4
The Digital Humanities

In the last 25 years digital technologies have changed the humanities. The question is: by how much? Is the digital revolution transforming the humanities intellectually? Or has it just sped up processes and access in ways that are certainly faster but not essentially different? Are we asking new research questions or are we just using new tools? Furthermore, do the digital humanities require new skillsets, which could cause us to think of universities and research training in fundamentally new ways, or is it sufficient to rely on established ways? This chapter explores these questions.

In the first section we give an overview of the world of professional digital humanists before turning to our interviewee's responses to see how the research culture of the humanities is responding to these new developments. We find that, while digital technologies have made information vastly more accessible, major regional imbalances remain. Furthermore, experts in digital technology face the challenge of explaining the intellectual benefits of new technologies to traditional academics, who are often mildly sceptical. There is also the problem that the present generation of humanists, trained in an analogue world, face the double challenge of training the next generation for the potential of new technologies and of embracing and rewarding new research questions and practices.

The world of professional digital humanists

The digital humanities (DH) cannot be easily defined. Many view DH as a movement within the traditional humanities and social science disciplines, which promises to bring digital technologies to bear on traditional research questions.[1] The same questions that once required a lifetime of

manual gathering and processing of data may now be answered within a few weeks, or even a couple days, with the aid of digitised information. Digital humanists have sometimes resisted this definition, however, seeing DH as a more expansive movement and as a discipline in its own right, involving new modes of scholarship and institutionals. Others are resistant to formally defining DH, seeing it as a young and 'constantly changing field, which escapes easy definition'.[2] Some disciplines, such as archaeology and linguistics that perhaps have embraced digital technologies more thoroughly than others, see little or no need to separate out a special digital humanities field. Rather than attempt to define DH outright, this chapter provides a brief survey of professional associations, the location and makeup of DH centres around the world, and a number of common research trends engaging with IT over and above the simple accessing of digital information. It is our hope that this overview will clarify many questions about who works in the digital humanities and what it is that they do.

The Alliance of Digital Humanities Organizations (ADHO) is a global umbrella organisation, which 'promotes and supports digital research and teaching across all arts and humanities disciplines, acting as a community-based advisory force, and supporting excellence in research, publication, collaboration and training'.[3] ADHO is currently comprised of a number of regional professional organisations and has approximately 400 members worldwide.[4] The Alliance supports a number of publications, including *Literary and Linguistic Computing* (LLC), a print journal published by Oxford University Press, and *Digital Humanities Quarterly* (DHQ), a peer-reviewed electronic journal.[5] ADHO organises a number of conferences and training initiatives, including the Digital Humanities Conference, the largest annual international meeting of digital humanists, and a large number of international THATCamps, in which scholars and technologists meet to share ideas and develop future collaborations. In July 2013 THATCamp was held at the University of Buenos Aires with further ones scheduled in the United States, Germany, Slovakia and New Zealand.[6]

While most digital humanists are regular faculty members in specific academic schools, many belong to specialised digital humanities centres. A centre is roughly defined as a group of scholars within a given community or academic institution, who are devoted, at least in part, to digital humanities research. The centre may conduct its own research projects or may provide technical support to academic projects across several schools. The majority of centres are housed in colleges and universities, although some are funded by governments or private initiatives.[7] In

many parts of the world, there are large numbers of independent digital humanists, despite there being no unified DH centres. The absence of DH centres is not always indicative of the number of scholars participating in the field.[8]

Table 4.1 summarises the number of digital humanities centres around the world according to information provided by centerNet, a global coalition of DH centres. The list is not complete, but is a good approximation of the reality at the time of compilation in July 2013.[9] The grouping is somewhat artificial in that many DH initiatives are collaborative, transnational and transcultural by design.[10]

It should be noted that a large university like the National Autonomous University of Mexico (UNAM) does not have a single, unified DH centre but does have many 'small personal initiatives'.[11] Recent findings show that there are at least 20–30 self-identified digital humanists working in four Mexico City universities.[12] This illustrates both the relative lack of information about the DH community in Mexico and other parts of the Spanish-speaking world and underscores the importance of looking beyond unified DH centres as a way of quantifying participation in the field. By way of illustration centerNet reports one DH centre in South Africa, the University of Cape Town Center for Educational Technology.[13] It is worth noting that the Rhodes University Book and Text Studies programme has held workshops in Humanities Computing. Additionally, the eThekwini Municipality's Libraries and Heritage Department in Durban, South Africa maintains a cultural heritage project, intended 'to collect and disseminate local content, in English and Zulu'.[14]

