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No such thing as Humanities Computing? An Analytical History of Digital Resource Creation and Computing in the Humanities[1]

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Abstract

This article seeks to answer the following questions: How is the outcome of a humanities computing project affected by the context in which it is established? Does this context have an effect on the way in which research is integrated into more traditional scholarly culture? What is the impact of national infrastructure and funding regimes? The research sought to determine how, within the confines of what is practicable and realistic, the creation and use of digital resources in the humanities can best be carried out. Research was conducted using qualitative case-study methods and compared the history and development of a sample of projects in the USA and England.

Findings were that institutional commitment to humanities computing was vital, and that this is best achieved when centres focus on research rather than teaching or support. Funding was found to be a key issue, as was the way in which young scholars are developed. All of these issues were affected by the prestige which humanities computing is perceived to have amongst more traditional scholars, since the discipline has been threatened in institutions where humanities computing is not held in high esteem. It is therefore argued that researchers in humanities computing must communicate the importance of their work to their more traditional colleagues to ensure the continued survival of the discipline.

Introduction.

Around a decade ago, a well-known scholar of the history of the United States of America and digital humanist was presenting his computer-based research to a group of more conventionally minded scholars. One of the audience enquired sceptically 'Isn't this kind of thing just like the Hula Hoop?' to which the scholar replied 'No, this is like television' (Ayers, 2001). The scholar was Professor Ed Ayers and the resource he was describing was the Valley of the Shadow project, which has become one of the most notable research projects in the area of digital humanities scholarship, yet as he admits this kind of scholarship still struggles to command the respect of many of the more traditional scholars in the historical profession. Although it is clear that digital research and resource creation is not just a passing fad, it has not yet acquired the status of a transformative technology which radically alters the way information is delivered and research performed. This paper seeks to understand why this might be and to consider the current status and impact of the discipline. To do this it will examine the relatively short history of humanities computing and a selection of the institutions and structures that support it.

Our original research in this area looked at technical problems caused by the use of platform-specific software and associated difficulties as resources began to age (Warwick and Carty, 2001). However, it became clear that these problems were symptoms of larger systemic issues. Researchers in the initial study felt keenly a lack of knowledge of good practice caused by isolation from others in the field, they often lacked time to keep good documentation and, without the ability to access the result of other researchers' trials and errors, they felt compelled to repeat them. The exception to this picture was the Robert Boyle papers project, which had access to the support

and advice provided at the Centre for Humanities computing at Kings College London (KCL).

It was hardly surprising that a project based in such a centre benefited from a fund of technical knowledge, nor perhaps that projects which found themselves marooned within a university department or library suffered from problems of isolation. Yet the actual impact of the institutional context of humanities computing has not yet been investigated, and it is this that the article will address. How is the outcome of an individual project affected by the context in which it is established? Does this context have an effect on the way in which humanities computing research is integrated into more traditional scholarly culture? What is the impact of national infrastructure and funding regimes? The research reported on in this article sought to answer these questions and to determine how, within the confines of what is practicable and realistic, the creation and use of digital resources in the humanities can best be carried out.

Methodology

The original research was conducted entirely on projects in England. It is well known, however, that a great deal of very valuable research in humanities computing takes place in the USA, and so for the second stage of the research English[2] centres were compared to a sample of centres in the USA. A case study approach was taken to the research. Interviews were carried out as a means of gathering in-depth qualitative data and the documentation provided by individual projects and humanities computing centres was also studied. Since each centre is different in form and function and in its relationship to projects within it, a semi-structured approach was taken in the interviews. This allowed core themes to be explored, but also gave the interviewees

scope to describe their particular circumstances and the history of their project or centre. The sample chosen was as follows:

Centres in England:

The Humanities Research Institute (University of Sheffield)

The Perdita Project (Nottingham Trent University)

The Research Technologies Service and Learning Technologies Groups of Oxford University Computing Services (developed from the Humanities Computing Unit)

The Centre for Computing in the Humanities, (Kings College London).

Centres in the USA:

Center for Electronic Texts in the Humanities (Rutgers University)

The Scholarly Technologies Group and Brown Women Writers Project (Brown University)

The Perseus Project (Tufts University)

The Institute for Advanced Technologies on the Humanities and The Virginia Center for Digital History (University of Virginia).

The sample was chosen to exemplify different types of organisation within which broadly similar activities in humanities computing have, historically, taken place.

