meters of the exhibition space)
> …
> It intends to grow as the museum collection expands.
> At the present moment (Fall 2015) it contains 78 items. (Albrecht 2015, front matter)

I enter the museum with two friends. And suddenly the space seems full. It is that tiny. Yes, this museum contains fewer than 80 items, and the exhibition space may possibly be less than 25 m². Yet, I spend hours in here. Why? As observed by Crane above, "the desirability of the curious object lay in its relation to a known or acceptable story." And this is precisely the story of this museum. The objects may seem irrelevant, or at best bizarre, but the narratives around them are so fascinating. And they confirm yet another of the criteria set out by Crane:

> Curiosities belonged in a cabinet, where their unique stories retained them in each place; historical objects, however, derived their significance as much from their original site, or their collection site, as they did from an individual story. In this sense, the historical object participated in a narrative uniting location and experience, whereas the curiosity represented a transferable story. (Crane 2000, 76)

So, the object in a museum is exhibited to confirm the greater narrative, while the object in the KunstkammerCabinets of Curiosities is there for its own sake. Or for its relation to other objects rather than to the greater narrative. This is exactly what this Berlin Museum does. In what seems to be a further deconstruction of the notion that a museum should be contained in a unifying narrative, the exhibition catalog presents the objects in order of *weight*, from 1 g to 3800 g. Or, to be precise, to 21,311 g, which is the weight of the totality of the museum's objects.

The objects in themselves seem ordinary (a wedding photo, a bunch of screws), or maybe bizarre ("Film snippets of subfilms", "The Wasp Honeycomb Collection Point in Kröte"), but they do have this in

common—the narratives attached to them are really captivating. And they blend fact and fiction without a blink. When Susan A. Crane visits David Wilson's Museum of Jurassic Technology in Los Angeles, she is struck by the same experience. And as a first comment on the "fake artifact" she quotes Samuel Johnson's reaction to Ossian manuscripts: "had it really been an ancient work, a true specimen [of] how men thought at the time, it would have been a curiosity of the first rate. As a modern production, it is nothing" (ibid., 64). Thinking about this harsh judgment of the fake artifact, Crane reflects on her experience at the Jurassic Museum of Technology and concludes:

> To turn Johnson on his head: the value of curiosities is the opposite of that of antiquities. Rather than being "nothing," the modern curiosity is what curiosities have always been: a mixture of the natural and the artifactual (in the old sense of the word, meaning "man-made"), the historical and the ahistorical. … Asking whether Jurassic technology is fact or fiction is beside the point. In the presence of museums, whether actual or represented, we still ask about veracity; to visit a curiosity cabinet, one must be prepared to be confounded. (ibid., 64–65)

This is a really productive feature of the epistemology of the *Kunstkammer*: that fake and veracity were not binary opposites in the narratives that constituted the totality of the collections. They were all parts of the wonders of the world (which indeed is another unifying narrative, but on a completely different scale than the ones prevalent in the museums that followed). It is also a strategy that may shed some deconstructive light on the notion of "fake news" so prevalent in the political discourse (and social media) of 2020. You may ask if it is problematic to mix fact and fiction as an artist or curator in this way, in the era of fake news? Or should we rather see it as a counter-strategy, to make us aware and observant, through the "shock" of confusion? Perhaps we could establish a genre, or type of texts and installations, that we label "*Kunstkammer* poetics," which without hesitation, and deliberately, mixes fact and fiction, in order to make us astonishingly aware?

To blend the authentic with the artificial is, of course, not a new feature of the digital age. The point here, though, is that the very same blend has different connotations in the age of digital communications than in the ages of romantic irony or avant-garde modernism. Another reason, rather than the historical moment, for a different reception of *Kunstkammer*

poetics is that we easily can check the facts and call them fake. Thus the "confusion" may work as a pedagogical tool. And in terms of embodiment this strategy is interesting. To take the above example, I suddenly got very interested in the relation between Walter Benjamin and typewriters. I had to move myself, physically, from reading the text on the wall in the museum (or, to be honest, from the same text in the catalog) to my computer, browsing for "Benjamin" and "typewriter," or "Benjamin" and "manuscript." Just as with the emblem, the *Kunstkammer* poetics does not make me stay in the text; the solution, "the riddle," is not contained in the text, or the objects, alone, but in my embodiment of the text by my actions on the internet, and the agency this action invests me with.

*Kunstkammer* poetics. The 2018 Nobel Prize winner, Polish author Olga Tokarczuk, creates in her 2007 novel *Flights* (*Bieguni*, trans. 2017) a prismatic effect in her oscillating reflections on travel and movement (Tokarczuk 2017). The novel has no coherent narrative, but rather a handful of them, spanning from the seventeenth to the twenty-first century, and the novel is, as it turns out, a prime example of *Kunstkammer* poetics.

In the fragment "New Athens," the narrator concludes that no book becomes obsolete as quickly as the guidebook.[20] But two of these s/he stills holds on to, albeit they are very old. The first is a Polish guidebook from the early eighteenth century, from which the text cites a long passage: "On other strange and wonderful persons of the world: That is Anacepholus, alias Headless, or Cynocephalus, alias Dog-Headed; and in other persons of curious form." What follows is indeed a page-long list of very curious, more or less human beings, which ends with the statement that every one of these creatures, as odd as he or she may be, inevitably is the descendant of Adam, and thus deserves salvation (ibid., 76–78).

In this fragment alone, Tokarczuk establishes several aspects of the cabinet of curiosities. The quote in itself, from the Polish priest Benedykt Chmielowski, is an obvious display of the bizarre wonders of the world, pure *Kunstkammer* prose, but Tokarczuk's fragment in itself establishes several juxtapositions. The end of the paragraph reads: "The other one is Melville's *Moby Dick*. //Though, if you can just check Wikipedia from time to time, that's also perfectly sufficient" (ibid., 78). So here the narrator suggests, as the second of two *guidebooks*, "written with real passion, and a genuine desire to portray the world," Melville's *Moby-Dick*—a novel

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[20] I call the sections in Tokarczuk's novel "fragments," and this also bears witness to the intimate connections between *Kunstkammer* poetics and Romantic fragment aesthetics, a relationship worthy of future study.

that in itself mix fact and fiction, statistics, archaic prose and sea adventures.[21] The very recommendation to make complementary use of Wikipedia, moreover, emphasizes the bodily involvement in *Kunstkammer* poetics: move in and out of texts, check, get back, continue. Is this "The New Athens" addressed in the title of the fragment (Athens not mentioned otherwise)? Is Wikipedia—or *Moby-Dick*, or the cabinet of curiosities, or all of them—the new locus for education, maieutics and philosophy?

No coincidence, then, that the next fragment in Tokarczuk's novel is called "Wikipedia," where the narrator hails "mankind's most honest cognitive project," coming "straight out of our own heads, like Athena [!] out of Zeus's," and maybe "the greatest wonder of the world," since it "will hold everything" (ibid., 78). But then the narrator starts to question this:

> After all what it has in it can only be what we can put into words – what we have words for. And in that sense, it wouldn't be able to hold everything at all.
>
> We should have some other collection of knowledge, then, to balance that one out – its inverse, its inner lining, everything we don't know, all the things that can't be captured in any index, can't be handled by any search engine. For the vastness of these contents cannot be traversed from word to word – you have to step in between the words, into the unfathomable abysses between ideas. With every step we'll slip and fall.
>
> It would appear the only option is to get in even deeper.
>
> Matter and anti-matter.
>
> Information and anti-information. (Ibid., 78–79)

So suddenly, Wikipedia, in all its wonder, needs to be supplemented by the void. This brings us back to the Museum of Unheard (of) Things and the introduction to the catalog, entitled "The Void and the Spontaneous Decay of the Vacuum or New Proofs of God," which begins thus:

> The question of the void has occupied humankind since time immemorial and indeed concerns the question "where do I come from, where am I going?" It is the question about our existence, about the inescapable fact of death that plagues us. The void implies the question of being and thereby the question of space, for a void can only be conceived of spatially and a being fills up a space.

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[21] And also, in 2010, being adapted as Fred Benenson's *Emoji Dick*; that is, *Moby-Dick* entirely narrated in emojis.

> The void is a place of nothingness, a place filled with nothingness. (Albrecht 2015, 2)

Why this occupation with nothingness when presenting a museum that contains 74 objects? Is it the void, the nothingness, that brings meaning to the objects in the *Kunstkammer*? Or is the quest for the dark matter in the universe: "It's a thing which we know exists, but without being able to access it, with any instruments" (Tokarczuk 2017, 233). Or is it the case that things we do not understand can only be reached by embracing the absurd, the fantastic, the curiosity? Tokarczuk's novel oscillates between the known and the absurd, and a recurring motif is the letters written by Josefine Soliman addressed to Emperor Francis I, begging him to return her father's body "stuffed and chemically treated – on view in the Cabinet of Natural Curiosities at the court of Your Majesty" (the father Angel being of African descent; ibid., 269). The void here seems to be the very body of poor Angel Soliman, and perhaps also the lack of any response from the royal highness. And moreover, a reminder of the not always pleasant objects on display in cabinets of curiosities.

*Flights* also displays an ongoing oscillation between stillness, as in the cabinets' exhibitions, and movement. As the title suggests, flights, like in airplanes, are recurring motifs in the novel, but also flights as in escape, running away—the Polish title *Bieguni* refers to a religious movement [sic!] who believed that being in constant motion would protect you from Satan, who most easily can strike us if we stand still. This constant mobility is treated ironically (or not?) when juxtaposed with twenty-first-century advertising:

> At the airport, a big ad on a glass wall all-knowingly asserts:
> …
> Mobility is reality.
> Let us stress that it is merely an ad for mobile phones. (Ibid., 234)

Significantly enough, this comes immediately before the fragment bearing the title of the novel, *Flights*. The *Kunstkammer*, the *Museum der unerhörten Dinge* and Tokarczuk's prose are joined in the appeal to make us see, to look anew on things around us. They present new optics. One final quote from *Flights* will illustrate this. In the lengthy fragment "Kunicki: Earth"—a story that is developed throughout the novel, about a man whose wife and child suddenly disappear and the only thing left is the contents of the woman's bags—Kunicki experiences some sort of epiphany:

Suddenly he realizes: there are different kinds of looking. One kind of look-ing allows you to simply see objects, useful human things, honest and con-crete, which you know right away how to use and what for. And then there's panoramic viewing, a more general view, thanks to which you notice links between objects, their network of reflections. Things cease to be things, the fact that they serve a purpose is insignificant, just a surface. Now they're signs, indicating something that isn't in the photographs, referring beyond the frames of the pictures. You have to really concentrate to be able to main-tain that gaze, as its essence is a gift, grace. Kunicki's heart starts beating faster. (Ibid., 352–353)

*Kunstkammer* poetics, as suggested by the above examples, is charac-terized by its fragmented style, where every fragment somehow is self-sufficient, its own story, while it may or may not contribute to a unifying plot or narrative. Also it takes no shame in mixing fact and fiction, unset-tling the reader's perception of what did actually happen, and also to make us aware, to beware. To trust and distrust, through associative play.

## 3.8   Babbage. Again

Let us summarize. Where our traditional interpretative traditions—despite the practice of "close reading"—have been established through distancing from the aesthetic experience, digital epistemology and *Kunstkammer* poetics encourage new sensations of presence. Rasmus Fleischer notes this too, in his postdigital manifesto:

The term postdigital does not signify a new cultural-historical stage, but rather a maturation of the digital experience that causes us to re-emphasize presence. … To use yet another concept with the prefix "post" is justified only by the need to take action against the denial of events, presence, and coexistence that continue to characterize our era's discourse about digital culture. (Fleischer 2009, 43)[22]

There, in the insistence from digital epistemology on being close to us, we have an end point for this chapter, and a starting point for the chapters to come. However, since academic traditions—still—encourage the prin-ciple of circular composition, let us return to Göran Printz-Påhlson and Charles Babbage. We will read it again.

[22] On the concept of "presence," see Hans-Ulrich Gumbrecht (2004).

And yes. There are several media archaeological and digital dimensions to reflect upon in this poem: the importance in programming to maintain "the greatest accuracy even in small things"; or the fact that the first "bug" in a computer was indeed not a dragonfly but close enough: a moth. But I will dwell upon the following.

The mathematician sits right next to Trinity College near the river Cam. Here, in one of the cradles of European educational culture, he reflects on existence (Printz-Påhlson 2011, 165). Something has been added. Vidocq—that trixter!—changed his own length. The larva came out of the pupa like a dragonfly. What is strange, though, is perhaps not the deviation, but that everything, almost always, follows the laws of mechanics and nature. But then, once in a while it happens: "the other number comes up" (remember Tokarczuk's longing for an encyclopedia containing "everything we don't know"; Tokarczuk 2017, 78).

