



III beyond print

Having discussed some fundamental considerations of discipline and methodology, we cannot proceed further without acknowledging that there is a situatedness to the inquiry of the book: a spatio-temporal horizon that is particularly pronounced when we endeavour to understand the principles of *digital* scholarly editing. This situatedness within a landscape of technologies and practices will date any description of the state of the art in due course. Describing such a state is therefore not the aim. (Although a description of practices will be involved.) Instead, the chapter identifies aspects of the shift from book to screen, print to digital, in order to contour the modelling *environment* that we find ourselves in. This is discussed along the axes of six phenomena: A. (Re-)Materialization, B. Spatialization, C. Multimedialization, D. Differentiation, E. Connection, F. Interfacing.

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*Digital editions are mutable objects:
they change because the technology
around them changes, and therefore
they are forced to adapt to it;
they change because they can be
changed; and they change because
they are inherently mutable,
interactive objects.*

ELENA PIERAZZO, *Digital Scholarly Editing: Theories, Models and Methods*, London: Routledge, 2016, 184.



dimensions of editing

beyond the paradigm of print

There are many different ways in which to understand the shift from books to computers as the main conduits of scholarship. So far, we have been focused on general questions of methodology. “With technical means,” leading palaeographer Bernard Bischoff wrote in 1979, “palaeography, which is an art of seeing and understanding, is on its way to becoming an art of measuring.”¹ (Instead of ‘understanding’ he speaks of *Einfühlung*, of course, here denoting understanding based on experience, familiarity, attentiveness, and sensibility.)² This recalls discourses about operationalization: According to Axel Pichler and Nils Reiter, operationalization “consists of developing the necessary steps to unambiguously assign the instantiations of a concept to this very concept and thus measure it.”³

If we were to continue with that methodical train of thought, we could query the transition of editions printed in books to editions realized in a

1 BERNHARD BISCHOFF, *Paläographie des römischen Altertums und des abendländischen Mittelalters* (Grundlagen der Germanistik; vol. 24), Berlin: Schmidt, 1979, 17, original: “Mit technischen Mitteln ist die Paläographie, die eine Kunst des Sehens und der Einfühlung ist, auf dem Wege, eine Kunst des Messens zu werden.”

2 Elena Pierazzo has pointed out that the translation of Bischoff’s *Einfühlung* has been debated for a long time, especially in Italian scholarship in the 1990s, cf. PIERAZZO 2018, 129, fn. 1. The main question seems to have centred on whether Bischoff meant to indicate ‘comprehension’ or ‘intuition’ – as might be clear from my own translation, I do not find ‘intuition’ an adequate translation since it implies a subconscious act of *Divination* rather than the active perspective-taking of *Einfühlung*; perspective-taking in this case indicating an immersion in and awareness of context rather than a change of interpersonal point of view.

3 PICHLER / REITER 2022, [1].

digital environment from the perspective of *atomization*: a ‘preparation for measuring’ through the discretization of information. This might be most immediately relevant to those interested in performing certain types of textual computational analysis.

Another avenue to explore is the question whether and how digital scholarly editing impacts the conceptual dimensions of editions, and this is the one I would like to pursue here. I take the liberty of proposing six dimensions that I deem suited for discussion:

- A. (Re-)Materialization
- B. Spatialization
- C. Multimedialization
- D. Differentiation
- E. Connection
- F. Interfacing

The purpose of this categorization is to refocus our attention, not to indicate a finite array of separate phenomena. We could, for example, think of other terms just as easily: ‘Visualization’ might be the most obvious one. It is not included here because I find it of limited use. Some, like Thomas Stäcker, have argued that digital editions are not visible and perhaps do not even have to be visible in order to exist; in that view, the oft-invoked separation between a ‘data layer’ and a ‘presentation layer’ grants them a life independent of their representational function.⁴ This merits debate. On the one hand, it solves the issue of longevity (or appears to solve it) by rooting the essence of the edition in the component most likely to survive software changes and server updates, namely the ‘plain’ TEI/XML encoding of a text, in most cases. On the other hand, it risks losing sight of what an edition is, at its core: a publication of material; a making-accessible for readers and users, not just those willing to peek ‘under the hood’. Every edition has always engaged in visualization, even if that visualization was the presentation of an edited

⁴ Cf. THOMAS STÄCKER, “A Digital Edition Is Not Visible: Some Thoughts on the Nature and Persistence of Digital Editions,” in: *Zeitschrift für digitale Geisteswissenschaften* 5 (2020), online: <https://doi.org/10.17175/2020_005>.

text in a book. With digital editions, there may be options for multiple outputs, based on the same data. But does an edition that has no output whatsoever exist as an edition, rather than as a base for an edition? Degrees of visibility would seem to be inherently linked to the viability of editions. In that sense, they are not a topic particular to *digital* editions. Sketching the new (or newly emphasized) dimensions of digital editions will be the task of this chapter, however, and while visualization has a role to play in that, we should seek to be more specific where we can. Consequently, the first aspect that appears to be a distinct feature of digital editions is not *that* they visualize something but rather *what* they visualize – beyond ‘text’ and beyond what would have been considered a component of an edition under a printed paradigm, as we already saw in our tentative discussion of facsimile editions. Let us therefore begin to understand the modelling environment of digital editions not as a new one necessarily but as a reconceptualized one:

A.

(RE-)MATERIALIZATION

At first glance, identifying materialization or re-materialization as a significant aspect of *digital* scholarly editing might actually seem counter-intuitive. Digitization is more often associated with a process of *dematerialization*. As Patrick Sahle has pointed out, equating digitization with dematerialization presupposes a perception of materiality.⁵ He accepts the premise of a “vanishing of materiality”⁶ of the original, nevertheless, and connects the inter-medium state – the transition to a state of digital representation – with his theory of a “‘demedialization’, or ‘premedialization’ or ‘transmedialization’.”⁷ We will return to this discussion of medialization in **SECTION C**.

⁵ Cf. SAHLE 2013c, 193.

⁶ Ibid. Original: “Verschwinden der Materialität.”

⁷ SAHLE 2013c, 193.

As far as materialization is concerned, it is understandable that digitization would be thought of as a process of dematerialization where it is thought to consist of ‘detaching’ information from a sheet of paper and releasing it into a digital realm commonly imagined to be disembodied or, in other words, immaterial, becoming *data* only after its detachment and becoming *running text* once attached to a sheet of paper again; to give one example. This documentary view on the subject might have its merits, but it is potentially misleading in its confusion over what is and is not a material form of storage, as well as what is and is not a matter of degree of ‘detachability’.

When it comes to scholarly editions, there is a different angle one might want to consider: the *visibility* and *invisibility* of materiality; materiality taken to mean the material existence of the source material that is to be edited, not the material state of the edition itself. That this has not received more attention is peculiar since the *New Philology* movement was quite explicitly interested in the materiality of codices, hence the term *Material Philology* which Stephen G. Nichols championed in particular,⁸ and this heritage remains active within the field of textual criticism to this day. That emphasis on materiality has, however, if anything, taken a predictable turn when confronted with the digitization of manuscripts, as noted at the beginning of **CHAPTER I**, giving way to fears “that the digital artifacts somehow [pose] a threat to [the] ‘originals,’”⁹ something that led Nichols himself to wonder: “What’s so offensive about them?”¹⁰ We must leave the answer to this question to those who would, in Nichols’ view, seem to be offended.

But what about scholarly editions specifically? Is it not true that scholarly editions have, in the past, rarely contained any representation of the source material in its materiality at all, aside from a short description? And is it not equally true that digital scholarly editions almost always

⁸ See STEPHEN G. NICHOLS, “Why Material Philology? Some Thoughts,” in: *Philologie als Textwissenschaft: Alte und neue Horizonte* (Zeitschrift für deutsche Philologie, special issue; vol. 116), ed. by Helmut Tervooren and Horst Wenzel, Berlin: Erich Schmidt, 1997, 10–30.

⁹ NICHOLS 2016, 44.

¹⁰ *Ibid.*, 45.

feature a pictorial representation of the material object and, in many cases, not just of each and every leaf but also of the binding? Or, differently put, is it not true that they at least could, if they do not yet? The point of comparison is not the digitized manuscript versus the physical codex – it is the visibility versus the invisibility of the source material in a scholarly edition of the contents of said sources. This matters greatly, as we will come to see throughout the rest of the book. It matters for the contents that are much more closely tied to that materiality than ‘text’ presumably is and it matters for the aspect of spatialization.

I would not want to suggest that this *Sichtbarmachung* (visualization – ‘making-seen’) of materiality in digital scholarly editions has not been noticed or discussed at all. Where it has, it has usually been in connection with codicological considerations.¹¹ Elena Pierazzo and Peter Stokes have referred to it as “putting the text back into the context”¹² and specifically advocated for a more holistic approach that integrates the codex as a physical object into the presentation and conception of the edition. Peter Robinson countered in 2013 that “this attention to documents”¹³ could lead to a “flood of facsimile editions in digital form (‘digital documentary editions’, to use Pierazzo’s term).”¹⁴ In addition to his criticism of facsimile editions already cited before, he has stated that

11 A specialized branch of discussion can be found in the work of Frederike Neuber who focuses on the visual aspect of typography and the fusion of typographical features and textual expression and has been doing important work in that regard; see FREDERIKE NEUBER, “Typografie und Varianz in Stefan Georges Werk: Konzeptionelle Überlegungen zu einer ‚typografiekritischen‘ Edition,” in: *editio* 32/2 (2017), 205–232, online: <<https://doi.org/10.1515/editio-2017-0012>>.

12 ELENA PIERAZZO and PETER A. STOKES, “Putting the Text back into Context: A Codicological Approach to Manuscript Transcription,” in: *Kodikologie und Paläographie im digitalen Zeitalter 2 – Codicology and Palaeography in the Digital Age 2* (Schriften des Instituts für Dokumentologie und Editorik; vol. 3), ed. by Franz Fischer, Christiane Fritze and Georg Vogeler, Norderstedt: BoD, 2011, 397–429, online: <<http://nbn-resolving.de/urn:nbn:de:hbz:38-43605>>.

13 ROBINSON 2013, 127.

14 Ibid. For the publications of Elena Pierazzo that led to Robinson’s response, see ELENA PIERAZZO, “A Rationale of Digital Documentary Editions,” in: *Literary and Linguistic Computing* 26/4 (2011), 463–477, online: <<https://doi.org/10.1093/llc/fqr033>>, and ELENA PIERAZZO, “Digital Documentary Editions and the Others,” in: *The Annual of the Association for Documentary Editing* 35 (2014), [1–23], online: <<https://scholarly-editing.org/2014/essays/essay.pierazzo.html>> (accessed 18 February 2023).

