Reflexive inertia : reinventing scholarship through digital practices

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Chapter 2

Scholarly labor and digital collaboration in literary studies[20]

Parenthesis – relation to conceptual framework

Readers of the following chapter may initially be struck by a specific terminological choice, namely my consistent reference to scholarship as labor. This term emphasizes the expenditure of mental and physical resources, and is therefore at odds with the popular idea of research as a disembodied, purely cognitive activity. My use of the word labor is an intentional attempt to radicalize a common theoretical abstraction applied by STS scholars since the late 1980s - that of research as practice (cf. Pickering, 1992). Posited as a challenge to influential mid-20th century accounts of science by philosophers (Karl Popper) and sociologists (Robert K. Merton), the notion of practice cuts through research in such a way as to avoid foregrounding idealized epistemological concepts, as well as reducing the sociology of science to a sociology of individual scientific careers. STS research on science as practice tends to draw attention to recognizably different issues, for example the material mediation of epistemological concepts in lab work (Galison, 1997; Rheinberger, 1997), and the sociotechnical translation processes involved in turning instrument readings into authoritative statements (Latour, 1987; Fujimura, 1992). The concept introduces new blind spots in its own right, however. For one, it tends to deemphasize the function of social, political, and institutional macrostructures, instead picturing knowledge production as a matter of situated, emergent cognition (Vann & Bowker, 2001). Secondly, and as a consequence of this, it neglects questions about how the economic cost of doing research mediates its intellectual substance (The Virtual Knowledge Studio, 2008). Much STS scholarship operating with the notion of practice is in fact based on the methodological assumption that everything relevant about scientific work can be grasped through ethnographic descriptions of the culture, social interaction and concrete physical acts of individual researchers in particular sites.

The notion of research as labor as I use it here is geared to draw attention to the mutual dependence of different forms of work in a larger

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infrastructural production process, and especially the way this production is constrained by the economic valuation of individual task areas. The preceding chapter has already shown how a managerial strategy to effectuate budget cuts through the reconceptualization of certain task areas can affect knowledge production. Specifically, I have shown how the digitization of the BNTL has made it more difficult to do research according to the disciplinary conventions of analytical bibliography. The following chapter further pursues this line of inquiry. It investigates in detail the implications of digital instruments for the conceptualization and distribution of different forms of labor that together enable the 'primary' process of scholarship in literary history, and the way that changes in this distribution affect the particular forms of knowledge that can be generated.

The chapter also extends the analysis in another way. The controversy around the digital bibliography of Dutch Studies presented us with a confrontation between research managers and policy makers on the one hand, and practicing scholars in various subdisciplines of this field on the other. If read as an isolated study, the preceding chapter therefore might be taken to imply that boundaries between task areas are stable and undisputed within a given specialty (thus suggesting that scholars of analytical bibliography, reception studies, or historical linguistics form homogeneous communities free of internal tensions). The following chapter instead follows the contentious process of reimagining scholarship on the level of a *single* specialty. Such an empirical focus allows for more refined observations about digital methods and disciplinarity than are commonly provided by social scientists. In fact, a growing body of literature on the implications of digital tools for research adopts a comparative perspective, often suggesting that current disciplinary features of a field will strongly influence the speed and intensity at which its practitioners will engage with novel technology (Collins, Bulger & Meyer, 2012; Fry & Talja, 2007; Fry & Schroeder, 2010). This resonates with my own analysis of the diverse reactions to the digitization of the BNTL across different specialties. At the same time, a downside of the comparative perspective is that it tends to highlight and perhaps overemphasize current organizational features of disciplines, thereby introducing a certain circularity into the argument. A commonly drawn conclusion is for example that the more empirically oriented branches of the humanities and social sciences will quickly adopt data-intensive approaches (Fry & Talja, 2007; Fry & Schroeder, 2010). While this may be true, such a prediction remains tautological if it is not complemented by an investigation of the conditions under which the very

epistemic features of a given area of study may change as they enter a mutual shaping process with digital research tools.

Introduction

The birth of literary history in the 19th century is intimately connected to the formation of the European nation states, and it has long been recognized that this context continues to shape current historiographical narratives (see for example Robinson, 1983). Literary history since the 19th century often has been an account of the heroic literary deeds of male author-geniuses, portrayed as the finest representatives of a Romantic national spirit. Canonical views of literary history typically exclude whole groups of potentially relevant actors, such as women as writers, translators, and mediators in the literary scene (Whittle, 2013). Although various currents of feminist and critical theory have drawn attention to such bias (Warhol & Werndl, 1997), they have not managed to actually replace longstanding canonical traditions. More recently, literary scholars and developers of technology have seen the application of ICT as a way of stimulating attempts to revise the literary canon (Moretti, 2005; Wilkens, 2012) – after all, digital technology often is promised to facilitate collaboration among otherwise scattered, 'lone scholars', and as potentially allowing researchers to take advantage of large amounts of empirical material in ways that combine hermeneutic methods with computational approaches (ACLS, 2006; Babeu et al., 2009).

In this paper I study a collaborative project of literary scholars from 26 European countries, who set out to rewrite literary history from a transnational gender perspective. The goal of the project, funded by the European Science Foundation in the framework of COST (Cooperation in Science and Technology), is to foster collaboration among like-minded scholars and to create empirical knowledge about the reception of marginalized women writers in Europe 1700 to 1900. The project – or COST Action, the official term – aims to integrate the individual research efforts of the participants in a shared conceptual framework. Collaboration is organized around the use of a digital database, which the participants hope can help them remedy some of the many omissions in the literary canon. However, grant-funded collaboration in the humanities is a relatively new phenomenon. Literary studies is organized in a somewhat fragmentary way when compared to the natural sciences, i.e. local contexts such as national disciplinary cultures, and even individual university departments, play an important role in the organization of research. Also, scholarly knowledge is predominantly circulated in monographs, a form of expression that allows for a lot of individual freedom in terms of chosen research goals and analytical approach.

The goal of this paper is to interrogate how specific ways of organizing scholarly labor make possible certain forms of knowledge, and to study the challenges scholars face when trying to adapt established organizational models. What does it mean for university-employed literary scholars, often acculturated in close-reading-based research practices, to work together in the format of a collaborative project? What kind of changes does the shared use of a digital database require in the way they usually organize their labor? How is labor within the project eventually divided among the participants, and how does this division shape the collaboratively produced knowledge?

In order to answer these questions, I make use of empirical materials I have collected through semi-structured interviews with relevant actors, participant observation, and by studying various documents authored in the context of the COST Action. Theoretically, this paper is firstly informed by the work of Richard Whitley (2000), who has compared the organization of research labor across various fields. Secondly, I draw on insights from infrastructure studies (Edwards, 2010; Star & Ruhleder, 1996), which offers a sensibility as to how scholarly work is both enabled and constrained by existing institutional requirements, disciplinary cultures, and technological instruments. The combination of those two perspectives allows me to analyze the move to collaborative digital scholarship in terms of its far-reaching implications for how particular tasks in the academic labor ecology are conceptualized and distributed, as well as providing a framework to describe the inertia of established infrastructural arrangements. Digital collaboration, I will argue, can potentially produce new forms of knowledge in literary history, but especially when undertaken at a large scale, it will also tend to create significant tensions with the way scholarly labor is normally organized.

The structure of the paper is as follows. I will first discuss my theoretical framework in greater detail. Then I will introduce my case study and methods. Subsequently I will present my empirical findings, which are again subdivided in a number of sections that chronologically follow key events in the course of the COST Action, and the debates these events have spawned in the project.

