Social Software and the Evolution of User Expertise:

Future Trends in Knowledge Creation and Dissemination

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Chapter 7
Between Tradition and Web 2.0:
eLaborate as a Social Experiment in Humanities Scholarship

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ABSTRACT

Web 2.0 is characterized by values of openness of participation (unrestricted by traditional markers of expertise), collaboration across and beyond institutions, increased value of resources through distributed participation, dynamic content and context, and self-organization and scalability. These values seem to offer new possibilities for knowledge creation. They also contrast in important ways with traditional forms of knowledge creation, where expertise, institutional affiliation, and restrictions on access and circulation have been important. Yet, rather than seeing a dichotomy between Web 2.0 and non-Web 2.0 modes of working in digital humanities, the authors observe the rise of hybrid forms that combine elements of these two modes. In this chapter, the authors reflect on the reasons for such hybrids, specifically through an exploration of eLaborate. As a virtual research environment, eLaborate targets both professional scholars and volunteers working with textual resources. The environment offers tools to transcribe textual sources, to annotate these transcriptions, and to publish them as digital scholarly editions. The majority of content currently comprises texts from the cultural heritage of Dutch history and literary history, although eLaborate does not put limits on the kind of text or language. Nor does the system impose limits on the openness of contribution to any edition project. Levels of openness and access are solely determined by the groups of users working on specific texts or editions. This Web 2.0 technology-based software is now used by several groups of teachers and students, and by scholarly, educated, and interested volunteers. We conducted interviews with coordinators of and participants in

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different editorial groups, and we evaluate their experiences from the point of view of the described values of Web 2.0. We investigate changes in digital humanities resulting from intermediate forms between traditional academic practices and Web 2.0 modes. Rather than claim a revolution, we show how hybrid forms can actually be very powerful sites for change, through their inclusive rather than oppositional setup in relation to traditional practices.

INTRODUCTION

When technologies are hailed as "new" or "groundbreaking," they invite attention that tends to focus on either the promises or the threats they present. Social software for scholarly research is no exception. However, rather than address the potential, positive or negative, of these new technologies here, we seek to understand how practices are transformed and how the experience of users changes in relation to new tools. In this chapter we trace the development of a particular platform, eLaborate, and analyze user experiences in order to understand how scholarly work is developing in the context of social software.

The developments we discuss in this chapter are in an area that is most commonly labeled "digital humanities," a field of research intersecting humanities and the use of digital technologies. This label addresses the use of a range of digital technologies and has a broader scope than "humanities computing," which tends to focus on data processing. Digital humanities is also posited as a scholarly enterprise, and is often explicitly contrasted with "digitization" as a technical or procedural endeavor of mediation (Schreibman & Siemens, 2001).

eLaborate: A User-Driven Innovation

eLaborate (http://www.e-laborate.nl/en/) is an online work environment for textual scholars working alone or in a group on a text edition. Textual scholars are humanities researchers who make scholarly editions. These kinds of editions have been made for centuries: they provide a trustworthy transcription of, for example, a medieval, handwritten manuscript in a form that can be used and understood by modern readers, or of printed material from the 16th century, annotated with all kinds of information and with printing errors explained and corrected. Modern material needs editions as well, such as handwritten letters (edited in correspondence editions) or novels that have been published in so many print runs that errors have crept in and now need to be weeded out by the scholarly editors.

Until quite recently, scholarly editors mostly worked alone, or occasionally in a very small group, and they published their editions in the form of books printed on paper. For the past decades, this often involved submitting digital files prepared in Word or WordPerfect to their publisher. Text editing is demanding, time-consuming work that requires a lot of expertise and knowledge of the material. Often, scholars announced the publication of a text edition they were preparing years and even decades in advance, thus explicitly claiming the edition as theirs and keeping the research community waiting for that edition—sometimes in vain.

With the rise of the Internet, a number of scholars from the Royal Netherlands Academy of Arts and Sciences thought that a Web-based work environment for textual scholars would have several advantages. First, the transcriptions could be made from a digital scan of the material—for example, of a medieval manuscript, with zooming and panning tools that the traditional photographs or original manuscripts did not have. Second, editors could work with larger groups, sharing their knowledge in a Web-based discussion forum linked to their digital edition; this larger group need not be confined to academic participants but

could also include volunteers from outside academia with experience in this type of humanities task. These ideas went as far as investigating the possibility of pursuing the work collaboratively, with different people using the Web for the first stages of the transcription—what today we would refer to as "crowdsourcing." In such an approach, the first step of keying in the text from digital facsimile to produce digitized copies of textual content would be outsourced to volunteers over an open Web-based work environment. Third, the whole process of making an edition was expected to go much faster when more people could easily work on (parts of) the same edition at the same time. Fourth, working in a Web-based environment would help scholars to think about the possibilities of digital text editions and to theorize about how Web-based digital editions require a different implementation of the traditional editorial ideas than paper print editions. And fifth, working in a Web environment, text editions would automatically result in a digital file that could be used for new kinds of analysis, unlike print editions which would first have to be digitized for this.