“digital documentary editions”¹⁵ would serve to “distance [the editors] and [their] editions from the readers.”¹⁶

Even though Robinson makes allowance for the fact that facsimile editions must have a purpose or, at any rate, undeniably a history and presumably a future of existence,¹⁷ their value remains unexplained as well as unexplored. A dualism is maintained that allegedly existed among printed editions: uncritical facsimile editions next to critical non-facsimile editions; the static image versus the dynamic text. Whether this might be true for printed editions is one question and our inquiry has already indicated that it is not. More pertinent, however, is the question whether such an opposition is a reality among digital scholarly editions – or likely to become one, if it is not yet. So far, no compelling argument has been made to that effect. Robinson’s position furthermore fails to account for a perspective on digital editions that does not necessarily treat its audience as ‘readers’ but as ‘viewers’ and ‘interactors’ as well, capable of manipulating both text and image, if we take manipulation and manipulability to be a crucial attribute of models, as McCarty does.¹⁸ It is worth noting that scholars like Elena Pierazzo have been actively engaged in the modelling debates of the digital humanities since digital scholarly editing is often viewed as a type of (textual) modelling: something malleable, in flux.¹⁹ Views on materiality do not replace components in the modelling system (although a case could be made that they could replace highly diplomatic transcriptions if those do not serve an analytical purpose rather than a representational one); they merely add components

15 ROBINSON 2013, 127.

16 Ibid.

17 Cf. ROBINSON 2013, 127.

18 Cf. MCCARTY 2005, 26.

19 See PIERAZZO 2016 and PIERAZZO 2018. Patrick Sahle uses the term *Modell* frequently in SAHLE 2013a–c and applies it to his proposed model of a *Textrad* (‘text wheel’) in which he unites or rather non-hierarchically arranges different conceptions of what a text is and does, cf. SAHLE 2013c, 9–49 and in particular 45–49. Of interest might also be how Anna Cappelotto situates Sahle’s approach within other theories on text plurality, prompted specifically by digital practices, cf. ANNA CAPPELLOTTO, “Digital Scholarly Editing and Text Reconstruction: Theoretical Perspectives and Practical Approaches,” in: *Digital Philology: New Thoughts on Old Questions*, ed. by Adele Cipolla, Padova: libreriauniversitaria.it, 2018, 77–98, here 80f.

to it that have to be related to other information from and about those same source materials.

Last but not least, Robinson's argument neglects that digitized images of the source material constitute, in themselves, a form of representation that a philologist like Robinson might, understandably, not rate highly in terms of its reproductive value for a scholarly edition of text but that, nonetheless, reintroduces some of the information, although not all, that would otherwise be lost; and that information, visual as it may be, is not merely information about non-textual elements of the source material, even though it is that as well.

B. SPATIALIZATION

One aspect that connects to this is the aspect of spatialization which is not always realized but serves, where it is, to distinguish digital scholarly editions from traditional editions. The aspect of spatialization is in itself of course not entirely novel, as few things ever are; Herbert Kraft, for example, proposed a 'theorem of spatiality'²⁰ for the edition of fragmentary, previously unpublished works based on his experience with the edition of Friedrich Schiller's *œuvre*.²¹ Kraft juxtaposed the spatial ordering of fragments with the editorial principle of ordering them chronologically:

The difference between both methods lies in the mode of transcription: the presentation of that

20 He did so most lengthily in HERBERT KRAFT, "Mehrfach besetzte Funktionspositionen als ‚Text‘ und die Räumlichkeit als ein Theorem der Fragmentedition," in: *Editionsphilologie*, ed. by Herbert Kraft, Darmstadt: Wissenschaftliche Buchgesellschaft, 1990, 107–124, but already presented thoughts to that effect in 1975 (see the fn. after the next).

21 The two volumes of the *Nationalausgabe* of Schiller's works that are relevant in this context, as they are the edition of the fragmentary tradition, are HERBERT KRAFT (Ed.), *Schillers Werke: Nationalausgabe* (vol. 11: Demetrius), Weimar: Böhlau, 1971, and HERBERT KRAFT (Ed.), *Schillers Werke: Nationalausgabe* (vol. 12: Dramatische Fragmente), Weimar: Böhlau, 1982. See also the characterization of the edition in FRANZ SUPPANZ, *Person und Staat in Schillers Dramenfragmenten: Zur literarischen Rekonstruktion eines problematischen Verhältnisses* (Hermaea. Neue Folge; vol. 93), Berlin: De Gruyter, 2010, 11, fn. 32.

which has come to exist or that which is coming to exist. This, however, also leads to a difference between the work and its genesis: In the phase of creation, every single part falls into a chronological succession; in the existence of the work, however, the spatial relations that denote the significance of every single part within the whole are its structure. That which exists spatially in the fragment documents a condition that is closer to the work than that which can be registered in chronological order. For that has only the quality of the genesis, the presentation of which may be left to the editor; the other, however, has already the quality of a work structure.²²

I quote this section because Kraft's references to a structural component – more so, a spatio-structural component – indicate once more how closely related processes of scholarly editing and processes of conceptual modelling are. Beyond that, his argument is noteworthy because it touches on a familiar conundrum: What are editors to represent? The process or the result? The *Befund* ('record') of evidence within the witnesses or a work structure with an eye towards an ideational whole? As Rüdiger Nutt-Kofoth notes, Kraft's theorem did not become popular with editors of other works as his reasoning was, according to Nutt-Kofoth, fairly specifically derived from and influenced by his experience with editing Schiller's fragments; in practical terms, this meant dealing with certain kinds of marginalia and later additions.²³

A more wide-ranging notion of a physical and therein also spatial dimension of textuality was introduced by Jerome McGann under the

22 HERBERT KRAFT, "Die Edition fragmentarischer Werke," in: *Zeitschrift für Literaturwissenschaft und Linguistik* 5/19–20 (1975), 142–146, here 143–144, original: "Der Unterschied zwischen beiden Verfahren liegt in der Art der Transkription: der Darstellung des Entstandenen oder des Entstehenden. Es führt dies aber auch zum Unterschied zwischen dem Werk und seiner Entstehungsgeschichte: In der Entstehungsphase fügt alles Einzelne sich in eine chronologische Abfolge; in der Vorhandenheit des Werkes aber sind die räumlichen Relationen, die den Stellenwert des Einzelnen im Ganzen markieren, seine Struktur. Das räumlich Vorhandene des Fragments dokumentiert einen Zustand, der dem Werk näher ist als das in chronologischer Folge Registrierte. Denn dieses hat lediglich die Qualität der Entstehungsgeschichte, die der Darstellung des Herausgebers überlassen werden kann; jenes aber hat schon die Qualität von Werkstruktur."

23 Cf. RÜDIGER NUTT-KOFOOTH, "Schreiben und Lesen: Für eine produktions- und rezeptionsorientierte Präsentation des Werktextes in der Edition," in: *Text und Edition*:

banner of a ‘bibliographical code’, in contrast to the ‘linguistic code’ of the text.²⁴ Aside from the materiality of the transmission – “the different papers she [Emily Dickinson] used, her famous ‘fascicles,’ her scripts and their conventions of punctuation”²⁵ –, he sought to shift the focus towards the “page layout”²⁶ as well.²⁷ In *Radiant Textuality: Literary Studies After the World Wide Web* (2001), he further developed these ideas that Paul Eggert has characterized as “custom-made for the computing environment,”²⁸ even though he was sceptical about the value of the concept; his criticism might best be summed up in his verdict that “the unpredictabilities of the gap between the physical features of a book and their meaning are poor conditions for the specification of a code”²⁹ and “that there can be no specifiable and invariable meaning for any particular *mise-en-page*.”³⁰

Practices of digital scholarly editing have shown that one does not have to go as far as encoding a variety of physical features of a document or encoding it according to a rigid schema in order to achieve, for example, a certain kind of text-image alignment, which would seem to be the simplest form of visualizing spatiality: locating text on a page. (See **FIGS. 9** and **10**).

The habit of localizing a transcription within an adjacent ‘digital facsimile’ of the thus reproduced ‘original material’ has been aided by provisions of the encoding standards in the field of digital scholarly editing; to wit, the *Text Encoding Initiative* (TEI) supports pointing towards coordinates on an image (sc. a digital representation of a source material)

Positionen und Perspektiven, ed. by Rüdiger Nutt-Kofoth [et al.], Berlin: Erich Schmidt, 2000, 165–202, here 195.

24 Cf. JEROME J. MCGANN, *The Textual Condition*, Princeton: Princeton University Press, 1991, 56.

25 *Ibid.*, 87.

26 MCGANN 1991, 87.

27 See on this topic also GEORGE BORNSTEIN, *Material Modernism: The Politics of the Page*, Cambridge: Cambridge University Press, 2001; with regards to McGann 7f.

28 PAUL EGGERT, “Text as Algorithm and as Process,” in: *Text and Genre in Reconstruction: Effects of Digitalization on Ideas, Behaviours, Products and Institutions*, ed. by Willard McCarty, Cambridge: Open Book Publishers, 2010, 183–202, here 191, online: <<http://books.openedition.org/obp/660>> (accessed 18 February 2023).

29 *Ibid.*, 191f.

30 EGGERT 2010, 192.

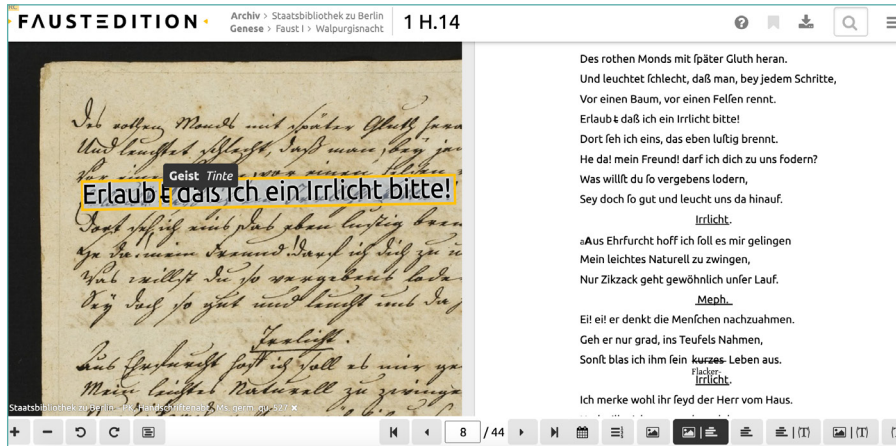


FIG. 9: Example of a text-image connection in the *Faustedition* (1.2 RC), Ms. germ. qu. 527, Staatsbibliothek zu Berlin – PK, f. 1v, where the synoptic view of the ‘facsimile’ and ‘documentary transcription’ allows for a mouseover effect on the image that highlights the corresponding text line, <http://www.faustedition.net/document?sigil=1_H.14&page=8&view=facsimile_document> (screen capture 29 June 2020).

