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Reflexive inertia : reinventing scholarship through digital practices

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Chapter 1

E-research and methodological innovation in Dutch Studies[11]

E–research and the humanities

It is well known that innovations in data collection and analytical instruments have regularly spawned new scientific and scholarly fields (Beaulieu, 2001; Lemaine et al., 1976; Shinn & Joerges, 2002), e.g., imaging technologies have led to radical innovations in medical, cognitive and neurosciences. Techno–opitimistic stories about the revolutionary potential of e–research applications (Atkins et al., 2003; Hey et al., 2009) seem to fit the picture of an innovative research technology with far–reaching consequences for the cognitive, social and material aspects of the sciences (Joerges & Shinn, 2001). E–research promises to enhance and innovate research in a number of regards: by facilitating cost-efficient, distributed access to large datasets, by providing the computing power necessary to process these data (e.g., through grid computing), and by facilitating collaboration across disciplinary and geographical boundaries (Jankowski, 2007; Wouters, 2006). The concept of e–research emerged in natural and biological sciences such as particle physics, astronomy, meteorology, and DNA research, and its characteristic features are tailored to the needs of quantitatively oriented, collaborative fields of research (Jankowski, 2007).

But what does e–research mean for interpretative social sciences and humanities? How are the dynamics in these fields influenced by technological and managerial innovations in research instrumentation and infrastructure? And how does this impact the identity of the field and its practitioners? To shed light on these questions we study the controversy around the recent digital innovation of the *Bibliografie van de Nederlandse Taal– en Literatuurwetenschap* (BNTL), a well–established bibliographical tool for Dutch Studies, i.e. the academic field concerned with Dutch language and literature. As we will show, the digitization of the BNTL is representative of many implications of e–research for the humanities.

The history of the BNTL is intimately connected to the disciplinary

11 This chapter has been published as: Kaltenbrunner, W., and Wouters, P. (2010) E-research and methodological innovation in Dutch literary studies, *First Monday*, 15(9). The present version is slightly abridged and contains minor stylistic changes in comparison to the published article.

history of Dutch Studies, and many practitioners used to regard the bibliography as an important tool for research. In 2004, the Royal Netherlands Academy of Arts & Sciences announced that funding for the bibliography would be decreased by more than 50 percent. The Royal Academy also decided that the BNTL should be no longer published in print, but in the format of an online database. As soon as this plan became public, a number of practitioners voiced their concern about the impact of this decision on everyday scholarly work routines and the future of Dutch Studies as a discipline.

Our paper will try to understand the innovation and the discussions accompanying it on two analytical levels. First, we will analyze how the innovation affects research practices in Dutch Studies. Second, we will investigate the implications of the digitization for the way practitioners think about themselves as scholars. Analyzing the transformation of a key research instrument on these two levels provides us with a first impression of the co–construction of scholarly knowledge, practices and identities through the implementation of technological and managerial innovation. We derived the most important sources for our study from written documents and qualitative interviews with members of the BNTL editorial team, scholars of Dutch Studies, and policy makers, all of which were conducted between September and December 2008.

History of the BNTL

The BNTL was first published in 1970, following a grassroots initiative to identify and make accessible a canonic body of scholarly works in Dutch and Flemish literary studies and linguistics.[12] The composition of its editorial staff fluctuated over the years, but usually consisted of five editors with a degree in Dutch Studies, and two university–trained documentalists (Baars et al., 2004). The BNTL was a retrospective disciplinary bibliography in the traditional sense. Individual cumulative additions were published on an annual basis, ordering relevant scholarly sources according to an elaborate decimal categorization. The editorial team simultaneously extended coverage backward and forward in time, ultimately encompassing the period from 1940 to 2004. From 1993 on, the BNTL database could be accessed online via university library portals and as an MS DOS or Windows version, with the print edition being published in parallel (Doorenbosch,