The expectations about the potential of such tools were very much rekindled with the rise of Web 2.0 tools. These seemed to offer the textual scholar the opportunity to create and use resources on the Web, and looked as though they might be of major importance for the innovation of scholarly text editing in the Web-based digital world. eLaborate, however, was not built with such innovation per se in mind. The specific drive for the development of eLaborate was the possibility of shared Web-based editing of the same text and Web-based discussions in a forum. A social Web 2.0 approach would allow collaboration between large groups on the same Web-based text edition, which, being visible to all the scholars involved, was expected to speed up work and innovation in the whole field of textual scholarship.

During the development of eLaborate, small groups of test users played a major role in shaping the direction of its functionalities. The project leaders made sure that the principles underpinning eLaborate were followed: a clean, simple-to-use, collaborative way of entering and annotating text on the Web, with a capacity for capturing discussion and notes on the ongoing work. Agile development methodology was used to ensure the software was built with the needs of the user at its core. However, the project leaders did not give the test users complete freedom of choice. In their view, the wishes of the (traditionally schooled) users would lead to the development of an online version of Word or <oXygen/> (an integrated "hard core" XML editor). In prioritizing the functionality to be developed, they chose to focus on those items that the test users marked as having the most added value, but they also gently guided features that they judged to be mere print-on-paper, text-processing "copy-cat" features to the bottom of their "to-do" lists. This type of prioritization in a user-centric approach enabled the users to actually (have to) experience the new possibilities. This in turn seemed to inspire the users to express far more innovative wishes for functionality. However, the project leaders found that scholarly text editors could not always be pushed in the directions that they thought most useful. In eLaborate, the Web 2.0 openness actually had to be limited to keep the textual scholars interested in using the new tool. The scholars did not want infinite openness and access, and opted instead for a carefully selected part of Web 2.0 abilities. This resulted in a hybrid form of Web 2.0 tools which ended up being very popular among textual scholars.

Based on these years of interactions with users, and on recent interviews with members of two different eLaborate edition projects, we will show how users evaluated the different Web 2.0 elements in eLaborate. We will also illustrate why a hybrid form proved to be the much-needed

intermediate step toward the innovation of the discipline of textual scholarship—while full Web 2.0 implementations would actually have kept scholars from doing anything at all with the tool.

eLaborate: An Innovative Technical Platform

Researchers and developers at the Huygens Institute for the History of the Netherlands (Huygens, 2011) released eLaborate[1] for the first time in 2005. It was envisaged as being a broad, collaborative, Web-based research environment for the humanities and social sciences. What truly attracted users, however, was its literary research component, the core of which could be described as a digital scriptorium: a Web tool for transcribing and annotating digital facsimiles of manuscript and early print sources. This was built as an extension of an open source content management system[2] that provided additional standard functionality for creating and publishing Web content, communication by mail-in forms, downloading and uploading of files, full text search, rights management, etc.

The original motivation to create a state-of-the-art transcription and annotation tool was not as straightforward as one might imagine. The Web-based collaboratory was aimed at transcribing textual sources into a digital format. This was useful where early print copies and manuscript sources defied automated computer transcription by optical character recognition. The researchers involved needed large amounts of digital text data for computational analysis. They soon acknowledged that they would not be able to produce these amounts of data by themselves. Thus, the creators of eLaborate at the time were looking for a way to provide literary researchers and editors with instruments that would prove useful to them and would, at the same time, multiply the production of digitally available resources for computational analysis in literary history.

Around 2004, most of the available transcription tools relied on verbatim TEI-XML transcription and annotation of textual sources. This meant that literary researchers had to write XML tags (e.g., "<l>a line of verse</l>") into their textual sources and had to structure their texts according to the Text Encoding Initiative schema for encoding text. This XML explicit approach to text modeling, however, seemed to alienate the majority of textual scholars from using XML (tools) at all. Therefore, eLaborate was developed to be a *text*-editor as much as possible, rather than an *XML*-editor. Various technical and usability reasons—no installation requirements, version integrity, ease of maintenance, ease of support—led to the choice of a Web-based tool. eLaborate became a Web-only approach, which was unique at the time within the field.

The recognition that textual scholars wanted to work with text rather than with XML shaped the very approach of the development of eLaborate: user-centric. The research and development team wanted to balance two issues. On the one hand, the tool would have to be far less obtrusive to the research practice of the users than editors using explicit XML. On the other hand, it needed to forcefully move away from commercial word processors that mostly capture layout digitally and do not capture a text's structure, something that is crucial to literary analysis. The balance was found in modeling a concept that is highly recognizable from the practice of textual scholars into the core of eLaborate: the trifecta of facsimile, transcription and annotation. Expressing these concepts in software allowed the software to capture the essential structures of the text and a graphical user interface, with which the textual scholars were familiar, could be offered. Creating a close link with existing practices, concepts, and workflow of targeted users was a key aspect in the development of eLaborate.

Another key aspect of eLaborate was its principled orientation toward an open approach to collaboration. eLaborate was designed to support openness of data and contribution. A project owner in eLaborate can keep any digital object

completely private, make it publicly available, or partially disclose it as necessary (e.g., have it both viewable and writeable for an editor, but only viewable for a registered user). This option is used in very specific ways in the field.

