Chapter 1
Introduction

Abstract This chapter begins with an introduction to Digital Humanities (DH) and outlines its development since c.1949. It demonstrates that the application of computing to cultural heritage has been ongoing for some 70 years yet the histories of DH have, until recently, remained mostly unwritten. After exploring some of the particular difficulties that attend any attempt to write such histories the approach that we have taken in this book is explained in detail. We close by asking why histories of DH are needed and essential to undertake.

Introduction to Digital Humanities

What is/are the Digital Humanities (DH)? This is a question of central and long standing debate between those who work within (and sometimes without) this protean and fast-moving field. Though the difficulties of defining DH will be discussed below, here we can begin by stating that it takes place at the intersection of computing and cultural heritage. It aims to transform how the artefacts (such as manuscripts) and the phenomena (such as attitudes) that the Humanities study can be encountered, transmitted, questioned, interpreted, problematized and imagined. In doing so it tends to differentiate itself from now routine uses of computing in research and teaching, for example, email and word processing.

DH is sometimes portrayed as a recent development. Kirsch, for example, admonished Humanities scholars to avoid the 'nascent' field lest they 'wake up one morning to find that they have sold their birth right for a mess of apps' (2014). However, its derivation is usually ascribed to Fr Roberto Busa S.J. (cf. Vanhoutte 2013; Rockwell 2007). Around 1949, Busa, in collaboration with IBM, began preparatory work for an *index variorum* (or concordance) of some 11 million words of medieval Latin in the works of St Thomas Aquinas and related authors (Busa 1980). In the intervening years the field has gone under many names, including Humanist Informatics, Literary and Linguistic computing and (more commonly) Humanities Computing. Its name changed to DH c.2006 (Kirschenbaum 2010) and

it has mostly used this name since then.[1] Indeed, it is now usual to use this newer name to refer to the work of the field since c.1949 and this is a convention that will be used throughout this book. Nevertheless, distinctions between Humanities Computing (i.e. the period from c.1949 to 2006, sometimes also including an incunabular phase, 'when computing was still a curiosity and business applications didn't yet dominate the public discourse' (Rockwell et al. 2011, p. 207)) and DH (i.e. post 2006) are to be found.[2] Thus, for the purposes of giving an outline of the development of the field from its beginnings to the present day, a distinction between these two phases will now be made (and the more general term DH will then be reverted to except when a distinction between DH and Humanities Computing is necessary for clarity).

Humanities Computing (c.1949–2006)

As is the case in the wider Humanities, the principal object of Humanities Computing research was text. The disciplines that were among the earliest to take up computing included Classics, which worked with large quantities of textual information (Brunner 1993) and sub-fields like Literary Studies, which was already pursuing quantitative methods. Today, quantitative approaches to the analysis of literature are sometimes portrayed as DH-led innovations, yet Literary Studies was pursuing such approaches to problems like authorship attribution and stylistic analysis before the advent of computing (Raben 1991, p. 342). All the same, in the editorial published in the inaugural issue of *Computers and the Humanities* (CHum), the field's first journal, Raben had felt it necessary to state that 'We need never be hypnotized by the computer's capacity to count into thinking that once we have counted things we understand them. The two articles in this inaugural number concur in stressing the primacy of humanistic imagination in all our actions' (1966, p. 2).

Vanhoutte has sketched the earlier connections between Humanities Computing and Machine Translation and the seminal contributions of Andrew Booth (Vanhoutte 2013, p. 122–5). Concordances and frequency lists were typical outputs of Humanities Computing during this period and essential pillars of Machine Translation processes. 1966 brought the publication of the ALPAC report 'Languages and Machines: Computers in Translation and Linguistics', which was highly critical of research done

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[1] Of course, the transition was not instantaneous. Rockwell and Sinclair's (forthcoming) text analysis of the Humanist corpus showed that "[w]hile we certainly found 'DH' taking off in 2004–2005, we were surprised that 'Humanities Computing' continued to be a popular phrase".

[2] For the sake of simplicity the transition from Humanities Computing to DH is here presented in chronological terms. However, factors other than chronology are relevant to a fuller discussion of this process. Svennson (2009) has explored the 'discursive shift' from Humanities Computing to DH and, in a subsequent article argued that 'the epistemic commitments and conventions of [Humanities Computing] cannot easily be subsumed in another type of digital humanities' (2010); Wang and Inaba (2009) examined the contours of DH from a bibliometric perspective, observing the shift in nomenclature from Humanities Computing and concluding that DH showed no distinct sub-fields as such and could still be viewed as an expanding discipline.

in Computational Linguistics and Machine Translation. As a result 'Computational Linguistics embraced the symbolic approach and abandoned statistical analysis which has been at the heart of Humanities Computing' (Vanhoutte 2013, p. 128).