12 Personal interview with Elly Kamp, 26 November 2008, The Hague.

1993). Originally an independent organizational unit within the Academy, the BNTL was in 2005 taken over by the Huygens Institute, an institute specialized in high–quality editions of historical texts in science, philosophy, and literature. Funding for the BNTL was subsequently reduced from 5,7 FTE to 2 FTE (Baars et al., 2004). The Royal Academy furthermore decided that the BNTL should no longer be published in print at all, but exclusively as an online database. While the editorial team previously guaranteed comprehensive coverage of relevant sources, the bibliographical dataset of the digital BNTL is now limited to a list of core journals. Articles appearing in these journals are automatically added, thus making users independent from the publication rhythm of the old print bibliography. Monographs, however, which still constitute a very important publication format in Dutch Studies, are no longer indexed in a comprehensive fashion. To make up for this, registered users now have the possibility to add publications themselves, which are then double-checked by the editors on a weekly basis. Another change is that the decimal categorization system of the print BNTL has been replaced by a new online query form, as for example used by digital library catalogues. Moreover, users have the possibility to inspect abstracts and access full texts of publications if available (Huygens Instituut KNAW, 2004a; 2004b).

The announcement of changes to the BNTL led to a controversy in which many practitioners of Dutch Studies as well as members of the editorial staff expressed their strong disapproval. One of the critics even called for a collective publication strike (Verkruijsse, 2005), and the Dutch Minister of Science and Education attempted to directly intervene at the Royal Academy by an open letter (Verkruijsse, 2004). Major points of critique raised against the innovation concerned the reduction and automation of bibliographical coverage. Another controversial aspect was the original plan to completely exclude publications in modern Dutch linguistics from the bibliographical dataset. The Huygens Institute reacted by setting up an advisory board of external users who were invited to participate in the digitization project. Among them were also some of the most outspoken critics of the changes. In response to the fierce criticism, the plan to exclude modern Dutch linguistics was finally abandoned. While one of the original critics who had joined the board reaffirmed his objections in our interview, another one indicated that the advisory board meetings had given him a better idea of the changes introduced, thus mitigating his original concerns. The new BNTL Web site was officially launched on 24 April 2008.

The BNTL in different research practices

The implementation of e–research tools in the Netherlands is linked to attempts by policy makers and individual academics to stimulate a methodological innovation in how science and scholarship is practiced. On the one hand, e–research is about enhancing knowledge production by bringing together and facilitating access to existing datasets in a centralized virtual environment, thereby enabling researchers to pursue wholly new lines of inquiry (KNAW/NWO, 2004). Another expected benefit is that the use of ICT will make research more cost-efficient, in that it will allow to automate many tasks previously carried out by humans. With respect to textual scholarship specifically, policy makers and e–research advocates often express the hope that the use of digital tools will encourage scholars to move from narrowly circumscribed research topics (e.g., the production circumstances of a single literary work, or the way a classic literary leitmotif is treated by a single writer) to larger scale comparative research (e.g., a comparison of production circumstances of many literary works across different countries, or a comparative international history of a given leitmotif) based on a strong basis of hard empirical data. In the following, Henk Wals, the Director of the Huygens Institute, exemplifies the characteristic advantages he expects of e-research on the basis of a recently developed tool for collaborative annotation:

> We have recently developed a tool called eLaborate. On the one side of the screen you have a digital facsimile of a medieval manuscript, on the other side you can insert a transcription and annotations. That's a Web–based tool, meaning that whole teams of researchers can simultaneously transcribe and annotate a text, and share their annotations. This allows not only to translate a text into machine–readable form quickly and efficiently, but also to create a research tool, a text which is constantly enriched, to which data are constantly added. (…) if you are a literary scholar dealing with a specific question in a project, which usually run for three or four years nowadays, then you can only do so much work on your own, only a limited number of texts at one time. In other words, it is always a sort of sample that you take. On the basis of a relatively small number of sources you try to draw a more generally valid conclusion. (…) But if it becomes easier to pose the same question to a larger corpus of texts then your research becomes much better grounded. If you then also take advantage of quantitative methods,

measure word frequencies, etc., you take another step towards more objectivity.[13]

The use of databases and other digital tools in various scientific and scholarly domains has in recent years become a topic of study for researchers in Science and Technology Studies (STS), information science, and Computer Supported Cooperative Work (Beaulieu, 2004; Borgman, 2007; Bos et al., 2007; Bowker, 2000; Hilgartner, 1995; Hine, 2006). Research foci and analytical approaches vary significantly, however. Publications in information science for example often provide descriptive accounts of the proliferation of ICT across the sciences, thus implicitly suggesting an inevitable epistemological development towards ever more data-intensive, ever more networked modes of research (Nentwich, 2003; Borgman, 2007). In such a view, digital databases and other tools tend to be treated as readily black–boxed instruments that transform scholarly practice by virtue of inherent technological potential.