Another feature of eLaborate that users seem to value very much is the clarity it offers in relation to the progress of a project. No matter how many people are working on a transcription, annotation, or project, they all have the same real-time view of the information. Although a more extended version management system was foreseen, the advantage of this simpler model seems to be that it offers a more efficient method of working on materials that are still "in flux." It has accelerated the production process quite considerably. For instance, the time-consuming version integration of various document sources is not necessary in this model.

eLaborate was built in a succession of project phases. Starting in 2003, and supported by KNAW (Royal Netherlands Academy of Arts and Sciences), the aim was to develop a content management system for research that required the sharing and exchanging of texts and data sets. One project leader (van Dalen) and representatives from different disciplines (including social sciences, literary history, history, and digital philology) were involved. In a second phase, the project was pursued under the heading of "text enrichment in virtual communities," and funded by a national body, SURF (SURF, 2011), whose mission is to support the pioneering of tools for scholars. In this phase, an annotation function was added to the transcription tool. From this point on, efforts were directed to the needs of scholars who study texts, and the plan to include historical data sets was abandoned. The third stage of eLaborate's development was also supported by KNAW, this time under the heading of Edition Machine). In this phase, the existing functionalities were improved. Between 2009 and 2011, under the name TextLab, eLaborate was further developed using a different data model and a new service-oriented architecture. New functionalities were added, in particular those for more user-friendly support for adding metadata, and a find and replace function as opposed to the original find only option. Throughout this period, different user groups adopted eLaborate. At the time of writing, the new version is almost ready for release; our research focused on the use of the first two phases of the software.

eLaborate and the Currents of Web 2.0 Dynamics

Looking back on these developments analytically, it is clear that the context in which eLaborate was developed was shaped by two dynamics that are of growing importance in digital humanities. One of these was a strong modernist policy trend that aims to introduce efficiency and acceleration to interpretative scholarly traditions, positing that technology can have such effects (Wouters, 2006). Such policy interventions are often used somewhat instrumentally by researchers since they also offer opportunities for funding (Beaulieu, 2009). Such top-down operations can also intersect with bottom-up initiatives (Hayles, 2012; Presner, 2011). When overly technology-driven, such initiatives result in a "parade of prototypes" (Wouters, 2007). This means that a demonstrator with limited functionality is built into the framework of a specific project in order to show the potential of applying a particular digital tool to a research project. These demonstrators are usually short-lived, being too simple or insufficiently robust to be of use in research and with relatively little adoption by users beyond the beta-phase (i.e., the period or phase in which the tool is released as a prototype).

For eLaborate, and several other cases described in this volume, a second dynamic is also relevant. Beyond highly specialized research tools, a range of new digital environments and practices evolved during the same time period as eLaborate was being built. This led to a wealth

of easily accessible, low-threshold Web-based applications that have at their core the exchange of information and insight, the collaborative building of databases (see, for example, Procter et al., 2010). Despite their huge diversity, these developments are collectively labeled Web 2.0. Definitions vary, but Anderson articulates a common vision of Web 2.0:

Web 2.0 encompasses a variety of different meanings that include an increased emphasis on user-generated content, data and content sharing and collaborative effort, together with the use of various kinds of social software, new ways of interacting with Web-based applications, and the use of the Web as a platform for generating, re-purposing and consuming content. (Anderson, 2007)

Such developments have not left academic users unchanged, and we can speak of "Web 2.0 in scholarship" as an intersection of two trends. We propose to consider the role of eLaborate as a crucial hybrid form that joins traditional scholarly practices and new possibilities for scholarship in a digital and networked setting.

As a virtual research environment, eLaborate targets both professional scholars and lay experts (Epstein, 1996), volunteers who dedicate time and effort to contributing to new editions. It offers tools to transcribe, annotate, and publish digital scholarly editions. The majority of content currently comprises texts from Dutch history and literary history, but eLaborate can be used with any language or any type of text and does not impose limits on the openness of contribution to any edition project. Levels of openness and access are largely determined by the communities formed around specific texts or editions—although, of course, some design and implementation decisions and strategies shape the possibilities. eLaborate is now used by several groups of teachers and students, and by scholarly, educated, and interested volunteers.

In order to understand how the promise of new digital support works in practice, we looked at how users experience the platform. This approach enabled us to consider whether, and how, users feel supported in using the platform. Rather than celebrate Web 2.0 as a liberatory manifesto that will lead the way to an ideal form of knowledge production, we opted for a close analysis of practices. We posit that

[g]iven discussions of new forms of cultural production that tend to posit these developments as largely uniform or as convergent (Jenkins, 2006; Bruns, 2008), we feel it is crucial to show the plurality and diversity of these configurations. Instead of either uncritically welcoming these developments as breaking the barriers of traditional power relations in a knowledge-stratified society, or—the reverse argument—criticizing them as incapable of being truly democratic or as leading to mediocre science, we offer a more contextual argument that highlights the constitutive tension between socio-technical reproduction and innovation. (Beaulieu, de Rijcke, & van Heur, 2012)