Origins

Many of the centres and projects described in this study began their lives in the late 1980s to early 1990s. It was a period when, as Ed Ayers describes it, there was a great deal of excitement about the possibilities of the use of computing and of digital

resources in the humanities (Ayers, 2001). However, from their beginnings it is possible to see a difference in the philosophy behind these centres, which can broadly be described either as research-based and service- or teaching-based, and here the comparison between two centres, IATH at the University of Virginia (UVa), and the HCU at Oxford, provides a particularly instructive example.

IATH began when IBM donated some powerful computer equipment and funding for systems administration to UVa. Alan Batson (then head of academic computing and professor of computer science) argued strenuously that ten years of putting computers in classrooms had changed very little in the culture of the university, and that the surest way to change that culture was to change the way faculty performed their research. At the same time UVa felt that it was impossible to compete with Ivy League universities in science research, given their huge lead and the great expense of research infrastructure. It was therefore decided that computers should be applied to work in humanities, an area in which the university already had a strong reputation. This decision, would, it was hoped, enable UVa to build an international reputation in an area in which exciting new developments were being made. Crucially, three different Provosts of the university supported these decisions, and provided funding for the experiment from its inception. Another decision that was to prove vital was the insistence of the computer scientist William Wulf, one of the founders of ARPAnet, that the research should be a collaborative effort involving both technologists and faculty members. Thus, in the early days of IATH each humanities researcher was teamed up with a technologist. Each academic would have a fellowship which lasted a year and would be allowed a 50% cut in teaching load to make it possible for them actively to work on the project with the technologist. (Ayers, 2001, Unsworth, 2001)

The Institute therefore began with two fellows, Ed Ayers, an historian, and Jerome McGann from the English faculty. Both were already scholars with international reputations. From the first, therefore, the quality of research was considered of great importance. Ayers was aware that becoming involved in the creation of a digital resource such as the Valley project could be a risk to his career, but he took that risk in the hope of discovering a new way of furthering scholarship in his field (Ayers, 2001). IATH grew from this point, as new fellows with different projects joined the centre. The one-to-one ratio of technologists to faculty members was, unfortunately, not scalable. However, the active collaboration between fellows and IATH staff has always remained key to its method of working, as has the aim of producing research which is meaningful not only in terms of the technology it uses (and in many cases develops), but also in the contribution that it can make to scholarship in the humanities (Unsworth, 2001).

The origins of the HCU in Oxford were somewhat different, and have therefore seen it develop in a different way. It is relatively common to find small specialist centres being formed with Oxford University, which run in an almost independent fashion, and this was the case with a part of what was to become the HCU. Susan Hockey took the decision to apply for government funding to make possible research into humanities computing, and was successful in bidding for the Computers and Teaching initiative (CTI) centre for textual studies in 1989 (Fraser, 1998). At about the same time the university had been creating computer support officers for individual faculties, as a distributed way of providing support for teaching and research. By the mid 1990s it became clear that some kind of central coordination for the support workers in the humanities was needed, and a post created to do this (Burnard, 2003). The first holder of the post was Stuart Lee, who had until them

worked for the CTI centre (Lee, 2003). The Computing Services provided a base for the CTI centre and also for a dedicated computer room for humanities users, called the Centre for Humanities Computing (CHC). CTI's mission was to educate academics in the use of computers in teaching, both by running workshops in other universities and at Oxford itself (Fraser, 2003). A major benefit for the university was therefore a collection of specialist resources for humanities computing and knowledgeable staff who were able to run courses in subjects such as markup. Since 1976, Lou Burnard, who had been working as part of the Oxford University Computing Services, had been building up the Oxford Text Archive, (OTA) which was a repository for electronic texts in the humanities, many of them marked up in SGML. Unlike the CTI and CHC, this was very much part of OUCS and not affiliated to the semi independent CTI and CHC. Another strand of complication was added when the OTA received government funding to be a service-provider for the newly formed Arts and Humanities Data Service (AHDS) in 1995, which allowed further staff to be hired. It therefore seemed logical to group these areas together, ie the CTI, the OTA and the CHC (which had taken on the role of coordinating university support for the humanities). Staff of the CTI and individuals such as Lou Burnard had also, in previous years, made successful applications for funding for a variety of humanities computing projects, such as the British National Corpus, and a new centre would also provide a base for such projects and others that could be applied for in future (Burnard, 2003).