Babbage is in Cambridge, but these thoughts he now reflects upon he has learned not in the lecture hall, nor in the library, but from his machine. Every day, more people are born than those who die. A sober statement, but in Babbage's monolog it adds a somewhat posthuman dimension: the dimension where one-sixteenth of a man has an intrinsic value, the upsetting of the rules of natural law, the transcendence of boundaries, the confirmation of the miracle. In and through the machine, Babbage sees this. In and through the digital, we observe this. Thus, let us never abandon reflection on history—through the machines.

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# "Books Are Machines": Materiality and Agency from the 1960s to the 2010s

**Abstract** In the first section of this chapter, the materiality of digital media—that is, the progression from huge machines in the 1960s to the ubiquitous computing of the twenty-first century—is juxtaposed with the notions of fear, shifting from Bomb to Virus, tentatively as a result of the Y2K scare. This is exemplified with a few examples from art and literature. In the second section, two Swedish literary experiments, one from 1965 and the other from 2010, are analyzed in their staging of digital technologies and in the effects this staging has on the notion of agency. The final section of the chapter raises the question of whether digital epistemology should be part of the digital humanities field or not.

> [T]he general field of humanities education and scholarship will not take the use of digital technology seriously until one demonstrates how its tools improve the ways we explore and explain aesthetic works – until, that is, they expand our interpretational procedures. (Jerome McGann 2001, xii)

## 4.1 Digitization as a Lens

So far, we have repeatedly described digitization as an epistemological phenomenon. In the following, the perspective of digital epistemology will be developed through two historical examples, which intend to illuminate some aspects of the history of digitization related to cultural artifacts. The first part of this chapter examines how the change in the materialities of digital technology from the 1960s and 1970s is also reflected in how

our threat scenarios evolved from the H bomb of the Cold War to the threat of networks and viruses. This is illustrated by analyses of both poetry and a couple of text-based works of art. The second part of the chapter examines two Swedish works which at intervals of about half a century stage a machine intelligence, a digital agency, which in different ways also install the agency of the human body.

The primary purpose here is to show that the perspective of digital epistemology is not a constant: a digital technology with machines as large as classrooms is of course different from personal computers, search engines and networks, which in turn have been supplemented with today's ubiquitous systems. These different ways of organizing digital technology have epistemological effects: a strictly place-based, almost monstrous technology, a privilege for states and large corporations, generates metaphors and images that differ considerably from systems distributed to laptops and smartphones, or through networks and intelligent textiles. The second and more analytical purpose of the text is to relate these various technological arrangements to cultural artifacts, texts, and show how the staging of *agency* can also be related to the history of digitization.

The chapter ends with a discussion on whether the concept of digital epistemology could be considered to contribute to the field of digital humanities.

## 4.2    DIGITAL HISTORY AND THREATS

Despite the fear of criticism from media archaeologists, let us actually follow the Gutenberg lead in a report of historical progression and accept the obvious: digital technology from the 1950s to the 2010s has seen some remarkable changes in size, mass, infrastructure and patterns of distribution. Through the lens of digital epistemology, we can observe this historical narrative in relation to the technologies of death.

Let us go back to the turn of the new millennium, or rather the last shivering seconds of the old one. These seconds vibrated with a certain intensity and these vibrations had a formula: Y2K—"Year 2000"—the digital bug that would end all functions, everything would just stop, as the zeroes and ones would not be able to make the transition from 99 to 00, creating chaos and mayhem in the civilized world.[1] It should be stated that

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[1] For a fascinating account of different stories concerning the Y2K, listen to the podcast Headlong*: Surviving the Y2K* (April 2019). To be found where you find podcasts (for exam-

the digital systems that were under threat in this transition were actually mostly site-specific and well-established technologies, such as telephone networks, industrial control systems and mainframes, which had in common that they could not handle dates of more than three digits.[2] This being said, the metaphorical effect—or *the message*—of Y2K was something else: Despite the fact that practically nothing happened (which *may* or may not be because we actually *were prepared*), Y2K announced that digital technology had moved away from calculators and computers, from laboratories and office spaces, from the distinct materiality so visible in science fiction and spy movies, to the entire culture. For a decade or so we had been familiar with personal computers, but it was Y2K that came to symbolize a shift in our digital awareness: The zeroes and ones had moved from the Machine to the Network. No coincidence, then, that our threat scenarios changed as well: from the Machine, the State and the Bomb, to Networks, Cells—and Viruses.

Y2K as a digital disaster is for example very different from the apocalyptic scenario depicted a couple of decades earlier in the movie *War Games*, when the omnipotent computer W.O.P.R. converts a young boy's gaming to a real nightmare, and a possible World War III (*War Games* 1983). The film is an excellent example of the close relation between "the Machine" and "the Bomb" that was so prominent in postwar scenarios.[3] Another, we must say *substantial* example of the postwar relation to the Bomb is Anselm Kiefer's monumental lead library *Zweistromsland* (Kiefer 1985–1989). Kiefer's library, also known as *The High Priestess*, is a construction almost eight meters wide and four meters high, making its very size to a "bigger than life" (or "…death") experience. It contains some 200 large books with covers, and pages, in lead, standing in two accompanying bookcases constructed in steel, decorated with wires and glass. The bookcases are named "Euphrat" and "Tigris," respectively, and the German title of the artwork also addresses the Garden of Eden—the biblical origin of life on Earth.[4]

However, it is not Life but rather the Apocalypse that is at stake here. The ambiguous title of the work—the Land Between the Rivers and the

High Priestess—establishes double references: On the one hand, thoughts are led to the place of Eden's garden, on the other to the powerful symbol of the Tarot card game, which can also be associated with the significance of lead in the alchemical tradition that was a particular interest of Kiefer's (Badger 1989). The materiality of the book, here, is grotesquely exaggerated, and not only by lead and steel, but also by being associated with both biblical and occult discourses. But the context that interests us here is the Bomb.

Kiefer's library was constructed in the late 1980s, in the heyday of computational bureaucratization and the early days of the personal computer. In this context, the lead books signal a celebration of the medium of the codex, in the midst of the current flow of deterministic or pessimistic media philosophies, with their recurring prophecies about the death of books and the decline of reading in the era of television and digitization.[5] Thus, there is a message in the medium of lead books. In the final destruction to come (the 1980s also marked the peak of the Cold War) everything solid would melt, but lead, of course, was regarded as armor against radiation.[6] The very mass of this work of art—and the bare thought that this library will survive us all—tells the story of the enormous impact of the technologies that proposed the threat in the first place: the Bomb and the Machine.

## 4.3    WITHOUT US: UKON

The Swedish psychologist and poet Ulf*UKON* Karl Olov Nilsson, alias UKON, debuted in 1990 with the poetry collection *Kung-kung* (King King). In 1992 he was represented in the anthology *En elva från Göteborg*

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[5] Neil Postman's concerned conservatism during the 1970s and 1980s is a striking example of this attitude (we shall return to Postman in the following chapter). A couple of decades later, Sven Birkerts (1994) lamented in *The Gutenberg Elegies* the loss of reading "real literature" in the coming electronic age of monitors, hypertexts and audio books. German media philosopher Norbert Bolz (1993), not without enthusiasm, claimed in the early 1990s that the medium of the book was no longer (then) capable of representing the complexities of social systems, and he also argued for the disappearance of the traditional author/reader contract as a consequence of the emergence of hypertexts.

[6] On the road between Vadstena, the small medieval town in Sweden where I grew up, and Skänninge (another small medieval town), right up to the end of the 1980s there stood a small cottage fully covered in lead plates. The story was that the owner wanted to protect himself from radiation. When the cottage was sold, the plates were removed and revealed a log cabin.

(A Gothenburg Starting Eleven—a pun derived from the fact that Gothenburg was the football capital of Sweden, with up to five teams in the premier division), where he published the poem "Utan oss" ("Without Us"), which soon became a recurring feature in his readings during the 1990s. It is a typical performance poem, where the intensity and the manic repetitions actually work better in oral than in written form. It is still the printed version we have to content with here, though:

it is the earth without us and the words the trees the fire without us it is the wind the water the spring the blowing and the stillness the summer stillness it is the brown animals without us it is horse cow dog deer beaver elk ferret bear hedgehog it is rust fungus grass and the green silvery animals like frog snake silver fox silverfish plain fish toad and the sick soil water ice the happy snow rain sometimes hail and it is the black animals flies scorpions cockroaches panthers ravens magpies penguins the white animals that are polar bears shark lynx rabbit mouse grouse whale seal it is moon sunrise sunset and the animals of the sun lion chaffinch canary golden retriever some butterflies and aquarium fishes the cheetah the bumble bee it is the children without us it is the work the sowing the the harvest the war the the solitude the summer solitude it is the rest without us it is the party the meeting the simultaneity the dance it is waltz foxtrot jenka ballet bug bossanova twist hambo farandole gopak jig landler mazurka schuhplattler polka cha-cha mambo schottis trepak tarantella flamenco bump without us it is the cold the abscess the aching without us the leprosy the cancer the acne the leg ulcers the tennis arm the pneumonia the sprained ankle the worn ligaments the meniscus the cataract choreomaniacs atopic dermatitis electrical hypersensitivity pulmonary edema earache child diseases like mumps rubella chickenpox, scarlet fever, whooping cough measles and the elderly diseases the infections the senility the pathetical the femoral neck fracture the varicose the prostate the flashbacks the dreaming the shakings the atherosclerosis the incontinence it is the pinpricks the heartsink the samplings without us bandage sling cast plaster walkers crutches transportation service it is the nervousness without us the underarm sweat, the anxiety, the farts the tinnitus the crudities the nail biting the police the nurseries the post office the bank the scouts the railway instruments such as piccolo balalajka trombone electric organ games such as yatzy risk gin rummy battleship war volleyball it is earrings rings diadem things you got given away or just bought armbands brooches barrettes porcelain animals necklaces small cactuses it is flavors without us salty sour sweet bitter pungent spring rolls bacon edamer cheese pie and mash lemonade mille-feuilles without us biscuits meal of the day rye flour ranch dressing bouillabaisse dumplings it is ham rockets robots

foetus group dynamics highways hotels terraces porches balconies bowls with fruits and nuts now I know what to think about. (UKON 2005)

Obviously, a shorter quote would have been enough to demonstrate this text's "point," but on the other hand the sheer length of this monolog constitutes an important factor in the materiality of the poem. At least in order to demonstrate what is left, without us. It is "we," and not the environment or our cultural expressions, that disappear. At first glance, the text can be read as a comment (or companion) to Danish poet Inger Christensen's poetry suite *Alfabet* ("Alphabet") from 1981, where another manic order is established based on the alphabet and Fibonacci numbers, occupied with describing objects that "exist" (Christensen 1981).[7] The initially hopeful and poetic designation of Christensen's text occasionally turns into threats, as when "the rifle" with its "peaceful precision" takes place in this "enlightened chemical ghetto." Christensen's suite ends with a trip across the globe:

| | |
|---|---|
| it looks like | Barents Sea |
| is always alone with | Barents Sea |
| but there behind | Barents Sea |
| the water strikes | Spitsbergen |
| and just behind | Spitsbergen |
| the ice is floating around | The Arctic Ocean |
| and just behind | The Arctic Ocean |
| the ice is stuck on | The North Pole. (ibid.) |

The approach is naivistic and apocalyptic simultaneously. The child's wide-eyed journey across the various fields of the globe is addressed in a poetry suite about nature's presence and threatening extinction. Christensen's combination of hope and threat is matched in UKON's rant by the exhilaration that characterizes the poem's scenario of annihilation. "Without us" contains several paradoxes. What is there "without us"? How are the underarm sweat, the tennis elbow and the group dynamics maintained when no people are there? Who dances mazurka, schuhplattler or polka if there is no one there to dance? Where *are* these things?

The poem at once becomes apocalyptic and philosophical—it begs the question of whether a phenomenon can remain after its carriers and

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[7] Inger Christensen (1981). It can be noted that these arrangements make "Alphabet" a very *written* poem, while the frenetic monolog in UKON's poem accentuates the oral performance, which may strengthen the impression of panic.

practitioners have been wiped out, a question that concerns notions of embodiment, materiality and perception. Just like the word "exists" in Christensen's *Alfabet*, it is the phrase "without us" that constitutes the lasting impression of UKON's poem. In both texts, these particular words accentuate to a great extent a paradigm that we, after N. Katherine Hayles, call the "presence-absence" pattern (and to which we shall return shortly). Written during the 1980s and 1990s, these two poems depict notions of the physical obliteration of humanity from the place where we live. If Anselm Kiefer had wanted to include poetry in his lead books, Christensen and UKON would have been suitable choices.

## 4.4   UBIQUITOUS VIRUSES

It is some distance from the notions of the Bomb and the Machine to the threat from Y2K and what we—if we want to be a little intrusive—can call "digital mites" (we do not see them but they are all over the place): nano-technology is everywhere and has provided us with a new community that is connected to, or constitutes, what we can call a *digital subconscious*. What has happened over the past 40 years is a shift among the carriers of digital technology: a shift from Monster to Mites, or from Machines to Networks; from States to Cells; and from Bombs to Viruses.