In the perspective of the more ethnographically and anthropologically oriented approaches to e–research, the unit of analysis normally is the interaction of disciplinary culture, users, and technology (Beaulieu, 2004; Bos et al., 2007; Davenport, 2001). This line of inquiry stresses the embedding of tools in individual research practices, implying that the shaping of e–research technology follows a logic of social construction (Hine, 2006; Bijker et al., 1987). In such a perspective, the question as to whether tools like the digital BNTL will indeed lead to a more efficient organization and methodological enhancement of scholarship depends not on inherent technological features, but on how well practitioners manage to integrate them with the specific cognitive and praxeological needs of their research.

In investigating the role of the BNTL in the work routines of scholars, we take theoretical inspiration from Karin Knorr Cetina's (1999) concept of epistemic cultures. Knorr Cetina's theory was originally developed to study knowledge production in laboratory sites in the natural sciences, but can also be applied to textual scholarship. It allows us to relate the use of technologies in everyday research practice to issues of heuristic interest and epistemology. The concept of epistemic cultures describes research practice in terms of three characteristics: the way researchers construct their objects of study; the way they experimentally validate knowledge; and the way

13 Personal interview with Henk Wals, 20 October 2008, The Hague (my translation).

epistemic units in a research site are related to each other (Knorr Cetina, 1999). A particular category of factors can only be analyzed with respect to the configuration as a whole. Conceptual frameworks for example shape technological instruments for research, which are used in turn to validate knowledge and thus reproduce the overarching conceptual structure. Symbolical, material, and social aspects of an epistemic culture are seen as interrelated in a specific configuration. Changing one constitutive aspect, such as a specific research tool like the BNTL, may result in a reconfiguration of the epistemic culture, but perhaps in ways not originally anticipated.

We adapt Knorr Cetina's concept to our own case in the following way. Under symbolical aspects, we subsume characteristic research questions (e.g., "when, where, and by whom was this particular literary manuscript written?"), underlying theories and theoretical assumptions (e.g., "linguistic analysis of texts allows to infer statements on its production process"), and methods (e.g., the comparison of different sets of empirical material) in Dutch Studies. Material aspects comprise tools and empirical sources for research, i.e., libraries, textual corpora, and specific instruments like the BNTL. As regards the social aspects, research and writing in literary studies has traditionally been organized as a solitary endeavor, although one of the expectations towards e–research is that it will bring about a more collaborative form of scholarship.

Dutch Studies is a continuum of very different research practices, rather than a methodologically and theoretically homogeneous field. Traditional ways of ordering these practices are to group them either according to the object of study (e.g., the writer investigated; the literature of a given historical period) or according to the methodological approach taken (e.g., quantitative reception studies). We decided that it is most insightful for the purpose of this paper to focus on a particular object of study, Dutch literature of the late medieval and early modern period. More specifically, we will discuss three distinct approaches to older Dutch literature as professed by three individual researchers. This allows us to give an overview of the bandwidth of techniques deployed to study a single topic, and of the different functions of the BNTL in these research practices.

On one side of the continuum of research practices in medieval/early modern Dutch literature is analytical bibliography, as practiced by Professor Piet Verkruijsse. Analytical bibliography studies the genealogy of texts as material artifacts. By collating variants, i.e. unauthorized or corrupted editions of early modern printed texts, analytical bibliography aims to

establish the original textual shape as intended by the author. Bibliographical tools, especially old library catalogues, potentially index forgotten copies and can thus help to lead the way back to the original version. For the researcher to stay on top of things, relevant bibliographical databases need to be timely updated and as comprehensive as possible. This goes also for bibliographies of academic publications like the BNTL, insofar as they trace the scholarly progress towards the original textual shape.[14] Verkruijsse welcomes the perspective of facilitated, always up-to-date access to academic publications through online databases like the BNTL. At the same time, he expresses strong concern about the fact that coverage of scholarly publications in the digital BNTL will be limited to a list of core journals, and that it will no longer be provided by a human editorial team. The BNTL does in his perception no longer fulfill the function of delineating and identifying a body of relevant knowledge. Verkruijsse recurrently drew a comparison between the innovated digital BNTL and Google to summarize the combination of facilitated access to sources on the one hand, and of less rigid structuring and quality control on the other.