There are at least 7 DH centres in Australia,[15] the ANU DH Hub being among the largest, housing five permanent staff members, and nine affiliated faculty.[16] There is a least one centre in New Zealand, the New Zealand Electronic Text Centre. There are three DH centres in Japan,

Table 4.1 Digital humanities centres and individuals by region, July 2013

Latin America	3
USA	60
Canada	19
Europe	65
South Africa	1
Australia and New Zealand	8
East Asia	8

including the University of Tokyo Center for Evolving Humanities, The Ritsumeikan University Digital Humanities Center for Japanese Arts and Cultures, and the International Institute for Digital Humanities (DHII). Taiwan is home to the Nanyang Technological University Research Centre for Digital Humanities (NTU) and the Dharma Drum Buddhist College Library and Information Center. A number of these centres have a strong interest in preserving and disseminating local historical and cultural information.[17] In China, there are several academic departments with a strong interest in DH. The Fudan University Research Center on History and Geography, the Wuhan University History College, the Nanjing Normal University and the Chinese Academy of Social Sciences have developed digital projects concerning Chinese geography and ancient archival materials.[18]

Europe has at least 65 DH centres. The densest concentration of 19 centres is in England,[19] the largest being the University College London Centre for Digital Humanities with six directors, ten staff, student, and liaison positions, ten affiliated faculty, and 13 or more affiliated graduate students. Ireland has the world's largest structured PhD programme in digital arts and humanities in a consortium of six universities, north and south of the border, with more than 60 doctoral students. There are at least 38 centres on the Continent,[20] with strong representation in countries like the Netherlands, France, Germany, Denmark, Sweden, Italy and Austria.[21]

centerNet reports 19 DH centres in Canada, ranging in size from one permanent faculty director, with five appointed scholars (CIRCA) to seven staff and faculty positions and 40 affiliated faculty (DH McGill).[22] As the largest of these, the initiative at McGill is shared between the Faculties of Arts, Religious Studies, Music, and the Library. Its projects tend to focus on textual analysis, knowledge environments, spaces and publics, cultural archives, curation, and visualisation.[23]

There are approximately 60 DH centres in the United States[24] with world-leading facilities, such as the Massachusetts Institute of Technology HyperStudio, the Harvard University Digital Arts and Humanities (DARTH), the Columbia University Digital Humanities Center (DHC), the University of Maryland Institute for Technology in the Humanities (MITH), George Mason University's Center for History and New Media (CHNM), and many other centres, indicating a vigorous growth of this field at most North American humanities faculties.

Research trends

Digital humanists are concerned with a variety of topics and, despite many initiatives to create project databases, the landscape is hard to survey.[25] Perhaps it is useful to identify five major research areas:

- Digital collections, archiving and text encoding
- Reading and analysing electronic texts
- Geospatial and critical discursive mapping technologies
- 'Big Data,' social computing, crowdsourcing, and networking
- 3D immersive visualisation environments

It should be noted, however, that many successful projects either do not fit neatly into this framework or fall into two or more categories.

Digital collections and archives

Projects in this category tend to concern the creation of digital editions, digital corpora and networks of existing data repositories. Many projects of this sort begin by transforming analogue material into an electronic format. This usually takes place through some method of scanning and optical character recognition. Where optical character recognition is difficult or impossible, a number of projects have made use of crowd-sourcing, asking users to help transcribe analogue materials. *Old Weather* asks users to transcribe weather records kept aboard US sailing ships from the mid-19th century. User transcriptions are mined to compile data about past environmental conditions, ship movements and the lives of the people aboard.[26] Similarly, the *Oxyrhynchus Papyrus Project*, an initiative at Oxford University, asks users familiar with ancient Greek to edit early Christian and Gnostic papyri.[27]

Other initiatives in this category concern the management and dissemination of metadata, or data about the data of interest. Common forms of metadata include author, title, subject, time and location. Well-managed metadata makes it much easier for researchers to access and analyse large data sets. The Text Encoding Initiative (TEI) has developed among scholars and institutions interested in maintaining metadata standards across projects and disciplines. Many notable data collections, including Tufts University's *Perseus* project, one of the largest digital collections of ancient Greek and Latin Texts, the *Women Writers Project* and the *Early Americas Digital Archive* follow TEI standards.[28]