At the turn of the millennium, N. Katherine Hayles, in *How We Became Posthuman*, described this change as a shift between two epistemological paradigms: from the Gutenbergian era's "presence-absence" to the "pattern/randomness" paradigm of the digital age (Hayles 1999, 25–30).[8] Both the Bomb and the Machine manifest a presence that, even in its absence (few people have had access to nuclear weapons or the earliest computers), is associated with a complex threat: the state apparatus's inhuman bureaucracy, the computer's possible self-realization in the singularity, the total devastation in a nuclear war. However—as with the false binary analog/d6igital—the concept of pattern/randomness does not establish the same kind of dichotomy as presence-absence. Randomness is not contrary to the pattern, quite the opposite—both are often operative

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[8] Hayles typographically represents both of these concepts with a slash: Presence/Absence vs. Pattern/Randomness. But there are reasons to modify this typography, as presence-absence implies a dualistic paradigm, whereas pattern/randomness rather suggests a more flickering epistemology and should therefore reasonably be referred to by the slash, which indicates an ongoing operation. Moreover, Hayles uses the word "splice" to describe the slash, a word that of course also suggests editing tape recordings.

at the same time. In the pattern of the code, the presence of the virus or the mistake is always a possibility.

It is easy to see the Bomb and the Machine, and even classic book culture, as an expression of a presence-absence paradigm: The Gutenbergian practice is characterized by the same dualism that shaped all modernity. The materiality of media point to the conditions in which the book's printed text (and the book itself as object), or the physical presence of the computer, constitutes a material factuality also in its *absence* (it *exists—there*). The same goes for the Bomb: it is not in itself a code, not something that is replaceable or arbitrarily distributed—it is where it is, in the Cold War laboratory, on the firing ramps, on the equipped submarines. Even in its absence it is presence; mass, materiality.

File sharing and ubiquitous systems have made us much more likely to accept an order where we distribute data—and viruses—instead of physical artifacts. Both biological and digital viruses have the property that they cannot be fixed to a given material carrier, but create their identity precisely through their instability, their way of spreading.[9] The W.O.P.R. in *War Games* and Kiefer's *High Priestess* are intimately associated with the Cold War; at the same time, the Bomb ( "A" or "H") is related to the discourse of the Machine. Visually, popular culture from the 1950s to the early 1990s is full of examples of technologies which represent spectacular and strange but never abstract or randomly distributed examples of this presence-absence in print-based order, as opposed to the pattern/randomness paradigm of the digital age.[10] Q and MI6 agents had good control over the computers with their rotating magnetic tapes and their punch cards, and the nuclear weapons rested calmly in the superpower's missile launch facilities, or for that matter in the mad scientist's headquarters on a mechanical island, where they waited to be fired at his target and then let the ingenious ruler, or his computer, control the world. These fantasies remained as long as the terror balance prevailed on the international agenda. Machines with a capital M. Bombs with a capital B.

What happened during the 1990s and beyond was that not only nuclear weapons—and the know-how of the nuclear age—but also new information technologies were distributed to more or less reliable powers around the world. When the computer was no longer perceived as a controlling

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[9] Covid-19, obviously, being the alarmist and contemporary example.

[10] Take any James Bond picture, Stanley Kubrick's *Dr. Strangelove* (1964), the aforementioned *War Games* (1983) or Jimmy T. Murakami's animated film *When the Wind Blows* (1986), just to mention a few.

device but rather as a personal tool, the machine with a capital M disappeared, together with the bomb with a capital B. No one really cared if the machine could learn to play chess—and no one feared any longer the mad professor in his hollow island. The machines still existed, of course, but they became more generally distributed, from offices and laboratories to our homes, or to the laps of seminar attendants and café visitors.

Today, two decades after the Y2K panic, file sharing, digital networks and phenomena such as ubiquitous data processing have transformed our management of physical artifacts into a distribution of patterns, temporary formations, clouds, rhizomes, cells—and viruses.[11] The point here is that the technologies which distribute information reflect the technologies and metaphors for our own extinction: Y2K signaled that the bomb had been replaced by the virus, and that nuclear mass destruction had been replaced by epidemics and terror cells. Doomsday prophets do not preach when obscure liberation fronts in Asia or rednecks in Georgia get hold of nuclear warheads; although the threat of an atomic bomb attack may be much greater today than during the Cold War terror balance and top diplomacy (Brill and Luongo 2012). No, doomsday prophets bang the drum and ring the bell when pigs or birds cause new forms of influenza that could possibly haunt Western civilizations (not to mention the corona virus of 2020, still haunting us as these lines are proofread).[12]

In other words: the unique Bomb has been replaced by the ubiquitous Virus. The lesson from the Y2K bug was—and this is the *message* of ubiquitous data processing—that from now on, the digital is no longer tied to desktop devices, but is really present everywhere, inside everything. In addition, the alleged threat to our open society, and thus the threat to world peace, is organized not in totalitarian or imperialist bomb shelters, but in networks and cells. The terror, as Douglas Rushkoff pointed out a decade ago, is a virus (Rushkoff 2009).[13]

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[11] For a media archaeological study of the history of the computer virus, see Jussi Parikka (2007). Parikka describes the origin and establishment of the virus from a technology-historical perspective of production and reception—the digital virus is indeed older than the Y2K bug.

[12] From the perspective of Actor-Network Theory (ANT), this means radically changed roles. On Latour and ANT, see footnotes and references to Chap. 3. What unites the present text with some main lines within ANT is that both the bomb and the virus are recognized as agents in the social network. Moreover, ANT could definitely be regarded as one of those theories that in itself is an expression of a digital epistemology, when digital culture inspires us to rethink our relations to materiality, and to objects.

[13] Douglas Rushkoff does not describe terror as an act of war, but as a contagious set of destructive schemes, the distribution of which is in intimate relation to our media ecology.

## 4.5    THE NUMBER OF THE BEAST

One final installation in relation to Y2K to be considered here is Linda Hilfling Ritasdatter's artistic research project "Bugs in the War Room" and the book project *Endless Endtime* (Ritasdatter 2016–).[14] The point of departure for her project is the Y2K scare, in particular as it was expressed in a 1999 letter to the apocalyptic Christian magazine *EndTime*, in which a reader named O.J. Briant (at least that is what Ritasdatter tells us) invented his own number system (A = 6, B = 12, C = 18, etc.), with which he reaches the conclusive evidence that the word COMPUTER with this formula will be translated to the number 666—the disintegration of digital culture thus coincides with the arrival of the antichrist and the apocalypse. The end of the world is thus near, something that apocalyptic Christians not infrequently greet with joy, as it foretells the return of Christ.

In a continuation of this Y2K prophecy, Ritasdatter has set out to create a never-ending—hence the name *Endless Endtime*—encyclopedia of all the phenomena that, according to O.J. Briant's numerology, can be seen as manifestations of the number of the beast, and thus as a harbinger of the apocalypse. By copying the letter from 1999, but replacing the word "computer" with a variety of other words—generated by an algorithm that Ritasdatter designed according to Briant's number system—she creates an encyclopedia of the apocalypse, an encyclopedia that every year (in May) is to result in a new edition with 666 different entries. The book is bound by hand by the publisher and artist Olle Essvik at Rojal publishing house. Not only this: Every new entry is also posted to the journal *EndTime*. In the 2016 edition, the first three words (which in addition to their connection to the number 666, are also explained with a brief note) are the following:

Not least, terror has had the effect that security checks at our airports during the 2000s became increasingly rigorous, albeit in many aspects a purely fictional construction (think of the glasses and cutlery provided by airport restaurants, or think of the line to security control as the target of an attack): "It does not take a military expert to see that a strategy of spot checking for dangerous fluids or scanning international phone calls is a losing battle against a foe that can pop up literally anywhere" (Rushkoff 2009).

[14] The book will be published continuously in May each year and Ritasdotter's algorithm will then have generated 666 new proofs of the world's downfall. It is handbound by Rojal's founder Olle Essvik (who also made the Swedish version of the book you're now reading). See http://www.rojal.se/

**ACCU-CHEK MOBILE** n.; A proprietary blood glucose measuring system used for home monitoring of glucose which has a menu-driven screen and analyzed lifestyle data.

**ADIDAS CAMPUS** May refer to: **(1)** n.; Classic 80s suede sneakers featuring a supportive cushioned collar. Suede upper; Textile lining. **(2)** n.; Corporate campus: At an All-Employee Meeting in November 2011, the CEO Herbert Hainer announced that the Adidas Group will invest further in their employees by building a Corporate Campus.

**ADVANCE WARS** n.; The Wars series is a video game series produced by Nintendo, also known as Famicom Wars (Famikon Wzu) in Japan and Advance Wars in the West. (Ritasdatter 2016)

In an essay published in the online magazine *DATA Browser*, Ritasdatter expands her investigation of the Y2K bug (Ritasdatter 2018). She interviewed a security engineer in Chennai, India, about how she worked with the Y2K threat. The technician says that they had set up a "war room," a 360° meeting space, where everyone had their monitor and maintained contact with various clients through both digital and alternative communication channels (ibid., 141). Ritasdatter makes the observation that this crisis room is strikingly similar to movie history's perhaps best-known war room, namely that in Stanley Kubrick's (1964) tragicomic atomic bomb dystopia, *Dr. Strangelove or:* How I Learned to Stop Worrying and Love the Bomb (ibid.). In a continuation of this parallel, Ritasdatter points out that the war room of the Cold War—where, let us remember, the Bomb and the Machine were at the center—was characterized by a hierarchical structure and a linear ordering system, an order that in the film's diegesis is disrupted by an eccentric and crazy General Ripper. It is, then, linear and binary structures that form the foundation of Kubrick's war room. In the 1999/2000 Indian war room, however, there is another order (Fig. 4.1):

> The table of the Y2K war room did not assemble top leaders, or represent a top-down hierarchy of order and execution. On the contrary, it was a gathering as emergency-brigade, or the caretakers of global information architectures, ultimately calling for a different understanding of the war room's relation to power; away from top-down management, with orders followed by execution, towards a model of continuous executable maintenance and feedback. (ibid., 145)
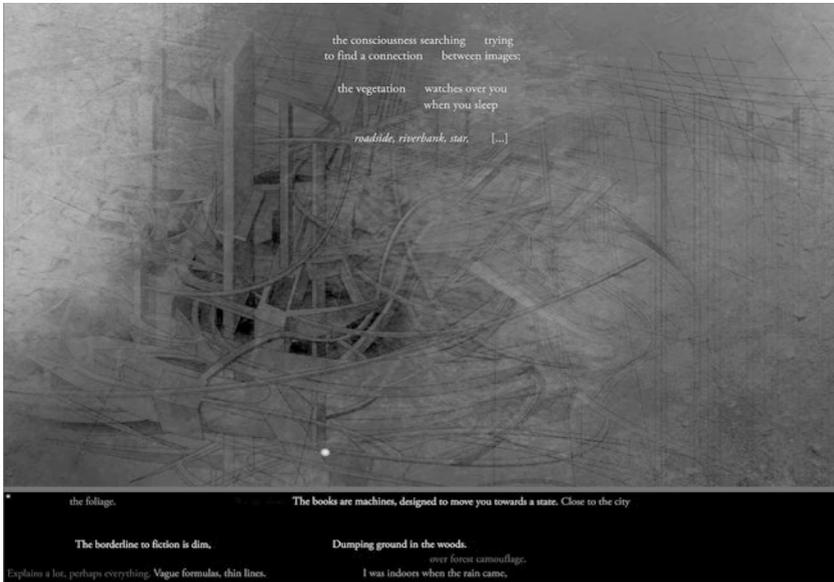
**Fig. 4.1** Linda Hilfing Ritasdatter, from *Endless Endtime II* (2016), detail, photograph

This coincides entirely with Georg Rushkoff's observation of the viral qualities of terror, which also confirms the shift from bombs to viruses, and from the paradigm of presence-absence to one of pattern/randomness:

> Just consider the difference between a [Charles] Manson, whose commands to followers depended on his in-person charisma, and today's terror cults who are capable of inciting activity entirely memetically through social media. (Rushkoff 2009)

In Ritasdotter's text installation, digital technology is linked to the apocalypse, not as a bomb but as a cultural implosion, the digital collapse. The immense irony of the work is embodied in the fact that, in the words of the publisher Rojal, "we are committed to producing this Encyclopedia forever." Although "forever" is understood to mean a fairly short time, given that the apocalyptic prophecy is to be realized, the book project

sends rather an optimistic signal by ironically deconstructing, and contradicting, the initial letter's predictions.[15]

These examples, which in different ways are related to bombs and viruses, show that digital epistemology does not function as a single theory of knowledge in the fold of history—it must be analyzed and considered as variants dependent on the materiality of communication at specific historical moments. The materiality of digital history, from the huge machine monsters in the 1960s–1970s to the ubiquitous "mites" during our own 2010s and 2020s, shows that different expressions and attitudes can be seen as reflections of this materiality. The bomb's presence can be read manifestly with Kiefer, ironically and indirectly with UKON. The code's pattern and its relation to Y2K are continually manifested in Ritasdotter's art and book projects.