Another approach to studying old Dutch literature is to look at its reception. The research of Professor Paul Wackers aims to reconstruct the reception of late medieval/early modern texts by historically contextualizing them in contemporary social and aesthetic norms. Texts as material artifacts constitute an essential part of this research practice, insofar as individual copies and editions may give hints about the social status of readers, their reading habits, or the way they received a particular piece of literary writing, e.g., through hand-written annotations in the margin. Wackers stresses the difference between his own research and more normative 19th century approaches to reception studies, which were based on the idea of an allegedly ideal way of interpreting a specific text.

> 19th century philologists thought that there was a general human quality expressed in cultural artifacts that could be discovered by a good researcher. All medieval things were valued according to the standards of 19th century aesthetic ideals, because those were held to be a general standard. That has changed. We have abandoned the idea that there is one standard for literature and culture and we are now trying to investigate the mindsets of medieval people in a more

14 Personal interview with Piet Verkruijsse, 10 December 2008, Amsterdam.

unbiased way.[15]

This hermeneutically oriented approach implies different ways of going about empirical work and validating research findings when compared to analytical bibliography. The latter depends on constant updating and comprehensiveness of bibliographical datasets for identifying a touchstone of relevant knowledge, and it implies a strong concern with the quality and depth of bibliographical source criticism. In hermeneutic reception studies, by contrast, the BNTL is considered one way among others to collect scholarly sources. Wackers regularly uses the bibliography for browsing topical publications, but complete coverage is not an epistemological sine qua non. Since Wackers is not interested in giving exact answers to highly specific research questions, validating findings for him is more a matter of creating intersubjectivity, in the sense of being explicit about the sources and research methods used. While Wackers was initially opposed to the digitization, he has since tended to accept the conceptual changes: "I've seen a list of journals they wanted to cover and I would say that 95 percent of what is important is automatically covered. I can live with that."[16]

The research of Karina van Dalen–Oskam, who is also the leader of the BNTL innovation project, consists in linguistic analysis of old Dutch texts. Of particular importance to this research practice are digital tools for the analysis of rhyme patterns, word frequencies, and syntactical structures. While linguistic analysis can also be conducted manually, the adoption of digital tools in recent decades has significantly expanded the empirical scope of this line of research. Findings here are validated through sophisticated quantitative methods, based on large textual corpora. The BNTL itself does not fulfill a particularly important role in this research practice, since most relevant journals are well covered in other databases, such as the Web of Science. The linguistic research community is generally more internationally oriented than other sub-areas of Dutch Studies, thus making practitioners less dependent on a body of canonic national knowledge as provided by the BNTL.

Technological innovation and disciplinary identity

In her influential 2008 study, Hine argues that the broad adoption of ICT in

15 Personal interview with Paul Wackers, 15 October 2008, Utrecht.

16 Ibid.

systematic biology over the last years has been linked to a reflexive repositioning of the discipline. A field concerned with classifying organisms and exploring their evolutionary relationships, systematic biology has attempted to get rid of its image as an archaic taxonomizing endeavor, and thereby save itself from neglect and underfunding. Practitioners instead have strived to re–imagine systematics as a technologically sophisticated and competitive modern science, a process that is in turn linked to the discourse on biodiversity. Institutions in systematic biology have recently presented themselves as providers of crucial information for the preservation of botanical and zoological species, with the spread of digital networks providing an ideal means to make this information widely accessible. Instead of seeking to capitalize on its robust taxonomic methodology, as in the past, systematics is now eager to prove its relevance as a discipline by catering to enlarged lay and professional audiences (e.g., interested amateurs, other biological sub–fields, museums, biodiversity–rich developing countries). Hine (2008) emphasizes in her analysis of these developments that e–research is not a rigid concept whose implementation straightforwardly transforms a scientific field according to a singular underlying model of data-intensive research. E–research rather figures as a sort of prism through which policy makers and individual researchers re–imagine the goals, methods, and also the history of their discipline. It seems that the adoption of e-research tools in Dutch Studies is related to a similar reflexive discourse about the identity and function of the field in an era in which the relevance of humanities scholarship is regularly questioned. The controversy around the digitization of the BNTL in particular has sparked an emotional debate in which different groups of actors express hopes and anxieties regarding the development of Dutch Studies in the near future.