A major Japanese project is the *Integrated Database of Classical Japanese Texts in the pre-Meiji Period*. This database of documents from Japan's

pre-1868 era involves the National Institute of Japanese Literature as the core institute. The project proposes compiling a new database with links to bibliographies, images of original manuscripts and transliterated texts.[29]

Reading and analysing electronic texts

A large number of DH projects concern the presentation, evolution and analysis of electronic texts. Many 'reading environment' projects tend to address the way electronic texts are presented, collaborative reading methods and digital annotation. These projects examine the ways in which interactive digital texts can produce new information and improve existing methods of scholarly debate. For example, *Debates in DH* was originally published as a book by the University of Minnesota Press and recently 'expanded into a hybrid print/digital publication stream that will explore new debates as they emerge'. Readers who visit the website are presented with an online text of the book, which they can mark and virtually index.[30] Text analysis projects use computing technology 'to present, manage, and learn from electronic texts in ways difficult to do by hand'.[31] Common approaches to text analysis include 'stylometry', a method that can be used in determining the authorship of disputed texts, 'content-based analysis', which uses advanced discovery functions to determine the frequency of words and topics within a given sample of text, and 'metadata analysis', which tracks 'information associated with archival material that lists key attributes, such as its author, date, publisher, or general subject'.[32]

A number of projects in this area aim to facilitate text analysis, making it more accessible to researchers. The *Text Analysis Portal for Research* (the TAPoR project) is a gateway for text analysis projects based at McMaster University, in collaboration with five other leading Canadian DH centres, University of Victoria, University of Alberta, University of Toronto, Université de Montreal and University of New Brunswick. TAPoR brings together a number of 'tools for sophisticated analysis and retrieval, along with representative texts for experimentation'.[33] *Textal*, recently released by UCL, is a smartphone application, designed to provide a user-friendly introduction to text analysis. It allows users to create wordclouds and 'explore the statistics and the relationships between words in the text'.[34] *Hermenuti.ca* is a notable collaboration between DH McGill and CIRCA, which has given rise to *Voyant*, 'a web-based reading and analysis environment for digital text'.[35] Voyant presents users with a number of options to read, analyse, and visualise trends in an electronic text. *Wordseer* is a similar project based at the University of California, Berkeley.[36]

Geospatial and critical discursive mapping technologies

Projects about digital representations of space and time often use geographic information systems (GIS) to capture, manage, analyse and display varying 'forms of geographically referenced information'.[37] GIS analysis is especially useful in addressing questions of political boundaries, cultural conceptions of space and time, environmental concerns, and the relationship of historical and literary texts to the physical landscape.[38] It is not surprising that this approach has been adopted by many historians and social scientists. *Hypercities*, a tool at UCLA and USC, rectifies and stretches historical maps to fit digital platforms. Projects like *AfricaMap* (Harvard), *The 'American Century' Geospatial Timeline* (Emory), *Bomb Sight: Mapping the WW2 Bomb Census* (University of Portsmouth), *Digital Augustan Rome*, *The Dictionary of Sydney* (University of Sydney), *Driving Through Time* (University of North Carolina), *Mapping the Lakes* (British Academy), *The Map of Early Modern London* (University of Victoria), *Mapping Medieval Chester* (Kings College London) and V*alley of Shadow* (University of Virginia) attempt to collect, visualise and disseminate historical and cultural information in new and informative ways. A number of similar projects have been developed by literary scholars in an attempt to explore the spatial dimensions of fictional texts. Projects of this sort include *Mapping St. Petersburg* (UCL), *The Digital Literary Atlas of Ireland 1922–49* (Trinity College Dublin), and *Mapping the Catalogue of Ships* (University of Virginia).[39]

Other projects in this vein build collections of complex spatial and temporal data. For example, *The China Historical Geographic Information System* (CHGIS), a collaborative project developed by Harvard and five other universities, is a database of administrative borders in China between 221 BCE and 1911 CE.[40] This data set serves as a starting point for researchers using spatial analysis, statistical modelling and digital visualisations. Harvard researchers claim that 'the advantage of creating the CHGIS, rather than printing paper maps, is that the relationships between the units can be modified and improved whenever new information becomes available and the new "edition" needs only to be posted on the Internet for users to download'.[41] The *Pleiades Project*, a digital gazetteer of ancient places, is another well-known data set, as is the *National Geospatial-Intelligence Agency: GEOnet Names Server* (NGA GNS).[42]