Thus the HCU came into existence as an entity, with a philosophy that was different from that which drove the creation of IATH. Unlike the deliberately conceived research centre, the HCU had a variety of origins, but the common theme of them was a focus on service provision, on teaching and the provision of teaching

materials, and on support for academics who wanted to use humanities computing techniques. Staff at the centre were neither established humanities academics nor traditional technologists, who might as easily work on medical research as on history. Instead they were members of a genuinely new breed: humanities computing professionals. They had a first degree, and sometimes a higher degree in a humanities subject and then became knowledgeable about computational techniques, either by taking dedicated courses, such as those provided by KCL, through working in the electronic publishing industry, or simply by teaching themselves techniques that they were interested in. These people were keen to share such knowledge, and when they were able to bid for research grants often worked in areas that were focussed on teaching materials, and projects that would raise awareness of the use of computers in this new area, for example the Wilfred Owen Project, or Humbul. Most did not carry out traditional academic research in the humanities, nor were they purely technologists. Theirs was firmly humanities computing research and disseminated as such. Yet despite the fact that the HCU remained a quasi-independent unit, it was physically and administratively part of the computing services, and as such was perceived, by the university and by individuals, as having a service function and not primarily a scholarly focus.

Scholarship or service?

This division between research, and service and support provision can also be seen in most of the other project examples. Perseus, Perdita and the HRI grew out of the research of a single scholar whose training had been in a traditional humanities discipline. Greg Crane founded Perseus while a young scholar at Harvard in Classics, Perdita grew out of English literary research by Vicki Burke and Elizabeth Clarke,

and the HRI grew out of the Hartlib project, begun by the historian Mark Greengrass. The resources produced by all the projects do provide a service to the academic community by their very existence, but their focus is clearly on research. Two of the centres studied have consciously tried to combine the two functions, with differing degrees of success. The Brown Women Writers project began in the late 1980s as a research project to publish little known women writers in print. The literary researchers were convinced by Allen Renear, then working in the Brown Computing and Information Services (CIS), of the potential of electronic publication and storage of the material. The project proved a huge and expensive undertaking however, and since the project did not have a particularly close relationship with the English department, the Scholarly Technologies Group (STG) was formed around it in the mid 1990s, as part of the CIS. The aim of the STG was to use the experience and knowledge of WWP members on other computing projects and consultancies, whether commercial or internal to the university. This, it was hoped, would help create revenue and convince the university of the utility of the STG staff. This has not been entirely successful, perhaps hampered by political circumstances and the dotcom crash, and keeping the STG and WWP afloat remains an ongoing struggle (Caton, 2001). It is clear then that an attempt to combine a research led project with a service and support mission has proved difficult in this context.

A far more successful fusion of these two areas can be seen in the centre for Computing in the Humanities (CCH) at KCL. The centre hosts a number of highly successful scholarly research projects, provides support and advice to academics and students on humanities computing and also teaches both at undergraduate and graduate level. From 2004-5 onwards all undergraduates in humanities subjects at KCL will have to take a course in humanities computing, but can also choose to take

joint honours courses in a single humanities subject with computing (Short et al, 2003). The status of the teaching for CCH is, however, of a different order from that offered for example by staff at the HCU in Oxford. HCU staff were employed as academic related members of staff and provided training courses in subjects such as markup, and the use of the internet for humanities. The CCH does have staff members of the same status, as researchers and analysts. However, it also employs university lecturers in humanities computing, who deliver credit-bearing modules which form part of BA or MA degrees. As such they enjoy the same level of status as other lecturers in more traditional humanities disciplines, with whom they may work on research projects. John Bradley also believes that moving the CCH from the Computing Services to the humanities faculty has also meant that it is perceived as a more prestigious and mainstream academic department (Bradley, 2004).

Whether or not it is desirable, such differences of status are very important within the academic milieu in which humanities computing seeks to establish itself. One of the interviewees, for example (who for understandable reasons wishes to remain anonymous) recalls an academic in the university department where he did his PhD commiserating with him on hearing that he had got a job based in a university computing services instead of a 'proper' lectureship. In an environment which privileges research over teaching, and both over support services, the status of support staff who do not do their own research is inevitably lower than university lecturers who are researchers as well as teachers, as is the case at KCL. Thus the question of whether humanities computing is carried out as a scholarly activity or one that provides support for such scholarship is key to the perception of its status as an academic activity. This is something that only the university hosting such a centre can determine, since it decides the institutional model for centre and makes strategic

decisions about what kind of research it wishes to support and indeed promote. However, the issue of the respect with which humanities computing is treated is an important consideration for all of us.