What does it mean, then, to relate cultural artifacts to the communication and organizational logic that—in various ways—has been promoted by digital technology since the 1950s? One way to investigate this is to draw attention to two Swedish literary works with almost half a century between them: Torsten Ekbom's *Signalspelet*, which was published in 1965, and Johannes Heldén's *Entropy Edition* from 2010.

## 4.6   Torsten Ekbom 1965

The Swedish author-critic Torsten Ekbom (1938–2014) produced a handful of radical prose experiments during the 1960s, from variations on the French *nouveau roman* to cut-up exercises and ambitious collage experiments. Alongside this production, Ekbom—also a literary critic and avant-garde theorist—introduced to a Swedish public concrete poetry, game theory, cybernetics, William S. Burroughs, Susan Sontag and Marshall McLuhan, as well as European authors such as Lawrence Durrell, Alain Robbe-Grillet, Uwe Johnson and Witold Gombrowitz.

Ekbom's third fiction book, *Signalspelet* (1965, "The Game of Signals"), declares itself not to be a novel but a "Prose Machine." The book starts with five blank pages (only the page numbers at the bottom indicate any progress), followed by a page with the single line "Fem

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[15] The motto for the Christian online magazine *EndTime* is "Preaching the Gospel of the Kingdom to every person on earth … Because the Endtime is Now!"; see *Endtime Ministries, Inc.*

minuter gick" ("Five minutes passed"). This line is repeated with increased intensity on the following pages:

Five minutes passed
Five minutes passed
Five minutes passed
Five minutes passed. (Ekbom 1965, 10)

And after a few pages this statement is interrupted by the line "Bilen rusade vidare":

Five minutes passed
Five minutes passed
Five minutes passed
The car rushed on. (Ibid, 12)

However, the actual "Prose Machine" is never mentioned or described in the text, and thus we *could* conclude that "the book" itself constitutes the machine (and, after all, that is what it says on the title page: *Signalspelet: en prosamaskin* – "The Signal Game: A Prose Machine"). If so, the text could be seen as a statement echoing Mallarmé's *Un coup de dés* and symbolist machine aesthetics in its wake.[16] It also could be seen as a critical remark upon the novel genre itself, regarded at the time by Ekbom himself as "dead" and "petrified" (Ingvarsson 1994). Even so, it is more likely that what we read is a representation of a real-time output from a computer, a machine now programmed for making prose narratives. And this machine slowly spits out, fragment followed by fragment, a not very coherent story, including a hotel and a bunch of agents (conveniently named A, B, C, D, E, F, G, H) communicating with each other by knocking signals on the walls. Somehow "Room number 17" plays an important role, as does Chapter 17, which appears several times in the book (a translator and introducer of William S. Burroughs in Sweden, Ekbom of course was no stranger to the literary cut-up and collage technique).

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[16] See Mark Hansen (2000), pp. 82–86. The book as machine is echoed also in much later notions expressed for example by Jerome McGann (2001: pp. 54–57), and even more explicitly in Johannes Heldén's *Entropy: Edition* (see below), which simply states: "Books are machines."

Unlike many electronic texts today, though, the machine in Ekbom's book is obviously not subject to any interactive processes—no more than the commonplace interactivity that any reader of any book is entangled in. No, the machine has (on a fictional level) been programmed, and what we read is its tentative output; the reader just has to accept its more or less literary result. Sometimes the computer malfunctions and the output, then, will only be dots and commas spread over the pages. This functions as a reminder of the vulnerability of the machine in those days, and of course is also a reminder of the dangers lurking in letting the machine control our everyday lives. In the 1960s and 1970s, the "state apparatus"— a phrase inherited from Marx, but revived by computer technology— became a metaphor for the bureaucracy that was the flip side of the emerging welfare states of the postwar Nordic countries (not to mention the East European states). The Swedish author Vilhelm Moberg (1898–1973) expressed this in 1959:

> Thus, instead of the ancient, personal, patriarchal oppression, they have introduced a state apparatus that exerts an impersonal, anonymous, mechanically functioning oppression. They have laid a solid foundation for a state capitalist society, where the gates on the backside slowly are opening up for the authoritarian state, in which the individual is obliterated by the collective and transformed into an object for state benefit. (Moberg 1959)

Around a decade later, in the 1970s, Swedish author Lars Gyllensten (1921–2006) connects the same state apparatus to computer technology:

> One example is the extension of various computer systems and other methods for the authorities to obtain information about citizens in aid of the bureaucratic state apparatus – censuses, compulsory surveys, increased powers for different authorities to require citizens' data and accounts, etc. (Gyllensten 1979, not paginated)

Ekbom's machine, though, is programmed to create literature. And sometimes, somehow, it does (or, rather, it does so the whole time, albeit in different ways). Even though the diminutive plot describes a bunch of agents, Ekbom's prose experiment, on both a fictional and factual level, sets up a structure actually devoid of human agents, or agency. The text "is produced" by a computer. And the actual text fragments are not written, but just chosen and assembled, by the author. As a result, the author is

absent in a double meaning: both on the level of fiction (the machine that produces the text fragments) and on the actual level of conception (the cut-up process performed by Ekbom). The actual "story" that unfolds, with the agents knocking on walls, desperately trying to find something out, paints a sometimes funny but absurd and claustrophobic vision of a futile mission. The absurdity of the text echoes the bureaucratic angst of Kafka, but technologically updated.[17] The Game of Signals, then, clearly establishes an opposition between the machine and human agency in 1965.

## 4.7    JOHANNES HELDÉN 2010

The Man/Machine confrontation of the 1960s differs quite radically from the positions taken in many electronic texts from the new millennium, and this can be illustrated with another Swedish example. Johannes Heldén's digital flash installation *Entropy Edition* (published alongside the poetry book *Entropi* in 2010) is de facto programmed with text fragments but—as opposed to the bulk of Ekbom's scattered prose—these fragments are (seemingly) written by the author himself (Heldén 2010a).[18]

The interface of Heldén's work reminds us of classic arcade games, those with falling stars or shells to be shot down by the player.[19] In *Entropy Edition*, though, what happens when you "chase" the dots is that poetic fragments appear at the top and the bottom, lines like "the consciousness is searching" or "a smoky edge." One poem emerges at the top, typographically more or less like a printed poem in a book. At the bottom, text

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[17] There is a scene which was left out of Orson Welles' 1961 adaptation of Kafka's *The Trial*, where K is being guided by a scientist through a huge hall with computers, which are about to tell him his future. See http://www.wellesnet.com/Trial_MS_2.htm

[18] *Entropy Edition* is an online work (in both Swedish and English versions) by Johannes Heldén (2010a). The work is also included as a CD-ROM along with the poetry book *Entropi* (2010b). In the later performance (and book) *Evolution* from 2014, Heldén and collaborator Håkan Jonsson claim that the author has stopped writing. The performance extrapolates the notion of the Turing test, and Jonsson/Heldén have also programmed an online poetry machine that creates new poems out of Heldén's earlier poetry. The N.K. Hayles award-winning book *Evolution*—along with a preface, some chosen poetry from the online version and a couple of essays—contains the entire programming code for the online poetry machine. Once again, human agency is put in question. See Heldén and Jonsson (2014a, b). I will further call the book version *Entropi* (since it is printed in Swedish) and the online work *Entropy Edition*.

[19] For example the game *Missile Command* (Atari 1980), see a gameplay here: https://youtu.be/nokIGklnBGY (accessed July 2020). Thanks to Reviewer #2 for this suggestion.

fragments will soon flash, appearing and disappearing in a horizontal space of six rows stretching from side to side. Heldén often operates with digital interfaces in his poetical practice, but technology itself is rarely a motif. Apart from scattered lines such as

> *the books are machines*
> or
> *a new presence confirmed real*

the text itself does not explicitly deal with "electronic" or "posthuman" themes. Rather, the actual text fragments in Heldén's poetic construction are biased towards impressions from nature; in fact, he is a distinct nature poet with a soft spot for postapocalyptic scenarios, where it is the ecological disaster rather than the bomb that figures as the Reaper (Fig. 4.2).[20]

"The poem about the beautiful sunset has run into some problems," a Danish critic wrote in 1971 (Hejlskov Larsen 1971, 172). If nature poems during the 1960s were put into question—with Göran Palm's "new simplistic" poem "The Sea" as perhaps the clearest statement—this can be said to have its origin in fatigue towards the overly lyrical, and overly elaborated, poetry of late modernism (Palm 1964).[21] Nature poetry, along with central lyrics, was under attack, both from concretist poetics and from the so-called "new simplicity" movement. "The crisis of the beautiful sunset" is also, in particular from the concretists, a consequence of an affirmation of the mechanical composition principle that also influenced Ekbom's prose experiment. The depictions of nature that occur both in the Game of Signals and in his following collage novel, *Spelmatriser för operation Albatross* (1967, "Game Matrices for Operation Albatross"), are demonstratively flat, and in the latter case usually in the form of theatrical stage directions.

When nature, 50 years later, is under scrutiny by a poet such as Johannes Heldén, it is not in the form of sublime experiences or romantic

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[20] In a 2013 essay, Norwegian scholar Hans Kristian Rustad examines the relationship between the printed and electronic versions of *Entropy*. He makes particularly careful observations of the visual elements in the online version, with associations with Piranesi and future industrial landscapes, and emphasizes the dystopian tone. He also points out that the falling bright spots at the same time represent just bright spots, a sense of hope. See Hans Kristian Rustad (2013).

[21] For the full poem, see footnotes to Chap. 3.
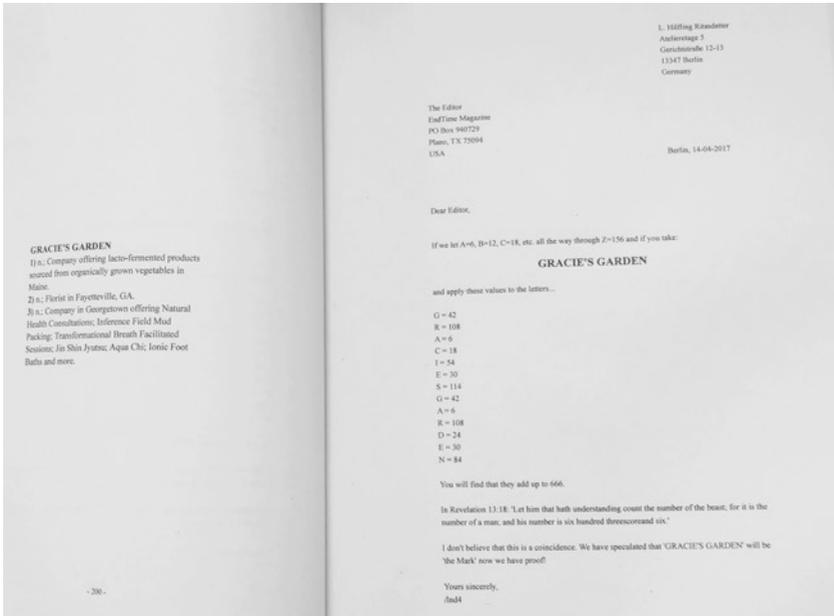
**Fig. 4.2**  Johannes Heldén, *Entropy Edition* (2010), screenshot

metaphors, but as a warning of the apocalypse to come.[22] The book (in which *Entropy Edition* is included as a CD-ROM) has on its cover a gray-scale photograph of a forested hill, with leafless trees in the background and a couple of bushes with the leaves left in the foreground—ecological concern informs the picture. The electronic edition generates sentences in the top poem like:

| | |
|---|---|
| the vegetation | watches over you |
| | when you sleep |
| a new presence | confirmed real |
| *roadside, riverbank, star,* | |

And in the rows at the bottom, you may read:

[22] To clarify: It is not Heldén who takes nature back to poetry—nature has, of course, been present in poetry all the time. However, what is remarkable about Heldén's artistic practice is the combination of technically innovative works and a fairly traditional—even moralizing—ecocriticism. The oscillation between these positions constitutes the dynamo of his artistry.

Dumping grounds in the woods.
The trees defoliated. At least you get a clear view. (Heldén 2010a)

The emerging lines of text are projected against a slowly shifting background depicting abstract postindustrial and almost Escher-like labyrinths, or, as suggested by Hans-Kristian Rustad, reminding one of the etchings of eighteenth-century artist Piranesi (Rustad 2013, 28). In his essay on Heldén's various versions of *Entropi*, Rustad emphasizes precisely the dystopian approach in the works: "We can thus conclude that *Entropi* portrays a civilization after a major disaster, or as a result of technological and industrial development, where nature's resources are utilized for the last drop" (ibid., 29).