Other typical research outputs included computer-assisted lexicographical studies and authorship and stylistic studies. At this stage, 'much attention was paid to the limitations of the technology' (Hockey 2004, p. 5). Character-set representation, for example, proved especially difficult (Ibid). Challenges related to institutional and professional acceptance arose too. When assessing the importance of CHum, Raben later recalled that 'for many individuals the mere existence of this journal has meant the difference between academic success and failure. … Few of these articles would have been appropriate for the conventional journals of their respective disciplines' (1991, p. 341).

From the early 1960s, steps were taken that would lead to the establishment of structures that are typical of academic disciplines more generally. A number of centres (an institutional formation that DH continues to adopt to this day)[3] were founded, for example, the Centre for Literary and Linguistic Computing by Roy Wisbey in Cambridge, UK, in 1963 (Hockey 2004). In the USA, IBM funded six conferences in 1964 and 1965 that were attended by 1200 scholars (Vanhoutte 2013, p. 129); in the UK, conferences were organized by Roy Wisbey and Michael Farringdon at the University of Cambridge in 1970 and in Edinburgh in 1972 (Hockey 2004, p. 7). The field's first scholarly associations, the Association for Literary and Linguistic Computing (hereafter ALLC, founded by Joan M. Smith and Roy Wisbey in 1973) and the Association for Computing in the Humanities (hereafter ACH, founded by Joseph Raben in 1978) were formed. After 1972, conferences became regular occurrences. In the UK symposia were held in:

> Cardiff (1974), Oxford (1976), Birmingham (1978), and Cambridge (1980) … By the mid-1970s, another series of conferences began in North America, called the International Conference on Computing in the Humanities (ICCH), and were held in odd-numbered years to alternate with the British meetings. The British conference and the ALLC annual meetings gradually began to coalesce (Hockey 2004, p. 8).

Some teaching programmes were also founded, yet in contrast with the organisational advances made during these years, Hockey argues that from the 1970s to the mid 1980s 'there was little really new or exciting in terms of methodology and there was perhaps less critical appraisal of methodologies than might be desirable' (Idem, p. 10).

The liberating effect of the personal computer, which freed Humanists to pursue their projects independently of the computer centre, and the wider take up of email were decisive developments of the mid-1980s to early 1990s (Hockey 2004, p. 10). In 1987, the electronic seminar Humanist, which remains, to this day, an active and important venue for DH researchers was founded and initially run on Listserv (Nyhan 2016). In terms of the research agenda, the achievements of the Text Encoding Initiative (TEI) guidelines for making digital texts machine readable are often emphasised. TEI

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[3] See, for example, 'CenterNet: an international network of DH Centres' http://www.dhcenternet.org/

is endorsed by agencies such as the National Endowment for the Humanities (NEH), the Arts and Humanities Research Council (AHRC) and the EU's Expert Advisory Group for Language engineering. It has also had an impact on developments outside of the strict domain of DH, for example, on aspects of the design of the meta-markup language XML, which has become the lingua franca of data exchange.

Hockey notes that a number of new academic programmes in Humanities Computing began to be introduced from the 1990s on 'although it is perhaps interesting to note that very few of these include the words 'Humanities Computing' in the program title' (on this see especially Rockwell 1999). She further emphasises the effect of internet, which brought new opportunities for the publication and dissemination of digital projects, albeit '[t]he emphasis was, however, very much on navigation rather than on the analysis, tools and techniques that had formed the major application areas within humanities computing in the past' (Hockey, p. 14). The significance of the internet (or more specifically, the web) has also been discussed by Rockwell and Sinclair based on their text analysis of the Humanist corpus from 1987 to 2008. They detected an increase in the frequency of words related to the web from 1996 on and argue that the term DH is 'not only an administrative term but one that signals a detectable change in the way electronic texts were used' (Rockwell and Sinclair forthcoming).

DH (c.2006–Present)

As of writing, DH continues to place significant emphasis on text as an object of research. An analysis of submissions to Digital Humanities 2016 (the field's main conference) based on author-assigned labels selected from a controlled vocabulary showed that text-related topics continue to dominate the research agenda. The most common tag was 'Text Analysis' followed by 'Historical Studies'; 'Data Mining/ Text Mining'; and 'Archives, Repositories, Sustainability and Preservation' (Weingart 2015). Yet, there are indications that the emphasis on text is waning, somewhat. An analysis of 135 DH syllabi from 2005 to 2011 found that DH curricula still focus on text but increasingly also video, audio, images, games and maps (Spiro 2011); indeed, 'Visualisation' was the fifth most common tag applied to DH2016 submissions (Weingart op. cit.).

