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Art History in the World of Digital Humanities. Aspects of a Difficult Relationship

Fig. 1: No digital art history in the digital humanities? (The 3-spheres model of the Digital Humanities by Patrick Sahle 2015).

Is Digital Art History failing at the Digital Humanities?

If one looks at compendia for the Digital Humanities, it is striking that art history and related subjects, even archaeology, are still rather marginal topics (cfr. fig. 1).[1] At Digital Humanities meetings, more and more contributions are being made that include working with pictures, 3D reconstructions or maps, but it is noticeable that art historians are rarely responsible for this. James Cuno published a frequently quoted article in 2012 with the title: “How Art History is Failing in the Internet”. [2] Hubertus Kohle even makes it into a kind of motto for his 2013 book “Digitale Bildwissenschaft”, which is currently more or less a German handbook on digital art history.[3] On the one hand, I agree completely with James Cuno’s statements, but what he is talking about is not in fact “the internet”, but rather the “Digital Humanities”, or whatever you might call historical and visual culture studies using digital methods. Moreover, we should take a close look at the situation to understand what this relationship really does look like.

First, Cuno recapitulates the challenges of digital initiatives in a few precise words: “Keeping up with the pace of change in the digital world is challenging, and harnessing its potential can be frustrating. But the biggest mistake many of us in the arts and humanities academy can make
is thinking of that potential only in terms of how we can use the new technology to more quickly and broadly disseminate information. The promise of the digital age is far greater than that. It offers an opportunity to rethink the way we do, as well as to deliver new research in the arts.”[4]

But what are exactly, according to Cuno, the prospects of the digital? “The power of our computers to store massive amounts of information and then order and reorder it in a near-infinite number of ways should be producing new paradigms in art historical research. Imagine what Erwin Panofsky or Aby Warburg could have done with our technology.” Such a lack of new epistemic paradigms was also observed by Johanna Drucker in an article provocatively entitled “Is There a ‘Digital’ Art History?”[5] She states that digital technologies did not induce any methodological and theoretical changes in the discipline: “A useful contrast might be drawn between the impact of critical theory and that of digital methodologies. In the 1980s, traditional art history was upended. Semiotics, structuralism, post-structuralism, psychoanalysis, Marxism, cultural and critical studies, and feminist thinking sharply divided art historians. [...] Every aspect of art historical knowledge was shaken at its foundations.” She demands that “we have to see a convincing demonstration that digital methods change the way we understand the objects of our inquiry. [...] what are the ways of thinking about works of art that arise from digital methods and reconfigure our fundamental understanding of what constitutes a work of art? What new research questions can be asked?” Drucker answers her own question by proposing “that we could situate a work within the many networks from which it gains meaning and value, and then present the results within complex visual arguments.” In her opinion, however, this is not the case: Although she states that an astonishing number of inventories of museums, libraries, galleries, and collections have been digitized, she claims that this kind of effort “is digitized art history, one built on the use of online resources. But no particular changes of thought or critical stance come with this convenience”.

The distinction made here between digital and digitized art history is not only crucial but also fatal for the role of art history within Digital Humanities since it weakens even well-meaning defenses of art history.[6]

This dichotomy reflects a certain concept of Digital Humanities that has its seeds mainly in the philological disciplines, especially linguistics. When I assert a rather difficult relationship between art history and the Digital Humanities, I basically wish to indicate a certain conflict of concepts concerning the use of the computer in various disciplines of the humanities.

We (still) have to assume a widespread opinion that the Digital Humanities are primarily about text analysis. This has to do with the fact that the umbrella term Digital Humanities was coined in linguistics and other text-based disciplines. Here, computer-based operations start from a (given) corpus, i.e. a text in digital format, for example, the complete works of Thomas Aquinas. Their exploration by Padre Busa in the 1940s and 50s with the support of IBM is regarded as the birth of Digital Humanities – at least in accordance with the common narrative of computer philologists.[7] Though it was expensive to build up a digital text corpus with these dimensions at that time, it was not too difficult to implement, as characters and text are almost digital per se. Contrary to art history and related subjects (we will come back to this later), the exciting work being done with the computer in the text based disciplines only started when the corpus was ready to be analyzed. In the di-
Digital format, text does not have to be read any more laboriously by human beings, but it can be processed and visualized graphically in various ways. Franco Moretti and his “distance readings” of hundreds or thousands of books at a time may already be familiar to the audience.[8]

Not only do many colleagues from the philological fields understand “Digital Humanities” exclusively in this way, but art historians have begun to adopt this view as well: so-called “digital art history”, on the one hand, involves analytical methods, whereas “digitized art history” is simply the production of digital representations of works of art.