Thus, just like many other of Heldén's works, including the *Primary Directive* (2006) and *Evolution* (2014), the reader is situated in various oscillating movements: between medium and "text"; between technology and body; between book and screen; and, especially in Heldén's case, between "culture" and "nature." One effect of this is that the pair quoted above has somehow been realized. "A new presence confirmed real": the reading has installed this presence of body and text and thus the "books" have indeed become "machines." But the statement also encourages us to reflect on the book as just a "machine" or as Johanna Drucker suggested already in 2003:

> Instead of reading a book as a formal structure, then, we should understand it in terms of what is known in the architecture profession as a "*program*" constituted by the activities that arise from a response to the formal structures. … The literal has a way with us, its graspable and tractable rhetoric is readily consumed. But concrete conceptions of the performative approach also exist. (Drucker 2003, my italics)

Through its staging, its interface, *Entropy Edition* raises the question of why it could not suffice to present this text in analog, printed form. If we could claim that the paradigm of pattern/randomness generates the text in *Entropy Edition*, then the work also establishes a presence-absence relationship between the printed and the electronic texts. N. Katherine Hayles writes in *Electronic Literature* that some of the printed novels she discusses "both acknowledge their position within the print tradition and reproduce on their surface the mark of the digital" (Hayles 2008, 161). This holds true of the book version of Heldén's *Entropi* as well.

The printed text, the poetry book *Entropi*, accentuates its digital identity through a typographic "haze," as each poem page operates with different shades of gray in the printed words. On the one hand, this can be said to reflect the grayscale on the book's cover (which strengthens the codex's analog identity); on the other, this technique seems to correspond to the electronic version's appearing and disappearing text fragments (which strengthens the digital identity; Rustad 2013, 32). "If the seductions made possible by digital technology are endangering print, that same technology can also be seen as print in the making," Hayles writes further (Hayles 2008, 162). "Print in the making"—in Heldén's case this is almost a literal truth, since the grayscale of the text seems to simulate or represent a textual agency which is reinforced by the printed text's relation to the electronic. Through this typographical measure, Heldén's text adapts almost demonstratively to Johanna Drucker's notion of the codex's program; the grayscale of the text guides the act of reading in the direction of this expected creation, even in printed form.

The reader thus has to engage in several bodily processes to make the text readable: turn on the computer, launch the browser, load the webpage, and then search and click the small falling dots in order to make the text and the visuals appear. These are, of course, obvious activities in the encounter with the digital text and with every digital interface. But they can be put into a context that simultaneously separates the work from the experience of reading a literary codex, and at the same time establish a connection (and an "always-already-relationship") with the body's interaction in the codex-bound reading act. Cecilia Lindhé writes in one of the essays included in the printed edition of *Evolution* about Heldén's negotiations between paper and screen:

> [w]hether print is flat and code is deep is of course significant here [Hayles 2004]. But is the page really flat? Perhaps we may say yes at first but if we look, touch and feel it closely enough we sense the fibers and pores "that give every page both the texture and the depth into which the ink must sink without penetrating." [Butler 2001] In Heldén's work the page is never flat. Here it matters, claims a space and a particular presence. It forces us to reconsider our habituated view of paper. The page is perhaps not always what we think it is. (Lindhé 2014)[23]

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[23] The references in the quote relate to N. Katherine Hayles (2004) and Shane Butler (2011), s. 17 f.

She then quotes a randomly generated text portion from the generic poetry machine *Evolution*, which is an important reminder of the printed text's digital materiality:

> *and at the end of every page it should say:*
> *this*
> *also*
> *will disappear*

What characterizes *Entropy Edition*, and Heldén's work in general, is an ongoing negotiation of the relationship between technology and nature. It is a form of cybernetic ecocriticism where writing and reading are bodily activities. The involvement of the body in the act of reading electronic texts is, of course, a trivial observation when describing these works (and should be self-evident also in how we describe the reading of books and the turning of pages), but it is also a relationship that is repeatedly articulated. The point here, however, is that the programming and the presence of the machine in Heldén's case—contrary to Ekbom's text—actually *encourage* agency.

It seems almost ironic that the fragments in *Entropy Edition* to such a high degree are occupied by nature. Why not just write nature poetry collections, or ecocritical debate books, or get involved in some Green Party? One answer to this is that the agency (or fiction) of interactivity installs another critical approach to the literary experience—an activity that could be related to such modernist phenomena as the epic theater of Brecht with its effects of "Verfremdung," or to different interactive and Fluxus installations during for example the 1960s.

The observation that agency—in relation to the machine—in Heldén's work realizes the work to a greater extent than in Ekbom's prose machine half a century earlier has an ambiguous effect: It is still the author who provides the text fragments—and in Heldén's case also picture, sound, music and animation—which constitute the final poetic and aesthetic product. Perhaps in *Entropy Edition*, after all, we should be reminded that action *is* possible—and necessary.[24] But at the same time, the activities of the texts in *Entropi* and *Entropy Edition* (both in the printed and electronic

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[24] From this perspective, the following work, *Evolution*, the programmed (online) machine that, without the reader's participation, produces text fragments from Heldén's entire production, translates into a more pessimistic statement.

versions, that is) accentuate the dystopian tendencies of the work. The language is somehow decomposing, and thus establishes a congenial commentary on ecological decay, or on entropy as such. Rustad also notes this: "as if the words are disappearing or have already disappeared from the surface of the paper, perhaps as a result of the energy being gradually drained from the system" (Rustad 2013, 31). Action is possible, but our environment is still fading away.

The entropy of the title, of course, refers to thermodynamics, the diffusion of energy and the decreasing order of existence.

Rustad, Hans-Kristian discusses this title and notes: "The fragments are locked on the screen and are available for interpretation, not just once, but at each reading of *Entropy*. In other words, the digital text is stable and permanent, and in that sense the text differs from what it is trying to thematize" (ibid., 30).[25] This is evidently true, but we can also note that when the real entropy as a factual process is constantly proceeding, then, with each new staging of the text, neither the reader nor the outside world is the same.

## 4.8    ON DIGITAL HUMANITIES

These various examples drawn from political history and (mostly) Swedish experiments were primarily aimed at, once again, showing digitization as a perspective—or as a lens—rather than as a collection of machines, techniques, networks and databases. Ekbom and Heldén capture in their respective works—and at almost half a century apart—important aspects of the history of digitization and its relation to human and mechanical agency. These texts also show that digital epistemology (or "the computer") does not constitute one single perspective, one lens, but changes in relation to the manifestations of digital technology at specific historical moments.

That digitization today, through its ubiquitous qualities, permeates all aspects of our daily lives is a fact that naturally affects our perception of this reality; and this, in turn, should clearly influence the questions that academics ask in their analytical activities. By relating literary works and

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[25] Rustad discusses the concept of "entropy" in depth in relation to Heldén's text, and he also develops Hayles' reasoning about the (digital) relationship between printed and electronic text, especially Hayles' pairing of "imitation" and "intensification." See also Hayles (2008), pp. 162–163, et passim.

text-based works of art—in both print and electronic form—to digital history, these works can be read as expressions of various stages in the development of computers and digitization. Whether we investigate change in the threat scenarios or analyze text-based experiments, we can observe how history, filtered through the digital lens, affects our perception of them.

So then: Does digital epistemology, as presented here, make a contribution to the ever-expanding field of digital humanities? Digital humanities as an emerging field of research has often been associated with studying texts using digital tools or building up extensive text databases (and theorizing around them). In a productive continuation of these approaches and established archives, the emergence of the distance reading techniques mentioned earlier can be noted, with Franco Moretti and Mathew Jockers as prominent names (Moretti 2013; Jockers 2013). Surely, their pioneering work will be considered to be of great value for today's and future humanities, and the epistemological implications of this practice are yet to be evaluated. Nevertheless, this book leaves databases, topic modeling and big data aside for the benefit of other epistemological and historical approaches to digitization and the humanities.

An illustrative example of the field's somewhat ambivalent relation to epistemological perspectives is the anthology *Digital_Humanities* from 2012 (Burdick et al. 2012).[26] In the short section "Digital Humanities Fundamentals," the authors argue that digital humanities is not so much a defined field as a handful of practitioners who have a common point of view; that is, that the printed text is no longer the culture-bearing medium for storing and communicating knowledge (ibid., 122). This opens up a broad definition of the field. Another section of the same introductory volume also discusses digital humanities in more epistemological terms, and the consequences this could have for the organization of academic activities:

> Digital Humanities is engaged in developing print-plus and post-print models of knowledge. Both involve more than an updating of the knowledge delivery system. They entail the cognitive and epistemological reshaping of

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[26] The number of introductions to the field of digital humanities has begun to become overwhelming. The above volume may here only serve as an example of initiatives and limitations within the field.

humanistic fields as a function of the affordances provided by the digital with respect to print. (ibid., 125)

The questions and perspectives raised by digital humanities challenge the boundaries of traditional academic disciplines (ibid., 82). This is completely in line with the epistemological implications of digitization as suggested in this book. The authors of *Digital_Humanities*, though, reject the idea that the very use of digital tools would qualify a work as digital humanities—a pretty decent statement, since virtually every academic product today is digital at some level. However, when they move on to describe what they see as necessary competences in digital humanities, it is only about technical abilities, which also applies to the learning objectives for digital humanities described in the volume (ibid., 132–134).

There are now many manuals and anthologies in the field of digital humanities and the reason for this is, naturally, that it is still an emerging field. Nevertheless, it seems somewhat significant that a volume that holds a number of very open approaches to epistemological issues lands in a fairly instrumental practice when the scope of digital humanities is to be exemplified. Whether the concept of digital epistemology can be said to be contained under the digital humanities umbrella is really unimportant, but could of course give an indication of how (and if) the field perceives itself epistemologically rather than technically, and—in a continuation—also of how the field relates itself to the humanities in general.[27]

Two decades ago, in his *Radiant Textuality* (2001), Jerome McGann made the following observation:

[T]he general field of humanities education and scholarship will not take the use of digital technology seriously until one demonstrates how its tools improve the ways we explore and explain aesthetic works – until, that is, they expand our interpretational procedures. (Jerome McGann 2001, xii)

As we know, digitization has for a long time since then developed our modes of interpretation, but from an epistemological point of view these practices have not yet significantly influenced the curriculum of the humanities in regular classes. However, it would be deeply unfortunate if

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[27] Of course, the struggle for how to define the digital humanities applies to research policies and financial funds. Some trends tend to absorb more funds than others, and getting inside or outside such a trend can have an impact on an individual researcher's ability to realize his or her projects.

digital perspectives on the humanities were relegated to parallel activities that run alongside regular course offerings. In many respects, Jerome McGann's challenge from *Radiant Textuality* has still not been answered—but we are working on it.

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# Towards a Twenty-First-Century Pedagogy for the Humanities

**Abstract** The concept of digital epistemology discussed here suggests that the historical curriculum should be revised, since "the digital"—understood as a perspective or a lens (Lindhé 2013; O'Gorman, Marcel, *E-Crit: Digital Media, Critical Theory and The Humanities*. University of Toronto Press, Toronto, 2006)—shifts our focus in the treatment of historical topics and aesthetics. Consequently, it is argued that the answers to the epistemological and pedagogical challenges of today lie not just in digital tools and devices, but also in early modern modes of thought. By combining digital perspectives with early modern modes of thought, we arrive at a defamiliarization (Shklovsky 1991; Agrell, *Tidskrift för Litteraturvetenskap* 1, 1997) of our own digital, pedagogical and theoretical present, as well as of our relation to cultural history and aesthetics. The chapter ends with further suggestions on how to implement digital epistemological perspectives in educational practices.

## 5.1 Introduction

In this book, we have heuristically labored with digital epistemology as different modes of thought, dedicated to capturing those parts of our culture that are not necessarily explicit or formally digital. I hope I so far have shown, or at least hinted, that—in addition to Moretti's graphs and tables (Moretti 2013) —there are other digital ways to read Balzac, Austen and Tokarczuk, reading practices that are in line with O'Gorman's

ambition to shift the analysis from hermeneutics to heuretics, from interpretation to invention (O'Gorman 2006, 12). It is thus a matter of reading and writing practices that differ from our teaching and research tradition as it has looked until recently. In the previous chapters we have located one such digital mode of reading practices in the field of media archaeology.

At the same time, digitization and our new forms of communication, and not least the bibliometrics propelled by computer technology and a neoliberal agenda, have often been used as arguments to undermine the position of the monograph in academic discourse. Therefore, it is appropriate to point out that the monograph, viewed through the lens of digital epistemology as a *mode of thought* rather than as a genre, should be able to regain—or consolidate—a significant position in academic knowledge production. Moreover, there is reason to reflect upon various academic forms of communication—such as the monograph, the peer review article, the collection of articles, the practice research, the seminar and digital formats—from *epistemological* rather than bibliometric perspectives.[1] You cannot simply replace the monograph with a collection of articles without a reflection on what it does with the results of the research. And you cannot simply put your lectures and seminars in a digital toolbox and expect that the learning result is identical.[2]

## 5.2    THE TWO CULTURES 2.0[3]

C.P. Snow in 1959 famously coined the phrase "the two cultures," by which he referred to the gap that has arisen between the natural sciences and the humanities, and the problems that occur when the two fields of

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[1] In order to deconstruct the New Public Management logic of bibliometry, it would not be unfair to count the seminar as a *lab*, where everyone who contributes to the final version of the text should be regarded as a co-author.