In contrast to the affinity with text that DH and mainstream Humanities share, the institutional, infrastructural and socio-cultural conditions required to carry out their respective research agenda differ. The stereotype is that Humanities research is the preserve of the lone scholar who is based in a university, academy or institute. Lone scholars feature prominently in DH too, yet, anecdotally at least, the more common mode of knowledge production involves collaboration between shifting constellations of, among others, Computer Scientists, Engineers, Library, Museum and Information professionals, DH and Humanities scholars. Furthermore, with its emphasis on crowd sourcing and public engagement (as exemplified by projects like Transcribe Bentham which invites members of the public to transcribe the

manuscripts of the philosopher Jeremy Bentham (Causer and Wallace 2012)), DH has seen a stronger participation of the non-specialist than has recently been the norm in the Humanities. Nevertheless, the ethics of crowd sourcing is increasingly questioned of late (Williamson 2016). In many cases, 'doing' DH necessitates the purchasing of equipment, the hiring of professionals skilled in programming and computing and the paying of costs associated with the hosting and longer-term maintenance of digital resources. Thus, it tends to cost more than mainstream Humanities research. It can also be seen as elitist because it is more often associated with research intensive universities that have the resources to support it (Pannapacker 2013). This can have political implications:

> Put most starkly, academics on the left blame the crisis in the humanities on the corporatization of the academy and the neoliberal insistence that the value of higher education is chiefly economic. Conversely, it is precisely because of the apparently instrumental or utilitarian value of the Digital Humanities that university administrators, foundation officers, and government agencies are so eager to fund DH projects, create DH undergraduate and graduate programs, and hire DH faculty (Grusin 2013).

At present, the research agenda of DH may be categorised according to three rubrics. The first is Janus-like in scope: it looks back at questions the Humanities have long asked and attempts to ask them in new ways. It also looks forward to identify new questions that could not otherwise be conceived of or explored. In both cases it incorporates new or otherwise specialized and repurposed forms of computing. *Das Woerterbuchnetz*, a digital network of German dictionaries of the southwest language area (which takes in the dialects of areas such as Rhineland, the Palatinate and the euro region of Saarland) exemplifies the former. The use of Digital Humanities methods such as TEI has allowed the multiple dictionaries included in the network to be simultaneously consulted and interrogated in new ways in order to answer questions that are typically asked by Historians, Linguists and Philologists:

> As the lemmatisation and hierarchical order of the headwords have different realisations in the print dictionaries, the lexical matching of the different linguistic systems of these conjoining regions can only be examined and compared when using digital versions with appropriated encodings and annotation standards. Such a system then enables complex enquiries, such as a full-text search through all the underlaying materials or specialised search for specific detailed information in the dictionaries enclosed in the system (Moulin and Nyhan 2014, p. 50).

An example of the latter is Lancashire's computational analysis (2010) of changes in the use of vocabulary across 14 of the works of Agatha Christie. This led to the argument that she suffered from dementia towards the end of her life and that this was detectable in her writing.

The second rubric can be seen as an inversion of the first in that it seeks to question 'technology' (writ large) using the methods and approaches of the Humanities. This remains an emerging area and disquiet about DH's lackluster progress in this regard is often voiced. Martha (2007) and McPherson (2012), among others, have written on the absence of questions about gender, race and sexuality in the research agenda. Liu (2012) has addressed the absence of cultural criticism:

> We digital humanists develop tools, data, metadata, and archives critically; and we have
> also developed critical positions on the nature of such resources (e.g., disputing whether
> computational methods are best used for truth-finding or, as Lisa Samuels and Jerome
> McGann put it, "deformation"). But rarely do we extend the issues involved into the register
> of society, economics, politics, or culture in the vintage manner, for instance, of the
> Computer Professionals for Social Responsibility … (Liu 2012).

The third rubric has a distinct activist mission in that it looks at structures, relationships and processes that are typical of the modern university (for example, publication practices, knowledge creation and divisions between certain categories of staff and faculty) and questions how they may be reformed, re-explored or re-conceptualised. For example, much attention is given to the evaluation of digital scholarship and how evaluative criteria developed for more traditional Humanities outputs should be extended or changed when applied to it (see below). Prominent too is the #alt-ac (or alternative academic) movement which focuses on careers other than tenure-track professorships that are available to those with PhDs (Nowviskie 2013).

At the outermost level the observations above will, for the most part, hold true. However, beyond such generalisations, definitions of DH are many, varied and disputed (see, for example, Terras et al. 2013). Space will not allow us to discuss the literature on this topic in any sustained way (yet the oral history interviews included in this book present a number of different perspectives on this). Rather, we will now discuss one aspect of this wider debate, namely 'is DH a discipline?', in order to exemplify some of the many positions on this that exist while introducing an issue that directly informed the boundaries of the research included in this book.