The organization of scholarly labor in literary studies

In order to grasp the implications of collaborative, digital scholarship for literary studies, it is important to understand how scholarly labor in this field has traditionally been organized. Richard Whitley's (2000) comparative

analysis of how scientific fields differ in their organizational characteristics here provides a useful starting point. Whitley introduces the analytical dimensions of task uncertainty and mutual dependence among researchers to distinguish between fields. Task uncertainty describes the degree to which researchers share an understanding of their research object and theoretical priorities, as well as the relative agreement on how technical procedures should be applied. Mutual dependence describes the degree of coordination of research across sites, and the requirement for individual researchers to demonstrate the comparability and relevance of their work in relation to the work of their colleagues.

In Whitley's framework, literary studies is the antipode of post-1945 physics. Literary studies is characterized by high degrees of task uncertainty, and by low degrees of mutual dependence, while physics is configured in the exactly inverted way. In literary studies, research questions are highly individual, and the communication system is weakly formalized. Knowledge is circulated through monographs. These apply a discursive form that is relatively more accessible to lay people than the esoteric mathematical sign systems and highly abstract research objects of the natural sciences. At the same time, in literary studies, it takes particularly long for neophytes to make meaningful contributions to research, since a lot of individually acquired experience is necessary before one can wield an array of largely non-standardized techniques and theories, and make sense of the ambiguous findings. Theory here predominantly fulfils the function of distinguishing individual researchers in a plurality of coexisting approaches, rather than integrating labor conceptually according to shared theoretical priorities, as in physics. According to Whitley, literary studies is thus the exemplar of a 'fragmented adhocracy', in contrast to the 'conceptually integrated bureaucracy' that is physics.

However, the modern organizational form of literary studies should not be seen as the expression of an inherent essence of the field, but as the result of historical differentiation. To better understand how criteria of valid scholarly knowledge, technological instruments, and the organizational forms that we subsume under the label 'literary studies' have shaped each other over time, it is useful to combine Whitley with insights from the field of infrastructure studies.[21] Specifically, I propose to apply Edwards' (2010)

21 In establishing this theoretical link, I also mean to overcome a recurrently highlighted weakness of Whitley's approach, namely its static character and its rather peripheral interest in exploring change in field characteristics (Fuchs, 1993; Zeldenrust & Hagendijk,

notion of knowledge infrastructure to literary studies.

> Knowledge infrastructures comprise robust networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds (Edwards, 2010: 17).

Infrastructure according to this definition is not a specific thing (such as an academic department or a faculty), but a relational concept. It is something that occurs when the various institutional arrangements, scholarly practices, and technical standards that constitute the network fall into a workable configuration for its users, i.e. the scholars, students, administrators and support staff who work in and move through literary studies on a daily basis. Infrastructure emerges for people in practice, connected to activities and structures. The appropriate question, then, is not „what is an infrastructure?“, but “when is an infrastructure?”.

Edwards' definition builds on the foundational work of Star & Ruhleder (1996), who argue that infrastructure can be characterized by a number of interrelated features. For one, it is linked to conventions in communities of practice. Infrastructure both shapes and is shaped by those conventions. The use of a specific tool in a given academic field for example may increasingly become part of disciplinary training. To the same degree it will become bound up with the conceptual frameworks of the field. The concept of infrastructure thus is complementary to Jasanoff's (2004) notion of co-production of science and social order: by organizing scientific labor in a specific way, researchers also reproduce criteria of what counts as proper scientific knowledge. Such criteria in turn will inform the technical skills and tools transmitted through research training, which again is instrumental in reproducing criteria of scientific validity etc. Infrastructure moreover is sunk into other structures and social arrangements, thus reaching beyond a single event or local practice. Infrastructure in fact is something that invisibly support tasks, without needing to be assembled or reinvented for each new task. On the other hand, when infrastructure breaks down, it makes itself visible through its absence – think of the temporary chaos that is caused when an organization migrates its email servers to a new format, or when natural disasters interrupt railway connections in a densely populated country. Star & Ruhleder furthermore propose to see infrastructure as distributions of these properties along the axes of the global/individual, and

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1985).

the technical/social. For example, if an information system is strongly embedded in a large scholarly knowledge infrastructure, its data categories will be generic enough to represent certain aspects of knowledge throughout the discipline. At the same time the information system must be malleable enough to cater to the specific local requirements of more specialized users (Bowker, Baker, Millerand & Ribes, 2010). This means that the degree of organizational integration of a field will influence the possibility to delegate certain tasks to technology. For example, in tightly integrated forms of knowledge production, such as physics, it will be easy to automate certain elements of the research process, since those elements are standardized throughout the discipline. In less tightly integrated fields on the other hand, possibilities to delegate individual work steps to technology on a global scale will be limited. Infrastructure occurs when the tensions between globally valid standards and local contexts, as well as between automated technological processes and tasks performed by human actors can be successfully resolved. An important consequence of this definition of infrastructure is that it develops incrementally - it is not created, it evolves.

So what does the knowledge infrastructure of literary studies look like? While there are currently no empirical studies on this question, we can make a number of preliminary observations on the basis of Whitley's work. Rather than a comprehensive description, I here present a number of aspects of humanistic infrastructure that will play a role in my empirical analysis.

For one, an important feature of a knowledge infrastructure is what its institutions consider legitimate forms of output. In literary studies, this has traditionally been the monograph. A record of monograph publication(s) often is an important factor in tenure and promotion decisions. The monograph implies a high degree of individual theoretical freedom, and a low degree of organizational differentiation of the underlying scholarly work process. Infrastructure in literary studies foresees that the primary process of producing a monograph be the work of a single individual. A decomposition of the research process that leads up to the publication of the monograph is not foreseen.

Furthermore, an important element of literary studies as a knowledge infrastructure is constituted by the totality of its information systems, such as bibliographies, archives, and library catalogues. These have played an important historical role in charting and making accessible the otherwise chaotic universe of print production (Chartier, 1995). Bibliographies define bodies of relevant scholarly knowledge for given subjects, and they traditionally have fulfilled an important ideological

function in defining national literary histories. These information systems operate with relatively generic, bibliographical categories, which have established themselves together with the emergence of print culture from the 16th century onward (Johns, 1998). In this process, bibliographical categories have become seemingly natural ways of describing print production. At the same time, bibliographical categories have become part and parcel of the conceptual deep structure of literary studies: very often, scholarship is organized around such categories as œuvre or author. Poststructuralist critics have famously drawn attention to the abstracting moves that make possible such forms of knowledge in the first place (Foucault, 1979; Barthes, 1978).

As pointed out, infrastructure is relational - the daily work of one person may be the infrastructure of another (Star & Ruhleder, 1996). This has implications for the visibility and social prestige of certain kinds of work (Star & Straus, 1999). In literary studies, there is an established division of labor between scholars on the one hand, and librarians, bibliographers, and archivists on the other. The division is such that the work of the latter is considered a technical service to the work of the former. Their role is thus similar to that of laboratory technicians as analyzed in the seminal paper by Shapin (1989), whose function is critical to the conduct of experimental science, but at the same time largely invisible. Libraries, archives, and bibliographies are infrastructure for scholars in that they constitute a transparent, ready-to-hand instrument that enables and constrains their research.

Furthermore, it is fair to assume that regional scope is an important infrastructural characteristic of literary studies. In fact it might be useful to think of literary studies as consisting not of a single, but of multiple, regional knowledge infrastructures. For example, the scope of bibliographies is frequently a regional one. Bibliographies in Central Europe are often produced by national Academies of Arts & Sciences, which function as an authority that vouches for the reliability of the information they provide. Also, sub-disciplines of literary studies are delimited by language communities. Some of these communities (English, French, German...) are much more influential than others. This means, among many other things, that smaller disciplinary communities, say, Slavic Studies, are likely to possess less disciplinary knowledge about topics that are well studied in larger communities. Therefore, we can often observe that research trends developed in larger disciplinary communities arrive with a certain delay in smaller ones (Dojcinovic-Nesic, 2006), and more generally, that what is

considered legitimate scholarly work varies by disciplinary community.