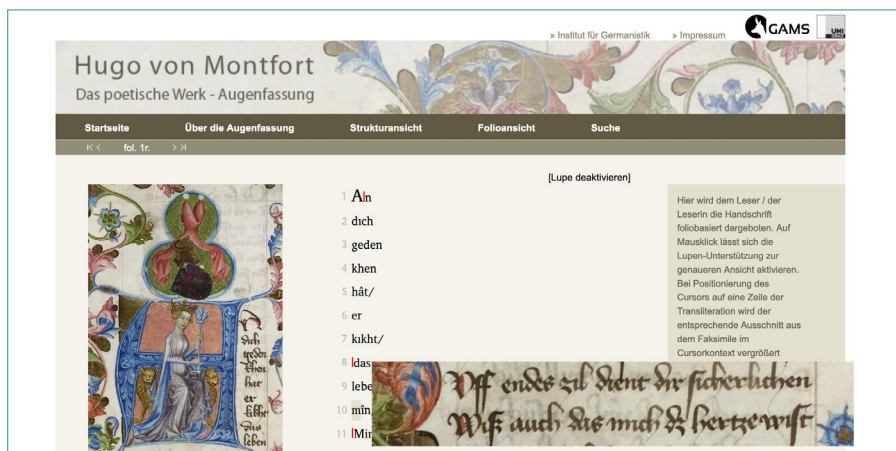


FIG. 10: Example of a text-image connection in the edition of *Hugo von Montfort*, Cod. Pal. germ. 329, f. 1r, where the synoptic view of the ‘facsimile’ and the ‘base transliteration’ allows for a mouseover effect on the text that highlights the corresponding part of the image, <<http://gams.uni-graz.at/fedora/get/o:me.1r/bdef:TEI/get/>> (screen capture 2 July 2020).

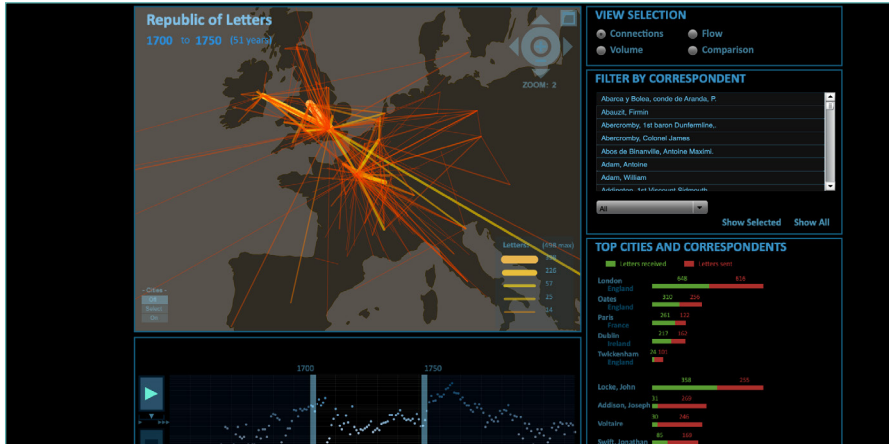


FIG. 11: RPLVIZ, the first visualization experiment for *Mapping the Republic of Letters*, built by Jeff Heer's students in CS448b, Humanities + Design Research Lab, Center for Spatial and Textual Analysis (CESTA), Stanford University, 2009, <<http://stanford.edu/group/toolingup/rplviz/rplviz.swf>> (screen capture 3 July 2020).

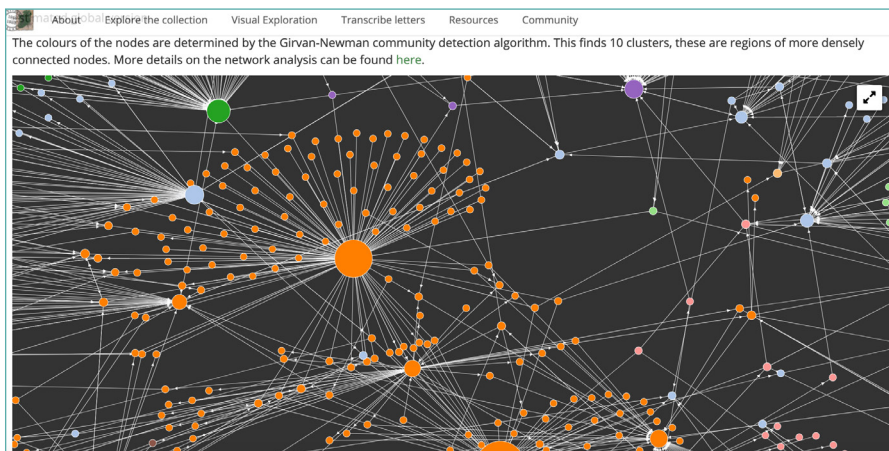


FIG. 12: A network diagram of letter writers and receivers from the *Letters of 1916–1923* project, ed. by Susan Schreibman, Maynooth University [et al.], 2013–present, <<http://letters1916.maynoothuniversity.ie/vizualizations/graph>> (screen capture 7 July 2020).

with the <surface> and therein the <zone> element.³¹ This may take rectangular or polygonal shape.

Further efforts have been made by cultural heritage institutions that are often in possession of the material that might be used as a source for scholarly editions, such as medieval manuscripts: The *International Image Interoperability Framework* (IIIF) initiative, through the work of its consortium, has established a set of standards and API specifications that are meant to facilitate a best practice in making digital image repositories accessible, usable, and, as the name indicates, interoperable according to a linked data principle.³² One part of this is the ability to address a specific (rectangular) region of an image, either by pixel coordinates or percentage.³³ The predecessor project of IIIF, *Shared Canvas*, advocated even more explicitly for a concept of canvases divided into zones.³⁴

When it comes to the aspect of *mise-en-page*, there have been experiments with automatic layout detection in medieval manuscripts, perhaps

31 See <<https://tei-c.org/release/doc/tei-p5-doc/en/html/ref-surface.html>> and <<https://tei-c.org/release/doc/tei-p5-doc/en/html/ref-zone.html>> (version 4.5.0; last updated 25 October 2022, revision 3e98e619e; accessed 18 February 2023).

32 See <<https://iiif.io/>> (accessed 20 February 2023). Of the many articles being published about the IIIF, see, for a selection, ALBERTO SALARELLI, “International Image Interoperability Framework (IIIF): una panoramica,” in: *JLIS.it* 8/1 (2017), 50–66, online: <<https://doi.org/10.4403/jlis.it-12052>>; JORIS VAN ZUNDELT, “On Not Writing a Review about Mirador: Mirador, IIIF, and the Epistemological Gains of Distributed Digital Scholarly Resources,” in: *Digital Medievalist* 11/1 (2018), [1–5], online: <<https://doi.org/10.16995/dm.78>>; and NUNO FREIRE [et al.], “Cultural Heritage Metadata Aggregation Using Web Technologies: IIIF, Sitemaps and Schema.org,” in: *International Journal on Digital Libraries* 21/1 (2020), 19–30, online: <<https://doi.org/10.1007/s00799-018-0259-5>>. Of interest may also be the use of IIIF for the comparison of images, for which a demo version exists on the French *Bibliissima* portal; see *Ovide moralisé ou La Bible des poètes en images: Comparaison de deux cycles iconographiques avec IIIF et Mirador*, <<https://demos.bibliissima.fr/ovide-moralise/>> (accessed 20 February 2023).

33 See the documentation of the IIIF Image API 3.0, ed. by Michael Appleby [et al.], <<https://iiif.io/api/image/3.0/#41-region>> (accessed 20 February 2023).

34 See the documentation of the Shared Canvas Data Model 1.0, ed. by Robert Sanderson and Benjamin Albritton, 14 February 2013, <<https://iiif.io/model/shared-canvas/1.0/#-Zone>> (accessed 20 February 2023). See also ROBERT SANDERSON [et al.], “SharedCanvas: A Collaborative Model for Medieval Manuscript Layout Dissemination,” paper presented at the *Joint Conference on Digital Libraries* (JCDL), Ottawa, Canada, 13–17 June 2011, online: <<https://doi.org/10.48550/arXiv.1104.2925>>.

most notably in the project *eCodicology*.³⁵ Feature extraction algorithms were used on a comparatively large scale, given the context, – on 170,000 pages from 440 codices³⁶ – to separate text from image elements, and then the data was encoded in TEI; the goal was to perform statistical analysis on the results.³⁷ Given the lack of any such publicized analysis, the internal findings of the project, interesting as they may be, cannot be referenced in the discussion here. They may not be immediately pertinent to digital scholarly editing either way, but the ambitions of the project showcase a materially- and moreover spatially-oriented momentum, similar to the aspirations of *distant viewing*.³⁸ They also align with the aforementioned shift in focus that has been classified as a ‘material turn’ in manuscript studies and the wider field of textual criticism and was discussed in that context by the participants of the project.³⁹ Transcription tools and aids like *Transkribus* that offer some provision for automatic layout detection or the *UVic Image Markup Tool* fit into a similar mould

35 See *eCodicology*, led by Andrea Rapp, Claudine Moulin and Rainer Stotzka, Technical University of Darmstadt, Karlsruhe Institute of Technology, University of Trier, 2013–2016, <<http://www.ecodicology.org/>> (accessed 20 February 2023).

36 Cf. HANNAH BUSCH and SWATI CHANDNA, “eCodicology: The Computer and the Mediaeval Library,” in: *Kodikologie und Paläographie im digitalen Zeitalter 4 – Codicology and Palaeography in the Digital Age 4* (Schriften des Instituts für Dokumentologie und Editorik; vol. 11), ed. by Hannah Busch, Franz Fischer and Patrick Sahle, Norderstedt: BoD, 2017, 3–23, here 16, online: <<http://nbn-resolving.de/urn:nbn:de:hbz:38-43605>>. This publication gives the most detailed account of the work performed in the course of the project, together with similar information found in HANNAH BUSCH and PHILIPP HEGEL, “Automatic Layout Analysis and Storage of Digitized Medieval Books,” in: *Digital Philology: A Journal of Medieval Cultures* 6/2 (2017), 196–212, online: <<http://doi.org/10.1353/dph.2017.0010>>.

37 Cf. MICHAEL EMBACH [et al.], “eCodicology – Algorithms for the Automatic Tagging of Medieval Manuscripts,” in: *The Linked TEI: Text Encoding in the Web. TEI Conference and Members Meeting 2013. Book of Abstracts*, ed. by Fabio Ciotti and Arianna Ciula, Rome: Digilab Sapienza University & TEI Consortium 2013, 172–178.