The liaison between art history and computational methods

I would rather see the so-called digitized art history as an essential part of both digital art history and digital humanities. So I advocate here for a concept of Digital Humanities as a discipline, which also includes the specific processes of art history and related subjects. This also intrinsically includes the digitization of their objects, which does not mean just scanning but also modeling and virtualization in a broader sense. Finally, a clear distinction to so-called digital art history cannot be drawn: Already storing digital images captured from works of art even in the simplest database, sorting or classifying them, means crossing the border to a methodological use of digital possibilities – in other words: crossing the border to digital art history – even without sophisticated image-technologies like pattern recognition.

In the domain of the digital capture of artifacts, art history is operating completely within its own tradition (fig. 2). From cataloguing, to describing, to drawing, to photography, the discipline always looked for ways to “take possession” of its subjects, particularly replicating and emulating them in order to have them ready for comparison and other operations. Neither Wölfflin’s formalistic school, nor the Warburgian cultural history approach, with its interest in iconography and iconology, would have been possible without prior transformation in portable media formats. Large, systematically structured image archives, as well as classification systems like Iconclass are undertakings of the discipline that anticipated the computer as a device for counting, filtering and calculation. It is true that com-
Computers had already appeared on the horizon by the mid-20th century, but initiatives like Iconclass were definitively inaugurated before such technology was actually available. This is also true of the Census of Antique Works of Art and Architecture Known in the Renaissance which was started as a double file record system on paper before, in the 1980s, it underwent a digital transformation with the help of the Getty Institute.

For a long time, the field of the application of computer technology was seen mainly in terms of classifying works of art by form, iconography, and function – these are the basic cognitive operations an art historian starts with. Due to the required memory and calculation impact, initiatives that tackled the image data itself came rather late, despite there having been discussions on image recognition and similar things in the first meetings organized by IBM in the late 1960s at the National Gallery in Washington. Today, images might be the first thing that comes to mind when talking about digital art history. Within short time, valid representations of artifacts might be (at least) three-dimensional, as the fourth dimension, time, has to be considered, too. But it is not just about the digital representation of the “measurable” aspects of the artwork. Artifacts are also parts of historical events, as Matthew Lincoln expressed it, they “are both actors in, and indices of, a host of historical trade networks patronage, gift-giving, commerce, colonization, theft, and other forms of physical movement and exchange”. This requires not only necessarily data concepts which are able to express a certain narrative but also dimensions, like probability and variants of hypothesis.

At this level of complex knowledge management, new and exciting fields are emerging which on the one hand are definitely only manageable with digital technologies. While considered by some experts as a core field of Digital Humanities, data modeling and knowledge management in art history, actually is hardly acknowledged as a specific field of action. This has certainly to do with the specific “resistance” of material objects against formalization but also with a lack of initiative from the discipline itself. Thus the most comprehensive concepts for describing artifacts, the CidocCRM, even if it was created by an ICOM group, largely was developed by non-art historians. As every formalization of historical events or material objects needs a – conscious or unconscious – framework of assumptions and strategies, the distinction between “digitized” and “digital” art history makes no sense here. The same is true if we look at the emerging field of mapping. This is an activity which is as well connected to collection building and data modeling as it is to analytical operations and visualization. This is even more the case if thinking about subsequent steps like formal reasoning and artificial intelligence (AI).

It is certainly true, as Matthew Lincoln states, that “the sheer numbers of extant art objects (particularly multiplicative works such as prints and photographs) present art historians with problems of scale that quantitative methods promise to address.” But again: the “resistance” of material objects, i.e. their history and their reference to cultural or scholarly concepts, require attentive data acquisition and management of data. Until now one can speak only of a few cases of “big data” and one should do this with caution in order not to simplify one’s methodology. It is not surprising that – even before digital art history could establish itself – the first harsh critics from a humanist viewpoint, like the article “Against Digital Art History” by Claire Bishop, have been heard.
Notwithstanding contrary announcements (cfr. fig. 3)\(^2\) and despite the fact that algorithms for pattern recognition are now quite advanced, computers are still rather weak in analyzing works of art. The reading and comparison of images itself is not too difficult for the computer if it uses colour analysis or outline detection. The challenge consists in bringing together the intellectual concepts of culture with the formal aspects of the artifacts. Only if we have enough data about the cultural context and sufficient calculation power at our disposal, more complex analysis will be possible.