However, in recent years, we can observe dedicated efforts to create an integrated, pan-European digital research infrastructure for the humanities. Particularly visible projects are DARIAH (Digital Research Infrastructure for the Arts and Humanities) and CLARIN (Common Language Resources and Technology Infrastructure). Describing itself as a 'connected network of people, information, tools, and methodologies', DARIAH (n.d.) presently partners with archival and research institutions in 14 European countries. Its core mission is to enhance and support digitally-enabled research across the humanities and arts. Next to promoting the coordinated development of analytical applications and improved long-term access to digital datasets, DARIAH's activities include the exchange of digital skills and computational research methods. CLARIN (n.d.) similarly aims to build a federation of European data repositories (archives, libraries), service centers, as well as centers of expertise at universities and other research institutions. The CLARIN web portal offers access to datasets and tools for researchers in computational linguistics and related fields, but also for social scientists interested in analyzing large amounts of text-based material.

Ambitious digital infrastructure initiatives such as DARIAH and CLARIN can be seen as interventions in the organizational landscape of the humanities. Originally inspired by similar efforts in the natural sciences (Jankowski, 2009), the goal of DARIAH and CLARIN is to create a technological basis that would allow humanities scholars to access and analyze uncommonly large amounts of digital data in a collaborative fashion, so as to enable them to answer research questions that could not be tackled with traditional means. The first step for such projects typically is the creation of buzz (by researchers, research managers, and policy makers) to attract the interest of funding bodies (Brown, Rappert & Webster, 2000; Kok & Wouters, 2013; Vann & Bowker, 2006). Once granted, project resources buy a degree of independence of scholars from their local organizational environment that allows for a potential reconfiguration of labor. Insofar as digital infrastructure projects constitute major investments, they are also informed by a specific set of managerial values, such as a pervasive systems perspective, sustainability, and avoidance of investment redundancy (Anderson, Blanke & Dunn, 2010; Zorich, 2008). Against this background, the relatively weak degree of integration of labor in the humanities poses a potential obstacle to the goal of interoperability of data and methods (Fry & Talja, 2007). Advocates of digital infrastructure therefore often promote the

identification/disambiguation of shared research methods, information practices, and/or data standards across the various humanities disciplines, which can then serve as technological design principles (Anderson, Blanke & Dunn, 2010). DARIAH for example is linked to the goal of building digital infrastructure around 'methodological commons', i.e. fundamental building blocks of scholarly processes that are shared across countries and disciplines. Another approach is to focus on integration through data standardization. Lynch (2002) and Borgman (2007; 2009) for example argue that humanists should establish strong, once-and-for-all definitions of what constitutes data and what scholarly interpretation, so as to provide a base for the encoding of interoperable metadata in digital libraries.

However, change in knowledge infrastructures can, per definition, only be incremental – as has been widely acknowledged, the uptake of digital research technology in the humanities depends on the extent to which the forms of user engagement they encourage allow to strike a balance with scholarly conventions, existing technical standards, and other elements of the status quo in local contexts (Bowker, Baker, Millerand & Ribes, 2010; Bulger et al., 2011; Wouters, Beaulieu, Scharnhorst & Wyatt, 2013). Successful implementation of digital research technologies hence will depend on the possibility to reconcile individual professional investment of scholars in existing research paradigms with the affordances of digital scholarship. It is this process of emerging organizational forms of labor that I hope to shed light on through my empirical analysis.

Case study & methods

This paper is based on data collected in a collaborative project in literary studies, entitled Women Writers in History (WWIH). The project is funded in the intergovernmental framework for Cooperation in Science and Technology (COST) for the period 2009 to 2013. COST does not fund research directly, but provides support for networking activities, such as meetings, joint conferences and publications. COST Actions are often meant as a preparation for further projects, for example in the European Union's Seventh Framework Programme.

The aim of WWIH is to lay the groundwork for a new history of European women's participation in the literary field before 1900. In its application for funding, WWIH forcefully argues that current literary historiography is still informed by the chauvinistic, canonizing tendencies of 19th century historians, from whose narratives women have been mostly

excluded. In particular, the document observes the lack of coherent empirical data on the activities of women as writers, translators, and mediators in the literary scene across countries and periods, which is exacerbated by a distorting focus on influential national literatures and language communities. Another limitation is the use of small samples of canonical writers in most literary research, which reflects the amount of empirical information that can be processed in single-author, close reading-based research practices. In contrast, WWIH aims to mobilize the combined efforts of its participants to work towards a more substantial and systematic empirical basis. More specifically, the application document promises the delivery of a "prototype of an online research infrastructure" (COST, 2009: 10) through the collaborative use and further development of an existing digital database, which was developed in a preceding project at Utrecht University. The prototype will build on this existing dataset, as well as interlink with other databases (such as DBNL, ECCO, Gallica2). Additionally, it will be further enriched by individual data input by participants.

> The COST Action will mobilize researchers to collectively create tools allowing to have the full benefit of these sources, and to establish direct connections between women's writings and these very diverse reception contexts. (…) Thus, a new instrument (a research infrastructure combining a virtual collaboratory with an online database) allows large scale approach of sources, and generate new (research) material: data about contemporary reception of early women's writing. These are shared, commented and analyzed (…) by quantitative and qualitative approaches, and eventually suggest new questions impossible to be asked up to now (COST, 2009: 6-7).

WWIH is a grass-roots project that has developed out of previous collaboration of predominantly Dutch literary historians. The number of participants has perpetually increased during the course of project – from initially 50 to about 120 researchers from 26 European countries in 2012. The research interests of the participants can be subsumed under the topic 'reception of women writers', but only very roughly so. Individual research interests include topics as diverse as the literary life of Irish nuns in the 16th and 17th centuries, studied empirically on the basis of monastery archives; the business relations between women writers and their publishers on the Iberian peninsula in the 18th century, studied on the basis of correspondence

and archival materials; or the history of a particular Dutch library for women readers in the 19th century, based on an analysis of the book loan files.

The data on which I draw in my analysis were collected in a total number of 24 semi-structured interviews, ranging from 30-120 minutes in length, extensive participant observation in two database-training events and three project meetings of several days each, an analysis of electronic project communication, a survey focusing on obstacles to database uptake (20 respondents), as well as an analysis of documents produced for internal and external use, such as project plans and presentations delivered at scholarly conferences. Data collection was spread over a period of two years, starting from December 2009. Initially, the data were collected according to a grounded theory approach (Charmaz, 2006), with a gradual concentration of interview emphasis on the topical relation employment-research-reputation.[22]

Discussing theory in a pragmatic way

The COST Action was officially launched during a four day meeting at the Huygens Institute in The Hague in November 2009. The kick-off meeting featured a presentation by Stanford historian Franco Moretti, a member of the COST Action's advisory board, and a pioneer in recent attempts to apply large scale quantitative approaches to literary history. Furthermore, next to introductory presentations by the project leader and digital humanities researchers working in other projects at the Huygens Institute, particularly spirited talks were given by two Belgian PhD students who had joined the COST Action immediately after launch. One of the students had developed a database on the reception of Scandinavian writers in the Netherlands, while the other one demonstrated how she had integrated a quantitative book historical component in a qualitative analysis of fairy tale translations. The participants shared a general enthusiasm about the potential benefits of digitally mediated collaboration, in particular the possibility to expand the empirical scope of their individual research. It seemed to tie in with hopes that they had had for a long time – to rewrite literary history from a gender perspective in a way that could not be achieved by any individual member.