38 On the topic of distant viewing, see, to start with, TAYLOR ARNOLD and LAUREN TILTON, “Distant Viewing: Analyzing Large Visual Corpora,” in: *Digital Scholarship in the Humanities* 34 suppl. 1 (2019), i3–i16, online: <<https://doi.org/10.1093/llc/fqz013>>.

39 Cf. HANNAH BUSCH, CELIA KRAUSE and PHILIPP VANSCHIEDT, “Möglichkeiten der automatischen Manuskriptanalyse. Tagung an der Universität Trier, 24./25. Februar 2014,” in: *editio* 28/1 (2014), 218–224, online: <<https://doi.org/10.1515/editio-2014-014>>. In their discussion of this emerging focus on materiality, they primarily refer to PER RÖCKEN, “Was ist – aus editorischer Sicht – Materialität? Versuch einer Explikation des Ausdrucks und einer sachlichen Klärung,” in: *editio* 22 (2008), 22–46, online: <<https://doi.org/10.1515/9783484605046.0.22>>.

(in terms of a general sentiment, not in terms of purpose, method, or state of development).⁴⁰

Another option to keep in mind in relation to the increasing spatial dimension in digital scholarly editions, compared to printed editions, is the quite literal mapping of content onto a geographical map, ideally (in the sense of using a medium to the best of its ability) in a dynamically interactive way. Letter editions appear predestined for this purpose since they naturally – usually – feature the locations of the sender and addressee of a letter, allowing for an intuitively understood visualization that may grow complex when larger networks of communication are involved, such as in the *Mapping the Republic of Letters* project (see **FIG. 11**).⁴¹

As the *Letters of 1916–1923* project – which offers an interactive map, a network diagram, and statistical analysis under a section of ‘visual exploration’⁴² – confirms (see **FIG. 12**), many of the aspects that I have singled out so far as being very pronounced in digital scholarly editions, even if not entirely unique to them, could be subsumed under the aforementioned umbrella of *visualization*. Visualizing materiality, visualizing

40 See <<https://readcoop.eu/transkribus/>> (accessed 20 February 2023). The layout analysis performed in the context of *Transkribus* focuses on the detection of regions and baselines. In the estimation of Georg Vogeler, the automatic layout detection of *Transkribus* works well in practice and requires few manual interventions, cf. GEORG VOGELER, “Digitale Editionspraxis: Vom pluralistischen Textbegriff zur pluralistischen Softwarelösung,” in: *Textgenese in der digitalen Edition* (editio / Beihefte; vol. 45), ed. by Anke Bosse and Walter Fanta, Berlin / Boston: De Gruyter, 2019, 117–136, here 125, online: <<https://doi.org/10.1515/9783110575996-008>>. See also for further literature on the topic his references *ibid.*, fn. 41. For the *UVic Image Markup Tool*, see <https://hcmc.uvic.ca/~mholmes/image_markup/> (accessed 20 February 2023). It should be noted that the development of the *UVic Image Markup Tool* goes back to at least 2006 and that it was last updated in 2012 (cf. <https://hcmc.uvic.ca/~mholmes/image_markup/update.php>, accessed 26 February 2023); it might therefore be considered a legacy of an earlier digital humanities history.

41 See *Mapping the Republic of Letters*, Stanford University [et al.], 2008–2017, <<http://republicofletters.stanford.edu/>> (accessed 12 February 2023). See also, more generally, HOWARD HOTSON and THOMAS WALLNIG (Eds.), *Reassembling the Republic of Letters in the Digital Age: Standards, Systems, Scholarship*, Göttingen: Göttingen University Press, 2019.

42 Cf. <<https://letters1916.ie/wp-post/visual-exploration>> (accessed 26 February 2023). On the project, see *Letters of 1916–1923*, ed. by Susan Schreibman, Maynooth University, 2013–present, <<https://letters1916.ie/>> (accessed 26 February 2023).

spatiality, making the content of source material visible in a *contextualized* form, amidst the source material from which it was drawn and the spatio-temporal world in which it was born.

C. MULTIMEDIALIZATION

The following sections continue that theme, but first it is necessary to understand how the change in medium affects scholarly editions in their mediality. Patrick Sahle prefers to speak of *Transmedialität* ('transmediality') in this regard, by which he refers to a transmediality of 'electronic texts'.⁴³ According to his understanding, texts enter a transmedial state during their 'recoding' and from this, his verdict follows:

In order to represent texts correctly with a technology that does not simply impose itself on other forms but recodes them transmedially *before* the remedialization, it is necessary to make one's own understanding of the text explicit.⁴⁴

The transmedial state, in that view, is the state of transition, a state after a demedialization and before a remedialization – one might therefore also call it an intermedial state or even a non-medial state, although that would not carry the same transitory *beyond*-medial emphasis; beyond medial implementation, that is. The Sahlean notion of transmediality as an inevitable condition of or at least stage in the process of digital scholarly editing (supposing that it involves the digital representation of something originally non-digital) introduces an important question: What is a 'medium' in the given context?

43 Cf. his discussion of the concept in SAHLE 2013c, 113f. See also PATRICK SAHLE, "Zwischen Mediengebundenheit und Transmedialisierung: Anmerkungen zum Verhältnis von Edition und Medien," in: *editio* 24 (2010), 23–36, online: <<https://doi.org/10.1515/9783110223163.0.23>>.

44 *Ibid.*, 113, original: "[U]m Texte in einer Technologie, die sich nicht einfach anderen Formen überstülpt, sondern sie *vor* der Remedialisierung zunächst transmedial recodiert, korrekt wiederzugeben, ist es notwendig, auch das eigene Verständnis vom Text explizit zu machen."

If a medium is any kind of *in-between* that communicates something to an observer, then a non-medial state of information cannot exist in the sense that we cannot observably know of its existence. The definition of the term by Marshall McLuhan, a pioneer of media theory, was, for example, rather loose in a similar vein.⁴⁵ If we, on the other hand, define a ‘medium’ in the more profane diction of, say, media theorist Friedrich Kittler, to name but one of many who have written about this, then the medium as a means of communication is more closely tied to its physical and technical means of storing information.⁴⁶

Patrick Sahle has acknowledged that the definition of a ‘medium’ has a bearing on his concept of transmediality and specified that “editions are transmedial when [the term] media denotes tangible products of certain media technologies, such as a book, a CD-ROM, or an online publication.”⁴⁷ He further concedes that ‘media’ is often used to describe overarching ‘systems’ “that include the products, the technical principles of production, and the underlying social and economic conditions of production [...] e.g. [...] ‘the press’, ‘television’, or ‘radio’”⁴⁸ and he also

45 See, in particular, MARSHALL MCLUHAN, *Understanding Media: The Extensions of Man*, London: Routledge & Paul, 1964.

46 Kittler’s *Habilitationsschrift* illuminates his controversial and influential approach to communication and media studies that helped establish those disciplines in German academia; the evaluations and expert opinions submitted to the habilitation commission tasked with deciding whether the work carried enough scholarly merit to warrant the reward of the habilitation qualification are interesting documents of the inner-academic debate in the early 1980s. See for those MANFRED FRANK [et al.], “Aufschreibesysteme 1980/2010: In memoriam Friedrich Kittler (1943–2011),” in: *Zeitschrift für Medienwissenschaft* 6/1 (2012), 114–192, online: <<https://doi.org/10.25969/mediarep/2681>>. For the *Habilitationsschrift* itself, see FRIEDRICH KITTLER, *Aufschreibesysteme 1800/1900*, München: Fink, 1985. For an appraisal of Kittler’s body of work as well as a survey of media studies in his wake, see MARIA TERESA CRUZ (Ed.), *Media Theory and Cultural Technologies: In Memoriam Friedrich Kittler*, Newcastle upon Tyne: Cambridge Scholars Publishing, 2017.

47 SAHLE 2013b, 164, original: “Editionen sind transmedial, wenn mit Medien die konkreten Produkte bestimmter Medientechnologien gemeint sind, also etwa ein Buch, eine CD-ROM oder eine Online-Veröffentlichung.”

48 *Ibid.*, 164f., original: “Unter ‘Medien’ werden oft aber auch zusammenfassend mediale ‘Systeme’ verstanden, die dann die Produkte, die technischen Grundlagen der Produktion und die sozialen und ökonomischen Rahmenbedingungen umfassen. Medien als ‘Systeme’ sind z.B. gemeint, wenn von ‘der Presse’, ‘dem Fernsehen’ oder ‘dem Radio’ die Rede ist.”

acknowledges that “one might speak of the ‘medium computer’ in that sense.”⁴⁹ Book and computer as two different types of media?

When film scholar Anna Bohn proposes the concept of a ‘multimedia edition’⁵⁰ as well as when medievalist Thomas Bein writes about the ‘multimedia edition and its consequences’,⁵¹ the term again proves flexible, absorbing different colloquial uses and implicit understandings of what a medium – and therefore, something *multi*-medial – is. In Bein’s case, the distinction seems to run somewhere along the lines of ‘print media’ or ‘manuscript media’ and ‘digital media’⁵² with a focus on the appropriate harnessing of the latter (i.e. the multimedia potential of the digital) although in more recent years, he has further deliberated on the incorporation of *performances* of literature⁵³ which could, for example, be achieved through a provision of audio recordings of poetry, something which was in principle and practice already possible in the world of printed editions where a physical audio record could be attached to a

49 Ibid.

50 See ANNA BOHN, “Multimediale Edition,” blog post, in: *Filmeditio* (10 January 2016), online: <<https://filmeditio.hypotheses.org/515>> (accessed 20 February 2023); see also ANNA BOHN, “Von U-Booten, Kriegsreportern und dem Fall des Hauses Romanov: Multimediale Edition. Perspektiven der Kontextualisierung digitalisierter Filmdokumente des Ersten Weltkriegs,” in: *editio* 29/1 (2015), 11–28, online: <<https://doi.org/10.1515/editio-2015-003>>.

51 See THOMAS BEIN, “Die Multimedia-Edition und ihre Folgen,” in: *editio* 24 (2010), 64–78, online: <<https://doi.org/10.1515/9783110223163.0.64>>.

52 Cf. for this juxtaposition, in reference to Hans Walter Gabler, BEIN 2010, 66. See also THOMAS BEIN, “Leerstellen edieren? Überlegungen zur Einbindung von Performanz in Editionen mittelalterlicher Literatur,” in: *editio* 32/1 (2018), 82–92, online: <<https://doi.org/10.1515/editio-2018-0006>>, and here specifically the following paragraph, *ibid.*, 85: “From the dawn of scholarly text editing (Brothers Grimm, Lachmann, and successors) until well into the 20th century, texts from manuscripts have been edited as texts. The medium has, here and there, almost been the same: Parchment there, paper here. Characters there, characters here.” (Original: “Seit den Anfängen der wissenschaftlichen Textedition (Brüder Grimm, Lachmann und Nachfolger) bis weit in das 20. Jahrhundert hinein werden die handschriftlich überlieferten Texte *als Texte* ediert. Das Medium ist hier wie dort fast gleich: Pergament dort, Papier hier. Schriftzeichen dort, Schriftzeichen hier.”)