Furthermore, rather than seeing a dichotomy between Web 2.0 and non-Web 2.0 modes of working in digital humanities, we see the rise of hybrid forms that combine elements of these two modes. If Web 2.0 is characterized by values such as openness of participation (especially without regard for traditional markers of expertise), collaboration across and beyond institutions, increased value of resources through distributed participation, dynamic content and context, and self-organization and scalability, then it is not surprising that it is hailed as potentially leading to quite different forms of knowledge production. In order to understand how this potential might be realized, it is important to consider the actual practices of scholars that shape the use and diffusion of platforms such as eLaborate. We know from earlier work that even if platforms seem to offer new possibilities for knowledge creation, they

may be rejected or need to be adapted when they also contrast in important ways with traditional forms of knowledge creation, where expertise, institutional affiliation, and restrictions on access and circulation have traditionally been key (Beaulieu, 2012) or when they require different approaches to formalization (van Zundert et al., 2011). In this, we are in agreement with a recent survey that states that

[o]verall, there is little evidence to suggest that Web 2.0 will prompt the kinds of radical changes in scholarly communications advocated by the open science community in the short or medium term: a wholesale "Web 2.0 revolution" is not imminent. We are, instead, in the initial stage of a process of "social learning," surrounding the development and use of Web 2.0 in research. (Procter et al., 2010: 4052)

If so, it is even more important to look closely at such social learning and how it is experienced. Based on years of feedback from users during the development of eLaborate, we gained some insight into users' views and experience. In order to further document user experiences and confront our perceptions with those expressed by users, we contacted users directly to interview them.

At the time of writing, around 20 different groups of textual scholars were actively working on an edition with eLaborate. The groups differed in their backgrounds and aims. Several projects were set up by university teachers who wanted to instruct a group of students in a limited amount of time in textual scholarship by using eLaborate. Other groups consisted of volunteers outside academia (but with an academic background) collaborating with representatives from academia. And yet other groups consisted of scholars working on their edition project alone or with one or two collaborators at most. For this chapter, we wanted to focus on the first two groups: teachers and students in an academic setting, and volunteers from outside academia.

We interviewed one university lecturer (in her forties) and two of her students (in their early twenties). From a group of around 25 volunteers, we interviewed the moderator (also a volunteer) and one member of the group she monitored. These two interviewees—like most of the others in their group—were in their sixties. We interviewed each person individually and the interviews were taped and transcribed for further analysis. Our questions were aimed at finding out more about the skills required to become a competent user and how these are acquired, about the social relations among users involved in a joint project, and about users' perceptions of eLaborate in the context of changing scholarship and digital humanities.

Because two of the three authors of this chapter were involved in the eLaborate projects, our direct experience with the users and user groups also provided insights for our discussion. Some of our roles in the projects over the years were developer, project leader (deciding priorities in the development based on user feedback), teaching the use of eLaborate in training sessions, giving front-line support through email and occasionally by telephone, answering questions from users about all kinds of technical and methodological aspects.

The analysis that follows was also spurred by ongoing work in Alfalab (Alfalab, 2011), in which the practices of platform and tool development for the humanities was supported by InterfaceLab in which all three authors were participants, albeit with different roles (Antonijevic, 2010). The role of InterfaceLab was to make explicit how the development of tools was shaping use and expectations, and, through being aware of assumptions being built into the tools, to improve the process of tool development. The insights presented here were developed on the basis of this ongoing interaction and mutual interrogation, as well as the interviews conducted specially for this chapter.

NEW PRACTICES AROUND ELABORATE

We present here the three main dynamics whereby the hybrid character of eLaborate comes especially to the fore. From interviews conducted with participants from different editorial groups, we focus on three instances of change in their experience of their scholarly work: integration, shifts in temporality, and collaboration. For each of these changing practices, we consider how it relates to Web 2.0 values and consider its significance for scholarship.

eLaborate for Integration: "It's All Right there, All in One Place"

From the interviews with users that we analyzed, the function of integration came very strongly to the fore as marking a change in users' practices. Using language emphasizing spatial metaphors and evoking a sense of place, users spoke of the platform as a "new site of knowledge production" (Beaulieu, de Rijcke, 2012). Specifically, this was achieved through the way the platform enabled the integration of the required multiple sources of information, the contiguity of text and image, and the possibility of closely associating the "source" and one's creative work around it. Here, the digital character of the platform was especially stressed by users, and their accounts depicted the platform as an "environment" rather than as a tool, a reference, or a source of data. The possibility of interactions was stressed—interaction with what had been, in the users' experience, disparate sources. This convergence of different material into a single environment is an important effect of digital mediation, and a typical element of Web 2.0 applications. (The meaning of "sources" changes, of course, when transferred to digital settings [Hayles, 2002; de Rijcke, 2011], but we focus here on the accounts of users' practices.)

However, it is important to note that it was the platform as a site of manipulation of texts, of a particular kind of textual labor, that was stressed, and not so much the values of Web 2.0 associated with a different kind of sociality or social relations. This was confirmed when we asked respondents to compare the platform to other applications—it was then compared to other "work" tools, such as Microsoft Word, or to applications such as a Web browser, rather than to any kind of social software. As such, we can see that with eLaborate there are shifts in the way we can access, manipulate, and enrich empirical materials. Change at this level is significant since it reshapes a core activity of knowledge production, namely, the relation to the empirical material (Wouters, 2006).