22 I wish to thank the participants of the COST Action Women Writers in History for giving me the chance to conduct fieldwork in the context of their project.

> The reason I got involved was that I thought it was a great idea. To me the great value of the idea is that it's just too much work to come up with a big scale picture of women's production in literature in Europe. As we've seen, in order to do a valuable analysis of a text it takes so much work that it's impossible for any single person or indeed for any collaboration to be able to come up with a hermeneutically valuable analysis of the production of women's writing, but I do think it's possible to look at reception at a large scale.[23]

While the kick-off meeting made tangible the general excitement about digitally mediated collaboration, there was at that stage no particular concern with how the many promises that had been made in the application should be put into practice. Things got much more practical on the occasion of the first of the so-called training school events in The Hague in October 2010.

As indicated in the above, the COST Action builds on a preexisting relational database developed for the rather specific research goals of a small group of Dutch literary scholars. The original purpose of the database had been to investigate the reception of women writers in the periodical press in the Netherlands 1800-1900. In the training school events, participants were confronted with an interface that had been developed for that specific research model. It allowed to search the dataset through three interlinked menus: authors, literary works, reception documents. Each of these displayed data according to a number of subcategories, e.g. authors were described through name, dates of birth and death etc. Literary works as well as reception documents in turn were described through bibliographical categories such as title, year of publication and genre. Genre again contained a number of subcategories. The project leader originally intended that the individual participants of the COST Action could use the database in ways that made sense for them. The database should function as a catalyst for new research: while allowing them to retrieve information already stored in the dataset, it should also offer an incentive for the participants to enter more information as they draw comparisons between existing content and the data they work with in their own research. The training school sessions were set up as an opportunity for the participants to familiarize themselves with the database, but also as a forum for deliberating how the original data

23 Personal interview with Marie-Louise Coolahan, 14 November 2010, Madrid.

format could be further developed to better suit the requirements of the expanded group of users.

A first issue that was recurrently brought up during the training school sessions was the problem of defining literary genres in the database. Some categories were simply perceived as overly specific. Others were rooted in genre definitions specific to a particular language, thus raising the question as to how one should apply them to other languages.

> I think about the genres, we need fundamental discussions about that. There are things which I couldn't really identify. For example, contes, ok, that's the French word for fairy tales, but it actually can be a tale (…) I came across this problem again and again, is something a tale or a story, and is that the same as Erzählung in German, I think we need to discuss this in greater detail.[24]

> It's a problem when you find closet drama, but not drama. The other way around, it's ok if you have poetry, but not sonnet, that's ok. That first level has to complete.[25]

Another particularly contentious issue was the definition of reception:

> I think that one of the big problems at the moment, and people don't seem to want to address that, is, how do we define a reception? Is it the translation of a work, or is it a review. (…) I don't think it's clear enough and I think that a lot of colleagues have very different ideas of what counts as reception I think that's going to be a big problem.[26]

The project leader proposed to resolve the potentially very lengthy discussion about definitions of genre and reception by treating data entry as an unproblematic step, the generation of a raw data package that could be further contextualized by prospective users of the database. To her, it was a predominant concern to amass enough material in the database to allow for larger-scale quantitative comparisons. Specifically, she proposed that

24 Field notes by the author, training school event at the Huygens Institute, 12 October 2010, The Hague.

25 Ibid.

26 Personal interview with Marie-Louise Coolahan, 14 November 2010, Madrid.

translations should always be treated as an instance of reception.[27] In line with what had been laid out in the original application document, she moreover suggested that genres should be identified according to definitions used in the historical reception documents, thus providing first-hand access to contemporary readers' perception of the literary work in question. This, however, implies a specific way of using the database, and a specific theoretical choice that the prospective users would have to agree on.

In contrast to definitions of genres and reception, categories such as author name, author gender, language, year of publication, publisher, i.e. categories that are widely used for information retrieval in many different contexts other than literary history, did not attract noticeable contradiction. They were apparently taken for granted. Through the lens of Star & Ruhleder's (1996) theory, the perception of some categories (author, title, publisher) as occupying a lower level of abstraction, and of others (genre and reception) as occupying a higher, domain-specific level of abstraction, can be seen as the result of a historically grown infrastructure. Some categories have over time become established as an unproblematic technicality to enable information retrieval in many contexts. Others have been developed in more specific disciplinary contexts, thus limiting their global applicability.

Yet even within those specific disciplinary contexts of literary studies, definitions of genre and reception are often subject to theoretical debates in monographs and at scholarly conferences. The organization of literary studies in fact is such that academics identify themselves as scholars by developing and defending an individual theoretical position on these matters (Whitley, 2000). The training schools, however, provided a context where definitions of genre and reception are negotiated in a face-to-face way, in order to advance the project. Rather than an opportunity for individual scholars to distinguish their theoretical perspectives, it was a pragmatic requirement to narrow those definitions down to a workable compromise. The training school thus encouraged the participants to think in a more functionalistic way about what is otherwise a continuous theoretical debate.

One example of this 'will to agree' is the recurrent suggestion to resolve the problem of arbitrary categories by resorting to what participants generally considered to be less abstract categories, e.g. if tale is too arbitrary, resort to the more general category of narrative. On several occasions

27 Field notes by the author, training school event at the Huygens Institute, 12 October 2010, The Hague.

participants argued for adopting less specific categories or standardized categories that are used by library catalogues, in order to be able to at least agree on *something*:

> If you can't decide on a global level, let's go on a higher level. If tale is too specific, use narrative.[28]

> If you choose to do the formal genre, stick to the classifications that libraries do: drama, poetry, prose. That's less specific, so it's drama and not closet drama, but it's an international standard.[29]

Another example demonstrating the 'will to agree' promoted by the training school format are situations in which theoretical debates resulting from certain categories are intentionally avoided, in order to get on with the project work. One informant specifically refers to a lengthy theoretical debate that *could* be had about the genre definition of autobiography as something that the project *perhaps should not get into*, since that would endanger the goal of reaching an agreement on data categorization: "There's a vast literature for example on what an autobiography is and on how you define it which we maybe don't want to get into."

However, in spite of this pragmatism, the training school did not really lead to lasting consensus on all categories. Several participants suggested that in the case of contentious categories, decisions should be delegated to a database editorial committee. The responsibility to take specific theoretical-cum-practical decisions thus was delegated to a future organizational entity within the COST Action. However, by the time of writing this paper, the editorial committee has not materialized, and the project continues to work with the original database format.

These difficulties, I suggest, can be seen as a manifestation of the obduracy of the extant knowledge infrastructure. As pointed out in the above, an important characteristic of infrastructure is how it distributes specific activities along the axes local/global, and social/technical. While bibliographical categories are widely agreed-upon as viable abstractions, definitions of genre and reception are considered matters of theoretical debate in literary studies. Whitley (2000) observes that in fragmented

28 Field notes by the author, training school event at the Huygens Institute, 12 October 2010, The Hague.

29 Ibid.

adhocracies, theory does not integrate labor across research sites, but rather distinguishes individual approaches in a variety of co-existing approaches – "In the humanities, one person's data is another's theory" (Borgman, 2009). The perspective of adopting a shared data scheme therefore implies a redistribution of the definition of analytical goals from an individual activity to a technicality, shared on a group level. The formalization of data categories that are usually not formalized on such a high level of abstraction is a necessity for comparative quantitative research, but it also creates a number of tensions in regard to monograph-oriented scholarship.

Delegating data input

Firstly, a stable classification of data categories required users to enter data in a specific format. The latter did not always correspond to what participants considered useful categories from their individual analytical perspectives.