In this section, we attempt to interrogate the elusive notion of 'disciplinary identity' by looking at how academics speak and think about themselves in terms of the following aspects: research methodology, embodied skills, and the cultural and geographical situatedness of research. The BNTL is bound up with the performance of disciplinary identity in that it represents and enables certain research methods, in that requires certain skills on the part of the user, and insofar as it delineates the cultural and geographical space in which research is conducted. As we will show, the digitization of the BNTL has affected all three of these aspects.

Dutch e–research initiatives envision future scholarly practices as characterized by data–intensive approaches and increased international and interdisciplinary collaboration. But while the digitization of the BNTL is part

of the attempt to induce a methodological innovation along such lines, a strong motive for resistance was precisely the function of the print BNTL in representing the methodological traditions of the field. Originally, the digitization plan foresaw to exclude modern Dutch linguistics from the dataset (Baars et al., 2004). This raised the controversial issue of the unity of Dutch Studies. In the 19th century, language and literature were thought to spring from the essence of national character, thus providing a powerful reason to subsume the study of both under one discipline. Since then, however, linguistics and literary studies have differentiated into methodologically and theoretically neatly distinct fields. The original plan for the BNTL digitization had meant to acknowledge this separation by excluding modern linguistics from the bibliographical dataset, not least because practitioners of the latter field had been found to rely mostly on other bibliographical databases anyway (Voorbij, 1999). This announcement caused fierce protests on the part of many Dutch scholars, however, who considered it absolutely vital that the BNTL guarantees at least formally the traditional methodological unity of Dutch literary studies and linguistics. Ultimately, this led to an agreement that the revised BNTL would continue to cover also the most important journals in modern Dutch linguistics (Huygens Instituut KNAW, 2006).

The strong symbolic value that many researchers still attach to the BNTL can partly be explained by the important role it occupied in disciplinary education. Training in the use of the print BNTL traditionally formed part of the undergraduate curriculum in Dutch Studies. Knowing how to use the print BNTL was part of being a scholar, and it distinguished members of the disciplinary community from other researchers. One of our interviewees, Paul Wackers, indicated that especially older generations of scholars have internalized the decimal categorization system of the BNTL, and that these categories influence the way they intuitively order and combine information.

> The old BNTL was created by people who indexed titles with keywords. The new BNTL does not do that. It searches full–text everything that can be found in abstracts and titles and so on. And I think this is one of the major differences between older and younger scholars. I have been trained in working in the system of the old BNTL. I have a grid of knowledge in my head and I know that for this I have to use this bibliography, and for that I need to use another bibliography. I think my way of researching and writing is

informed by these man–made criteria.[17]

The relation between the use of the print BNTL and disciplinary identity in Dutch Studies however, began to change when the bibliography became accessible online in 1993. Within the following few years, many users switched to consulting the BNTL through their university library portals (Voorbij, 1999). The recent implementation of a new online query form have made training in the proper use of the decimal categorization system of the print version principally unnecessary. The ability to use the BNTL is no longer a skill by which members of the scholarly community of Dutch Studies can distinguish themselves from 'outsiders'.

A major topic of inquiry in STS have been the implications of e–science for the spatial organization of research (Bos et al., 2007). Lenoir (1998) has for example argued that the use of global digital databases may replace the laboratory as the main site of knowledge production in biology. Hine (2006) in contrast has concluded that biological laboratories and digital databases co–exist as different frameworks for organizing particular aspects of research, complementing rather than replacing each other. The case of the BNTL shows that the displacement of research tools into virtual space potentially creates problems specific to scholarship in the humanities. Bibliographies for a national philology delineate the geographical and cultural context in which research is conducted, and this context in turn is an important factor in determining what counts as valid methods and objects of study. The digitization of a bibliographical tool, and the creation of e–research applications in virtual space, seems to be related to a change in the established distribution and hierarchy of research goals in Dutch Studies.