53 See BEIN 2018. On the topic of performance in its relation to editorial concerns, see also THOMAS BETZWIESER and MARKUS SCHNEIDER (Eds.), *Aufführung und Edition* (editio / Beihefte; vol. 46), Berlin / Boston: De Gruyter, 2019.

book.⁵⁴ Bohn's understanding of 'multimedia' is similar in that it would seem to mean a combination of sound, text, image, and film on a shared technological platform.⁵⁵

While this definition of a multimedia edition is intuitively plausible, it is worth noting that so-called 'hybrid' editions exist – editions published both in a digital, usually web-based, form and in a printed book form.⁵⁶ Those types of editions were, in fact, more common than strictly 'electronic' editions from the late 1980s until at least the early 2000s.⁵⁷ Why would we not call those kinds of editions multimedia editions? Is it because they treat the digital and the printed medium (if we go by that definition) as separate entities, wherefore their content must be duplicated in the other to the extent that that is possible in order to satisfy different user groups?⁵⁸ Is it because both represent text, even if stored

54 See, for sample projects and cooperations to that end, BEIN 2018, 87. He questions whether the mere addition of an "auditive medium" (ibid.) is sufficient and then argues that differently interpretative (live) performances could provide some insights into textual and literary source material as well as offer a possibility of reconstructing lacunae through, presumably, conjecture based on the performances (cf. BEIN 2018, 90f.).

55 Cf. BOHN 2016.

56 Examples for such editions include *Theodor Fontane: Notizbücher. Digitale genetisch-kritische und kommentierte Edition*, ed. by Gabriele Radecke, <<https://fontane-nb.dariah.eu/index.html>> (accessed 20 February 2023), *Ernst Toller: Digitale Briefedition*, ed. by Stefan Neuhaus [et al.], <<http://www.tolleredition.de/>> (accessed 20 February 2023), and the *Hannah Arendt: Kritische Gesamtausgabe*, ed. by Anne Eusterschulte [et al.], <<https://hannah-arendt-edition.net/>> (accessed 20 February 2023). For an earlier example that progressed from a book publication to include a digital version, see *Vincent van Gogh: The Letters*, ed. by Leo Jansen, Hans Luijten and Nienke Bakker, <<http://vangoghletters.org/vg/>> (accessed 20 February 2023). For an appraisal of this type of edition, see STEPHANIE P. BROWNER and KENNETH M. PRICE, "Charles Chesnutt and the Case for Hybrid Editing," in: *International Journal of Digital Humanities* 1 (2019), 165–178, online: <<https://doi.org/10.1007/s42803-019-00015-7>>.

57 At the time still overwhelmingly disk-based, cf. JÖRG HÖRNSCHEMEYER, *Textgenetische Prozesse in Digitalen Editionen*, doctoral dissertation, University of Cologne, 2017, 28–30, online: <<http://nbn-resolving.de/urn:nbn:de:hbz:38-75446>>.

58 Dirk van Hulle, in referring to the hybrid nature of the *Beckett Digital Manuscript Project* (BDMP), <<https://www.beckettarchive.org/>> (accessed 20 February 2023), has described it as following 'a rationale of reversible roles' but the fact remains that the beneficial – as postulated – and even reciprocal relationship between the 'digital edition' and the 'printed monograph' is neither portrayed as either of them aiming at the same target group nor portrayed as being in itself indispensable, cf. DIRK VAN HULLE, "Modelling a Digital Scholarly Edition for Genetic Criticism: A Rapprochement," in: *Variants* 12–13 (2016), 34–56, online: <<https://doi.org/10.4000/variants.293>>.

differently in technological terms, or perhaps even images, as may have already happened in printed editions featuring one or two pictures of a manuscript,⁵⁹ but not a third or fourth dimension of ‘mediality’ in the sense of Bein or Bohn? Is it because the digital ‘medium’ is inherently seen to be ‘multimedial’ as opposed to a supposedly ‘monomedial’ printed ‘medium’?

It would be possible to launch into a lengthy media-theoretical discussion at this point but it is doubtful that that would produce relevant findings for the purpose of this book. Posing these questions is merely a reminder that there are different ways to think about these issues, beyond terminology. It is, for example, not at all inconceivable that there could be an edition that would be part digital, part printed; an edition where those parts could not be viewed or used separately from each other (with negligible allowances of one being more comprehensive or ‘searchable’ or decorated with images); an edition where those parts would be inalienably *dependent* on each other, with information flowing both ways and combining to form the edition, not just in a complementary way but in a way that is interwoven. It is, moreover, conceivable that this could be expanded to other ‘tangible products of media technologies’ and that this cross-pollination could be thought of as a type of multimediality; a multimedial existence of the edition in its infrastructural conditionality, not necessarily in what it represents.

This might not come to pass so long as the printed part of a hybrid edition is seen as the ‘reliable’ part that may be reviewed and quoted in academia while the digital part is treated as a playful extension of or extended data basis for the printed edition that one might peruse at their own discretion; should those be prevalent sentiments.⁶⁰ In

59 Or a series of facsimile images opposite the traditionally edited text, such as in the aforementioned FLEMING 1999.

60 The reasoning given for designing the digital edition of Hanna Arendt’s work as a hybrid edition is quite explicitly such a sentiment: “Critical readings such as academic studies that gain access to the entirety of the text for the first time will continue to originate from the medium book in the future. For printed editions are not just the most reliable and sustainable medium for the transmission of text, even in the digital age, they furthermore [...] function [...] as an indispensable material instrument of research.” (<https://hannah-arendt-edition.net/content_md.html?id=docs/hybrid_edition.md> (accessed 23 February 2023); original: “Kritische Lektüren wie wissenschaftliche Studien, die nun

such a scenario, a multimedia edition as sketched above would negate the perceived advantages of a printed part in a hybrid edition without addressing reservations about its digital counterpart, possibly (and in that case reasonably) rooted in past experiences of instability and lack of long-term preservation.⁶¹

Since this is hypothetical and again irrelevant for the present inquiry, insofar as it is concerned with *digital* scholarly editions and not hybrid forms of edition, the most important insight that can be gained from these considerations is that there may be at least two dimensions of multimodality that need to be considered in the *modelling* of scholarly editions: the dimension of carrier materials or information carriers and how those interact with each other, and the dimension of ‘types’ of information formerly extant on separate carriers (paper, film reels, photo paper, audio cassettes) but through digitization and a subsequent transformation of information united in one space, therefore necessitating the question how they relate to each other in that space rather than across spaces, making it a matter of intersecting representation.

Something that should not remain unsaid, furthermore, is that the depth of representation tends to be (over-)emphasized in discussions of digital editions where it is used as a measure of contrast and argument for superiority over printed editions.⁶² Much is made of the enrichment through mark-up and the explicitness or implicitness of information;

erstmal's Zugriff auf den Gesamttext erhalten, werden auch in Zukunft vom Medium Buch ausgehen. Denn gedruckte Ausgaben sind selbst im digitalen Zeitalter nicht nur das beständigste und nachhaltigste Medium der Textübermittlung, sondern [...] fungieren [...] als unverzichtbares materiales Forschungsinstrument.”)

61 On the related note of a perpetual ‘unfinishedness’ and thus ‘unquotability’ of digital editions, I discussed what I termed the ‘beta dilemma’ at length in TESSA GENGNAGEL, “The ‘Beta Dilemma’ – A Review of the Faust Edition,” in: *RIDE* 7 (2017), online: <<https://doi.org/10.18716/ride.a.7.3>>.

62 This can be sensed in the following statement: “Traditional critical editing, defined by the paper and print limitations of the codex format, is now considered by many to be inadequate for the expression and interpretation of complex, multi-layered or multi-text works of the human imagination.” (Cf. MARILYN DEEGAN and KATHRYN SUTHERLAND (Eds.), *Text Editing, Print and the Digital World*, Farnham: Ashgate, 2009, ‘Introduction’, 1–10, here 1.) Another example for this kind of thinking is evident in the famous dictum ‘print is flat, code is deep’ that was coined by Katherine Hayles; see N. KATHERINE HAYLES, “Print Is Flat, Code Is Deep: The Importance of Media-Specific Analysis,” in: *Poetics Today* 25/1 (2004), 67–90.

but digital editions flatten the tactile experience of a material and the sensory experience of the information gleaned from it in a way that is not at all dissimilar to printed editions.⁶³ An argument can be made that the increased potential for *interaction* with and *manipulation* of a digital representation changes the consumption of information from a more passive to a more active state when compared to reading a book, but at the end of the day, and spoken in generalized terms, the page in a book and the screen of a computer are both flat surfaces, hence the inevitable emphasis on the *visibility* and visualization of information. The aspect of *audibility* is, as Bein has pointed out, still underutilized in the context of digital scholarly editions, despite some efforts in that regard.⁶⁴ IIF

63 Art historian Michael Camille wrote an interesting article about this topic in 1998, parts of which read prescient today and other parts of which document an apprehension similar to the one sketched above under the section about (re-)materialization, pertaining to a sense of dematerialization and disembodiment. Referring to the use of computer screens as viewpoints on digitized manuscripts specifically, Camille noted: “True, this site/sight is vastly more multiform than any page and can be constantly played around with by myself and anyone else who cares to join in. But it is always absent, and, moreover, it can be everywhere at once.” (MICHAEL CAMILLE, “Sensations of the Page: Imaging Technologies and Medieval Illuminated Manuscripts,” in: *The Iconic Page in Manuscript, Print, and Digital Culture*, ed. by George Bornstein and Theresa Lynn Tinkle, Ann Arbor: University of Michigan Press, 1998, 33–54, here 46.)