> The fundamental question for me is: To what degree must the COST Action really stick to the initial outline and to what degree is there space to develop concepts, questioning further, taking into account recent developments in Gender Studies, theory of literary history and literary theory?[30]

> I should have liked the tool to be more flexible, among other things so that it would be easier to correct or edit the structure already built when new knowledge alters the picture (so that the picture doesn't have to be clear when you start entering data in the database).[31]

Furthermore, the database required amounts of data input that exceeded what could be easily entered by participants in the course of doing their individual research. Data input started to appear as an overhead to the 'actual' research.

> Like all of us I am concerned about how to make the database to cover enough material and providing an infrastructure to work with. I might be interested in systematically listing diaries written in

30 Anonymous, unpublished survey among COST Action members, October 2011.
31 Ibid.

> Finland (hoping they discuss literature, reading and writing too...?) But I could not do this alongside my full time job. Letters would be great material to study reader's experiences, but the material is so huge...[32]

To be sure, the curation of data always has been part of the activity of scholars. Especially so in the case of COST Action participants, whose research often involves archival work that leads to the discovery of previously unknown literary documents. Scholarly work may thus in practice overlap with the work done by archivists. However, the amount of data curation involved in research will be directly determined by the individual disciplinary research needs of the scholar, and the data can be categorized (implicitly or explicitly) in ways and in amounts that make sense in the individual research context.

In contrast, for many participants, the activity of entering raw data on the reception of women writers into the database did not have an immediate connection to their individual research. For many, it therefore simply stopped being recognizable as a proper scholarly activity. At the first training school event and at an early meeting in Madrid, participants expressed strong concern about the perspective of entering data at a large expense of time ('slave labor'), without taking any 'real' advantage in the shape of producing peer-reviewed publications. They began to call for a solution that would allow them to delegate data input.

> More generally – and this is a very personal opinion – I think that the pure accumulation of more names and titles to prove the presence of women in literary history, at least for the "big" European literatures as German, English, French, etc., is neither a very interesting task for a researcher nor a theoretically challenging objective (...).[33]

> I think it is important also for the Women Writers database to have [data input personnel], because not everybody wants to be on the technological side. (…) If you have a person whose time is not as valuable as yours – to put it that way – to do that, that time-consuming work, that's great, because you can send data and that

32 Anonymous, unpublished survey among COST Action members, October 2011.
33 Ibid.

person knows how to enter them.[34]

An arrangement that developed in light of the difficulty to reconcile main employment context with project work was to delegate large chunks of data input to assistants. Some of those were graduate students supervised by the participants. Others were hired data workers without further interest in WWIH as a project. Drawing on students as a work force in similarly oriented projects is a quite common strategy in the North American digital humanities (Blackwell & Martin, 2009; Zorich, 2008: 30). Anecdotal evidence I collected in various meetings of the COST Action suggests that 'data work' is often downplayed in project applications, since expenses on this 'subordinate' element literally go at the cost of other project aspects, and thus are feared to make funders suspicious.

As I have pointed out, the knowledge infrastructures of literary studies are characterized by a division of labor between bibliographers and scholars, according to which the work of the former appears as a technical service to the work of the latter. Bibliographical work here can be considered a technicality insofar as it constitutes a basic element of an established research model. Bibliographical categories are conceptually bound up with dominant monograph-oriented research practices, and the ability to use bibliographies, library catalogues, and archives, constitutes a widely shared skill among scholars. Therefore, bibliographical work is delegable. Data input in the COST Action had a family resemblance with bibliographical work, and participants found it convenient to delegate responsibility for that labor. To the participants of the COST Action, data input appeared as 'technical', but not according to the theoretical infrastructural meaning of the term that I have just described. As the above quotes illustrate, the participants tended to perceive data input as 'technical' in the sense of involving the use of digital technology, and in the sense of being a type of non-intellectual work that a professor cannot afford to spend much time on. But in contrast to bibliographical categories, the definition of analytical categories (genres and reception) remained contested. Also, it was still unclear which new research questions and insights the database might enable. The differentiation of data input as a separate work step, and its delegation to students and data workers, therefore was a managerial artefact, rather than an effect of infrastructural evolution. This artificial separation had the unintended effect of limiting the diffusion of database skills.

34 Personal interview with Nieves Baranda, 14 November 2010, Madrid.

Interestingly, the student data workers charged with data input did not necessarily think of their job as a purely technical one. Take for example Astrid, a Dutch Mphil student who was hired for data input as part of her research internship. Next to entering data, Astrid also used the database for her own research on the reception of the British writer Ouida in the Netherlands. Her comments make clear that her research practice literally has emerged in conjunction with entering data.

> You are drawing conclusions as you are entering the data. For instance what's really important in my research is that you can see that there is a number of female translators who are working on Ouida, and they are always the same ones. This is something I might not have found out if I had just listed the translations. (…) As you enter the data you are also placing it in a larger network, and by visualizing that info you get a better sense of what you are working with. You create this overview which does not draw conclusions for you, but it helps to see those links which you might have overlooked otherwise.[35]

Astrid pointed out that the quality of the work done by the otherwise indifferent data input personnel that had been hired before was sometimes rather poor, and demanded a lot of post-hoc correction work. Similarly ambiguous was the quality of occasional contributions by some project participants who manifestly had not taken the time to familiarize themselves with the database interface.

> I am not sure how many people are really using the database for their research. I do think that there is a fundamental difference in entering data into the database and using it as a research tool. There have been assistants before me who just received lists of information that they entered into the database, and I am mostly entering information into the database for my own use. Other people can use it as well, but it's mostly what I deem necessary to be entered I enter. (…) You can see that some people just entered data without thinking. Just authors e.g. without adding works, or lists of works without adding reception. That's less useful because you don't get this view of a network that would get if you enter receptions and work and

35 Personal interview with Astrid Kulsdom, 13 October 2010, The Hague.

link them up to each other.[36]

Despite having attended one or more training school events, some of the more advanced project participants on several accounts exhibited only a rather superficial understanding of the phenomenology of the database until well into the funding period. It was for example relatively common for them to confuse the user interface of the database with the underlying data model, a distinction that became clearer only when a possible transition to a new, more smoothly interoperable data model and various visualization techniques was discussed. Many of the more established scholars seemed to think about the database more in terms of flat excel sheets, a format they were familiar with from individual datasets they had created for their PhD theses.

While the more advanced project members thus have tended to apply a distinction of 'technical' data work vs. 'actual' scholarly activities so as to justify delegating the former, it was exactly by getting their hands dirty in data work that student assistants – for whom the project temporarily became the central reference point of their work lives – have managed to combine database skills with substantive research skills. The participants' usage of the term technical, I suggest, is an expression of the fact that data work currently is not widely recognized as a legitimate part of the scholarly skill set. Yet the commonsensical association of 'technical' with technology artificially severs the link between conventions of practice and criteria of valid scholarly work. If the participants could achieve an understanding of database-related work as having deeper implications for the intellectual substance of scholarship, this link could be re-established. Rather than reproducing a fault line between tech-savvy data workers and professors with a more traditional skill set, the project could then become a seedbed for the dissemination of digital skills.[37]

36 Personal interview with Astrid Kulsdom, 13 October 2010, The Hague.

37 It seems that the participants have indeed developed a more differentiated view of data work in the course of the project. On the occasion of the concluding conference of the COST Action in June 2013, a number of participants reported that once they had taken the time to engage in more substantial data input, they experienced interesting surprises, such as unanticipated empirical discoveries, and an overall more 'system-like' perception of literary reception. While the core tension between time-consuming data input and individual research requirements remained tangible, it appears that the separation of data work as a separate work step has become more blurry over time.