Is DH a Discipline?

Is DH a discipline? This question has been asked since at least 1999 when a seminar called 'Is Humanities Computing an Academic Discipline?' was held over the course of that academic year at the Institute for Advanced Technology in the Humanities at the University of Virginia. It is interesting that the wider debate about DH's disciplinary status often seems to assume that such designations are unproblematic for other fields; however, this is not universally so (Taylor 1976). The debate is also frequently conducted without reference to the fact that the wider definition of the term discipline is itself contested. This is clearly brought out by Gascoigne et al.:

> There are a number of analytical frameworks for classifying academic disciplines. …
> Others define disciplines by their characteristics: is the area taught in formal courses at
> universities? Is it defined and recognised in academic journals? Do practitioners belong to
> learned societies?
>   A third school considers the notion of a discipline from accreditation perspective. Does
> it have a name? What are its key concepts, and what models, paradigms and perspectives
> influence the field? What methods are taught, and what is the relationship between theory
> (academia) and practitioner? How did the history of the area evolve? …. So, clearly different
> measures can be used to determine which fields of study can be considered "a discipline" in
> their own right (2010).

The pragmatic response is that DH is a discipline because it has the characteristics of one. Its scholarly societies include the European Association for Digital Humanities (which grew out of ALLC) and the Alliance of Digital Humanities Organizations (ADHO). The latter was founded c.2002 and is an umbrella organisation that includes new and more established members such as the ACH and scholarly societies that represent the interests of DH communities beyond Europe and North America, namely in Japan, Canada and Australasia. The field's first journal CHum was founded in 1966. Today, its leading international journals include *DSH*: *Digital Scholarship in the Humanities* (founded by the ALLC in 1986 as *Literary and Linguistic Computing*) and *Digital Humanities Quarterly*, published by ADHO and founded in 2007 by Julia Flanders. Journals with a more regional focus also exist, for example, *Digital Studies / Le champ numérique*, founded in 1992 and published by the Société canadienne des humanités numériques. Numerous monographs, edited collections and the field's first Reader (M. Terras et al. 2013) have been published on the subject in the past years. DH's first major conference is usually said to have been held in Yorktown Heights in 1964 and sponsored by IBM (see Bessinger and Parrish 1965). Today, its major conference is held annually: more than 750 delegates attended Digital Humanities 2014 in Switzerland, where the acceptance rate was approximately 30 %, roughly equivalent to some leading Computer Science conferences. At present c.200 DH centres exist worldwide (according to CentreNet); as mentioned above, in 2011, 134 different academic courses worldwide offering DH were identified and anecdotally it is clear that still more have since joined those ranks. It is more common for DH teaching programmes to be embedded in existing departments, for example, in University College London the DH MA/MSc is offered by the Department of Information Studies. Yet, a few autonomous DH departments do exist, for example, at King's College London. Jockers has set out the strides that the field has especially made of late in terms of moving from the margins to the mainstream. He writes, for example, that:

> Academic jobs for candidates with expertise in the intersection between the humanities and technology are becoming more and more common, and a younger constituent of digital natives is quickly overtaking the aging elders of the tribe. … Especially impressive has been the news from Canada. Almost all of the "G10" (that is, the top thirteen research institutions of Canada) have institutionalized digital humanities activities in the form of degrees … programs … or through institutes … (Jockers 2013).

Notwithstanding such factors the recognition of DH as a discipline from an institutional perspective has sometimes proved problematic. There are various reasons for this, including reservations about the integrity of typical DH modes of knowledge production and research outputs. Though a number of reports have been published on approaches to the evaluation of Digital Scholarship (MLA Task Force for Evaluating Scholarship for Tenure and Promotion 2007; Presner 2012; Rockwell 2011; Nowviskie 2011; American Historical Association 2015), a more recent article points to ongoing issues. Kaltenbrunner describes the tensions that arose in a large, transnational Literary Studies project that attempted, largely unsuccessfully, to engage senior scholars in the collaborative and digitally-mediated aspects of the research:

> … an important feature of a knowledge infrastructure is what its institutions consider
> legitimate forms of output. In literary studies, this has traditionally been the monograph. A
> record of monograph publication(s) often is an important factor in tenure and promotion
> decisions. … Infrastructure in literary studies foresees that the primary process of producing
> a monograph be the work of a single individual. A decomposition of the research process
> that leads up to the publication of the monograph is not foreseen (Kaltenbrunner 2015).