Shift in Temporality: Changing Pace or Setting the Pace with eLaborate

Working with eLaborate not only changes how people perceive and interact with the various sources and material they use, it also changes how they experience the temporality of their work practices.

We also noted a contrast between users who work with eLaborate in the framework of a project in which they are lay experts (volunteers) and users who are students using eLaborate as part of their coursework. For the first group, using eLaborate felt like an investment in time, slowing down their work while they learned to use the platform, but eventually leading to a better outcome. Students and teachers felt that using eLaborate accelerated their work. We explain this difference through the emphasis placed in each context on keeping track of what had been done and by whom. The importance of monitoring completion (keeping track of what has been done) was therefore different in the two contexts. For the coursework, doing the work, but mostly being seen to have done the work, "monitoring" was important, a task well supported by eLaborate. For volunteers, this was not felt to really be a gain (other than by the coordinator who found the project easier to manage).

Speeding up work and increasing efficiency are well-known promises of eScience and of the distributed nature of Web 2.0 research. We found that eLaborate does shift one's perceived efficiency, largely in relation to the changes described in the last section. Because all the material is in one place, using eLaborate feels like a more efficient approach for some users. Users then speak of acceleration in the pace of their work, and of greater efficiency. Both "regular" users and editors praise this aspect of using eLaborate. The immediacy provided by having the various elements side by side was especially noted. For example:

"En verder vind ik het zelf bijzonder prettig werken met zo'n plaatje en daaronder een vak waar je meteen in kan transcriberen." (interview with moderator) And what's more, I personally find it wonderfully convenient to work with the image and underneath, a box into which I can transcribe immediately.

Yet, there are other changes with regards to the temporality of work, due to the contiguity of different users and of their work. In eLaborate, the work "is all in one place," as we learned above. But a corollary of this contiguity is that the work of different users can be examined from a panopticon approach, where the editor/moderator can survey what is happening. Another possibility is that of mutual surveillance of the users, who can see each other's progress. As a result of this potential for overview, the overall progress of the project becomes much easier to assess and eventually manage for the project leaders. This enables moderators to deal with deadlines very differently, even in a proactive kind of way. A moderator is expected by the participants to direct the workflow, and adjust the workload if needed. For example, if the moderator sees that one user is not going to meet a deadline, he or she can simply change assignations in eLaborate. A text that has been assigned to a user who, because of his or her rate of progress, seems unlikely to get to that text, can be freed up so that another user can work on it.

The pressure of deadlines is also experienced differently when users have insight into the progress of others. Students especially reported that they did not have to rely on the "talk" of others to know how far along they were. A student described the situation pre-eLaborate as

"Ja, je hoort wel natuurlijk mensen praten over… maar dan weet je nooit of het echt zo zit, natuurlijk." (student #1) Sure, you hear people talking about it ... but then again, you never know how far along they really are, of course. (Student 1)

eLaborate means everyone can see how everyone else is progressing.

Another related effect we noted in relation to the use of eLaborate is that it becomes possible to intervene at different points in the work process, because it makes ongoing work visible, which introduces the possibility of steering, or correcting:

"En in Word zie je het eindresultaat pas op het moment dat ze het inleveren."And [when using] Word you get to see the end result only at the point in time where they send it [their work] to you.

Moderators can modulate the work as it develops. Furthermore, since all the work also happens in a standardized environment, there is a big difference in terms of the time moderators have to spend reconciling all the Word versions of submitted texts.

While this account of eLaborate does support the shift in efficiency claimed by some champions of increased use of technology, it also signals a deeper reorganization and reconfiguration of work. As we saw, the changing temporality (faster/slower) is not uniform in its effect, and cannot be attributed solely to the technological platform. Furthermore, the shifts in the timing or visibility of work, and the potential for ongoing surveillance also changes how scholars work, and the

manner and time in which their work is evaluated. Ongoing surveillance by colleagues (or even just the awareness of potential surveillance), or the shifting of deadlines and workload by a moderator, changes how users feel about their pace and their obligations. Beyond a potential gain in efficiency, our analysis of work performed through eLaborate points to new forms of accountability for scholars.

Collaboration: eLaborate for All, All for eLaborate

The flow of work changes when using eLaborate. This is where the hybridity of the platform comes most strongly to the fore. Technically, it is possible for all users to see and change the work. This means that one user can improve on the annotations of another, or change a transcription. But we found that this does not happen in practice. It appears that this aspect of textual work is heavily shaped by the tradition in the field—despite the role of the moderator and the expectations being made explicit to the users. For example, in one user group, users are asked to correct the texts of other users—but this only happens once the work has been explicitly "signed off" by its "author." The other users refrain from correcting the text of another author until the author of that text explicitly says that it is completed. In another group of users we interviewed, some users were not even aware of the possibility of seeing or commenting on/changing the work of anyone else. We are therefore confronted with the same platform giving rise to different expectations and different levels of awareness. Yet, among all the users, we found no attempt to really open up work to everyone or to make the work fully collaborative and interactive across the entire process. Interaction remains strictly limited and only occurs in explicitly stated situations.