What can you expect from a database, and what can it expect from you?
Another source of tension was the fact that the database could not be readily used as a resource for producing a publications, an aspect that made it even more difficult for the participants to combine project work with their individual career requirements. Although intellectually inclined to distrust canonical accounts of literary history, the expectations of many participants towards the WWIH database in fact was shaped by the advantages they associate with professionally curated archives and bibliographies. Archives and bibliographies are infrastructure in the sense that they provide what is normally agreed to be a relatively complete, authoritative body of knowledge. Bibliographies crystallize regional research traditions and delimit the field of relevant knowledge one must possess when embarking on a new research project, be it a paper or monograph. In this arrangement, trust is delegated to archivists and bibliographers.

> You know what a bibliography is? If you want to research Shakespeare, you take a Shakespeare bibliography and you find all information, and it has been checked and organized in some topics and subjects. So you check that and you see 'oh I need to see this and this and this' and then I have to read all those forty or whatever books and then I get some information and some answers to my question, and I know what is known and what is still to be researched.[38]

Archives and bibliographies are as geographically situated as the research practices they enable. Their reliability is jeopardized if the user ventures to transcend the bibliographically instantiated boundaries, a move that could actually be seen to effectuate a breakdown of infrastructure (Bowker & Star, 2000). The very goal of the COST Action of course was to do just that – to collectively transcend regional contexts in which scholarly labor is usually organized, and to work towards the creation of a systematic transnational perspective on the reception of women writers. Yet while leaving vouched-for bibliographical territory was a core premise of the project, it has nevertheless created significant insecurity. Many participants expressed doubts about the reliability and coherence of the database, given its aim to combine empirical materials from a lot of different contexts. The responsibility to solve these issues, however, could no longer be delegated to

38 Personal interview with Nieves Baranda, 14 November 2010, Madrid.

bibliographers, but had to be dealt with internally.

> The problem is, if I go to the database for information that I am familiar with, I can see that it is poor data, and I cannot trust it. It's poor information, something is always missing. (...) From what I've seen in terms of Spanish authors in the WWIH database, it's not good. So, is it the same with Italian sources, with French sources? If I don't trust information, then I have to double-check every information.[39]

A first cause for concern was the fragmentation of the covered data. For example, Dutch women writers were extraordinarily well represented, given the origin of the database in a preceding research project at a Dutch university. The result was odd contrasts with the sparse coverage of other national literature, especially in the case of countries with a wealth of disciplinary knowledge about women writers. Similarly, relatively famous writers often tended to be underrepresented in comparison to much less well known ones. This was a consequence of the unsystematic manner in which scholars would sometimes enter data that they came across in their individual research. The fragmented empirical picture that emerged reflects the heterogeneous empirical foci adopted by the participants.

> At the same time, when having for instance several smaller projects about Italian writers, it will be completely … how do you say, desequillibré? Because there will be too much information about Italy, and the need to filter out overrepresented countries and periods, no?[40]

Furthermore, the database was meant to be used for studying reception. In turn, this implies a bibliographically rather incomplete picture, if one decides to use the database by looking at literary production first.

> (…) there's a number of very famous English authors in the database, and some of their works are in there because their reception is recorded, but not all of their printed works are

39 Personal interview with Nieves Baranda, 14 November 2010, Madrid.

40 Field notes by the author, project meeting at the Huygens Institute in The Hague, January 2012.

included.[41]

It therefore became clear that the project in the short term would not only produce a larger base of information. Instead, given its very empirical scope and the plurality of research interests of the participants, it would also produce more gaps and fragmentation in that base. Combined with the laborious task of simple quality control of data, this made it difficult to imagine that the database could be used as a resource similar to a traditional archive or bibliography any time soon. The implication rather was that more labor investment was necessary to harmonies and better understand the growing dataset.

In contrast to a view in which the database is seen as a resource from which to 'slice off' bits of empirical information, the project leader promoted an understanding of the database as a serendipitous research tool, a perspective in which the limitations of the dataset represent the very object and catalyst of research. Fragmentation and ambiguity of coverage could then be turned from a professional risk into the distinctive features of a project intent to make visible systematically marginalized aspects of literary culture. As a side effect, this view justifies more dedicated expense of labor on quality control, since the value produced in WWIH would not only be the individual publications the participants could use to advance their careers, but also the database itself as an asset that increases the value of the project on the market for competitive funding. Indeed, in preparing a follow-up application for another funding framework, the project leader sent out an email in which appropriate cleaning of the data in the database was presented as a requirement for delivering a competitive funding proposal.

> It will in particular be important for the HERA proposal that we be able to specify that cleaning up of data is being taken care of, but also for any other subproject for which we might try to find funding (...). So I suggest that each of you also check if she has the possibility of taking part in these sessions (van Dijk, 2011).

The organizational contexts of the project and that of literary studies as a field thus tended to promote diverging expectations towards the database, which reflects also the different types of knowledge those contexts aim to

41 Field notes by the author, project meeting at Complutense University Madrid, 13 November 2010.

produce. Given the need to make their work in the project 'count' for their university-based careers, the participants tended to expect the database to be a readily usable, 'complete' source of data (similar to a bibliography) that they could use to write monographs and papers - typically with a focus on small samples of writers. The project framework tended to promote a notion of the database as a complex research object in its own right, which has a much larger scope than any bibliography, but whose empirical coherence and reliability has to be accomplished by the participants themselves. To the project leader, resolving the tension between those diverging views presented itself as a recursive resource problem. If more funding could be acquired, additional assistants could be hired to support the participants in the provision of quality control and data input. This would further increase the attraction of the project to both participants and funding bodies. Yet to deliver a competitive proposal, the project first would have to mobilize enough labor to reach what could be presented as a critical mass of reliable data...

Conflicting demands

In fact, what was useful for the project increasingly appeared as different from what was useful for the participants in their individual research careers. Many participants continued to be enthusiastic about the longer-term perspective of gaining access to a coherent empirical picture of women writers across countries and historical periods. Yet their ability to free up time to advance the database was limited. They often thought of their working hours as divided between the teaching, admin, and research they had to do at their home institutions, with project work coming in as a distinct, rival entity to these workloads.

> I think a lot of people are having that time problem. I wish I had been able to go to the training school, because that sounds like it was an immersive experience, and I now have to do that myself. That's the same problem with most people, most people aren't employed as full time researchers, they are employed as teachers and they are burdened with administration as well.[42]

42 Field notes by the author, project meeting at Complutense University Madrid, 13 November 2010.

The project leader said:

> (...) I think many of the colleagues have been engaging themselves in something European without really feeling that there is a corresponding need to abandon the individual freedom in a way. (…) I'm not sure that I can go on suggesting to colleagues you should use the database. If they don't, I cannot continue endlessly (...) At the end of the 4 years we will need to have our research programs to submit to the FP7 program or something like that. We cannot ask 25 countries to be all included in the follow-up proposal. We will be between 6 and 10, so there will be a natural selection. Those who want to participate in this research proposal will have to show clear adherence to this way of doing research.[43]

Apart from the general issues concerning data input and trust in data, the ability and willingness of the participants to reconcile individual research careers with participation in the project was influenced by a number of more specific, disciplinary factors. These shed light on some particularities of the various knowledge infrastructures in which the participants were embedded, and on the position of the participants within them.

For one, there is an interesting contrast between the career backgrounds of most participants and the project leader. The latter had for several years combined her employment as a teacher at a secondary school with research as a non-tenured member at a University. After that, she fully switched to a career as a researcher based on various grants. For her, grant-funded project frameworks had for a long time been her interface to engage in the disciplinary discourse of literary studies. The COST Action for her was not rival to a tenure-track based research career at a university, instead it was her primary research context.