Many divergent views exist in relation to the 'accreditation perspective' (mentioned above). For example, some of the field's key concepts, such as whether one must be able to code in order to be a Digital Humanist, remain open (Ramsay 2013a) and, as we shall show its history remains largely unwritten. So, it is not surprising that views on its disciplinary status differ even within DH. For Flanders, DH is 'a critical investigation and practice of the methods of humanities research in the digital medium' for Kirschenbaum it is a 'term of tactical convenience' (Taporwiki 2011) and for Alvarado a 'social category, not an ontological one' (2012, p. 50). For Ramsey:

> Nowadays, the term can mean anything from media studies to electronic art, from data
> mining to edutech, from scholarly editing to anarchic blogging, while inviting code junkies,
> digital artists, standards wonks, transhumanists, game theorists, free culture advocates,
> archivists, librarians, and edupunks under its capacious canvas (2013b).

Others, such as McCarty, reject the category of discipline altogether, arguing that it is an 'interdiscipline', and that the metaphor of the Phoenician trader can be used to understand the experience and role of its practitioners. He draws on Galison's anthropological metaphor of a 'trading zone' to describe their canvas of operations as 'moving from culture to culture, bringing techniques from one very different application to another' (1999). Later he argued that in place of the traditional disciplinary metaphors of 'Tree, Turf and Centre', DH might be described as an 'Archipelago', its most salient characteristics being the sense of helpful distancing that it can create and the 'core anthropological event of encounter' that it evokes (2006).

As will be explained further below, the many disagreements that exist about whether it is a discipline (and thus about the coordinates of its boundary lines) have directly influenced the across-the-board approach we have taken to identifying and interviewing those who work(ed) in DH.

The State of the Art: Histories of DH

Though the application of computing to cultural heritage has been ongoing for some 70 years the histories of DH remain mostly unwritten. Indeed, with a few exceptions (see, for example, Burton 1981a, b, c, 1982; Raben 1991; Adamo 1994) the history of the field was mostly ignored until McCarty included an outline of it in his contribution to the *Encyclopedia of Library and Information Science* (2003).

In 2004, Hockey published what remains the most substantial chronological account of the history of the field. Her approach is to emphasise 'landmarks where

significant intellectual progress has been made or where work done within humanities computing has been adopted, developed or drawn on substantially within other disciplines' (p. 3). More recent work (for example, McCarty 2011; Nyhan et al. 2015; Vanhoutte 2013) has emphasized the need for histories that can, among other things, uncover, document and analyse the social, intellectual and creative processes that helped to shape research into computing in the Humanities from the 1950s until the present day. To do so, we believe that it is necessary to acknowledge multiple and contradictory narratives of foundation and discovery and to seek to explain these contradictions in a complex and nuanced fashioned that does not simply result in a flat and simplified narrative that is linear and uncontested (Nyhan et al. 2015). As McCarty has argued 'For computing to be *of* the humanities as well as *in* them, we must get beyond catalogues, chronologies, and heroic firsts to a genuine history. There are none yet' (McCarty 2008, p. 255).

Of late, a number of publications on particular aspects of the history of DH have begun to appear.[4] As well as signalling a growing interest in the history of the field something of a 'theoretical turn' away from chronology and evolutionary accounts of progress can be noticed in them. Indeed, the fields of Media Archaeology (Zielinski 2006) and Platform Studies (see Bogost and Monfort n.d.) are emerging as formative influences on what can arguably be viewed as the emerging sub-field of the history of DH. Recent, notable contributions include Jones's study of the first decade of Busa's research (1949–1959) that seeks to 'complicate the myth [of Busa as founding father of DH] with history' (Jones 2015). Sinclair and Rockwell's study of three forgotten text analysis technologies emphasise how 'the web-based text analysis tools that we use today are very different from the first tentative technologies developed by computing humanists' (Sinclair and Rockwell 2014, p. 257).

This book complements and extends this scholarship by its incorporation of oral history and the implications of this approach will be taken up at length in Chap. 2. In the context of the emerging literature on the history of DH our research is, to the best of our knowledge, the first of its kind to incorporate oral history in this way. We will now explain the wider research context that gave rise to this research.

As mentioned above, of late, there appears to be an increasing interest in the history of DH and a number of valuable contributions on it have appeared recently. Yet, many questions remain unanswered. For example, considering the military and commercial contexts of much early computing one wonders how and why Humanities scholars decided to include computing in their research from c.1950 onwards? Why did they believe that computing would advance the Humanities given how few precedents they could reference? Through what routes did they learn about Humanities research involving computers? What did the computer symbolise

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[4] For example, McCarty's contributions on questions such as the intellectual connections between Busa and Turing (2013) and reflections on the purpose of writing the histories of DH (2011, 2014). Rockwell et al. (2011) have examined how computing was represented during the incunabular period of DH in the major Canadian newspapers the *Globe* and *Mail*. Gouglas et al. (2013) have examined the emergence of DH scholarly associations in Canada. Vanhoutte has published on the history of electronic editions (2010) and is at work on a literary history. Earhart (2015) has published a book-length study of the history of digital literary scholarship.

for them and what did the very act of using the computer in Humanities research symbolise? How did Humanities scholars find technical colleagues to work with? How did they access training in programming and computing? What infrastructures (such as computer centres) existed in their universities and as Humanities scholars how did they justify their access to them? From where did they receive funding? How was their work perceived and judged by colleagues who did not use computing in their research? Through what routes did they enter into the emerging field (or not enter, or make a swift exit, as the case may be)? As time went on, and a field with dedicated journals, societies and conferences began to emerge what parallels and divergences in ways of working and exchange and in the expression of creativity and novelty can be identified? And how have these issues helped to shape the field of DH as it currently stands?