A major geospatial project in Japan is the *Global Integration of Regional Knowledge Resources and Intercommunity Platform*. The core institute implementing this is the Centre for Integrated Area Studies at the University of Kyoto, the Centre for Spatial Information Science, the Japan Consortium for Area Studies and the Japan Organisation of Geographical Sciences. The objectives of the project are to collect, digitise and structure regional knowledge resources, including historical documents and maps, and

to construct and continuously run an intercommunity platform for acquiring, managing and retrieving resource information. The project aims to further enhance the development of area studies.[43]

Big data, social media, crowdsourcing, and networking

All DH projects deal with lots of data but big data signifies the problem that occurs when data are so massive and complex that they defy the ability of relational database management systems. Researchers in big data may need to rely on software running in parallel on a dozen or hundreds of servers, in which case the infrastructural and technical demands exceed the typical setup of a humanities department. The technological needs were first realised in fields such as astronomy and genomics, but similar project needs are developing in the humanities. High-volume data streams may occur when sensors are used for geospatial mapping of movements or when capturing text messages from social media.

There are very big problems of research access and data security in big data when applied to social science and humanities. Big data is used for business intelligence to understand customer needs and preferences, and the data is often proprietary market information, which is only shared with researchers under strict rules of confidentiality. Such information may be of extreme interest for understanding human behaviour, communication and perception but is largely not accessible for research. Other fields for big data, such as library information, archival and physical heritage data, are in the public realm and rapidly growing. Crowdsourcing data from voluntary information providers, perhaps gathered by with sensors and cameras, is another vast source of information.

The *Digging Into Data Challenge* was launched in 2009 by the Joint Information Systems Committee (JISC) from the United Kingdom, the National Endowment for the Humanities (NEH) and the National Science Foundation (NSF) from the United States, and the Social Sciences and Humanities Research Council (SSHRC) from Canada. Already in its third round of open calls the initiative has funded path-breaking humanities projects such *Mapping the Republic of Letters*, a product of Stanford Literary Lab, which analyses metadata about date, author, place of origin and recipient in order to create a spatial analysis of 'intellectual correspondence networks' in the 17th and 18th centuries. Another example is the *Harvesting Speech Datasets*, which harvests audio and transcribed data from podcasts, news broadcasts, public and educational lectures and other sources to create a massive corpus of speech. The project will develop new tools to analyse the different uses of prosody (rhythm,

stress and intonation) within spoken communication. Other funded projects are *Digging Into Image Data*, *Structural Analysis of Large Amounts of Music*, *Railroads and the Making of Modern America*, and *Digging into Human Rights Violations*.[44]

3d immersive visualisation environments

3D immersive visualisation relies on advanced displays, image generating computers, video switching/distribution, and application software that allows users to be immersed in a displayed image. The 3D lab enables neural and behavioural scientists to track individuals as they respond to simulated environments in a controlled setting. The immersive 3D lab also enables the researcher to analyse and interpret complex data. Visualisation enables the research team to create simulations of past heritage sites or future landscapes. It is a field with much crossover between the visual arts, gaming industries and the spatial and cognitive sciences. The potential for the humanities is huge but high infrastructural costs are probably currently limiting the application of these technologies to a few laboratories, which are typically based in computer science departments that collaborate with humanists for their data. Successful projects include archaeological and landscape simulations and conservation of works of art.[45]

Resistance to digital humanities

So far our survey has indicated that the digital humanities is an established field with notable success stories, even if it is unevenly distributed and difficult to track or map. Nevertheless, there is a great deal of more or less implicit reluctance or even some explicit resistance to DH within the world of humanities, of which we need to take note. Strangely, much of this debate is not published but articulated in blog posts and other short web-based forms, which do not encourage the writers to fully argue their case. We have identified four poles around which DH criticism tends to revolve. Not all reluctance is born out of resistance and not all resistance is hostile; so the poles listed here are simply intended to identify the main critique of DH before we turn to our interviews.

Reward structures in academia do not recognise digital publication

One main criticism of the digital humanities is shared by both its supporters and critics. It is well known that the reward structures of academia change very slowly and in most institutions do not favour digital

work. Digital modes of representation may therefore put the early career researcher at a relative disadvantage. 'Indeed, this may be [the] outright advice from senior faculty and administrators', as Patrik Svensson of the HUMlab of Umeå University, Sweden, concedes.[46] Reward structures may be changing, but at a very slow pace and there is no simple path to advancement. Given this, many prospective DH researchers who want to pursue an academic career may see themselves forced to compete in two worlds – the digital and the traditional (or perhaps, for want of a better word, the analogue) worlds of humanities at the risk of not becoming really good in either. The proponents of DH may of course counter that such scepticism is true of any interdisciplinary endeavour and that the world would come to a standstill if the boundaries were not crossed by some adventurous pioneers. Nevertheless, the concern about future job opportunities is probably shared by both sides.