Funding

As Paul Caton, publishing director of the WWP, has observed, 'In the end it all comes down to scraping together some money' (Caton, 2001). As has already become evident, issues of funding for humanities computing projects and centres remain vital to the way they develop. Humanities computing projects are expensive in comparison to the traditional humanities methods of producing printed publications in the form of articles or monographs. Thus there must be an incentive for individual scholars to embark upon them, or for universities to support them. It was clear that long-standing projects in the USA such as WWP, Perseus and Valley of the Shadow had been possible though a combination of different types of funding. All three have benefited from grants from national bodies such as the NEH, however, their survival was due to complex mixture of financial support. All the American researchers interviewed agreed that the initial phases of their projects would have been impossible without support from internal funding, in various forms. Faculty members in US universities are typically given a small amount of funding to support their research. Perhaps just as importantly in the case of humanities computing projects, at UVa, IATH funded 20 hours a week of research assistance from a graduate student.(Ayers, 2001). This additional time and money can be vital in starting a new project. Equally, US universities also have internal completions for research grants, and, in the case of IATH, fellowships that carry teaching release time. Although the amounts granted are smaller than can be provided by outside bodies, the chances of success are clearly

greater, and winning any kind of grant ensures both prestige for the researcher and their project. This internal funding can also help a project to survive in the period when one grant expires and others are being sought, something that is impossible in the UK, where many projects are forced to end prematurely for want of continued funding to develop or maintain a resource.

Faculty members at Virginia are especially fortunate, since a fellowship at IATH allows them not only to benefit from its technological expertise, but also its experience in writing grant proposals. Fellowships have been lengthened to two years, partly so that the project can be at a sufficiently developed stage to allow fellows to write informed grant proposals. As a result they are more likely to succeed (Unsworth, 2001). As WWP found, the support of the institution is key, however. Brown was expected to find funds to match the $2 million of NEH grants that the project was awarded, and questions were raised about the benefits of the project to the university, and whether it represented good value for money (Caton, 2001).

As WWP found, project directors who want to ensure the longevity of their projects have to work hard to find grant money. To raise the profile of the project and keep previous donors happy, project directors may need to give a multitude of presentations to current and potential donors. This can take up so much of a project director's time that it can be difficult to concentrate on research. Nevertheless, there are douzens of private foundations to which projects can apply, and these are often less onerous in the conditions placed on the funding than state or federal grants. Gifts from university alumnae can also be a valuable source of revenue (Thomas, 2001). This is again where the research model of production can be advantageous. If a project is the result of work by a single scholar, for example Greg Crane at Perseus, it may be that s/he will be sufficiently committed to it to work hard to raise funds for its

survival, since it is so personally connected to their work. Both Crane and Ayers also found that as their prestige as scholars grew, other universities tried to recruit them (Crane, 2001, Ayers, 2001). Their own institutions then offered financial packages to persuade them not to leave, and this provided much-needed funding for their projects. This kind of approach may be made repeatedly through the career of a successful scholar and so there is a mutually beneficial relationship between the scholar's reputation and a successful digital research project. Ayers is also convinced that he was right not to leave UVa, since other universities, even highly prestigious Ivy League institutions, could not rival the unique UVa infrastructure to support humanities computing and that therefore the Valley of the Shadow project would not have survived (Ayers, 2001).

The main difference between this and the UK system is that there are fewer sources of funding for the aspiring humanities computing researcher. Very few universities have pump-priming resources needed to initiate a humanities computing project, whether this is in the form of internal grants, the release of time or internal provision of graduate research support. Thus researchers planning such a project must usually apply to national granting agencies such as the AHRB, the JISC, or the HLF. The British Academy provided a small grant to fund this research, but the amount available would cover only the very beginning of a born digital humanities computing project. A very few private foundations like Leverhulme also exist. However, it is evident that the relatively small amount of money of offer nationally means that competition is fierce.

This is a situation in which the existence of a centre in which humanities computing projects are based is invaluable. Such a centre is likely to have considerable experience in writing grant proposals and a track record of success, and

the experience of previous research projects can inform decisions made in planning proposals. The Research Technologies Service (RTS) at Oxford is also moving towards a model where posts are not intrinsically tied to amounts of money and staff time is shared between projects. This allows them to maintain a permanent, skilled workforce, and to be able to start new projects- an excellent way to convince funding bodies that an idea is viable (Fraser, 2003). Lessons learned from other projects can also help a new grant-writer produce a more impressive application than one from a single humanities academic working unsupported. Granting bodies may also feel that the support and advance available within a well respected centre will make it more likely that the project will succeed, and thus be a good use of their scarce resources. Yet all these advantages cannot in the end make up for the lack of internal and external funds when the situation is compared to that of US researchers.