At most, users told us, they could look at others' work, but not change it. Suggestions are sent by email, in writing, but not directly implemented in what is considered to be someone else's text. Indeed, this possibility was described as "messing around with someone else's work." As one user recounted, any changes were made as follows:

"En we hadden afgesproken dat we enkel in onze eigen gedichten gingen werken, en de verbeteringen die maakten we dan wel ofwel met de hand ofwel in een Worddocument, zodat we niet in de andere zijn tekst gingen rommelen" (student #2) And we agreed that we would only work on our own poems, and the corrections we would make by hand or in a Word document, so that we wouldn't be messing with someone else's text. (Student 2)

While we can therefore speak of collaboration in the course of these projects, the platform is used in very specific, limited ways to facilitate collaboration. Any interaction in terms of improving the output that does take place does so via means that are parallel to the platform: putting the text in Word and then changing it, or writing up suggestions for improvement in an email. This indicates that there are limits to the changes that scholars will embrace, no matter what the technology makes possible. The extent to which scholars will embrace new practices is not well defined (Jankowski, 2009). Training certainly plays a role, but so do the context of research, the support available, and the degree of freedom from extreme pressures to produce output so that scholars are at liberty to explore and play. Conventions about ownership of one's work and responsibility for its state shape how scholarly interaction proceeds, and at which points in the workflow collaboration can occur.

This is an interesting finding in that it qualifies other studies that associate collaboration and Web 2.0. Procter, for example, finds that those who collaborate are more likely to use Web 2.0 (Procter et al., 2010). While the accounts of our users do not contradict this correlation, they do draw attention (1) to the need to qualify what

counts as collaboration (since it may be said that our users contribute to a common textual text, but do so by working in parallel) and (2) to a strong warning against taking for granted that using Web 2.0 means collaborating. By taking a close look at work practices, we see that collaboration is a highly variable activity, even around a single platform.

Next Steps for eLaborate and the Future of Web 2.0 Scholarship

As developers of eLaborate and scholars who have been committed to engaging various fields in a critical and productive practice using digital tools, this analysis leads us to a number of conclusions about eLaborate. It reinforces our conviction that certain values can only be enhanced through a combination of interventions in eLaborate's design and interaction with user groups.

eLaborate is a platform that accommodates a range of practices, and makes adaptation rather than revolution a winning strategy for the scholars who have been experimenting with it. While, as we have already stated, we do not believe that the tool alone will lead to innovation, the significance of offering a new platform should not be underestimated either. As Hand (2008) has shown, the sense of newness felt and expressed by participants is empirically important. Introducing a new tool can create a window of opportunity for adapting or reflecting on practices.

With regard to eLaborate, we noted a number of transformations in research practices that are also relevant to other digital platforms (without wanting to claim that these are generic changes!). First, we note an atomization of work as a result of using a digital platform. With eLaborate, we see that work gets broken down into "chunks" to be assigned, or into steps to be taken to complete the work. This means separating the work into texts or units of work, which are then distributed among the participants. Such a step relies on and further reinforces a process of formalization. Furthermore, there is a delegation of some parts of the work to technology and of other parts to humans. The interviews with users show that this picture contrasts with a non-eLaborate-based, holistic pursuit of tasks (of course, this work can also be seen to be parceled out and organized, but we are stressing here the contrast between, not the essence of, the tasks). This results in a different division of labor, between people in a team but also between "expert" tasks and "support" work, for example. The pace of work, keeping track of the work done, and sharing resources are all activities that become much more external to the individual scholar in the context of eLaborate. As such, they can be relatively more easily shared among team members or delegated to research assistants or project managers.

From what users tell us, eLaborate also changes the awareness of the process of work. For example, users become aware of *how* they work to a greater extent, because the platform and the coordination with other team members draw attention to this. For example, their work might become more iterative, so that the tasks of transcribing, annotating and checking might contrast with a more linear process in which one goes through a text from beginning to end. Or there may be changes in the timing when scholars interact with the coordinator and with others as an ongoing part of the work, rather than once a piece is completed. This could mean shifting from a "reviewing" interaction, where one scholar checks the work of another, to a "consulting" interaction, where one draws on others' expertise in the course of doing the work. Such a change has consequences for key components of scholarly work, such as how we define an "editor" or what is means to have literary insights. These may be shifting from a single expert whose life is dedicated to a topic, toward configuration where editions are undertaken as a discrete project with a fixed time frame and pursued as a distributed team-based effort.

Another contrast is in the *view* of the task at hand that becomes possible with eLaborate. If we use optical metaphors, we might say that eLaborate

works as a magnifying glass, focusing attention on the specificities of texts, enabling users to work in precise, consistent ways, getting close to the image and lines of the text. However, other textual tasks, such as checking annotations, are currently less well supported. This means that to get a "view" of the texts, to have a more global view, users tend to print out their work. In other words, eLaborate is a platform that is designed for contiguity, not overview.