Failure to see how DH applies to some disciplines

In general, DH appears to fit better with empirical disciplines whereas some disciplines like philosophy may legitimately find the DH challenge less relevant. Even in this discipline, however, there may be ways to introduce digital technology, as argued by P. Bradley.[47] Again, this is an argument that should cause dialogue rather than opposition.

'Where are the results?' 'Show me a project that does something useful with technology'

However, not all opposition is friendly or well intentioned. These rhetorical questions are occasionally asked perhaps less out of curiosity than defiance. Any mapping of digital humanities, as attempted in this chapter, is unlikely to answer the questions satisfactorily. D. G. Myers puts his challenge to DH this way: 'a mind must interpose between machine and meaning. And this is the scandal of the digital humanities. They have been unsuccessful at their fondest hope – eliminating the mind from humanistic scholarship. ... The confidence that they "will enable us to move beyond the traditional methodologies" might be called the Great White Hope of the digital humanities. It is overweight, overhyped, an expression of superstition and prejudice.'[48] Myers, however, fails to establish that such fond hopes are or have been nurtured by digital humanists and he seems to be fighting a straw man.

The dark side of DH

This is the title of a session at the Modern Language Association meeting in the USA in January 2013. While it was not very clear what

the dark side is, the papers presented were based on a sense that the humanities are in crisis and that DH is presented as a way out. The organiser of the panel Professor Richard Grusin stated: 'I would assert that it is no coincidence that the digital humanities has emerged as "the next big thing" at the same moment that the neoliberalisation and corporatisation of higher education has intensified in the first decades of the 21st century. ... To hazard a probably ill-advised metaphor, I worry that digital humanities projects might serve as something like gateway drugs for administrators addicted to quick fixes and bottom-line approaches to the structural problems facing higher education today, providing them with the urge to experiment with MOOCs (Massive Open Online Courses) and other online forms of "content delivery", which is how college courses are being increasingly defined by university administrators, government officials, and techno-utopians alike.'[49]

In this case the term DH seems to be short for almost any unwanted development in academic life. The criticism does not seem quite transparent, but it is clear that a camp mentality is easily being fostered on both sides of the debate.

Interview responses

The question remains, however, if the heated and somewhat antagonising discourse about the DH in the documents we have examined exists among humanities scholars at large. To help with the answer we now turn to our interview results. Our main concerns are how much scholars know about these DH developments, how engaged they feel with them and, more generally, what attitudes they hold towards the DH. It is important to stress at the outset that almost none of our respondents had been specifically selected for their interest in the DH.

We asked:

> Is the development of digitisation changing the nature of research practice in your field?
>
> Do researchers in your field have the necessary skills to make the most out of the digital resources available to them?

Lack of engagement?

The first point to make is that few of the respondents gave detailed answers and discussed the DH with reference to specific projects that had affected their own research or at least impacted their field. In fact, only seven respondents gave any detailed kind of unprompted answer. All the rest answered the question in very general terms.

It was quite typical of respondents to refer to the rather basic point that digitisation has made research more convenient, especially by creating online databases for literature, sources and data. A point made by 34 respondents, including:

> *Af12:* More materials are becoming available in digital format, making traditional research approaches less relevant. Availability of digitised version of documents online has made unnecessary traditional visits to archives.
> *As9:* Digitisation certainly makes it possible to view a lot of information in a considerably short period of time which also makes it convenient to look at information not necessarily directly related to one's research topic. The time usually consumed by commuting between libraries can be used for browsing a greater variety of sources.
> *As10*: Quite simply, it is much more convenient to check facts on the Internet, which means one is less reliant on one's own memory – and I don't have to make as many trips to the library.

Some confined themselves to talking about accessibility, which we discuss in more depth in Chapter 7. Other respondents said that, in addition to convenience, digitisation might be changing the nature of research, though only one gave details.

> *Au4:* It is now much more common, I think, for historians … to actually go looking for metadata, so looking for statistical sources. … Quite senior historians … are really enthusiastic at the prospect of going and tracking down, for example, weather records from the Philippines, data on rainfall, on wind, on the strength of storms, which have been collected by Jesuit missionaries in the Philippines for a period of several hundred years.

We discuss the lack of take up of a DH perspective among our interviewees below.