Further progress is to be expected, but it should be clear that the application of computational methods requires a certain amount of structured and comparable data. Concerning the idea of Digital Humanities, rather than making a division between digital and digitized art history, we should move towards a circular concept consisting of building up structured digital collections on the one side and analytical methods on the other (cfr. fig. 4). So, to a certain extent, it is up to the discipline itself to claim a much more central position in the Digital Humanities by increasing the emphasis of data creation and curation which are traditionally strong fields of art history.

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Fig. 3: The machine already better than human beings: Ahmed Elgammal and Babak Salehat, Rutgers University (MIT Technical Review May 11, 2015).

Fig. 4: Digital Humanities as circular model of aggregation and analysis (G. Schelbert).
Of course, this is also about creating a new mindset regarding data and data analysis within art history itself. Notwithstanding its technological traditions, there is a strong anti-digital attitude in the discipline today (as we already heard from James Cuno) which should be taken seriously and addressed accordingly.

**Need for opening art history towards a data driven and collaborative methodology**

The challenges start with our research and publication practices. If the scholarly narrative, printed as book or article, remains the only target of academic practice, it might be difficult to establish something like digital art history. We should not just see data as primary sources, we should also accept the various stages of data creation as a genuine part of research.[22]

But, right now, we are far from such a good relationship with data: Driven largely by theoretical paradigms (as also mentioned by Johanna Drucker), the discipline has shifted more and more to the production of rather detached narratives that tend to focus on individual “artistic positions” based on single aspects, as opposed to clearly defined objects of investigation. It is curious that particularly in the field of contemporary art – and even computer art – there seems to be the greatest distance from the concrete methodologies of digital art history.[23]

On the other hand, there are a lot of emerging (or re-emerging) fields that require more fact-based research, like provenance research, history of collections, art market, personal network research etc. Also both, the so-called spatial and material turns require strategies that are based on data.[24] Mapping spatial data and visualization of temporal aspects in timelines currently are seen as promising methodologies.[25] The research on the interference of city geographies and dealer networks in the nineteenth-century London art market are a representative example for a data-driven methodology which focuses at the same time on spatial and temporal visualization.

![Fig. 5: A data-driven project: Mapping nineteenth-century London’s art market (Pamela Fletcher and Anne Helmreich).](image)

A data-driven strategy in these fields and others will not just facilitate interdisciplinary and multilingual communication and collaboration[26] but promote also new forms of publication, such as databases, online catalogues, maps, or multidimensional datasets. There is no cause for alarm for the traditionalists, however, as the scholarly narrative will maintain its status – perhaps more and more as a personal view addressed to particular communities on the respective field of study.

Another crucial point is that data-driven and technology-enabled research cannot be tackled sufficiently by the kinds of solo practitioners typical in the humanities. Only multidisciplinary teams of researchers together with data engineers can build up comprehensive corpora and can take full advantage of their content, as was extensively shown by Diane Zorich in a re-
port for the Kress Foundation and the Rosenzweig Center.[27] As such – at least as an option – the discipline should learn to collaborate more. As collaboration via the internet can be virtually global, concepts of open access and data sharing must become more familiar. This should also include a culture of academic recognition. In the current academic climate, most graduate students running out of funding or assistant professors racing against the tenure clock are understandably more committed to personal publications than to the common goal of creating repositories.

Last but not least, one could name another problem concerning the institutional and infrastructural situation in art history. It is the almost strict separation of the practice of art history into the two fields of museums and universities. Thus much of “digital” – mostly cataloguing and digitizing, but also development of standards like CidocCRM and database technologies – is done exclusively in the museum world, while classroom activity is generally limited to consultation of online resources and blogposts with results. There might be many reasons for this, it is not simply because it is generally not possible to bring art objects into the classroom, as the situation in archaeology shows. Something like archaeo-computing seems to be an accepted field within the discipline.