Also, there is evidence that individual national research systems in which the participants were embedded influenced their ability and willingness to participate. It is has been variously pointed out that the lack of reward for the creation of digital scholarly resources is an obstacle for the creation of digital infrastructure in the humanities, both in Europe and the US (AHRC, 2006; MLA, 2012). The project leader more specifically reported that participants from the UK were particularly vocal about their difficulties to reconcile project work with their academic careers. An explanation could

43 Personal interview with Suzan van Dijk, 8 November 2011, The Hague.

be the importance of the British Research Assessment Exercise, a nationally orchestrated evaluation protocol that strongly values peer-reviewed publications as a performance criterion for tenured researchers also in the humanities (Barker, 2007).

At the same time, involvement in international projects often is seen as an important addition to scholarly CVs. This results in the phenomenon of pro-forma-participation, i.e. scholars participating only to prove international involvement, rather than actually investing labor in a project:

> (…) these things, participating in a research group [WWIH], these things are important in your CV. But sometimes you have to be careful, because sometimes people want to be in a research group, but they don't mean to work. It's like 'well, I'm in a research project, I get some things out of it", but they don't work very hard in it.[44]

Furthermore, individual disciplinary context mattered. Various scholars expressed their view that in the case of countries with a lot of disciplinary knowledge on women writers, the activity of filling the database seemed particularly unattractive. While more empirical research would be necessary to warrant a firm claim, an infrastructural explanation could be that the threshold at which database-related work stops looking technical, and begins to be more co-extensive with proper scholarly activity, is lower in regions whose bibliographical and archival infrastructure is less well developed. There, charting the activities of hitherto unknown women writers in a database more quickly looks like generating new knowledge also from a disciplinary perspective. In contrast, creating a comprehensive dataset in a country such as Germany first requires amassing data that are very likely to be already found in existing bibliographies, thus making that work appear rather redundant. These dynamics played out in interesting ways in the later stages of the COST Action.

Resolving the tensions in local contexts

After the first year attempt to involve 26 countries in the collaboration, the project leader began to envision the possibility of downsizing the project in applications for follow-up grants – i.e., to reduce the number of participating

44 Field notes by the author, project meeting at Complutense University Madrid, 13 November 2010.

countries, and to focus on those that had shown more active participation. Generally, it was smaller countries situated at the geographical and cultural periphery of Europe, such as Slovenia, Serbia, and Norway, that tended to contribute more data to the database. One reason for the discrepancies in data input was that in certain local contexts, the tensions that plagued the COST Action at large could be more easily managed.

An example is Serbia, where a smaller project has been launched that has adopted the database-structure of the COST Action. Biljana, a professor of Literary Studies at Belgrade University, explained that she had managed to combine her involvement with the COST Action with a project funded by the Serbian Ministry of Science. While conceptually inspired by the COST Action's original goals, she had tailored her funding proposal to the needs of her local disciplinary context. In contrast to the COST Action, she had emphasized the aspect of literary production. Given that research on women writers has only a short history in Serbia, the creation of a database on their literary production made eminent disciplinary sense. Furthermore, she explained that it had been an important element in her application to present Serbia not only as a country that received foreign writers, but that also exported its own writers – this was in line with what she knew to be a general strategy of Serbian cultural policy.

> Everything has started with the COST Action, but you see in the COST Action, the database has much more emphasized reception than production. And we do need to put emphasis on production. (…) The first reason is that within our community - there so many women writers who are not only outside the canon, but the problem is that nobody has ever head of them. (…) The second problem, on a more general level, we want to be perceived as those who have written something, not only as a country who has received something. Slavica non leguntur, people do not read Slavic languages (…) The basic idea was to construct this database, which is based on the COST Action's database. They are similar, but we have added what we are interested in, and in the way we are interested in.[45]

The Serbian sub-project adopted the database structure of the COST Action, and while linking its data up to the COST Action's database, it also has an

45 Personal interview with Biljana Dojcinovic, 26 January 2012, The Hague.

independent web-presence. The much reduced scope of the Serbian sub-project reduced many of the challenges that plagued the COST Action's database. Biljana expected that the database would eventually comprise a number of about 30 women writers. While this seems a small dataset compared to the scope originally intended by the COST Action, the number was still impressive in the context of Slavic Studies, given the almost complete absence of disciplinary knowledge about Serbian women writers. The small scope furthermore allowed data entry to be done almost exclusively by two PhD students of Biljana's. Given the reduced size of the sub-project, decisions about the database interface and data categories were much easier to take, and the challenge of creating a trustworthy dataset was much reduced. Lastly, given the small number of authors that should be covered, the participants could continue working on individual writers, while still contributing meaningfully to the sub-project.

Discussion

Early initiatives to create cyberinfrastructure for the humanities were characterized by the paradigm of e-science (Wouters & Beaulieu, 2006). This led to the creation of sophisticated computational tools that were of great interest to computer scientists, but often met with indifference by the scholars who were supposed to use them (Bulger et al., 2011; see also Wouters, Beaulieu, Scharnhorst & Wyatt, 2013). One conclusion that was drawn from these early initiatives was that the prospective users of digital tools should be thoroughly involved in their design (ACLS, 2006; ESF, 2011). The COST Action I study in this paper can be seen as an excellent example of this approach, in that it actually emerged from a bottom-up effort of scholars to use larger-scale quantitative approaches to literary history. However, this has created problems of its own.

As Whitley (2000) observes, literary studies is configured to enable research according to a qualitative, monograph-oriented model, situated in regional disciplinary contexts. Collaborative project frameworks like the one studied in this paper on the other hand require a certain degree of integration of individual research practices. In the case at hand, this has created a number of tensions between project requirements and disciplinary career requirements of the participants.

Firstly, the project required data input in a specific format, and in amounts that exceeded what was useful in the context of the individual research practices of the participants. An element that increased

organizational flexibility was the modularization of data input as a separate work step (thus mimicking the established division of labor between bibliographers and scholars). While this allowed participants to delegate parts of the seemingly unscholarly labor of data input, it has also limited opportunities for them to find ways of combining data-driven analysis with substantive research skills. Another tension arose from the ambitious scope of the project, which in the short term produced more uncertainty than firm empirical knowledge. The database necessarily remained fragmented, insofar as its coverage was the result of bursts of punctual data input. Rather than a resource participants readily could draw on for the production of publications, the database revealed itself as a potential research object in its own right. The database could not replace bibliographies and archival resources. Instead it implied a wholly different relation between scholar and research technology, one in which the database functions more as a heuristic tool rather than an empirical authority. The theory of infrastructure studies (Bowker & Star, 2000; Edwards, 2010; Star & Ruhleder, 1996) predicts that if such a model would become more widespread, we would also a witness a change in the conceptual deep structure of literary studies. The current canonical literary history is ultimately an expression of a scholarly landscape dominated by the monograph-oriented model. In Whitley's terms, it represents the kind of knowledge one gets if a field is characterized by low degrees of mutual dependence and high degrees of task uncertainty, thus forcing scholars to remain in the scope and conceptual sphere of a bibliographically oriented perspective. A wider diffusion of database-oriented scholarship could effectuate a partial increase in mutual dependence and a reduction in task uncertainty. This would potentially supplement literary history with analytical categories that illustrate relations on a large geographical and chronological scale, such as networks of production and reception. It could also entail a change in the granularity of individual contributions to disciplinary knowledge. Rather than having to provide individually 'complete' narratives (which implies a certain need to appeal to a higher bibliographical authority), scholars could validate their contributions more in relation to the contributions of their colleagues.