[2] One of many lessons learned by the distance teaching practices that has been forced upon us in the Corona pandemic of 2020. It is not a question of quality, but rather a matter of identifying that the epistemological teaching and learning content change when you change the format.

[3] The following discussion on "the two cultures," it must be said, is based on my experiences from universities in the Nordic countries. I am aware that the situation may differ significantly in different academic cultures, perhaps most clearly in the United States with its tradition of private funding, etc. So while the reader may or may not identify with the overview, I hope the concluding challenges will apply to—and inspire—readers of different academic backgrounds.

research do not interact (Snow 2013 [1959]). Snow's distinction has been used in our days as a metaphor for the lack of understanding between different academic traditions, and for discussing concepts such as "science" and "education."

In the last decades, we can see two new cultures that have emerged in the humanities, and this time the watershed is spelled "digital humanities." Although digital humanities as a field of both research and education has expanded significantly over the past decade, and external funding as well as local initiatives indicate the attractiveness of the field, the gap does not appear to have been bridged but rather consolidated—digital humanities often seems to exist as an activity separated from the regular curriculum. The perspective of digital epistemology, however, encourages us to affirm our digital contemporary in a mode of thought that does not disregard either history, theory or object. Anne Balsamo has similar thoughts in *Designing Culture*:

> Fundamentally, we need to stop thinking about new digital technologies as the channels through which education is delivered, and instead explore the ways in which these technologies are implicated in the reconfiguration of knowledge production across domains of human culture. The aim then is to take these insights as the basis for rethinking structures and pedagogies within formal educational institutions. (Balsamo 2011, 137)

Digital tools are not just tools. They contribute, Balsamo believes, to the restructuring of our way of managing and distributing knowledge, and they offer new opportunities for pedagogy. At the same time, we know how strangely resistant educational systems are; we accept influences from the most diverse directions (gender theory, postcolonialism, queer theory, environmental humanities, etc.), but our disciplines and fields of research still essentially retain their curricula.[4]

I hope we now, in 2020, can look at the following as history. But far into the 2010s there was a clear skepticism among many practitioners of "traditional" humanities towards the digital curricula. This was partly caused by fear (new technologies, making the reading of books obsolete);

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[4] In systems theory, we talk about *autopoiesis* (self-organization), operational closure and structural coupling. The system connects to the outside world (for example, new educational theories, new text concepts), but only to such an extent that one can still (autopoietically) confirm one's own identity. For a description of comparative literature as a social system, see Ingvarsson (2015).

or disinterest ("that digital thing is not my concern"); or envy ("they are taking all the funds"); or epistemological concern (a skepticism towards the seemingly positivist nature of big data research); maybe something else. And it is important to acknowledge that digital humanists themselves may have to take some blame for establishing this tension.

However, the tension between educational tradition and classical analysis vis-à-vis databases, topic modeling and digital tools cuts right into the core of the media skepticism that the two cultures 2.0 express according to this reasoning. That skepticism has a history: It has existed at all times, a more or less automatic resistance to new media and new cultural expressions (not least the romance genre was met with great suspicion in the eighteenth and nineteenth centuries, and was advised to be withheld from easily influenced women). The opposition to the modern ether and mass media culture was formulated eloquently by Marshall McLuhan adept Neil Postman in the 1970s and 1980s—a book title like *Teaching as Conserving Activity* (1979) is a clear statement—and a quote highlights the book's main theme:

> Its [the education's] aim at all times is to make visible the prevailing biases of a culture and then, by employing whatever philosophies of education are available, to oppose them. (Postman 1979, 20)

This attitude may seem rabid, but if you look past the moral dimensions you will find several modern echoes of Postman's reasoning, in the 1990s for example with Sven Birkerts, and later also with Andrew Piper (although in very different modes). We shall return to them.

So let us take this media skepticism seriously and ask ourselves a two-part question: Should we develop strategies that constitute a form of counter-culture to the many problematic trends that digital culture inevitably carries, or should we adapt and find ways in which we embrace digital culture as a resource and as a mode of thought in academic and educational work? The answers generated by this two-part question can be called "counter-culture" and "correspondence," respectively.

### 5.2.1    Counter-culture

Sven Birkerts' book *The Gutenberg Elegies: The Fate of Reading in an Electronic Age* was first published in 1994. There the author describes his sincere concern about a reading culture that he sees as threatened by mass

media in general, and digital culture in particular. About the (at the time of the book's publication) new genre of hypertexts, Birkerts writes: "I stare at the textual field on my friend's screen and I am unpersuaded. Indeed, this glimpse of the future – if it is the future – has me clinging all the more tightly to my books, the very idea of them" (Birkerts 1994, 164). The new genre worries him. Birkerts has a powerful precursor in the above-mentioned Neil Postman, and a similar skepticism also echoed in 2013 in Andrew Piper's *Book Was There: Reading in Electronic Times*, in a passage about electronic texts where the author claims that "The more my body does, however, the less my mind does. Interactivity is a constraint, not a freedom" (Piper 2018, 18).[5]

It is easy to sympathize with this "Gutenbergian" pessimism, and if we consider it productively, we as researchers and teachers fostered within the humanities can regard reading, interpretation and the overall dedication to, and work with, the "analog" cultural heritage as an act of *resistance* to contemporary cultural discourse. It is our duty to create intellectual harbors for reflection, Archimedean points from which this contemporary culture can be critically observed—and the humanities is an indispensable tool for this endeavor.

It is obvious that Postman and his followers see pedagogy and classical education as a tool to free young pupils from the paralysis and confusion of modern media. To achieve this, we must refrain (preferably entirely) from an education that is congenial to the surrounding society—research and teaching will certainly *adapt* to the surrounding media environment, but only in order to offer a *counter-culture*.

This, of course, may sound conservative—or reactionary, even—but quite frankly, who should hold the banners of education and history, if not the humanistic and aesthetic disciplines? These also form the backbone of the knowledge that teachers in elementary and secondary school deliver in their professions. Thus, a great responsibility lies on those disciplines.

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[5] When Piper compares digital reading to analog, he thus refutes the body's interaction as part of an intellectual activity. This Cartesian thought figure—in addition to appearing somewhat obsolete—at the same time rejects ancient rhetoric's relation of body, space and speech in the creation of experience and knowledge, something which, for example, Cecilia Lindhé (2013) emphasizes: "The significance of the body and the emphasis on Bodily senses in the rhetorical situation were thus crucial." In fairness, though, it should be pointed out that Piper's book discusses many interesting and productive perspectives on the relationship between book and digital culture.

Moreover, trying to adapt education to digital cultures would still only mean that you are one step behind the youngsters themselves.

It would be tempting here to use the concept of defamiliarization (*ostranenie*) introduced by Russian formalist Viktor Shklovsky, a strategy to break the taken-for-granted perception of our environment, a trademark of the avant-garde and other "difficult" poetry (Shklovsky 1991, passim). Why should traditional education not have the same effect, to interfere with the blurred perception of reality, obtained by our youngsters as an effect of too much media consumption? But as Beata Agrell reminds us (in an essay from 1997 to which we shall return soon), Shklovsky's concept is largely based on *recognition*—thus making defamiliarization a function more or less in contradiction to the concept of counter-culture in education.

### 5.2.2    Correspondence

But, if the humanities is to be anything other than a closed system, some kind of sanctuary, then we may have to try forms, in both teaching and research, that *correspond* to the surrounding culture. Out of those who would like to see an adaptation of the classroom to digital culture, we can count Anne Balsamo, already quoted, and N. Katherine Hayles. In both cases, they argue that humanistic competence is best communicated in an environment that gives room for the younger generation's own languages and media. It is a version of the pedagogical notion of "experience-based learning," which in this case means focusing on media habits and digital experiences. In *How We Think* (2012), Hayles asks how we can translate digital literacy into the ability to read, understand and work with, for example, literary texts? And how do we make possible the connection between these two areas of expertise?

> While literary studies continue to teach close reading to students, it does less well in exploiting the trend towards the digital. Students read incessantly in digital media and write in it as well, but only infrequently are they encouraged to do so in literature classes or in environments that encourage the transfer of print reading abilities to digital and vice versa. The two tracks, print and digital, run side by side, but messages from either track do not leap across to the other. (Hayles 2012, 57)

Perhaps the humanistic and aesthetic disciplines have been too restricted in allowing the production of multimodal texts within their own curricula? Hayles describes it as two parallel tracks that meet too rarely, or not at all. So, then: Should all students start blogging? Should the teacher tweet? Do we need to know programming? Should everyone work with databases and scanned texts? Sure, why not? But also, no, not necessarily—and this is where the media archaeological perspective enters. This chapter will advocate an attitude towards digitization in education and research which *simultaneously* promotes "digital literacy" and more traditional humanistic competences; a defamiliarization of contemporary culture, but not through resistance or by surrender to "digitization," but through curiosity about *the digital as a mode of thought*, which also leads us to pre- and early modern modes of thought. Let us first, before we go into the modes of thought, look at some digital forms of expression.

## 5.3   Digital Expressions?

Digital epistemology is based on the fact that digital forms of expression affect how we view and process information, both contemporary and historical. The notion of "digital forms of expression" requires, for the sake of clarity, a rather narrow definition in this context (this is not to say that phenomena that fall outside these examples do not support the following arguments). Thus, here are some examples of (a) *digital practices*; and (b) *digital-born* works of art.

### 5.3.1   Digital Practices[6]

The desktop has come to play a diminishing role in how we organize our digital files. In the personal computer's "adolescence," however, the desktop was an important entry-level metaphor, not least for humanists who felt uncomfortable with program code and flickering markers. In the metaphors of the desktop—documents, folders, trash—we felt at home. The hypertext pioneer Ted Nelson has repeatedly talked about what a missed

[6] Digital practice is, of course, incomprehensible. The phenomenon of ubiquitous computing means that we now have a great deal of access to, and use, digital technology without traditional interfaces in the form of screens and displays. The ubiquitous qualities give the whole existence some kind of "digital agency." There are reasons to return to this, but for the sake of clarity, I will here dwell upon more concrete interfaces such as the computer desktop and search engines.

opportunity in the development of human thinking it was when the desktop came to be the dominant interface, because it exerts such strong limits on the potential of *thinking new* that the computer medium possesses: "We must," he wrote in 1999, "overthrow the paper model, with its four prison walls and peephole 1-way links" (Nelson 1999).[7] It may have taken the decades that Nelson feared, but nowadays we are not quite so committed to the desktop metaphor. The hierarchical structure is not as prominent any more, as many of us have more or less abandoned the folder structure to instead clump our documents into a single folder and online in different clouds, such as Dropbox, Box and ProDrive. Instead of browsing folders we "google" our own hard drive—the verb reveals that the search engine is replacing the desktop as a metaphor. And on tablets and smartphones, we barely handle documents at all.

Searches on Bing and Google or in different library databases thus represent a partly different logic than the desktop and the hierarchical file structure. It is no different from the logic of the encyclopedia (or library shelf); we all remember how we searched for a keyword in the encyclopedia, only to find ourselves reading about a lot of other things on the same page as the entry we searched for.[8] The point of the encyclopedia, after all, is that it is not organized according to a hierarchical principle—the encyclopedia is blind to any order of things outside the alphabetical (and to the order of things that direct the editor's choices of headwords). The same goes for search engines: The words you type in the search box inevitably generate results that could be far away from the information you were actually looking for. However, it would be a mistake to call this handling of information management "democratic" or "neutral"—search engines, just like the authors of various encyclopedias or the manager of a library, work (or operate) in the interests of their owners. Somehow, we ourselves seem to contribute to these powers, as we more or less consciously design texts and headings with more than one eye directed towards the algorithms of the search engine (and possible click effects).[9] In the next step, the search engines have also identified our preferences and search history,

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[7] The reason, Ted Nelson argues, that the "desktop" with "folders" and "documents" became the interface metaphor was that it was developed by Xerox Parc, which, with its extensive production of copiers and faxes, operates in the paper business. See Nelson (1999).

[8] The similarities between the results from search engines and phenomena such as the encyclopedia and the library have been pointed out by (among others) Marco (Codebó 2010).

[9] In a 2013 essay, "Sökrutan, flödet och humanioras framtid" ("The Search Box, the Flow and the Future of the Humanities"), Rasmus Fleischer argues:

and will soon come up with suggestions and arrangements of our searches. A search on Google or Bing from a computer located in Sweden (and without tampering with VPN servers) generates completely different results than if you search for the same terms in, say, India or South Africa. Thus, the search engine is hardly more "fair" or more "neutral" than the hierarchically (and ideologically) arranged archives. But it does have another logic.