These changes, though small, are far from trivial. They go to the heart of scholarly work and shape our relationship to the empirical material. eLaborate itself actually hints at how profound these changes may be. Using eLaborate as a means of production, Dr. Mariken Teeuwen published a digital edition of the oldest gloss tradition on Martianus Capella's *De nuptiis Philologiae et Mercurii* (Teeuwen, 2010). The ninth-century manuscript shows scholarly tradition in a striking manner: the base text has been commented on, glossed by, annotated by, and marked by several hands, in several interdependent layers.[3] What we see here is a witness to the scholarly practice of collation and annotation that has remained relatively unchanged for at least 2,000 years. The digital facsimile of the ninth-century manuscript shows how little the act of annotating and commenting has changed in essence over the centuries. Though typography changed over time, the basic model was stable: a base text printed or written on a page with typographical distinct annotations "in margin"; gradually the bottom of the page became the conventional container for such critical apparatus. Basically this scholarly technology has been in use since classical times, and ancient scholars would most probably have little trouble grasping the layout conventions of the majority of modern day scholarly printed works. But the same example (the columns on the right-hand side of the interface are labeled "Transcription" and "Annotations") shows how very different the "materiality" of text and annotations may become from the conventional print-based medium. Annotations may float in ways that are as interesting as they are unexpected over the graphical Web interface of a digital edition. Progressing along these lines the very fabric of editions may change over time due to Web 2.0 technologies, as editions may become visualizations of distributed sets of data rather than print-like integrated texts (van Zundert & Boot, 2011).[4]

Such changes, though deceptively small indeed, can have profound influence on scholarly workflow and practice. We could say that technology change, or medium change, can provoke a 90-degree turn in one's perception of what it is to work with text on a scholarly level. For example, facilitated collaboration via the Web in the case of eLaborate has already led to further specialization of contributors in parts of the workflow: the one who is good at solving Latin abbreviations focuses on that aspect of a text, another who is versed in using all kinds of dictionaries focuses on adding annotations about word meanings with references to the right sources, for example. This type of specialization could ultimately bring about a great change in publication practices. Currently, humanities scholars are (in general) expected to give large and bold narrative overviews, and to tell well-polished stories. But hyper-specialization may result in publications becoming narrower in scope and focused on more detailed aspects of texts. This would constitute a significant change as it is still unusual in the humanities to compile knowledge by publishing small articles that build on each other, as is more common in the natural or life sciences.

Currently there is also debate about what it means for reading practices and the materiality of text to be transmigrated into a virtual realm (see, for example, McGann, 2001; Kaltenbrunner, 2010). It appears that eLaborate has managed to create—through its particular conceptualization of the scholarly workflow for transcribing and annotating—interesting new insights into scholarly practice for its users. But it has also created some feelings of disconnection from the tradi-

tional, print-on-paper modes of verification and control, as expressed through the need expressed by various users for a print function to be able to experience more overview of the textual data contained in eLaborate. By understanding the consequences of eLaborate's reconfiguration of research practices, we come to understand more precisely how deeply Web 2.0 tools can change our approach to knowledge production. We also gain an insight into the dynamics of such change and come to value incremental transformation of practices, rather than bet on revolutionary change through technology alone.

FUTURE DIRECTIONS

We have shown that changes in digital humanities can benefit from intermediate forms, such as eLaborate, which can be situated at different points in relation to Web 2.0 scholarship, depending on how it is used. eLaborate makes it possible for groups of users to adopt different approaches, ranging between academic exclusiveness and Web 2.0 openness, and to reflect on and reorganize their work practices. What is clear, however, is that the technological potential for radical openness and shared expertise does not determine the practices of users.

The developers of eLaborate got two things right. They succeeded in migrating some essential concepts for scholarly workflow from literary studies into the digital realm—"succeeded" insofar as literary researchers found the tool useful and beneficial enough to test-drive it, and to apply it in actual research. They also took eLaborate to a stage where it offered possibilities—although they took no explicit stance on how those possibilities should be used—for experimenting with (Web 2.0) openness. Researchers were welcome to keep their work completely private and under full control; or they could opt to crowdsource their transcriptions in relatively more transparent and public ways, allowing users to step forward and engage in transcription work via the Web.

In the case of eLaborate, users from the literary research domain valued the way their methodological concepts were modeled into the tool so that they remained recognizable. They also appreciated the opportunities to formalize their workflow. Web 2.0 technologies played a crucial enabling role here, not as objectives in themselves, but rather as enablers of a convenient Web-based workflow support that very much adhered to existing off line practices. eLaborate's use of these new technologies offered a number of benefits that researchers were keen to pick up—mainly enhanced efficiency of production, simple version management, and workflow control.

Many lessons about Web 2.0 approaches in scholarly settings were learned in the context of Alfalab (van Zundert et al., 2011) and eLaborate. One of the key lessons is that capturing and integrating existing scholarly methodology into a new technological environment is difficult—very difficult indeed—but that it is essential to technological innovation within a field. Technology by itself does not constitute methodology, nor methodological innovation. However, methodologies and formalizations are often very much implicit, embedded in a research domain and therefore invisible. Often methodological knowledge and experience is also tacit knowledge, and only rarely expressed in a field where researchers experience such methods as second nature or common sense—acquired through training that develops a sensibility and judgment, and through a long apprenticeship, rather than by following protocols. But precisely by capturing existing methodology and formalizations, and by offering explicit, tangible ways to take up new practices, new technologies may actually prove useful for scholars at large. Technologies by themselves constitute no innovation, merely the potential for it when taken up by researchers to develop new practices.