Indeed, our understanding of the history of the field can, at the present time, be best described as a shattered mosaic of uncertain but intricate design. Our research concerns not only the excavation and preservation of the remaining pieces but it is equally an exploration of the many ways that they can feasibly be pieced together. Indeed, the rather piecemeal state of our current knowledge raises the question of why the history of DH been neglected both by those who work in the field and by the Humanities more generally? These question will now be addressed before a more detailed overview of the approach to the work presented here is given.

Why Do We Not Have Histories of DH?

Elsewhere we have discussed some of the myriad arguments that can be put forward in response to this question (Nyhan et al. 2015, p. 74–5) These include the range of attitudes (such as uncertainty, hostility, fear and dismissal) to the computer and its place in Humanities research, and how such attitudes may have influenced decisions about what counted as 'legitimate' topics of historical study. Indeed, the Humanist archives show that that such attitudes were common even within the DH community. For example, one finds a number of exchanges on the question of whether it would be legitimate to offer a PhD in the area:

> Is it academically legitimate for a PhD student to write one of his or her exams in the general area of "Computers and blank" where 'blank' is his or her field of study? … There are also very good arguments against allowing such an exam. The computer does function, after all, more like a "tool" than a "method," and we seldom allow exams in "tools." We would be unlikely to allow an exam in lexicons, say, or synopses of the Gospels (Humanist 1:662).

In addition to issues of 'legitimacy' we have discussed the many difficulties that attend the writing of histories of DH (Nyhan et al. 2015, p. 74–75). Given the context of this book, and especially by way of explaining the approach that we have taken here, it is important to revisit this issue.

One crucial problem is the issue of archival sources. At the present time it is difficult to both locate and access much of the field's archival documentation. Two notable exceptions exist: the first is the archive of Busa, which was formally accessioned by the Università Cattolica del Sacro Cuore, Italy, in January 2014. Contained in the archive is a wealth of material, including his personal correspondence with Thomas J. Watson, the Chairman and CEO of IBM (1914–1956), among others, and artefacts such as the punched cards that the *Index Thomisticus* was first represented on. The second is the University of Alberta's archive on the 'Histories of Humanities Computing' that includes the papers of John B. Smith and the ACH newsletter collection. However, 'most of the materials are embargoed for reasons of copyright and privacy' (Gouglas et al. 2013). Beyond these archives, we are not aware of any others that are currently accessible. Indeed, at the present time, a crucial obstacle to the writing of histories of the field is that much of DH's archival evidence has either not been preserved or is held by individuals (and so remains 'hidden' unless one can discover its existence and secure approval and the means to access it). This is brought out strongly in Gouglas et al.'s study of the emergence of Humanities Computing as a discipline in Canada:

> What remains clear in this study is the importance of unpublished administrative documents. …. If we want to be able to trace the history of computing in the humanities we need to find and archive administrative documents. … The challenge now, before the materials are lost, is to gather and properly archive such administrative documents. The *Histories and Archives Project* at the University of Alberta has begun to do that. The impetus for the project began with the discovery of boxes of documents that literally fell into our hands. In 2008, Geoffrey Rockwell rescued from the garbage boxes of materials gathered and preserved over the years by Terry Butler (Gouglas et al. 2013).

It should further be pointed out that paper (or oral) sources are but one route into the discipline's history and those who wish to study its development from a technological perspective will also require the technical skills necessary to analyse software and other computational objects as historical artefacts.

The Approach Taken in This Book

The interviews included in this book came about in the context of a project entitled 'Hidden Histories: Computing and the Humanities'. This project aimed to identify 'early adopter' scholars and practitioners in the field of DH from 1949 until c.2006 and to carry out oral history interviews with them. We selected this approach because we recognised that it could help us to fill some of the 'archival gaps' that are alluded to above. We expected that this research (which has an element of urgency due to the advancing years of many of those who were involved in the earliest stages of the field) could allow us uncover and document information not normally included in the professional literature of the field. Furthermore, such testimonies have the status of primary sources. They can be analysed in conjunction

with other primary and secondary sources and reused by other researchers. In this way our research not only results in new knowledge about the field but also advances the possibilities that exist for carrying out further research into it.