The same goes for the webpages to which the searches refer us. The information we are served is always part of some major network or overall interest. It could be a large company or authority, the provider of the web service, or the interests represented by the site's advertisers. The information provided by the webpages is very rarely self-sufficient, and in principle never completed, since the purpose is to direct our gaze or interest either towards the advertiser or away from the authority that runs the page.

### 5.3.2    *Digital-Born Works*

In the category of digital-born works we can—in this context, that is— count both computer games and more or less interactive, platform-based or site-specific artworks. Interactivity as such is of course not unique to digital objects—even the codex invites interaction, mainly through page turning. But computer games and electronic works generally offer greater opportunities for multimodal and synesthesia experiences—image, sound and text, in both moving and static forms, cooperate.[10] If computer games nowadays, with few exceptions, for commercial reasons invest in getting maximum dissemination (online games are more attractive than arcade games), digital art is characterized by an interesting dualism between on the one hand online-based works, and on the other site-specific installations.

Like Facebook, Academia.edu is designed to encourage tendencies toward narcissism. Users get detailed information on what search terms others have used to find their essays. This helps to train researchers in expressing themselves in a "search engine optimized" mode – thus writing in a way that will improve the position of the search engines, rather than in a literary style. The Universities' communication departments urge the researchers routinely to go in the same direction.

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[10] Just as with the book as a medium, of course, it is absurd to summarize this huge field in a single mode of thought. I would therefore just like to point out some observations that can serve as a basis for further reasoning.

It can be about utilizing virtual rooms such as CAVE, but also other more or less advanced digital constructions.[11] Often, different gaming platforms are used to explore artistic expressions, as in several of Johannes Heldén's works. An illustrative example is the early online work *The Prime Directive* from 2006, where the reader is first introduced to a title page, illustrated with a drawing of a natural motif depicting beavers by a lake. From there you come to a page with two animated books that rotate against a black background. As the user approaches the books with the mouse pointer, a heading and a short poem—or perhaps a motto—appear underneath them: "1 The Path of the Fragment" and "2 The Prime Directive." When you choose one of the books you enter one of two different text/image spaces depending on which one is selected. Thrifty but suggestive animation appears, short text snippets and different sounds for different mouse clicks. Instead of the linear structure of the traditional reading of books, the reader is met here by an oscillation between headline, image and text fragments. Does the puzzle have a solution?

From Heldén we can also find an example of site-specific digital installation, the work *Field*, a multimedia installation displayed at HUMlab X, Umeå University, in the winter of 2015. In the leaflet accompanying the artwork, Heldén reflects upon the relationship between code, DNA and language, topics he has been occupied with for a long time. Throughout his works there are, as noted earlier, continuous negotiations between concepts such as technology, digitization, nature, creation, automation, games, language, life, artifact. From a posthumanist (and probably also a Heldénian) perspective, we cannot really draw a distinct line between these binaries: life and artifact, nature and culture, code and language, man and stone (Fig. 5.1).

In *Field* Heldén worked with soundscapes and screens, not only on the walls but also with one giant screen on the floor (one feature of HUMlab X), and exhibited 3D prints of slowly mutating jackdaws. Walking on the

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[11] CAVE is the abbreviation for "Cave Automatic Virtual Environment," a technology where the user is surrounded by visual information on all sides in a closed room. Virtual reality (VR) glasses enhance the effect. CAVE is used for educational purposes as well as in industry, entertainment and art. McKenzie Wark has an interesting deconstruction of the CAVE phenomenon in his *Gamer Theory* (2007), where he imagines a game business offering, for a fee, "access to game consoles in a darkened room," not unlike the existing CAVE technology. Wark contrasts this experience, and moreover the abrupt disruption of it, with Plato's parable of the cave and the "world of shadows," in the chapter "AGONY, on the Cave™."

the old linden tree on the east
side of the house            grey skies      fields
seen from a speeding train, or the smell of    rain,
dirt, leaves decomposing),        the wind turned.
    slowly overgrown: pale          ferns, the
muted sounds    dim glow      forest.    slow
shift            scene        up.
into the morning –            flooded    green
lake            dried-out riverbed    sunlight
    smell of      tiny sparks          in the air.
        the dirt road      the light    an unknow
window.            the dying bird
people passing by
colour    the lake
        the chimneys        years to
    drive home from town over an
        dim, spiraling        through        nts,
        the island      shadow            stretching
out over the ice.
        trees wither away.    clouds roll in.
        they return. I know
just the          sound of wings,    thunder pitched
down. What        code is there,      hidden signs,
in this sequence of words.

**Fig. 5.1** Johannes Heldén, from the installation *Field*, HUMlab X, Umeå 2015. Photograph

interactive floor changed the texts on the walls, which also mutated, decomposed. In this combination of natural lyric and dystopia, the DNA of a jackdaw changes at the same time as a projected text is transformed into fragments; prose becomes poetic text. Four different mutations of the jackdaws have been produced by 3D printers and are displayed on the floor. The viewer must move in and through the artwork to stage the various moments of image, sound, text and sculpture (for more, see Bolick 2018). Indeed, Heldén's installation is guided by a moral appeal (just like the emblem), but the bizarre combinations, fake mutated jackdaws and oscillating relations between the different parts of the artwork still echo many aspects of *Kunstkammer* poetics.

## 5.4    FROM MODE OF EXPRESSION TO MODE OF THOUGHT

Let us repeat. If we consider the internet as a huge archive, we find that search engine logic—which, as noted, partly coincides with well-known phenomena such as the encyclopedia and the library—in many aspects marks a return to the early modern order of the principle of pertinence— or the subject principle, or dossier system—which has been introduced in earlier chapters. It is also a logic, or a sense of order, that is in accordance with the perspectives brought forward by media archaeology.

Many websites and digital works can also be said to be organized according to the principle of pertinence, in its associative rather than linear order—such as Heldén's *The Prime Directive*. But perhaps even more so, these phenomena can be said to resemble the emblematic mode of thought that has been highlighted in previous chapters. Let us take this one step further: In her extensive study of Swedish novels of the 1960s, Beata Agrell has established the emblem as a kind of matrix for the open and challenging strategies that characterized large parts of the 1960s' experiments in literature and art, not only in Sweden but in culture at large at the time (Agrell 1993, passim). Agrell's book is one of the first attempts to update the aesthetics of early modern emblematics into an analysis tool for more modern artistic expressions.[12]

In short, Agrell's reading of the emblem means that she, in line with Daly (1979) and Manning (2002), considers this not as a curiosity or

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[12] For an investigation into emblematic motifs and structures to the genre's own contemporary literature, see Peter M. Daly (1998).

banality, nor as mystification or a decodable rebus, but as a system of organizing knowledge. Agrell, too, thus views the emblem both as an art form and as a mode of thought (ibid. passim). The art form consists of the objects that were presented in emblem books and collections. And although the *pictura* can retrieve motifs from a variety of allegorical, biblical or mythological inventories, the image's referential content is not given—a frog or a rose can have different meanings from emblem to emblem. This "arbitrary symbolism" is also reflected today in digital phenomena such as memes and GIFs. The associations created by the visual elements in, for example, memes are not static, but are always governed by the cultural and regional code in which they are generated and disseminated.

Even though he does not believe that "Madison Avenue has rediscovered emblem books," Peter M. Daly, in an essay from 1988, makes some interesting connections between the Renaissance emblem and modern (1980s) advertising (Daly 1988, 352 and passim). The tripartite form—*inscriptio*, *pictura*, *subscriptio*—is everywhere, Daly observes, and he concludes:

> While the emblem is certainly not a source or direct model for modern illustrated advertising, the two forms frequently employ texts and symbols in a similar manner to convey messages and persuade readers. (ibid., 362)

It is evident, if you start looking, that the logic and structure of the emblem appear in many cultural expressions, from poetry to advertising and webpages. The reason, however, why emblems have taken such a prominent role in this short introduction to digital epistemology is not—as you may know by now—only their formal appearance, but the emblem as a mode of thought.[13] Agrell sees this mode of thought as a "maieutic practice," aiming "not to give knowledge of nature, but to redeem a sense of the visible that reveals a connection to 'Creation'" (Agrell 1993, 51). This mode of thought and maieutic practice are congenial to the expressions on many regular websites, as well as in Johannes Heldén's works, for example. Both on webpages and in many digital works, an information surplus is created which makes a "finished" reading of the pages impossible;

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[13] In a later essay, Agrell develops her emblematic analysis, drawing lines from the Renaissance through Victorian literature and art to avant-garde, high modernism and to the experimental art scene of the 1960s. The present book can thus be said to be a continuation of Agrell's ambitions to see emblematics as a mode of thought present under other aesthetic and media historical paradigms (see Agrell 1997, pp. 31–33).

instead, the reader is invited to redirect his or her interest in an emblematic way. This coincides with Daly's observation that the "solution" to an emblem does *not* lie in revealing the background of the different components; it is not a rebus or a riddle to be solved. No, the emblematic mode of thought instead encourages combination and composition—echoing Marcel O'Gorman's earlier-mentioned ambition of "invention" rather than "interpretation." This also coincides with what Peter Boot points out in *Mesotext: Digitized Emblems, Modeled Annotations and Humanities Scholarship* (2013):

> The emblem's use of multiple media, its wide variety of subject matter and its many intertextual relations make emblem studies very suitable for experiments in humanities computing. (ibid., 13)

Johannes Heldén can, again, serve as an example. Several of Heldén's poetic installations, including *The Prime Directive*, can be usefully related to emblematic modes of thought: the establishment of a text and image interaction that at once creates riddles and promotes the reader's reflection; his or her active participation; and the view of nature "through the 'spectacles of books'" (as Manning 2002) points out in the motto to this chapter), which in this case may become "the spectacles of graphic interfaces." If, in the seventeenth century, as Manning suggests, one lived in an environment of emblematic epistemology, today we live in a digital one.

Heldén's previously mentioned installation *Field* from 2015 also shows an emblematic structure—image and text appear in an oscillating interaction, an unfinished participatory process with a clearly moral message—but the work also promotes the spatial order of the early modern *Kunstkammer*, which also is an expression of the principle of pertinence. The participant/viewer moves between seemingly disparate physical and digital objects in a room intended for this experience only.

This brings us to a concluding note on digital culture and older modes of thought (before we move into theoretical and pedagogical reflections). For it is striking that even though many digital expressions may appear "new" and "foreign" to the traditional humanist, they may as well be related to a variety of cultural genres, phenomena and modes of thought from the time before (or around) the breakthrough of modernity. In this book, attention has mainly been directed to some significant early modern forms, but "the early modern" is not really an end in itself for the juxtapositions that have been carried out here. In addition to the emblem, the

cabinet of curiosities and the principle of pertinence, we can mention the romantic fragment; salon culture; the rhetorical ekphrasis and *enargeia*; the ancient poetic collage technique *cento*; and other ancient concepts such as *techné* and *methexis*.[14] These are principles for organizing, exploring and problematizing our cultural heritage that do not necessarily follow a Gutenbergian and post-Romantic principle, or the concerned notion of evidence fostered by the natural and social sciences. This is not about *reproducing* knowledge, but creating new knowledge—and creating it anew from already existing material. Or, as Marshall McLuhan stated: *I don't explain – I explore* (McLuhan 1968, xiii).

## 5.5 Media Archaeology, Digital Epistemology and Pedagogical Challenges

We can thus establish parallels between contemporary digital forms and older aesthetic expressions. But this must not be regarded merely as a curiosity, an intellectual musing over the similarities of existence; most of what we have around us can be likened to something else. No, the reasoning advanced so far is partly to show that the "digital" we observe is not a self-sufficient—or even completely new—sphere, but borrows expressions and modes of thought from aesthetic genres with a very long history. At the same time, the "digital" establishes new connections and its own logic, whose theoretical and educational implications are the final subject of this book.