We should therefore be careful not to see the advent of Web 2.0 technologies, social software, crowdsourcing approaches—or whatever label we want to put on the technologies that promise dynamics of openness—as an ipso facto trend that must permeate the scholarly arena as well. eLaborate in this perspective provides us with an interesting insight into how new technologies may be shaped into supportive tools for existing methodologies, and how they may enhance certain aspects of such existing methodologies.

CONCLUSION

Which of these lessons could be useful for other projects? And how can these lessons be useful for thinking about Web 2.0 and about social software in relation to scholarship? Rather than claim a revolution, we have shown how hybrid forms can actually be very powerful sites for change, through their inclusive rather than oppositional setups. In eLaborate, we see that the early phases of the development of this platform were shaped by high expectations of cross-institutional and cross-disciplinary work, a phenomenon we have also observed in the development of other infrastructures for knowledge production (Beaulieu, de Rijcke, & van Heur, 2012). Institutional factors are therefore important for the growth and uptake of such platforms. But as we have seen, the way groups of users take up eLaborate is also shaped by how participants are rewarded (as students or volunteers) and the way trust in the materials produced is established. How participants experience the platforms, including any tensions between expectations or traditions in the field, is therefore a key component in the deployment of Web 2.0 strategies in scholarly work. This is something that cannot be taken for granted, given recent findings (RIN, 2010) that show that researchers feel neither sufficiently (technically) supported nor stimulated to explore new and challenging ways of researching and disseminating their work. This means that working closely with research communities (van Zundert et al., 2009) is a winning strategy if this is to be overcome.

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KEY TERMS AND DEFINITIONS

Annotation: A note or comment that is made while editing a text, and that may end up in a final publication of the text. It provides additional information for the reader about meaning, formal aspects, or context relevant to an aspect of a text.

Collation: In textual criticism and bibliography, collation is the process of determining the differences between two or more texts, or the comparison of the physical makeup of different versions or copies of a text.

Digital Humanities: Sometimes called humanities computing, an area of study, research, teaching, and invention concerned with the intersection of a wealth of digital technologies and the disciplines of the humanities. It can be contrasted with computational humanities, which has a more narrow focus on computation and the use of computers as data-processing machines.

Editor: In the context of the humanities an editor is a textual scholar who produces an edition (i.e., a representative specimen) of a text based on all the relevant scholarly knowledge that is available about that work, its author(s), and current or contemporary use. Somewhat confusingly in the context of digital humanities, an editor can also indicate an application that enables copy editing of a text in a digital environment.

Formalization: A process that attempts to define attributes, categories, and steps in actions, often with the goal of standardizing, mechanizing, or regulating interactions, operations, and behaviors. Formalization can take different shapes, depending the goals it is meant to achieve and on the demands of organizations or technologies for which formalization is being pursued. Formalization can make relationships and elements more visible and explicit, but can also reduce their complexity and hide their contextual and interdependent nature.

Gloss: A specific type of brief annotation about the meaning of a word or wording in a text. It may be in the language of the text, or in the reader's language if that is different.

Humanities Scholarship: The humanities is a label assigned to a group of disciplines. Often, these include the study of languages, literature, philosophy, history, music and theater, though there is variation between national and institutional traditions. According to Cathy Davidson and David Goldberg, Humanities Scholarship "Engages three broad sets of questions: those of meaning, value, and significance. Meaning concerns interpretation of data, evidence, and texts. Value ranges over the entire field of cultural, esthetic, social, and scientific investments. Significance, implicating both the former two, raises questions of representation, in the sense of accounting for (explanation) and of capturing, in the sense both of offering a faithful rendition (description) and of making broad claims (generalization)".

Scholarly (Text) Edition: The outcome of editing a state-of-the-art version of a text. See Editor.

Textual Scholarship: The investigation of texts. Textual scholars attempt to understand how texts have come to be as they are and, in order to achieve this, they examine different sources of a text, some of which are considered primary. There are several different schools of thought and practice within the discipline. Whereas some scholars emphasize authorial intention, others seek to understand the emergence of texts as collaborative products. Textual scholarship usually involves producing editions of the texts that have been studied. (cf. http://www.textualscholarship.org/). See Collation, Editor, Scholarly (text) edition.

Transcription: The production of formalized, often typed or digitized, text from a (handwritten) manuscript, printed text, or facsimile. See also Formalisation.

Web 2.0: A label that became popular around 2004, when the term was prominently used by Tim O'Reilly, at the O'Reilly Media Web 2.0 conference. It has had an important role in rebranding the Web, in the aftermath of the dotcom crash of 2001. The term is often associated with Web ap-

plications that facilitate participatory information sharing and creative uses of the Web, rather than purportedly passive consumption.

ENDNOTES

1 See eLaborate: http://www.e-laborate.nl/en/

2 See: http://Web.archive.org/Web/20050204165838/http://www.i-tor.org/en/

3 Cf. an example of one folio at http://martianus.huygensinstituut.knaw.nl/path/facsimile/leiden_vossianus_48/book_3_grammatica/folio_20v.

4 Note that in order to indicate just one such major shift, typography in the case of Martianus Capella made a 90-degree rotation. The bottom half of the conventional paper page became a column in a basically vertical divided layout. This does happen in print-based publications as well, but it is by no means an established convention in scholarly publishing.