Difference in take up between fields

It is clear that there is an uneven take up of digitisation across different fields. Some connected this with the distinction between qualitative and quantitative research:

> *Af7*: History as a discipline is less affected by digitisation because much of the historical research is qualitative and descriptive.
> *ME1*: I belong to a field of anthropology that uses qualitative rather than quantitative methods. So although I use the Internet to find

literature, digitisation is more significant for those who use quantitative methods. In these cases, it is changing the nature of research.

Four philosophers from quite different regions (Lebanon, US/Korea, Spain and China) thought that digitisation affected their field less than others:

ME3: If you're a geographer or a historian, digitisation makes a big difference. But it doesn't in my field (unless you're a historian of philosophy). And I can't see how digitisation will become more applicable to philosophy.

As11: [Is the development of digitisation changing the nature of research practice in your field?] Not in my field, although the greater availability of online journals can only be a good thing.

E3: [Is the development of digitisation changing the nature of research practice in your field?] Not in philosophy, though to an extent in logic. To some degree there are significant changes in linguistics and archaeology.

NA13 (philosophy and religion): ... digital literacy in my field is relatively less complex than some other fields.

But others (three from the Far East and one working on digitisation) made the point in more general terms, or with reference to a different or broader range of disciplines*:*

As1: Subjects vary as to how well they use digitisation.

As8: There has been a discussion amongst scholars about this issue and it varies depending on your field and different topics. Some lack certain research, which is a vocabulary of how Western notions and concepts became a part of East Asian media and publications. A digital survey may give you more evidence because with digitised material you can do quantitative work. I think in linguistics, literature, history and in some fields it isn't so necessary.

NA12: Students of Japanese, Chinese and Korean are working with philological problems, and it's a long time before they are even getting to DH.

As7: Personally this doesn't affect me so much because I am an actuarial historian and old fashioned. In my field of being a Confucianism specialist, I'm not sure.

A culture clash?

Some of our respondents referred to a culture gap between DH enthusiasts and more traditionally minded scholars. Here, for instance, are

some comments to this effect (from India, the Netherlands, Thailand and the UK):

> *As2:* Researchers in many cases do not have the skills to fully exploit the new facilities. But that comes mainly from the inability to break out of the old moulds of scholarship and embrace the new possibilities of digital humanities.
> *E4:* Conservative… humanities scholars have been very concerned about digitisation. They and their students live in quite different worlds.
> *E13*: At present there is something of a gulf between humanities scholars and those who understand the technology (the techies). They live in different silos.
> *As13*: Generally speaking, there are three groups of researchers in view of their use of digitisation: the aliens, the immigrants, the natives. Many of the older generation researchers do not access digital databases on regular basis, the immigrants access them on some occasions, while the natives depend heavily on digital access.

Picking up on the reference to concern in the second extract, note those respondents who saw training as a means to overcome apprehension of or lack of engagement with DH:

> *LA2*: Researchers don't have the skills; we're not adequately trained, not even in archaeology. We're trained to be scholars in the traditional sense, but there's a fear of engaging with technology.
> *NA7*: There's an ideological resistance to [digitisation] in the humanities, out of fear that it's going to replace the humanities, but it's just a tool. It can be embraced or rejected as it is useful. There's nothing more fearful about it than that.

There seem to be two different kinds of anxiety being discussed. The first might stem from the fact that traditionalists do not understand the technology involved in the DH, and treat it as a 'black box'; and what they don't understand, they fear. The second might be described as follows. If some of the more extravagant claims of the DH enthusiasts are right, whole swathes of humanities scholarship might have to be revised. The traditionalists fear that their expertise will be devalued.

Others who perceived a culture clash thought that it could be resolved, but only over time:

> *NA1:* I do think that it's going to take time and a cultural shift for humanists to think of their research as collective, rather than an individual slaving in the archives.
>
> *NA2: [Do researchers in your field have the necessary skills to make the most out of the digital resources available to them?]* The overwhelming majority does not. This is partly attitudinal. Some still want to use their three by five cards. It is largely that everything is happening so fast, and it's hard to keep up. It's almost impossible. [My] university has a special centre on campus that holds classes on new technology, from basic things like PowerPoint to course websites. Most of my colleagues are mostly not into that kind of thing. There is a tension between tech and teaching. The new generation, the junior range and below are more comfortable with it, but it's going to take a while for all of us to be accepting and competent. Simultaneously the tech is becoming more idiot-proof, so it's making it a bit easier.
>
> *E4: [Is the development of digitisation changing the nature of research practice in your field?]* Yes, but the change is slow in coming. What has been fast is the creation of databases over the last ten years, i.e. the immediate use of the quantifying power of the digital humanities. But the meta-discourse about how this is changing the humanities has been very slow, because painful.