In his sociological analysis of the French 'academic field', Pierre Bourdieu (1988) argues that a discipline such as the national philology is characterized by an inherent methodological tension between 'softer' and 'harder' conceptions of research, which are related to different societal functions. On the one hand, the national philology is expected to produce original knowledge according to disinterested 'scientific' standards. On the other hand, it has the function to conserve and transmit knowledge about national language and literature. This conservatory function implies a more panegyric attitude of scholars towards national writers and literary texts which potentially contrasts with the 'scientific' function of the discipline (Bourdieu, 1988). While national philology as an agent in the conservation

17 Personal interview with Paul Wackers, October 2008, Utrecht.

and reproduction of national culture is geographically situated, national philology as the scholarly pursuit of new knowledge about language and literature is a more international endeavor.

In the case of the Netherlands, Dutch national philology has witnessed an overall internationalization over the last years. The need to publish at least partly in international journals and to participate in international conferences and events has become an imperative. Scholarship is increasingly evaluated in comparison to the international academic context. Also, funding is more often provided by bodies of the European Union. E–research is by many practitioners perceived to promote the internationalization of Dutch Studies by strengthening the 'scientific' function of the field.

The project leader of the BNTL digitization project for example, Karina van Dalen–Oskam, points out a relation between the geographical/cultural context in which research is conducted, and the epistemic goals and methods that are considered appropriate. Scholars of Dutch literature addressing a national audience may reasonably presuppose readers to be familiar with Dutch literary history, and can hope to attract attention by interpreting the content of the works investigated. The cultural value of Dutch literature for a national audience here legitimizes a rather interpretive and hermeneutic approach. Scholars addressing an international audience on the contrary will not be able to legitimize their work simply by virtue of the cultural value attached to their objects of study. In comparison to writers of 'world literature', Dutch literature and language are relatively little known abroad. The work of W.F. Hermans for example, one of the most important Dutch writers of the 20th century, and a particular personal interest of van Dalen, has for the most part not been translated into English. In van Dalen–Oskam's view, Dutch Studies as a field should make up for the lack of cultural capital of its research objects in an international context by capitalizing on 'scientific' virtues of empirical exactitude and objectivity, and through the use of sophisticated technology. As a model for a more internationally relevant scholarship, van Dalen-Oskam points to the type of research she engages in herself, i.e. linguistic studies of early modern Dutch texts that leverage large amounts of data, and that are consistently published in English-language journals.

The digitization of the BNTL was on the other hand perceived as a potential threat for the conservatory function of discipline. Apart from the possibility to implement new functionalities such as full–text search and a collaborative component, an important reason for transforming the BNTL

into an online database were of course budgetary considerations. Replacing manual bibliographic work by an automatic coverage system allows for the database to be maintained by fewer and less–skilled personnel.[18] Perhaps unsurprisingly, the combination of digitization with cost-cutting has had a powerful psychological effect on some practitioners of Dutch Studies. Critics perceive it as proof that the disciplinary function of cultivating national literary heritage is no longer valued by the Royal Academy. Book historian Piet Verkruijsse refers to the changes in the BNTL in terms of a metaphor of globalization — an established, national quality product is replaced by a cheap replica manufactured in low–wage countries (Verkruijsse, 2005). Two of the practitioners we interviewed made clear that they do not consider it part of their job to add their publications to the digital BNTL, if those publications are not automatically covered. Guaranteeing a comprehensive national bibliography in their view is something that the Dutch state should fully support through public funds, since it falls under its responsibility for national cultural heritage more generally. Interestingly, a BNTL documentalist we interviewed indicated that many lay users, for example amateurs interested in contemporary and historical Dutch literature, already make use of the possibility to add publications to the BNTL dataset. This is in stark contrast to professional academic users, who rarely upload any bibliographical information or full scholarly sources.[19]

Discussion and conclusions

Popular accounts of e-research suggest that the adoption of data-intensive, networked research tools will bring about a simultaneously more cost-efficient and more powerful way of producing scientific knowledge (e.g., Atkinson, 2006; Nentwich, 2003; see also Hine, 2008). But while the perspective of collaborative work and the use of larger amounts of quantitative data merely extrapolates the methodological precepts of many natural sciences, it implies a tension with the strong grounding of most scholarly disciplines on qualitative approaches (Wouters, 2006; Wouters & Beaulieu, 2006). To better understand the implications of e–research for the humanities, we have analyzed the recent digitization of the BNTL, a long–standing bibliographical tool for Dutch literary studies and linguistics.