64 Cf. BEIN 2018, 87. He refers to philological medievalist German studies and their cooperation with the study of music history specifically, rather than making a sweeping statement about digital scholarly editions in general. On the underdeveloped current state of ‘audio editions’ (i.e. editions of auditive materials such as radio plays), see the conference report SOPHIA VICTORIA KREBS, “Kritische Audio-Edition: Interdisziplinäre Fachtagung an der Bergischen Universität Wuppertal, 12.–14. Juli 2018,” in: *editio* 32/1 (2018), 220–223, online: <<https://doi.org/10.1515/editio-2018-0020>>. The lack of audible elements sometimes applies, curiously enough, to the edition of music works as well; see, for example, the digital edition of the correspondence, diaries, and works of composer Carl Maria von Weber in the *Carl-Maria-von-Weber-Gesamtausgabe* (WeGA), ed. by Gerhard Allroggen [et al.], Akademie der Wissenschaften und der Literatur Mainz, 2011–present, <<https://weber-gesamtausgabe.de/>> (accessed 20 February 2023), which does not incorporate audio files (the funding for creating such recordings as well as the copyright situation with regard to existing recordings has to be taken into account, of course). It should be noted that the *Music Encoding Initiative* (MEI) mark-up standard does have dedicated elements for the inclusion of performances in the form of audio or video recordings (see <<https://music-encoding.org/guidelines/v4/content/facsimilesrecordings.html>> (accessed 20 February 2023)). In cases where legal issues or similar practical concerns do not exist because the recorded material itself is of scholarly interest and was created by and subsequently shared by scholars, such auditive materials have been provided in the form of a scholarly curated archive, such as in the *Oral Tales of Mongolian Bards* project, ed. by Walther Heissig, Bonn University, University of

added support for the presentation and annotation of audio-visual materials or ‘time-based media’ with version 3.0 in 2020 which may yet prove to be a significant step with an eye towards the future of digital scholarly editions.⁶⁵

When one considers digital scholarly editions in that future, navigating issues of mediality may not be at the forefront but it will be at the base of activities and, more importantly, it will be at the base of modelling concerns since it directly impacts what is being modelled and what it is being modelled for. Rüdiger Nutt-Kofoth has written about it as a *mélange* of ‘plurimediality, intermediality, [and] transmediality’⁶⁶ and it would seem that developing a clear vocabulary to address practical implications in an editorial context must be a desideratum going forward. We will return to some aspects of this discussion in **CHAPTER VI**. For now, it should suffice to state that the question of *multimediality* – of the edition itself and of the contents it represents – has featured in the

Cologne, 2012–2020, <<https://mongoltales.awk.nrw.de/>> (accessed 20 February 2023). Outside of a stricter context of scholarly editions, there have also been digital humanities projects like the *Virtual St Paul’s Cathedral Project* which “provides the experience of hearing John Donne’s sermon for Gunpowder Day, November 5th, 1622 in Paul’s Churchyard, the specific physical location for which it was composed,” cf. *Virtual Paul’s Cross Project*, led by John N. Wall, NC State University, 2011–2021, <<https://vpcross.chass.ncsu.edu/>> (accessed 20 February 2023). And then, of course, once one moves away from the digital humanities or otherwise towards virtual reality applications with a cultural or historical component, or websites with otherwise audio-visual materials, examples for those abound.

65 Cf. <<https://iif.io/news/2020/06/04/IIIF-C-Announces-Final-Release-of-3.0-Specifications/>> (accessed 20 February 2023): “A critical element of this release is the ability to move beyond static digital images to present and annotate audio and moving images. This is done by adding duration to the existing IIIF canvas model, which also features x and y coordinates as means of selecting and annotating regions. Now, images and video can be juxtaposed using open source software viewers — allowing the public to view time-based media in open source media players, and allowing researchers to use open assets to create new tools and works including critical editions, annotated oral histories, musical works with thematic markup, and more.”

66 RÜDIGER NUTT-KOFOTH, “Plurimedialität, Intermedialität, Transmedialität: Theoretische, methodische und praktische Implikationen einer Text-Ton-Film-Edition von Alfred Döblins Berlin-Alexanderplatz-Werkkomplex (1929–1931),” in: *Aufführung und Edition* (editio / Beihefte; vol. 46), ed. by Thomas Betzwieser and Markus Schneider, Berlin / Boston: De Gruyter, 2019, 183–194, online: <<https://doi.org/10.1515/9783110639261-015>>.

discourse about digital scholarly editing in a way that it did not before with printed editions, for all the reasons outlined.

D. DIFFERENTIATION

Another aspect that noticeably distinguishes digital scholarly editions from printed editions – or the conversation surrounding either – is the aspect of differentiation. This is an interesting aspect that has little bearing on the edition of non-textual works *specifically* and I will therefore not devote much space to it here. In fact, we can abbreviate it thusly: What is meant by differentiation is the explicit *delineation* of entities, the *naming* of entities, the *categorization* and *classification* of entities; in short, everything discussed in relation to ontologies, taxonomies, and the like.⁶⁷ This topic inevitably involves the discussion of metadata and might be said to be influenced by considerations from library and information science in that regard.⁶⁸ Take FRBR, for example, the

67 In addition to aforementioned literature, see on this topic, since it pertains to the subject of this book, RICHARD GARTNER, “Towards an Ontology-Based Iconography,” in: *Digital Scholarship in the Humanities* 35/1 (2020), 43–53, online: <<https://doi.org/10.1093/llc/fqz009>>. With regard to graph-based image databases that make use of ontologies to register image contents (as well as of classifications such as Iconclass), see, as an example, *REALonline* by the Institut für Realienkunde des Mittelalters und der frühen Neuzeit in Krems, University of Salzburg, relaunched in 2019, <<https://realonline.imareal.sbg.ac.at/>> (accessed 20 February 2023), and INGRID MATSCHINEGG [et al.], *Daten neu verknöten: Die Verwendung einer Graphdatenbank für die Bilddatenbank REALonline* (DARIAH-DE Working Papers; vol. 31), Göttingen: Dokumenten- und Publikationsserver der Georg-August-Universität, 2019, online: <<http://nbn-resolving.org/urn:nbn:de:gbv:7-dariah-2019-3-5>>.

68 In the case of film studies, see ANNA BOHN, *Film-Metadaten: Standards der Erschließung von Filmen mit RDA und FRBR im internationalen Vergleich und Perspektiven des Datenaustauschs* (Berliner Handreichungen zur Bibliotheks- und Informationswissenschaft; vol. 431), Berlin: Institut für Bibliotheks- und Informationswissenschaft der Humboldt-Universität zu Berlin, 2018. In a context of digital art history and the use of metadata in museums, see MURTHA BACA (Ed.), *Introduction to Metadata*, Los Angeles: Getty Publications, 2016, online: <<http://www.getty.edu/publications/intrometadata/>> (accessed 20 February 2023) [originally published in 1998], and MURTHA BACA, ANNE HELMREICH and MELISSA GILL, “Digital Art History,” in: *Visual Resources* 35/1-2 (2019), 1–5. See also JOHANNA DRUCKER [et al.], “Digital Art History: The American Scene,” in: *Perspective: Actualité en histoire de l’art* 2 (2015), [1–16], online: <<https://doi.org/10.4000/perspective.6021>>, and JORGE SEBASTIÁN LOZANO, “Digital

Functional Requirements for Bibliographic Records standard: At its most fundamental level, it distinguishes between work, expression, manifestation, and item, in that order of abstract notion to concrete physical object;⁶⁹ and that would, at first glance, appear to be self-explanatory and easily applied – Goethe’s *Faust* (1808) is a work, Bayard Taylor’s English translation (1870–1871) is an expression of that work,⁷⁰ the third edition of that translation published by Ward, Lock & Co. in 1890 and cited in **CHAPTER II** is a manifestation of that expression, and a singular physical copy of that print run is an item. As has been pointed out over the years, however, that bibliographic approach to cataloguing books struggles to account for works of art not typically found in libraries, e.g. works of fine arts and architectural works most definitely not found in libraries,⁷¹ works from other times, such as medieval times, where there was a different and not necessarily author-bound work conception as we discussed at length in **CHAPTER I**,⁷² and where there was, furthermore, no distinction between a manifestation of a work expression and an item thereof, given that manuscripts are always unique objects, not only in their physicality but in their *Ausführung* (‘realisation’) – the list could go on. In debating these issues, one could be reminded of Robert Scholes’ summation of John Unsworth’s well-known and aforementioned article “What is Humanities Computing and What is Not?” (2002) wherein Scholes states:

Art History at the Crossroads,” in: *kunsttexte.de* 4 (2017), [1–14], online: <<https://doi.org/10.18452/18695>>.

69 On FRBR in general, see RICHARD P. SMIRAGLIA, PAT RIVA and MAJA ŽUMER (Eds.), *The FRBR Family of Conceptual Models: Toward a Linked Bibliographic Future*, London / New York: Routledge, 2013.

70 On the topic of which, see, merely as an aside in case of interest, JOHN T. KRUMPELMANN, “The Genesis of Bayard Taylor’s Translation of Goethe’s ‘Faust’,” in: *The Journal of English and Germanic Philology* 42/4 (1943), 551–562.

71 Cf. HEIDRUN WIESENMÜLLER, “Sacherschließung unter FRBR und RDA in Theorie und Praxis,” in: *O-Bib: Das offene Bibliotheksjournal* 3/3 (2016), 24–53, here 49f., online: <<https://doi.org/10.5282/o-bib/2016H3S24-53>>.

72 See in the context of FRBR and its lack of suitedness for older materials also the remarks by Patrick le Boeuf from the *Bibliothèque nationale de France*, cf. PATRICK LE BOEUF, “Musical Works in the FRBR Model or ‘Quasi la Stessa Cosa’: Variations on a Theme by Umberto Eco,” in: *Functional Requirements for Bibliographic Records (FRBR): Hype or Cure-All?*, ed. by Patrick le Boeuf, London / New York: Routledge, 2005, 103–124, here 115.

Just putting a library shelf on the web is not humanities computing. Making a selection from that shelf and decisions about how to represent that selection, how to frame it, and how to allow access to it and search it takes one into the area Unsworth would call humanities computing, because these decisions can be right or wrong, good or bad.⁷³

Can they be, however – right or wrong? Any decision can be good or bad, depending on the respective point of view, and some decisions can be right or wrong, if viewed from a vantage point of morality – and some information can be wrong, insofar as we deem it nonfactual, e.g. if I were to state that Johann Wolfgang von Goethe wrote his *Faust* in 1125 BC –, but there is something else at work here, something that I would rather describe with a need for ‘ontological commitment’.⁷⁴ The issue is not so much that we never had to describe anything before, it is the level of differentiation between information either required or for some reason thought to be required in a digital environment. Perhaps this would not matter if no one ever learned how we classified things; whether we called them ‘works’ or ‘expressions’ or any number of names. If there is an anxiety in connection with the differentiation of explicit statements about something, then it would seem that that anxiety is rooted in a knowledge or fear that others may notice how we have classified something – if no one did, what would be the harm? If there is a sense of ontological commitment and subsequently a fear of ontological commitment, then it is possibly a social concern more than anything else, insofar as any statement about a subject of study, as well as any differentiation among those statements, might lead to a need for explanation. Note that this sense of ontological commitment should not be confused with ontological *coherence*, either across a single project

73 ROBERT SCHOLES and CLIFFORD WULFMAN, “Humanities Computing and Digital Humanities,” in: *South Atlantic Review* 73/4 (2008), 50–66, here 59 [the article is divided into two parts with clear author attribution, hence this quote being from Robert Scholes specifically].