Scepticism about the DH

If some of our respondents referred to a culture gap, did any of them show hostility towards digitisation themselves? One, from the UK simply raised the following question:

> *E12:* We are prompted to ask ourselves both what do we gain from digitisation and the virtual workplace, and what does it threaten to elide or obfuscate?

A few were sceptical as to whether the DH is introducing anything new:

> *NA1*: I'm not a technophobe, but I'm not the best person to comment on the future of the DH. We have done a number of things in the DH. I wouldn't say I'm a skeptic, but I'm not yet persuaded. … I don't see yet how it's changing the questions we ask. Sure, new

databases change and enhance the process of research. This may reflect my own limitations or my own slowness to coming to this, but I haven't seen an instance where we're really changing the whole direction of our research.

NA12: [Is the development of digitisation changing the nature of research practice in your field?] It seems to be for a lot, but not for others. … I think the jury's out. From what I've seen, some of this development is like the relationship with the typewriter. For a lot of people, computers are just really fancy typewriters. People doing the same thing they have always been doing, just on a fancier machine. To be honest, the digital humanities hasn't really pervaded this campus.

R7: I would not say that the changes in research practice brought by the advent of the electronic media were enormous. Quantitative data have become more available and easy to deal with (although this process has largely started already in the 60s), but their nature have not changed. Internet as such provides a new and very rich source of data in itself (e.g. using different forms of connections as raw data social network analysis, or latent-semantic analysis), and I expect much work being done in this direction due to relative cheapness of such data, and possibility to make truly global research on their basis from any geographic point on the Earth. But the logic of such research will not be much different from those implementing more traditional data.

R8: [Is the development of digitisation changing the nature of research practice in your field?] It certainly changes the framing. Not sure about the content.

Some acknowledged the convenience of digitisation, but insisted that it cannot obviate older methods:

As8: I think digitising material will provide a lot of convenience for scholars; sometimes you will have to travel a long way to get it and even when you get there, it may be a weekend – you can't conduct the research you want to. Doing research this way may be costly and it is much cheaper to use digital material, but during the final stages of research, we would still want to see it with our own eyes. When you digitise material, you can't always tell by itself – the quality of the paper, colour, texture and size. Often, you'll want to check with the original and you can't simply rely on the digital version.

E2: [Is the development of digitisation changing the nature of research practice in your field?] Definitely yes! Libraries and archives in the US have pioneered digitalisation and have made many sources

available via online. For an historian based in Europe that makes access much easier, faster and much less expensive. Still, I believe that historians who study the history of foreign countries need to experience the culture firsthand. I have lived more than six years in the US. I do not think that I could write American history the way I do without that experience.

NA10: I think every field is affected by digitisation of knowledge, generally for the best. But I think there's still a lot of value to traditional methods and working into archives.

Further along the critical spectrum, others warned of various risks to the quality of research:

ME2: I'm lucky to be of the generation that has made the transition between the analogue and digital worlds. I'm familiar with analogue research, so I know about and can be critical of the hierarchy of sources available on the Internet. Not all sources are on the same level. It's often difficult to get students to understand that. ... some younger researchers lack a critical sense of the sources, because they have not worked enough with analogue material; they attempt to minimise the qualitative assessment of sources.

Af1: Digitisation tends to produce the younger 'cut and paste' scholars, too lazy to do actual under-the-hood, retro research, they surf Google books, cut and slice expressions and segue them into a conference paper.

ME4: As regards research, digitisation does not necessarily save time. The facility of digitisation makes you keep searching, and so makes you avoid the moment when you need to think and write. (It's easier to read on a computer than to think and write.) Digitisation doesn't affect or reduce the real effort required for research. In the end it's got to be your own work.

As13: It seems that researchers read less and have less incentives to work on something really deep or taking a lot of time.

However, it must be stressed that all but one of these also pointed out the advantages of digitisation, so they were by no means purely negative. In fact only one out of our 89 respondents showed outright hostility.:

NA4: I'm a Luddite. I think that DH are essentially bankrupt. Yes, they bring content to people, but I'd never encourage a graduate student of my own to go into the DH business. Our business is to

think and reflect on ideas. In answer to the question: what research questions do the DH open up, my response is: what questions are they shutting down?