Our first point of interest was the question as to how the digitization

18 Anonymous personal interview, 10 December 2008, The Hague.

19 Ibid.

affects everyday research practices, and also what possible inferences can be made regarding the adoption of digital tools by scholars more generally. Adapting Knorr Cetina's (1999) concept of epistemic cultures, we investigated knowledge production in Dutch Studies as an interplay of research questions, theoretical frameworks, and epistemological assumptions, mediated by material tools. Our comparison of research practices in the area of old Dutch literature has revealed a plurality of ways in which the bibliography is used. These ranged from providing a way to identify relevant sources to an epistemological function in validating findings. The degree to which research practices depend on specific tools more generally seemed to correlate to the degree of epistemological exactitude researchers aim for in the results they produce. Research practices aiming to provide very exact answers to research questions (e.g., 'Which one of a range of surviving copies of an early modern printed text is the oldest one?', or, 'What linguistic patterns can be deduced from this corpora of early modern Dutch poetry?') use bibliographies and tools for linguistic tools in an experimental way, i.e., to corroborate or refute hypotheses. Epistemologically softer practices such as hermeneutic reception studies pose questions that cannot be answered with the same claim to exactitude, and bibliograhical instruments such as the BNTL provide one way among others to collect scholarly sources.

These exploratory observations suggest that the implementation of e–research tools will unevenly affect the different scholarly approaches in Dutch Studies. The rather exact, technologically dependent practices are more likely to be affected by e–research than the ones leaving larger leeway for interpretation of results. But also in the case of the more technology–dependent approaches, specific predictions about the effects of proliferating digital tools are difficult. For example, the digitization of the BNTL has replaced extensive manual data curation through a human editorial team by a system automatically covering a list of core journals. While fast, continuous updating and the possibility to conduct full-text search on parts of the dataset constitute an undeniable benefit for all users, the reduction in overall coverage is very detrimental for some areas of study, such as analytical bibliography. Further empirical and conceptual work is necessary to unpack the implications of digital approaches in specific research contexts.

A second point of interest was the question as to whether and how the spread of digital tools in the humanities is related to changes in the performance of disciplinary scholarly identity. Much like the case of systematic biology presented by Hine (2008), the implementation of e–

research tools in Dutch Studies does not take the shape of centrally controlled process with a predetermined outcome, but rather of an emotional argument about the very essence and function of the field in the early 21st century. More specifically, the controversy around the digitization of the BNTL touched upon three aspects of disciplinary identity: research methodology, skills/tacit knowledge, and the geographical/cultural space in which research is conducted.

On the one hand, the implementation of e–research in the Netherlands is shaped by the vision that the spread of digital tools will promote more collaborative, data-intensive approaches also in the humanities. Well–established research instruments, however, may represent methodological traditions of a discipline in ways that clash with the intended innovation. The initial plan for the digitization of the BNTL acknowledged the de facto differentiation of Dutch literary studies and linguistics over the past 150 years by excluding publications in modern linguistics from the dataset. This prompted fierce resistance of many practitioners, who considered it crucial that the bibliography of national philology continues to formally represent the historical unity of the two fields.

The digitization of a tool like the BNTL also entails a change in the skills required on the part of the users. In the past, aspiring scholars of Dutch Studies were trained in the use of the print version of the bibliography, in particular its elaborate decimal categorization system. The ability to navigate this system was distinctive of disciplinary culture. By contrast, anybody familiar with digital library catalogues and online search engines can use and contribute to the digital BNTL. The BNTL has thus become a site of collective knowledge production that weakens the boundary between specialists and laymen. The fact that lay users have so far taken much more advantage of the collaborative element than academic researchers would imply that the former are more enthusiastic about this 'opening' of knowledge production than the latter.