Research institutes with close connections to museums could bridge this gap. [28] There are some that are already doing so, including important ones like the Getty Research Institute in Los Angeles or the RKD (Rijksbureau voor Kunsthistorische Documentatie) in Den Haag. Despite their impressive technical and organizational capabilities, however, they are not equipped to offer open services for the broad community. Openly available infrastructures from private or commercial initiatives such as Wikipedia, Wikidata or Google maps are only partially feasible for scholarly work.[29]

A particularly promising alternative seems to exist in the Digital Humanities labs already in place in North American Universities, such as the Rosenzweig Center or Duke’s Wired lab, which are strong in the development of appropriate tools. However, there are few such laboratories doing noteworthy work in the field of art history.

In my opinion, the discipline can no longer avoid investing more in such concrete structures – ones that must be tightly connected with museums, libraries, and archives – in order to establish a stable concept of digital art history. Digital art history is not just the momentary application of algorithmic processing to particular research questions, nor is it just the consultation of digital sources; it is also the continuous aggregation of knowledge in digital form, including a widespread digital virtualization of artifacts that must be kept permanently accessible for any kind of research, like books in a library.

Notes

14. Cfr. Matthew Lincoln in Drucker/Helmreich/Lincoln/Rose 2015, Digital Art History: “But physical objects resist both the structured description and the abstraction these methods rely upon. Compared to structured data for libraries’ generally homogeneous collections of books, museums do not yet have interoperable standards for describing their heterogeneous collections of unique objects. While library data are produced through broad consensus about the facts of a book’s publication and classification, knowledge about historical objects tends to be advanced through iterative and conflicting scholarly argumentation – a process that is difficult (though not impossible) to model as structured data.”
16. CIDOC CRM was developed by the CRM special interest group under the direction of the physicist Martin Doerr and became an ISO-standard in 2006. ICOM is the International Council of Museums. The responsible committee was CIDOC (Comité International pour
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Leonardo Impett and Susanne Süsstrunk,
From Mnemosyne to Terpsichore. The Bil
deratlas after the Image, in: Premiere Annual
Conference of the International Alliance of
Digital Humanities Organizations (DH 2017),
Montreal, Canada, 2017 (URL https:
dh2017.adho.org/abstracts/525/525.pdf 10-
12-2017); Peter Bell and Björn Ommer, Digital
Connoisseur? How Computer Vision Sup
ports Art History, in: Connoisseurship nel XXI
secolo. Approcci, Limiti, Prospettive, ed. by
Alina Aggujaro and Stefan Albl, Rome 2016,
22. Of course, “data”, “facts” and “information” should be seen in a functional and heuristical sense, not in an ontological one.
23. An explanation for this could be the overwhelming amount of available material. Case studies and almost generic narratives avoid direct interaction with this material.
don-art-market, 10-12-2017), cfr. also Matthew Lincoln in Drucker / Helmreich / Lincoln / Rose 2015, Digital Art History.
26. Multilinguality is a critical issue. A more data-driven research could shift communication from scholarly papers to exchange of primary source material, measurement data and short statements which are less tied to lingual and cultural traditions.
27. Zorich 2012, Transitioning to a Digital World. As a result, the Kress Foundation published
28. Almost identical considerations were already expressed by Matthew Lincoln in Drucker/Helmreich/Lincoln/Rose 2015, Digital Art History; cfr. also Zorich 2012, Transitioning to a Digital World.


**Figures**

Fig. 1: No digital art history in the digital humanities? (The 3-spheres model of the Digital Humanities by Patrick Sahle 2015).

Fig. 2: “Taking possession” of the works of art (here still with pre-digital technology): B. von Tieschowitz and R. Hamann-Mac Lean taking pictures in Vezelay, 1927, Foto Marburg.

Fig. 3: The machine already better than human beings: Ahmed Elgammal and Babak Salehat, Rutgers University (MIT Technical Review May 11, 2015).

Fig. 4: Digital Humanities as circular model of aggregation and analysis (G. Schelbert).

Fig. 5: A data-driven project: Mapping nineteenth-century London’s art market (Pamela Fletcher and Anne Helmreich).

**Abstract**

This text can be considered among a number of recent statements regarding digital art history. It serves as a contribution to an ongoing discussion, certainly not as an exhaustive analysis of the field or its history. The basic thesis here is that the popular separation (Pias, Kohle, Drucker) between “digitized” and “digital” art history is disadvantageous to the discipline, particularly for the positioning of art history within digital humanities. “Digital art history” is not possible without extensive activity in both digitization and digital documentation. Only then sufficient data will be available for creating new insights and knowledge in art history within a digital space.

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