As it stands however, the difficulties the participants experienced in the attempt to reconcile their individual research with collaboration in the project mark the distance between two different research models: the monograph-oriented one that currently enjoys almost exclusive dominance, and an emerging research model that encompasses elements of database-related work. Infrastructure studies stresses that skills, conceptual

frameworks, and instruments used in a given field of research are reproduced together with criteria for valid contributions to disciplinary knowledge. By learning how to handle the tools of the trade and produce publishable papers and monographs, neophytes also internalize what it means to do proper scholarship. Inevitably therefore, the activities that are necessary to make a transition from an exclusively monograph-oriented research model towards one that is compatible with database work will look unattractive from the perspective of the status quo. Data input and digital quality control do not look like tasks that a professor, i.e. somebody who is very advanced in the established disciplinary hierarchy, can afford to spend much time on.

An important question for digital humanists, policy bodies and infrastructure designers therefore is, how can those tensions be reduced to a more manageable level, so as to provide interested scholars with opportunities to engage in new forms of research, and thus to broaden the variety of approaches to literary history? This is a challenge that much concerns developers, who tend to react by aiming for more customizable, faceted search engines (personal communication). While these are worthwhile efforts, the problems identified in this paper cannot be completely solved by a 'technological fix'. Even the most customizable search engine must always be based on a data model that is standardized at the back end, thus leaving a certain residual tension between individual hermeneutic freedom of scholars and the need for organizational integration. Another possibility is to think about what funding formats are most appropriate.

One of the findings I present in the above is that the two organizational models proved better reconcilable in instances where organizational authority was conceded to more local contexts. In the case of the Serbian sub-project, the smaller, regional scope of the database reduced the labor needed for data input and quality control. Moreover, the general level of disciplinary knowledge on women writers in a given country or region, as well as their relative degree of 'canonicity', seemed to influence the potential for compromise. For the participants of the sub-project, the generally understudied role of women writers in Eastern European literary history provided particular opportunities to reconcile project interests and individual career interests. This observation can be generalized insofar as the possibility to systematically achieve this sort of compromise will diminish with the scale of a project. Small and medium size projects will be more sensitive to local disciplinary context than large ones, which in turn

will increase their chances to attract additional local funding. If database-oriented project can be seen as interventions into the organizational landscape of literary studies, then small and medium scale projects constitute less radical interventions. They will tend to make the shift of defining analytical goals from a strictly individual activity to a more collective one less steep. Finding a middle ground between individual theoretical freedom and project needs will less overtly feel like a pragmatic concession. At the same time, small to medium size projects will prevent the need for harshly dichotomous divisions of labor between data work and analysis, thus creating better opportunities for digital skill diffusion. In Whitley's terminology, initiatives of this scope provide a means to increase mutual dependence and decrease task uncertainty in more subtle, but also more sustainable ways than very large scale projects.

However, it is here that disciplinary contexts tend to clash with management interests. From the perspective of actors who are interested in creating a pervasive digital infrastructure for the humanities, smaller scale projects may be negatively seen as 'boutique projects' (Friedlander, 2009) or 'data silos' (Zorich, 2008). Such projects may be intellectually beneficial for participating researchers, but as investments in the service layer of future scholarship, they would be considered a waste. Critics of 'boutique projects' often seen them as the result of poor coordination of individual efforts and as distracting funds from larger systemic goals (Borgman, 2009). A problematic implication of this view is that digital humanists are primarily cast as providers of information services, and only in a secondary sense as scholars with a firm grounding in the disciplinary landscape. But it is only in regard to the goal of a pervasive, content-centered digital infrastructure that smaller, research-oriented projects and disciplinary fragmentation of the humanities appear as a problem in the first place. My case study demonstrates that such projects in fact may constitute emergent compromises that allow scholars to strike a balance between investment in extant research models and digital scholarship. What is necessary here is greater appreciation for the evolutionary development of knowledge infrastructures. If there is indeed a critical amount of interest in using digital technology in the humanities, for example to tackle such problems as revising the literary canon, then this endeavor will be a long-term one. Realizing it will entail small steps that may be seen as underwhelming or even as failures when measured against certain policy ambitions.

For one, the preceding case study confirms again my conceptual assumption that the value of particular tools does not depend on inherent features, but on how meaningfully they can be incorporated into a historically grown infrastructure. New features – if not carefully adapted to disciplinary needs – can actually undermine existing scholarly practices. The participants of the COST Action hoped that the shared use of a digital database would allow them to draw together their individual efforts, thus creating knowledge that would be more than the sum of its parts. They were forced to realize, however, that the dedicated use of the database implied an organizational model of scholarly work that was at odds with the epistemic and social structure of their field, effectively making participation in the project a potential risk for disciplinary career development.

To better understand this widely perceived mismatch between project requirements and individual career requirements, I have deepened an analytical theme introduced in chapter 1, namely the conceptualization and valuation of particular forms of scholarly labor (Strauss & Star, 1999; The Virtual Knowledge Studio, 2008). Thereby I have been able to show that intellectual considerations regarding the use of novel scholarly approaches in a field cannot be separated from questions about the relative prestige associated with particular forms of work - the very reproduction of disciplinary paradigms in literary history actually appears to be intertwined with the reproduction of traditional fault lines in the academic labor hierarchy. This can have seemingly paradoxical effects. On the one hand, all participants of the COST Action welcomed the intellectual perspective of engaging in a more data-intensive, comparative mode of scholarship, so as to overcome the limitations of traditional literary historiography. At the same time, those who were employed in advanced research positions at universities also tended to advocate a traditional division of labor between 'scholarly' tasks and 'subordinate' data work, thereby undermining the aim of establishing a new disciplinary paradigm.

These findings could be read as an indication of pronounced inflexibility in the organization of academic work, or perhaps even of a culturally engrained resistance to innovation in the humanities. In fact, ardent proponents of digital scholarship regularly level such charges against their 'traditional' colleagues (ACLS, 2006; Wouters, 2007). It is important to remember, however, that the intelligibility of knowledge depends on the very epistemic and organizational inertia of the scholarly infrastructure (Bowker & Star, 2000; Star & Ruhleder, 1996; Ciborra & Hanseth, 2000). My

analysis has shown that it is by maintaining compatibility to established disciplinary conventions regarding the scope and conceptual formats of research that scholars are able to draw on the work of preceding generations. If, by contrast, different datasets form very different research contexts are simply put together without significant further effort at quality control, harmonization, and the adaptation of existing research practices, information simply does not 'add up'.

Rather than dismissing the difficulties encountered in the COST Action as a sign of individual or structural conservatism, I would therefore draw the following two conclusions. Firstly, a change of focus in current debates about the use of data-intensive research in the humanities - currently often summarized under the label big data – is warranted. The common narrative usually pictures the benefit of big data as a sort of emergent property of bringing together large datasets, and thereby tends to downplay the large amounts of data work that are necessary to harmonize information. This goes particularly for the humanities, since the kind of data that scholars will usually be interested in are unlikely to be produced by any other party (in contrast to, say, economists or social scientists interested in demographic or financial datasets produced for administrative purposes).

Secondly, the work of incorporating new tools in scholarly practices should be performed with an awareness for the epistemic and organizational characteristics of a field, as well as the structure of academic careers. A practical result of such reflexivity in the COST Action has been the adoption of a smaller project format, which has turned out to better suit the disciplinary characteristics of literary history. To be sure, this adaptation of organizational modalities has been a result of coincidental experimentation, rather than intentional design, and we can easily imagine that comparable tensions remain unresolved, or, are resolved differently, in other projects. It thus seems that reflexivity is a choice that scholars can take when incorporating new tools into their practices, but it is not an inevitable one, and neither will it lead to a predictable outcome. In the following chapter, I will further investigate the function of reflexivity through a more in-depth case study of the work required to mutually adapt research practices in a collaborative project involving humanities and computer science.