With regard to sampling a purposive approach, which involves the seeking out of 'settings and individuals where … the processes being studied are most likely to occur' (Denzin and Lincoln 1994, p. 61) was adopted. Above we have reflected on the contested nature of DH. This is significant for setting the parameters of our study because questions about the constituency of the 'in-gang' cannot be definitively answered at the present time; indeed, we doubt whether it is even a helpful question to ask. Therefore, the approach we take is an inclusive one. We have conducted interviews with well- and lesser-known DH figures. Some have played a pivotal role in the development of the field. Some have been very familiar with its activities while maintaining something of an outsider's perspective (and so their reflections provide an important point of orientation and cross-reference). Our sample includes not only those who worked in academic positions in DH from the 1950s onwards but also those who worked in so-called 'service roles', for example, in computer centres. Included too are some of those who worked in the broad range of organisations outside of the university sector where DH also takes place, for example, funding bodies (e.g. NEH and Mellon), standards organisations (e.g. the World Wide Web Consortium (W3C)) and industry and consulting (e.g. Black Mesa Technologies). Interviews with those who worked in the Galleries, Libraries, Archives and Museums sector are in planning and it is hoped to include them in a subsequent publication. It should be noted that language was also a factor in our selection of interviewees. For the most part we have worked with interviewees who speak either English or German (because those are the languages that Nyhan, who has done most of the interviewing, speaks).

To date 40 interviews have been completed. Of those, five have been published elsewhere (see Siemens et al. 2012; Unsworth et al. 2012; Short et al. 2012; McCarty et al. 2012; Rockwell et al. 2012) as part of a pilot project that investigated the suitability of an oral history methodology to this research (see Nyhan et al. 2015). A further 12 interviews were carried out with those who worked on Busa's *Index Thomisticus* project and are in preparation for publication elsewhere as part of a special study on the female punched card operators who worked with Busa during the 1950s and 1960s. The interviews that could not be included in this book due to the pressures of time will be published elsewhere in due course.

The title of this book *Computation and the Humanities*: *towards an oral history of DH* has been carefully chosen to indicate that this is but one publication that has or will emanate from our research into the history of DH. It has likewise been chosen to signal that an oral history such as this will always remain incomplete because it is not possible to include all of the voices that we hoped to include. A number of those who worked in the field during its earliest stages, for example, inter alia, Roberto Busa, Antonio Zampolli, Joseph Raben and Paul Fortier were too unwell to be interviewed when we approached them or had already died. Linguistic constraints have already been mentioned. Furthermore, others whom we hoped to

include either declined our invitation to be interviewed or have embargoed their interviews.

All the oral history interviews presented here were carried out in line with the premise that oral history resources are acts of co-creation between the interviewee and the interviewer. The interviews are semi-structured. Questions vary from interview to interview, depending on factors like the responses of the interviewee, but all interviews aimed to explore the following core questions:

1. Please tell me about your earliest memory of encountering computing technology
2. Did you receive formal training in programming or computing?
3. How did you first get involved in what we now refer to as DH?
4. Which people particularly influenced you and how?
5. What about scholars who were not using computers in their research? Do you have some sense of what their views were about DH?
6. What was your first engagement with the 'conference community' and how did that come about?

The recordings of the interviews are available on the website that accompanies this book (see http://hiddenhistories.omeka.net/interviews) and have not been edited except to prevent potentially sensitive or private information being revealed. An initial transcription of each interview was made from the audio file was made by the project's Research Assistant, Jessica Salmon. Nyhan then set about the editing of the interviews. This stage was most labour intensive; indeed, we radically underestimated how much work this would involve. The resulting transcripts have, in comparison with the audio files, been heavily edited to aid their readability. The editing pertained to content, for example, to remove disfluencies and infelicities of speech. It also pertained to structure, for example, to delete a repetitious section. Some interviewees were able to provide relevant supplementary information after the interview had been completed and this was added to the transcript. Where interviewees spoke English as a second language it was sometimes necessary to substantially revise the wording of the transcript to ensure that their message was intelligible. Accordingly, each of the interview transcripts went through a number of stages of editing by Nyhan and she worked closely with interviewees throughout to ensure that they agreed with the proposed changes. All interviewees received at least two (and some considerably more) versions of their transcribed interviews for comment.

The interviews were annotated, and, as far as was possible, checked and cross referenced by Nyhan. On the whole, the annotation that has been inserted references external literature, usually selected by Nyhan, which is relevant to the discussion at hand though not mentioned during the interview. Given the book's expected readership, technical references have not usually been glossed. Supplementary information about individuals mentioned in the interviews has been provided when deemed necessary, for example, when information might otherwise be difficult to find or when an explanation is necessary to the wider narrative.