This is, of course, not the first attempt to unite digital practices and pedagogical challenges. The hypertext pioneer, author and theorist Michael Joyce, in *Of Two Minds: Hypertext Pedagogy and Poetics*, already

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[14] The *ekphrasis* has long been understood as a verbal description of a visual expression, for example a verbal description of a painting, but as Cecilia Lindhé (2013) has shown, the concept originally meant a form of *enargeia*, a vividness; that is, a striving to create images in the minds of the audience. The focus is thus on the recipient of the message rather than the referent (interaction rather than representation). The *cento* was the poetic tradition of later antiquity where new poetry was created by assembling collages of earlier poems (see Sigrid Schottenius Cullhed 2015). *Techné* is one of the Aristotelian forms of knowledge and refers to skills, both artistic and craft (see, for example, Wylie Sypher 1968, passim). The premodern era made no distinction between art and other skills; everything was *techné*—for example, da Vinci was not both an artist and an inventor, his skills were simply contained within the same concept. *Methexis* is originally part of the mimesis concept and refers to participation (see Sypher 1968, pp. 86–88; and Christopher Kelty 2016).

in 1995 suggested some radical changes in the teaching situation, made possible by hypertexts and the software Storyspace (which he himself developed together with Jay Bolter in 1987):

> Let us say, then, that in the new cosmology learning and teaching are both decentered and distributed, i.e. hooked together and mixed up. Thus, when Martha Petry and her American literature students at Jackson Community College build a Storyspace around the poetry of Walt Whitman there is a natural confluence and linkage among the machine-based learning conversation, the textual encounter, and the gathering of scholarly resources. It is a linkage that software like Storyspace is uniquely suited both to enact and to represent. The learning conversations embodied in students' journal responses not only are graphically linked to Whitman's lines as part of the encounter with the text but, indeed (and quite naturally), also find their way into the resources that the teacher-scholar brings to bear upon the text. The learners truly take their place as co-equals in an interpretive community. (Joyce 1995, 121)

This is a line of argument not so different from Marcel O'Gorman's (2006). However, in the mid-1990s the fully equipped computer lab in schools was still a rarity, and Storyspace or hypertext software in general was not commonplace. Today the situation is different. And the ubiquity of digital tools and gadgets puts us in a more privileged position to combine digital interfaces, media archaeological perspectives and historical juxtapositions.

In other places in this book, media archaeology has been mentioned as a congenial expression of digital epistemology. For example, it has been suggested that search results on Google or Bing correlate well with the activity of juxtaposing our own research results, and the same search engines—not to mention the library databases—give us unprecedented opportunities to dive into individual years. But media archaeologists do not arbitrarily parallel their results—the archive has nodes (just like the search engine, by the way). These digital and media archaeological perspectives, at the same time, challenge the theories that since Romanticism have consolidated a subject-object position between theory and text, art and reality. Media archaeology and search engines both encourage us to re-examine cause and effect, materiality and presence.

This must of course also affect how we work actively in the teaching situation, for a start by not seeing the internet as a problem, or the online

student as a disruption. Instead, these new forms of knowledge can challenge us to relate cultural artifacts to each other in new ways.

In previous chapters, Marcel O'Gorman's *E-Crit* has been mentioned as an inspiration for the present work. O'Gorman applies an educational model that he devised with inspiration from W.J.T. Mitchell, which he calls "Hypericonomy." A "hypericon" is an image that, in Mitchell's words from 1994, works like "a piece of movable cultural apparatus, one that may serve a marginal role as an illustrative device or a central role as a kind of summary image … That encapsulates an entire episteme, a theory of knowledge" (Mitchell 1994, 49). Mitchell continues: "They are not merely epistemological models, but, ethical, and aesthetic 'assemblages' that allow us to observe observers. In their strongest forms, they merely serve as illustrations to theory: they picture theory" (ibid.).

The point is, then, that the images, "the hypericons," not only represent and present—they *do* something, too. O'Gorman emphasizes this aspect on the basis of Friedrich Kittler's media historical project: Critical thinking is not a text *about* culture, but rather a method of *writing with* cultural expressions. The practice of hypericonomy, for O'Gorman, gets concretized in an exercise in which the student is asked to create a diagram according to a model, in which s/he is asked to combine a private childhood memory with one of William Blake's (1757–1827) poems, as well as with a visual interpretation model from Mitchell and some other parameters. Out of this they will make a comment which blends the personal and historical with theory and popular culture. O'Gorman continues:

> Hypericonomy is not about immediately throwing out our current discursive practices, but about provoking change and inventing transitional, even provisional, strategies that bridge the gap between print-centric and computer-centric practices. (O'Gorman 2006, 95)

This is not a brutal transformation of curriculum, but rather a thought-provoking practice with the intention of bringing together the "two cultures" I described above. Thus, for O'Gorman, William Blake's writing is a prime example of "hypericonomy." Blake's images do not constitute conventional illustrations of the text, nor does the text form any obvious commentary on the image; instead, they create an intricate interplay of feedback loops and new insights.[15]

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[15] For Blake and digital perspectives, see also Whitson and Whittaker (2012).

O'Gorman sees great potential in leveraging personal, and private, experience as a starting point in his "hypericonic" pedagogy. It is a subjectivity which, of course, is congenial to digital culture's at once more private but at the same time more open logic. On the web we see constant interplay between the individual and the collective, an expression of which are the flickering identities on social media.[16]

The hypericon is an interesting point of departure, and W.J.T. Mitchell also uses it to point out the duplicity in the title of his well-known book. The hypericon is not an example of *a* picture theory but rather acts as an imperative, *to* picture theory. Images (like, one can argue, literary texts and all cultural artifacts) *do* something; they establish discursive practices that can point out different directions. Cultural artifacts shape and create ("picture") theory. But if we push the media archaeological perspective a little further, it is clear that both O'Gorman and Mitchell—despite their historical perspectives—overlook some "hypericons" in their respective practices. We can now see that William Blake's combination of text and images has striking similarities with the emblem as a mode of thought. And by turning our attention to several of the aforementioned pre- and early modern aesthetic expressions, we can find ways of thinking that correspond well with "hypericonic" practice. An example of this is the emblem. Returning to Peter M. Daly, he describes the emblem's epistemological qualities thus:

> Rather than describe a mode of thought by reference to motifs of clearly demonstrable hieroglyphic provenance, whether Egyptian, pseudo-Egyptian or Renaissance, I propose to use the term to describe an attitude to combination and composition. (Daly 1979, 82)

Thus, in digital pedagogy, Marcel O'Gorman sees a shift from "interpretation" to "innovation" (see Chap. 1). This coincides with Peter Daly's observation that the "solution" to an emblem lies not in revealing the background of the components—not in their provenance—but rather in a productive approach between combination and composition (to "create" instead of "interpret"). The emblem's and hypericon's approach to its sources seems to coincide with the aforementioned principle of pertinence.

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[16] Another example is how young people share the communications they have with their cell phones—they share each other's texts, overhear each other's calls, etc. This was observed already in 2001 by Alexandra Weilenmann and Catrine Larsson in "Local Use and Sharing of Mobile Phones" (2001).

The emblem, in its many configurations, thus bears obvious similarities to hypericons as discussed by Mitchell and O'Gorman. The hypericon, in this appearance, is also a way of exploring cultural history in a productive and non-hierarchical way. It is about seeing the pedagogical situation not as a reproduction of existing knowledge, but as an opportunity—just like the in emblematic practices—to relate the search for knowledge, through the analysis of the artifact, to a world outside the material being processed. Combination and composition.

In this combination of digital pedagogy and early modern forms of knowledge, we approach Shklovsky and defamiliarization (*ostranenie*) again. When Agrell (1997) reads the emblematic form of thought as a strategy for defamiliarization, she emphasizes that Shklovsky's essay does *not* draw attention to the artwork itself, but to the "processes of perception" it sets in motion: "The artwork is thus not autonomous, but focuses on a certain type of *observation*, which it, at the same time, through its built-in approach, *evokes*" (ibid., 28). Here we see a strategy aimed at the user, which we can now also translate to several digital practices such as hyperlinks, interactivity, immersion and so on. This aim involves a recognition: "The artifice here consists in manipulating the original. In the reuse, deviations and obstacles should be utilized, in order to de-automate the perception of the previously familiar, and thereby make it foreign …" (ibid.).

By combining a sensibility towards our digital contemporary with a curiosity about various early modern forms of thought, we achieve just such a defamiliarization—and thus it is a defamiliarization of both digital culture and our traditional cultural history. What until recently has caused digital culture to be an obstacle for our humanist colleagues is nothing more than a post-Romantic view of education—a legacy, that is, of modernity's expurgation of early modern forms—where "the work," "the genius" and "originality" (not to mention "History" and "the Nation") was placed at the center of the analysis and the curriculum. Our digital practices point in other directions, just like early modern modes of thought and genres. The skepticism towards "the digital" that for a long time could be observed within the humanities could be related to an acceptance of a banal linearity of history (a view of history it ironically shares with both development optimists and technophiles). Because this skepticism, it turns out, seems to be rooted in the notion that the pursuit of digital means the end of the analog (although as we have seen in Chap. 1, they do not constitute a binary couple), multimodality becomes a threat to

codex; the databases are a threat to writing history; the internet and Wiki culture are a threat to reading and education. In addition, it is not uncommon to view digital publishing as a threat to the monograph.

## 5.6    CONCLUSIONS AND CHALLENGES

My reasoning in this text leads to a vision of an educational situation where, with the help of technology, we can change the pedagogical perspective on its subject from provenance (origin, genealogy) to another, more associative, but not free, sorting principle—the principle of pertinence. There are a number of historically interesting but rather poorly explored modes of thought and concepts that could prove to be marvelously congenial with digital culture, *Analog vs digital* and which have only been hinted at here. In Chap. 1, I suggested that digital epistemology can be seen as a "digital humanities *sans* digital tools and objects"—yet the analytical examples in this chapter have been taken from digital works (albeit to illustrate digital practices). Let us, therefore, clarify that the point of this stipulation is to emphasize that it is possible to conduct teaching and research in line with a digital epistemology *without* using databases, algorithms, electronic works, fan fiction or topic models to any particular extent. It is possible to conduct "digital" humanities, exploring the modes of thought of the emblem and the cabinet of curiosities, and how they can be used to develop new (or old) learning processes in both primary and university education. You can encourage pupils' and students' work by using digital tools, or compile their surveys into emblematic or other pre- or early modern structures—*loci communes*, salon culture, the fragment and beyond. It is easy to imagine a situation where students explore emblematic thought forms and the principles of the *Kunstkammer*, and with these models in front of them produce exciting new compilations of "Edinburgh," "The 1950s," "Grass," "The Color Blue" or "Simone de Beauvoir." At the same time, they will teach us something about forms of knowledge in our own digital age. I actually see Gunnar D. Hansson's aesthetic program (see Chap. 3) as a very productive source of inspiration here.

It would be a shame for those of us who are interested in digital perspectives on the humanities if we scare away colleagues who possess genuine historical expertise. That risk exists if we continue to cultivate the two tracks that traditional humanists and some digital humanities practitioners still maintain to some extent. One reason for this is that some of us still see

"the digital" as a set of tools and practitioners, and not as an epistemological endeavor, a digital epistemology.[17] By raising our eyes from the apparatus *towards* epistemology and cultural history and viewing academic practice through this lens, we can suggest some possible directions and challenges for educators and researchers:

1. Update humanities' working methods from Gutenberg to Jobs, from a book-bound practice and theory paradigm to a multimodal, media archaeological and transmedial ditto.
2. Do not limit the notion of "the digital" to digital objects or even digital tools (although the latter are a good prerequisite).
3. Explore and establish multimodal relationships between multiple cultural expressions, showing that all culture always already is intermedial/heteromedial (Bruhn 2010).
4. Link historical perspectives to the present, connect humanistic topics to the private, create new research perspectives.
5. Encourage a curiosity for the materiality of media and thus for "tactile" cultural history.
6. Encourage multitasking capabilities and associative ability.
7. Get away from regarding digital tools as a problem ("cheating," "plagiarism"), but see them as tools for education, by encouraging creative combinations of information—text, image, sound; present, past, future.
8. Encourage traditional teaching methods, but at the same time encourage the student to put this information into new contexts.
9. Encourage a productive defamiliarization of both contemporary media expressions and cultural and aesthetic history, and not least to establish a de-automation of educational practice as such.

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[17] See also O'Gorman (2006, 103):

> [A] pedagogical practice that ignores materiality (or that flattens human physicality into pixels on a screen) will not have the capacity to transform the academic apparatus in any humane way. Web-based distance education has already changed the way we understand the university, but it has simply transposed print-centric habits (with varied success) into a new learning space. I believe that the transformation of the academic apparatus is most likely to occur by means of physical agents that engage directly with the traditional material structures of learning, from the essay, to the classroom, to the entire campus itself.

With what has been stated here, it may seem that digital epistemology is paving a path away from traditional humanities, and away from publishing monographs. The purpose here, however, is quite the opposite. By looking at digital culture epistemologically, it becomes possible to regard the printed monograph precisely as an expression of an epistemic discourse (a discourse we have long taken for granted, and therefore not considered as such). Digital culture gives us the conditions to finally realize what the monograph actually *means* (the medium being a message), and that it must *therefore* be preserved, not as a genre but as a *mode of thought* among others, an interface and a tool for knowledge production with special characteristics and effects. A mode of thought that most likely is different from the collection of articles, the practice research, the peer review article, the seminar and the digital *Kunstkammer*.

The idea in this reasoning is, finally, to initiate a process that can lead on to establishing a platform where traditional historians and digital archivists, exegetes and multimodal pedagogs, theorists and graphic designers, can meet and discuss the future of the humanities.

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[1] Note: Page numbers followed by 'n' refer to notes.

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