74 ‘Ontological commitment’ is not intended to invoke Quine’s definition of the phrase here, although philosophers in the digital humanities might want to discuss it with such literature in mind; cf. on that general topic SMITH 2014.

or several projects.⁷⁵ As the situation presents itself, differentiation in digital scholarly editions occurs by stating that this is this and not that; but that does not mean that this will always be this or that that would be declared that by everyone.

E. CONNECTION

And thus, we find ourselves with the second to last section in our own differentiation, namely the differentiation among the aspects that would seem to be particularly noteworthy about digital scholarly editions when compared to printed editions. As the title of this section indicates, it pertains to the most well-known part of ‘the digital’ – interconnectivity, hypertextuality, linking, referencing.⁷⁶ This point actually illumines one of the reasons why differentiation of entities is seen to be of more importance or in any case practiced more stringently in digital environments: Only where there is a clear delineation of entities can those entities be related to each other; and only by relating entities to each other may we benefit from the structure of the *web* which carries its intent in its name. It should not come as a surprise that digital humanities proponents have

75 Or else the TEI would not have to point out in their guidelines that ‘tag abuse’ is an undesirable practice, cf. <<https://www.tei-c.org/release/doc/tei-p5-doc/en/html/AB.html>> (accessed 20 February 2023).

76 One might merely consider the word internet – inter-*net* – or the nomenclature of the world wide *web* here; literature on the topic is, of course, vast. It might be prudent to remember the history of the internet and its roots in military operations and that doing something digitally or computationally is not the same as doing it web-based; however, in practice, for many if not most digital humanities projects, terms such as ‘digital’ will be used to refer to exactly that, to something that is web-based and through that communicative. On the topic of the history of the internet, see, as a selection, JANET ABBATE, *Inventing the Internet*, Cambridge, Massachusetts / London: MIT Press, 1999; STEPHEN LUKASIK, “Why the Arpanet was Built,” in: *IEEE Annals of the History of Computing* 33/3 (2011), 4–21; MARTIN SCHMITT, *Internet im Kalten Krieg: Eine Vorgeschichte des globalen Kommunikationsnetzes*, Bielefeld: transcript, 2016; and CAMILLE PALOQUE-BERGÈS and VALÉRIE SCHAFER, “Arpanet (1969–2019),” in: *Internet Histories: Digital Technology, Culture and Society* 3/1 (2019), 1–14, online: <<https://doi.org/10.1080/24701475.2018.1560921>>.

been vocal in their support of the ‘Semantic Web’,⁷⁷ Linked Open Data (LOD),⁷⁸ and encoding standards such as the Resource Description Framework (RDF) which presents a graph-based type of relating resources to each other, subject – predicate – object, a principle of semantic triples.⁷⁹ Georg Vogeler’s advancement of the idea of graph-based ‘assertive editions’ is but one way we see this idea enter discourses in digital scholarly editing.⁸⁰ Whether linking data from a project to classification systems like *Iconclass* or authority files like the GND or controlled vocabularies, internal resources, external resources, the idea remains the same: to build a network of contextualized information.⁸¹ One project that might be seen as the epitome of this is *The Codex* which fully utilizes stand-off properties to decentralize annotations.⁸² As with any and all digital projects, it remains to be seen what the longevity of the approach

77 See e.g. EERO HYVÖNEN, “Using the Semantic Web in Digital Humanities: Shift from Data Publishing to Data-Analysis and Serendipitous Knowledge Discovery,” in: *Semantic Web* 11/1 (2020), 187–193, online: <<https://doi.org/10.3233/SW-190386>>.

78 See e.g. PHILIPP CIMIANO [et al.], “Linguistic Linked Data in Digital Humanities,” in: id., *Linguistic Linked Data*, Cham: Springer, 2020, 229–262, online: <https://doi.org/10.1007/978-3-030-30225-2_13>. See also PATRICK DANOWSKI and ADRIAN POHL (Eds.), *(Open) Linked Data in Bibliotheken*, Berlin / Boston: De Gruyter, 2013.

79 On the use of RDF in digital humanities contexts, see, in addition to the other literature about linked data and the semantic web, e.g. VALENTINA BARTALESI [et al.], “DanteSources: A Digital Library for Studying Dante Alighieri’s Primary Sources,” in: *Umanistica Digitale* 1/1 (2017), 119–128, online: <<https://doi.org/10.6092/issn.2532-8816/7250>>.

80 See GEORG VOGELER, “‘Standing-off Trees and Graphs’: On the Affordance of Technologies for the Assertive Edition,” in: *Graph Data-Models and Semantic Web Technologies in Scholarly Digital Editing* (Schriften des Instituts für Dokumentologie und Editorik; vol. 15), ed. by Elena Spadini, Francesca Tomasi and Georg Vogeler, Norderstedt: Books on Demand, 2021, 73–94.

81 On the general topic of which (not specific to the *Gemeinsame Normdatei*, GND, by the German National Library which is just one such example, another one being the *Virtual International Authority File*, VIAF), see FELIX BENSAMMANN, BENJAMIN ZAPILKO and PHILIPP MAYR, “Interlinking Large-Scale Library Data with Authority Records,” in: *Frontiers in Digital Humanities* 4 (2017), online: <<https://doi.org/10.3389/fdigh.2017.00005>>, which also touches on RDF and LOD, of course, since all of these topics are related.

82 Cf. IAN NEILL and ANDREAS KUCZERA, “The Codex: An Atlas of Relations,” in: *Die Modellierung des Zweifels: Schlüsselideen und -konzepte zur graphbasierten Modellierung von Unsicherheiten* (Zeitschrift für digitale Geisteswissenschaften; special issue 4), ed. by Andreas Kuczera, Thorsten Wübbena and Thomas Kollatz, Wolfenbüttel, 2019, online: <https://doi.org/10.17175/sb004_008>.

will be. This, too, naturally colours any and all thinking about digital scholarly editions and more specifically the modelling of scholarly editions. If we leave the issue of a reliable and stable way of referencing an edition aside – and it is an important issue to leave aside, not least of all because expiration phenomena like ‘orphaned editions’ are quite unique to digital scholarly editions as well⁸³ –, then we can still sense some of the issues that might arise if interconnectivity were to become the main focus of a digital scholarly edition. The first question would be: What are we connecting? More specifically: What are we connecting beyond that which was already implicitly connected in a printed scholarly edition? (Since traditional scholarly editions heavily rely on reference systems of their own, collating not only witnesses but sourcing intertextuality, e.g. quotes and paraphrases of preceding authors as well as quotes and paraphrases of the edited passage in later writings by others.) ‘The digital’ can afford to make these connections more explicit – granted that there is an external resource from which the referenced text or biographical and geographical information can be retrieved or with which it can be linked. Everything else then becomes a question of standards, APIs, and protocols. Within standards, however, always lies a restriction to the commonly agreed. And within the explicitness of the information generally connected in such a way lies a mundane quality; certainly not trivial but rarely more than a courtesy from the editor to the reader in traditional scholarship, vis-à-vis the identification and disambiguation of entities and the provision of context in a *Sachkommentar*, the identification of references to older works in a *Similienapparat* and the identification of references to the edited text in later works in a *Testimonienapparat*, to name examples from one tradition of editing. Weaving that web more

83 In this context, see also the nascent discussion of the FAIR principles and how digital scholarly editions may adhere to them, which is obviously relevant to any question of interoperability; cf. TESSA GENGNAGEL, FREDERIKE NEUBER and DANIELA SCHULZ, “Criteria for Reviewing the Application of FAIR Principles in Digital Scholarly Editions,” version 1.1, in: *RIDE* (2022), online: <<https://ride.i-d-e.de/fair-criteria-editions/>> (accessed 27 February 2023), and TESSA GENGNAGEL, FREDERIKE NEUBER and DANIELA SCHULZ, “FAIR Enough? Evaluating Digital Scholarly Editions and the Application of the FAIR Data Principles,” editorial, in: *RIDE* 16 (2023), online: <<https://doi.org/10.18716/ride.a.16.0>>.

fully and immediately accessible serves its purposes beyond convenience, namely a broader view on spheres of intellectual influence, and it may, over time, shift how we gauge the value and quality of an edition. Yet if we apply current standards of scholarship, other matters come to the fore, in terms of presentation, representability, functionality, and usability; and they are tied to the quality of commentary, the quality of reconstructive work, the quality of collation and emendation, the quality of navigation. It is, in fact, the relation of these latter qualities – which may be said to be common to scholarly editions of all materials and to scholarly editions *in* all media, insofar as such a state can be envisioned at the present moment – to those aspects of digital scholarly editing – which may not be unique to it but are nevertheless rather specific to it – that must be the basis of conceptual modelling concerns in this context as well as a guideline of evaluation for the resulting implementation, viz. a digital *and* scholarly edition.

F. INTERFACING

I would like to conclude this brief chapter on some of the distinctive transformations that scholarly editions are going through with an aspect that is rather important as well: the appearance of the edition. Or, if we mind the term ‘interface’ and consider the previous section: the access point of an edition. Not for data exchange but for human use. As Hans Walter Gabler has rightly pointed out:

A significant reason for the survival of editorial thinking and procedure from the age of material print may be the persistent focus on the production side, on the making of editions. The user interface of digital editions has as yet been too little attended to. This may ultimately be a result of the strong autocratic strain traditionally ingrained in the editorial enterprise. That strain effectively bars imagining the edition’s user as the editor’s partner and peer and

makes for a lack of incentive to provide for the user's participation in, and interaction with the edition.⁸⁴

One could think of this as yet another matter of visualization but as with printed editions, we do not tend to think of usability in those visual terms; not least of all since editors rarely had to reimagine what a book 'interface' could or should look like at its most basic level, guided as they were by existing conventions of typesetting. The question of interfaces in digital scholarly editing has received more attention in recent years.⁸⁵ One cannot claim, however, that this has conventionalized practices of web design in accordance with the specific needs of scholarly editions or, indeed, their potentialities. Editions created with toolboxes like the *TEI Publisher* or *EVT* may be closest to qualifying in that regard,⁸⁶ depending on their level of customization, because they are published within or rather on the basis of an underlying framework, generating a degree of recognizability otherwise absent from digital scholarly editions. The use of templates and existing components is especially commendable with an eye towards the sustainability and maintenance of a digital edition; even so, it arises from a consensus that may not necessarily be rooted in the kind of vision that Hans Walter Gabler indicates – the vision of editions as participatory experiences.