This book contains one chapter of analysis on the theme of 'revolutionaries and underdogs', which occurs in many of the interviews conducted so far. A book of

historical-interpretative narrative that will be based on a sustained analysis all of the interviews we have carried out is also planned.

Why Do We Need Histories of DH?

This chapter argues that the history of Digital Humanities was once neglected, is now emerging and is absolutely necessary. We have dedicated significant discussion to the lack of attention that the history of DH has hitherto received and the difficulties of researching such a history. Therefore, we will close by asking why histories of DH are needed and essential to undertake.

Perhaps the most obvious response to this question is to point out that the intersection of computing – and we use computing in the broadest possible sense to avoid the implication of either technical or social determinism or that it can be done with 'the computer' only – and the Humanities is altering not only the scope and possibilities of Humanities research (Bulger et al. 2011) but also some of the conditions under which it is carried out (Moulin et al. 2011). Of the purpose of history, Marwick has written: 'As memory is to the individual, so history is to the community or society. … It is only through a sense of history that communities establish their identity, orientate themselves, understand their relationship to the past and to other communities and societies' (1989, p. 14). Indeed, how can we understand DH's identity in any meaningful way without knowing its history? How can we trace continuities and divergences between DH and the other fields that are concerned with what it means to be Human without an adequate understanding of the multifaceted conditions that have shaped DH? As will be argued in Chap. 17, it is not uncommon for the field to communicate its contributions in a rather superficial way, for example, by reflecting on its 'revolutionary' contributions and potential. Such shallow rhetoric serves to occlude understandings of the importance of history (why consider the past when your aim is to transform the present and future?). It also casts DH adrift in the wider sea of knowledge. The History of the Humanities is a new and emerging area (viz. the recently founded University of Chicago press journal *History of the Humanities*) that complements the History of Science by studying the comparative history of the disciplines that form part of the Humanities. It seems obvious that the History of DH must be part of this wider history and that it could contribute to (and benefit from) the conversations that are ongoing there. Yet, so far, DH has engaged with this emerging field in but a limited way and this is arguably due to its underdeveloped knowledge of and attentiveness to its own history.

The last example looked out to wider developments in the Humanities but the point is no less pertinent when one looks in at DH. Indeed, we argue that the lack of such a history is hindering DH's understanding of itself and what it is that truly makes it distinctive. It is often claimed that the field's collaborative nature makes it distinct and differentiates it from mainstream Humanities. However, research that we have carried out shows that this claim is rather more problematic than it first appears. A study of one of the field's earliest projects, Busa's *Index Thomisticus*,

showed that collaboration was the basis on which it was realised. Yet, it appears that some forms of collaboration were considered more worthy than others and so the contributions of the many female (and occasionally male) punch card operators who did the work of the project were not acknowledged and, until our research, their identities and the nature of their contributions had disappeared from the historical record (see Nyhan and Terras forthcoming).

So too, an unsound indicator of collaboration, namely joint-authorship, is often invoked by the DH community as evidence of its collaborative nature. Our analysis of publication patterns in two of the field's central journals: CHum (1966–2004) and *Literary and Linguistic Computing* (LLC) (1986–2011) showed that single-authorship predominated. Our control was the *Annals of the Association of American Geographers* (AAAG) (1966–2013) where we found that increases in the numbers of multi-authored papers were more wide-ranging than in either LLC or CHum (Nyhan and Duke-Williams 2014). Thus, collaboration may be portrayed as a distinctive feature of DH but, notwithstanding the small scale of the study mentioned above, it seems reasonable to question such claims further. When and how did collaboration take on this significance for the field and how is such collaboration usually signalled in DH research outputs? What is the significance of the supposed cleaving of DH from the practices of the mainstream Humanities in this regard? How deep is our understanding of the role and performance of collaboration in DH (and indeed mainstream Humanities) and how has it changed over time? Without a history of DH (that can then be set in wider contexts such as the History of the Humanities) we cannot answer such fundamental questions.

It has been argued that the absence of a history of the field is hindering the development of its future. McCarty believes that Busa's concerns, uttered in 1975, about 'why the use of the computer is… detained at some primitive and laborious stage while its services in other fields are monumental' (cited in McCarty 2011, p. 4) still hold true today. He has seized on DH's ignorance of its history as a key reason for this: 'McGann has proposed a fascinating amalgam of theoretical ideas …, but I don't think we know what to do with them because we don't know how they fit, and we don't know that because we don't know what they have to fit to. Hence the crying need for a history' (Idem, p. 6).

We hope that this book takes an important step towards meeting this need. In the next chapter we will argue why and how Oral History is an important and productive methodology for uncovering the histories of DH.

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