The digitization of the BNTL was also perceived as an element in the process of internationalization of Dutch Studies, which is in turn related to a change in the hierarchy and distribution of research goals. Some practitioners associate the methodological innovation expected of e-research with internationally valid 'scientific' virtues, thus suggesting that digital approaches may be useful to promote Dutch literary scholarship among academic audiences abroad. Critics associated the digitization with a demotion of the disciplinary function to conserve and mediate knowledge

about Dutch literary heritage. The case of the BNTL thus illustrates a tension specific to the implementation of digital tools for the humanities in countries like the Netherlands. Scholars understand that they increasingly need to participate in an international academic community, for which the adoption of digital approaches seems to be ideal. The displacement of research tools into virtual space, and the increased focus on research per se, however, may in turn conflict with the pronounced need to cultivate the cultural heritage of an otherwise little studied, small language community.

Postscript to chapter 1

In this first chapter I have argued that the controversy around the digitization of the disciplinary bibliography of Dutch studies has not just been a technical discussion about desirable features and practical design choices. Rather, it has been one about how scholarly work itself should be organized in terms of methods, research goals, and relevant audiences, and how the humanities may be best served through the adoption of new tools. Illustrating the subtitle of this thesis, digital technology has served as a refracting lens through which practicing academics, as well as a variety of other actors, such as administrators and policy makers, began to reimagine what it means to do scholarship in Dutch studies.

The chapter does not portray a transition towards a singular new model of scholarly work, however. Instead, some scholars were extremely critical of the newly introduced features of the bibliography, while others tended to embrace the changes rather quickly. These heterogeneous reactions can be explained by combining the perspective of infrastructure studies (Star & Ruhleder, 1996; Edwards, 2010) with a sensibility for the epistemic and organizational differences between individual scholarly specialties (Beaulieu & Wouters, 2006; Knorr Cetina, 1999). The field of Dutch Studies can then be seen as an ecology of disciplinary subcultures, each characterized by a unique set of properties. These subcultures are interrelated through their shared history, material tools and embedding in academic institutions, but rather loosely integrated in terms of research practices and conceptual frameworks. From such a vantage point, particular technological affordances of a digital bibliography, such as participatory features or immediate updating, are not inherently useful. Instead, they acquire their meaning in relation to the specific research goals and methods of their users. If we take into account the intellectual and methodological diversity of Dutch Studies, it is not surprising that different practices are affected very unevenly by the digitization. Individual opinions differ as strongly as the variety of approaches in the field – this is arguably different from the adoption of tools in comparatively more integrated fields in the natural or quantitative social sciences.

The case also introduces a related aspect of the infrastructure perspective, namely issues surrounding the conceptualization and valuation of particular forms of work in a delicate balance of mutually sustaining task areas (Star & Ruhleder, 1996; Strauss & Star, 1999). At one level, the controversy around the digitization can in fact be read as an altercation about what type of activity the work of bibliographical data ingestion and

quality control actually is. By reducing expenditure and turning that work at least partly into a crowd-sourced responsibility of scholars and interested lay users, the Huygens Institute has effectively redefined a publicly subsidized infrastructural service as an activity that overlaps with the core tasks of university-employed scholars. It would be wrong to read the subsequent protests of academics only as a reaction to the perceived loss of disciplinary prestige. Instead, re-drawing the boundary between technical and scholarly responsibilities also had tangible negative consequences for the everyday conduct of scholarly work in some specialties. Analytical bibliography for example (and possibly other areas of study not covered in the chapter) constitutes an epistemic subculture that is particularly reliant on well-curated and extensive bibliographical information. Continuing to work according to the conventions of this specialty requires practitioners to make up for the reduction in editorially warranted coverage through their individual effort. The digitization thus affects how easily scholars can produce certain forms of knowledge, potentially leading them focus on different sorts of research questions in the future.

In the next chapter, I will refine these first impressions by probing a very different empirical case, namely a grass-roots initiative in digital literary history. This provides me with an opportunity to study the adoption of digital approaches in a context where the intended innovation of scholarly methods and practices is not driven by managerial intervention, but emerges directly from within the intellectual dynamics of a field. Moreover, the case study will allow me to draw out the organizational implications of a core promise often associated with digital research technology – that of harnessing data-intensive research methods in hermeneutic fields of inquiry.