This is significant because funding for editorial projects does not (in the German context, generally speaking) include expenses for personnel solely concerned with the appearance of the edition. If such an edition is created in collaboration with an institution that provides digital humanities expertise and backs individual project members with a larger team,

84 HANS WALTER GABLER, "Theorizing the Digital Scholarly Edition," in: *Literature Compass* 7/2 (2010), 43–56, here 48, online: <<https://doi.org/10.1111/j.1741-4113.2009.00675.x>>.

85 See ROMAN BLEIER [et al.] (Eds.), *Digital Scholarly Editions as Interfaces* (Schriften des Instituts für Dokumentologie und Editorik; vol. 12), Norderstedt: Books on Demand, 2018.

86 See *TEI Publisher*, led by e-editiones, 2015–present, <<https://teipublisher.com/>> (accessed 28 February 2023), and *EVT – Edition Visualization Technology*, led by Roberto Rosselli Del Turco, University of Pisa, 2013–present, <<http://evt.labcd.unipi.it/>> (accessed 28 February 2023). The alpha of EVT 3 was released 8 December 2022, cf. <<https://visualizationtechnology.wordpress.com/2022/12/08/evt-3-alpha-available-for-download-and-testing/>> (accessed 28 February 2023).

such tasks may be covered under that umbrella or fall to employees who happen to possess that particular skill set in addition to the required knowledge of database management, software development, text encoding, etc. The need for and usefulness of the TEI Publisher and similar single-source publishing pipelines clearly demonstrate that remarkable individually realized digital editions are lucky coincidences, born out of the necessity of practice and the privilege of supplying an editorial project with more resources than were likely granted for its execution and completion. Out of the box solutions also serve to reduce redundancy. That is helpful; it enables the successful creation of more editions with fewer resources; or the investment of those resources in other areas of the editorial work (although, as noted, few resources are reserved for the appearance of the different publication formats to begin with). Therein also lies the issue. Designing an edition should not be viewed as the part that can be rationed away. The supremacy of the data-driven approach does not, *pace* Stäcker, ensure longevity. The longevity of resources is generally ensured by a social contract, namely a community of users and a group of hosts (even if only of the most simple imaginable repository) willing to care – to answer requests, to update servers, to migrate data. A data dump that no one looks at is as dead as a printed edition that no one reads, although one supposes that both could be dusted off in due time. The different components of a digital scholarly edition and their ‘storability’ naturally figure into any conversation about the essence of an edition, of that which remains after everything is said and done, but the focus on data also obscures an extremely important modelling concern which would appear to be self-evident: We do not only model the data. We model the experience. We model the appearance. These, too, consist of parts and sequences of order. And they, too, may be inextricably linked with the essence of an edition, especially if we move past textual mark-up as the alleged primary value of the (digital) scholarly edition. These other editorial components need to be documented and reasoned about as well. And it needs to be a task of any project design to consider the sustainability of any given approach – to clarify which parts of the edition need to be referenceable in a stable way and which parts may be or even should be ephemeral, malleable, or revivable.

In the investigation of the following chapters, we will focus on the variance of (audio-)visual works since the demands they make of us are the next step: From the text that we edit traditionally, as found in medieval manuscripts, for example, to other units of meaning contained in those very same manuscripts. The distinct qualities of digital scholarly editions would seem to lend themselves to thinking about *everything other than* text with its reproductive digital as well as pre-digital history; even more so: everything *visual*. It would appear to me that there is no sense in discussing, at this stage, what an interface of a digital scholarly edition should contain or what it might look like – first, we need to expand our understanding of what is that we edit or could edit, were we to consider the media of that which we edit as much as the media in which we edit it. That marks the beginning of our modelling process. Nevertheless, there are a few aspects that I would like to mention before we can proceed to do so; other aspects that point towards a future of digital scholarly editing more so than its present, principally not regardless of that which we edit but regardless – to some degree – of the medial quality of that which we edit.

I am referring, in part, to social, political, and ethical concerns. The ease with which to publish something digitally rather than in print must be acknowledged, even though we cannot discriminate between the offences of printed and digital scholarly editions in this way; the ‘scholarly’ part of any such edition should prevent actions that lack reflection, or so one would hope. Since digital scholarly editions may refer to external digital or digitized resources, however, they need to be cognizant of circumstances of creation that reside outside their own remit. Discourses about the digitization of ‘source materials’ are dominated by Anglophone and Eurocentric voices in the digital humanities, and we should be mindful that to regard these materials as source materials is only one way of viewing our interaction with them. As Yirga Gelaw Woldeyes described in his review of a printed scholarly edition of *The Hagiography of Ethiopian Saint Woletta Petros* by Wendy Belcher and Michael Kleiner which contains an English translation of the Ge’ez and was also accompanied by an online presentation of a manuscript witness:

Most rural and all monastic people in Ethiopia believe that Ge'ez texts like The Hagiography of Wolletta Petros are sacred, alive and powerful. They are placed in a church and brought out for readings during Mass and holydays and kissed by the faithful for blessings. Belcher was given access to one of these manuscripts, which she photographed and then made available online. She also reproduced and published 59 images of sacred paintings in her book without mentioning how she negotiated consent or what ethical guidelines she followed in the use of these items. [...] This is a source of great suffering for these spiritual people.⁸⁷

While this does not apply to the manuscripts that we will be discussing in this book, digital scholarly editing discourses should display an awareness of these issues – namely that the *invisibility* and *inaccessibility* of materials might be a desirable component of editorial design as well and indeed mandated by the circumstances in which access to materials was granted to begin with. These considerations are taken seriously in other areas of the digital humanities, more broadly interested in cultural heritage presentation. Roopika Risam has highlighted the *Mukurtu Content Management System*,⁸⁸ tailored specifically to Indigenous communities so they may “exercise cultural protocols for what should be shared and with whom.”⁸⁹ Some readers might not think this applicable to scholarly editions; in that, they would, I believe, be mistaken. Not every subject of edition may necessitate leaning away from the ‘autocratic strain’ that Gabler evoked (although it is worth wondering whether such a strain should be present in scholars at all; the obvious answer to which is: no), but there are many subjects of edition, especially but not exclusively from the 18th century onwards, that need to engage in sensitive exchange and implementation. We already see this realized in initiatives like the

87 YIRGA GELAW WOLDEYES, “Colonial Rewriting of African History: Misinterpretations and Distortions in Belcher and Kleiner’s Life and Struggles of Walatta Petros,” in: *Journal of Afroasiatic Languages, History and Culture* 9/2 (2020), 133–220, here 201.

88 See <<https://mukurtu.org/>> (accessed 28 February 2023).

89 ROOPIKA RISAM, “Decolonizing the Digital Humanities in Theory and Practice,” in: *The Routledge Companion to Media Studies and Digital Humanities*, ed. by Jentery Sayers, London / New York: Routledge, 2018, 78–86, here 83.

German-Cuban collaboration on *Proyecto Humboldt Digital*, in immediate vicinity to and interrelation with editorial projects like the *edition humboldt digital*.⁹⁰ The crucial role of such considerations may become all the more true, the more we move into the direction of cultural heritage held by institutions like museums. Any specific design of a digital scholarly edition must primarily take into account what *should* be done rather than what could be done.

There is another concern that should be of interest to us, something that art historian Michael Camille pointed out in the 1990s: Not only did he oppose what he termed ‘philological iconoclasm’,⁹¹ he also opposed the “movement toward the hegemony of the visual in late-twentieth-century culture”⁹² and emphasized that “the manuscript itself is a locus of all five senses [...] [which] not only represents sight, touch, sound, taste, and smell; [but] [...] embodies them in its own material performance.”⁹³ He goes on to elaborate:

While the editors of medieval texts have increasingly come to value the iconic page and, like scholars in all fields, have realized the value of returning to the material site of production and reception, there is still little understanding of the somatics of reading. What I have termed *philological iconoclasm* erases not only the marks of pictorial making from the page but also any signs of material labor that are not pertinent to disembodied textual meaning. More recently, the proponents of the ‘New Philology’ have focused

90 See *Proyecto Humboldt Digital*, led by Tobias Kraft and Erik Guerra, Berlin-Brandenburgische Akademie der Wissenschaften, Oficina del Historiador de La Ciudad de La Habana, 2019–present, <<https://habanaberlin.hypotheses.org/>> (accessed 28 February 2023), and *edition humboldt digital*, ed. by Ottmar Ette, Berlin-Brandenburgische Akademie der Wissenschaften, 2016–present, <<https://edition-humboldt.de/>> (accessed 28 February 2023).

91 See MICHAEL CAMILLE, “Philological Iconoclasm: Edition and Image in the ‘Vie de Saint Alexis’,” in: *Medievalism and the Modernist Temper*, ed. by R. Howard Bloch and Stephen G. Nichols, Baltimore [et al.]: Johns Hopkins University Press, 1996, 371–401.

92 Cited before but cited in full here again to avoid confusion with the preceding footnote: MICHAEL CAMILLE, “Sensations of the Page: Imaging Technologies and Medieval Illuminated Manuscripts,” in: *The Iconic Page in Manuscript, Print, and Digital Culture*, ed. by George Bornstein and Theresa Lynn Tinkle, Ann Arbor: University of Michigan Press, 1998, 33–54, here 37.

93 *Ibid.*, 38.

our attention upon the manuscript in what Stephen J. Nichols sees as a more ‘material philology.’ But another term that he used to locate attention on the page was the *manuscript matrix*, which suggests the grid of the computer, not the flesh of the womb (which is the word’s etymological source). Medieval texts and images have to be put back into the body, the matrix not of a network of meanings but the unstable site of sensation itself.⁹⁴

This introduces the question whether the true future of scholarly editions lies not in the digital (or the printed) as their paradigm of being but in other forms of meaning and expression of meaning. Considering matters of editing *beyond text*, in our case by considering picture works and film works hereafter, must not necessarily equate a turning towards ‘networks of meanings’. And if it does, there might come a time when we must turn away from ‘knowledge sites’ and instead turn towards ‘sites of sensation’, of sound, smell, taste, touch.⁹⁵ Doing so would also mean turning away from the digital environment as the sole conduit of certain kinds of source material study and (re-)configuration or rather, it *should* mean to regard it as *one* conduit that can be combined with and perhaps should only be realized in service of other kinds of engagement with materials, just as multimedial editions might have to be thought of – or come to be thought of – or be designed so as to be – multimedial in themselves.

94 CAMILLE 1998, 44.

95 For a digital humanities project pioneering approaches towards modelling cultural heritage experiences related to smell and olfaction, see *Odeuropa*, led by Inger Leemans [et al.], KNAW Humanities Cluster Amsterdam [et al.], 2021–2023, <<https://odeuropa.eu/>> (accessed 28 February 2023).