Beneficial effects: collaboration and the opening up of research

On a positive note, we should record the views of a cluster of respondents, again from very different regions, who talked about the ways in which digitisation is creating more collaboration:

AU2: I think what you have to do is get a collaboration … , to be able to go to digital experts and work with them in common projects where they see some benefit from having you and you benefit enormously from their expertise.

As10: The Internet provides immediate information about what other people's research agendas are and what conferences are happening.

E1: Being able to create sophisticated databases yourself and then being able to share that information with the scholarly community enhances quality and makes our work more efficient.

As2: Access to material on the web, the digital commons initiatives and the facilitation of connections between disparate materials have resulted in both increased research output, new platforms of publication and, more importantly, in new methods of collective, cooperative work.

A few who made this point stressed the international potential of digitisation:

E10: [Digitisation] … helps conducting research in a more comparative manner, and to build research communities, by strengthening the connections between historians from different countries and/or affiliations.

Af4: I have encouraged the use of digital equipment for the recording, storage and archiving of field materials. I am doing the same at the Institute now, seeking well-meaning global partners for the digitisation of indigenous knowledge fields.

Af8: For African and other poor universities digitisation allows scholars to overcome the lack of libraries, to share information and to build global networks, even though there are problems associated with access to ICTs.

As14: It's quite a thrilling time to participate in this sort of global interaction amongst scholars.

LA10: We also have a more fluent communication with researchers from other countries, mainly with the nearby countries. Last year we organised in Uruguay the first international conference about all the realms of philosophy. It was attended by more than 100 researchers from seven countries of South and North America.

Finally, here are some respondents who referred to the democratic potential of digitisation:

LA1: Internet and digitisation changed the picture completely toward a more democratic access.

LA10: Internet changed this situation into a more democratic access. Nowadays we have online access to electronic journals and to relevant papers uploaded by philosophers from important research institutes.

Af11: The development of digitisation … popularises research outputs that might not be made known to many people in the past due to costs and distance.

NA12: Computational technology then becomes the very condition of how we think about the very questions and problems we ask and attempt to solve in the humanities. Such thinking changes the university as the gatekeeper of cultural ideals and values and the intermediary between these values and the state and marketplace. What we are experiencing now is that professors, administrators, or whomever, but especially students, can access massive databanks of knowledge from anywhere at any time without the professoriate guarding the gates.

Conclusion

In the first half of this chapter we showed that the digital humanities are developing rapidly, both in terms of number of scholars and the means of engagement. Based on our mapping of digital projects, we find that there is a breadth and depth of engagement across the humanities with digital technologies. We are also in no doubt that digital technologies are creating the potential for conceptualising radically new research questions. The DH is facilitating new ways of research organisation as evidenced by the crossover between humanities and computer science. However, it is also clear that there are real challenges to the world of humanities as part of this development. Some problems of access and data security are shared with other sciences while others seem to be peculiar to the humanities. The scepticism and even outright hostility to

DH evidenced by some blog literature might be a unique phenomenon within the humanities.

In the second part of the chapter we looked at responses to our questions about the DH. Based on our respondents' somewhat lukewarm answers, we would say that, however much DH activity is taking place, and despite the funding, mainstream humanities scholars are not very deeply engaged. It is not our role to allocate blame; one could accuse mainstream scholars of not making the effort to learn more and to become more engaged; or one could accuse the DH researchers of creating their own ghetto and failing to communicate effectively with those outside it. On the basis of our interviews, it is certainly safe to say that the main problem is presently one of communication between mainstream scholars and the digitalists.

We have also discussed the possibility of a culture clash. However, we have not found much evidence of outright hostility among our respondents. What we did find were varying degrees of scepticism about just how much digitisation can achieve. But we also found optimism about the changes digitisation might make to the culture of research, in terms of collaboration and openness. Very likely there is a problem of uptake of the DH among mainstream humanities scholars, perhaps involving generational differences, which will take some time to solve. But it would be erroneous to see humanities scholars divided between different tribes on this issue.

Digitisation certainly reduces transaction costs by obviating the need to travel to archives and easing access to rare books, but the humanities do not become digital simply by moving texts from paper to hard disks. So far DH has mushroomed within and all over the world of humanities, while leaving most of the humanities unchanged except for quickening and democratising access.

The real challenge of digital humanities still lies ahead in asking new research questions enabled by the technology, training researchers to identify and utilise the potential, and developing a critical sense of the explanatory power of new technologies.