Young scholars

One funding-related problem which remains common to both systems is the relative difficulty of involving young scholars in this kind of research. With some notable exceptions, the scholars who have been able to attract prestigious funding to persuade them to stay in their own institution are already relatively senior and well-known, such as McGann and Ayers. Following the example of John Unsworth at UVa, a handful of scholars have now achieved tenure on the basis of digital scholarship,[3] but this remains a controversial and difficult procedure (Unsworth, 2001). Since achieving tenure in the US system can be so fraught, many young scholars have been actively advised against doing work in humanities computing. A notable exception is that graduate students are encouraged to become involved with the Society for Early English and Norse (Seenet) project, which publishes digital editions of early English

texts. Hoyt Duggan, its founder, encourages this, since Seenet provides properly refereed publication in an area where the limited nature of the audience often made it difficult to find a print publisher (Duggan, 2001). Nevertheless, in general, work on a digital resource can be seen as a distraction from the process of amassing enough publications to be considered for tenure.

Within UK higher education, the tenure system does not apply, and digital resource creation, or at least publication stemming from it, is recognised as contributions to the Research Assessment Exercise.[4] Nevertheless, funding still presents an entry barrier for young scholars. Granting bodies such as the AHRB are cautious about awarding large amounts of money to young, unknown researchers, since they do not have a track record of success. They fear that their limited resources will be wasted on a project which may fail due to the researcher's inexperience (Morrill, 1999). The researcher is therefore faced with a similar dilemma as in the US system. Should they ignore humanities computing projects in favour of becoming well known though print publication, and thus perhaps lose touch with the digital area altogether, or do they risk not making progress in their career in humanities computing through an inability to gain grant funding? In both cases humanities computing is the loser.

One way in which young scholars can be attracted to the discipline is to work on digital projects as a research assistant (RA), and again there are differences, closely related to funding, in the way that this is organised in the US and UK systems. Grant funding the UK is used primarily on the salaries of research assistants. They usually have PhDs or at least Masters degrees in a traditional humanities discipline, and are then trained in computer techniques required for a project. This can range from complex XML and programming languages to more basic tasks which amount to little

more than data entry. In the latter case there is the risk that a highly trained and very intelligent person who already has a PhD may find the tasks frustrating and tedious. At best this leads to an unhappy workforce that is unlikely to help the progress of a project and at worst a high staff turnover and a disincentive for such researchers to continue with work in humanities computing.

In contrast to this, some RAs face a daunting learning process. Jill Millman, an RA on the Perdita project, had to teach herself to manage the technical aspects of the project in the absence of any specialist humanities computing technical support at her university. Yet this challenging task fundamentally changed her view of the kind of researcher that she is, and she is keen to continue to work in the digital area. The problem for people such as Jill is that there is still a relative scarcity of digital projects for her to work on once the Perdita funding finishes in summer 2005, and her career progression is unclear. She believes, however, that other RAs on the project, who had less challenging technical roles, and produced traditional written research on the project still regard themselves primarily as literary scholars, and would prefer to work in more traditional types of research. (Millman, 2002) Ironically, they may find it easier to progress in their careers, since their research is more easily understood by scholars in conventional English departments.

All the USA based projects in this survey used paid graduate students as RAs. In the absence of national grants for PhDs, students are usually funded by their university and in addition to being teaching assistants for more traditional faculty courses, students may work in digital humanities projects for up to 20 hours a week in vacations and 8-10 in term time. Although Perseus and some IATH projects used grant funding to appoint full time RAs for some tasks, the graduate student model was more common. RAs typically perform clerical jobs and basic data entry. However,

UVa also uses graduate students as project managers, whose role may include co-ordination with project editors, organising the digital data, building a delivery system or working with programmers to design the functionality of the resource. This is clearly a responsible job and is carried out by a relatively senior student who has already worked as a project assistant (Laue, 2001). The amount of work undertaken is possible because graduate students have to work to fund themselves through their PhDs, which can take up to ten years to complete.

The method of employing graduate students can have advantages over the use of postdocs. Initially a new graduate student may feel less frustrated at doing routine tasks since they also have their PhD for intellectual stimulation. They also retain a dual focus with a link to traditional scholarship though their dissertation. Yet they may also finish their PhD with considerable experience in computing techniques. Andrea Laue, for example, used techniques learnt on the Blake archive on which she was project manager, in her own PhD research (Laue, 2001). Some, like Steve Ramsay, may progress to a faculty position within the university system, but their experience in computing or project management also makes them potentially employable in the commercial sector

Relationship with traditional scholarship

The case of young scholars and graduate students raises important questions about the relationship of humanities computing to traditional scholarship and its culture. The problem of making connections between humanities computing and more traditional scholarship is still one which concerns scholars like Ayers and Crane. Ayers argues that traditional humanities researchers must be convinced that scholarship in the digital arena is worthy of respect (Ayers, 2001). As Lou Burnard observes, if a

notable success is a achieved using computational methods in any discipline then it tends to become well known (Burnard, 2003). If no advantages are perceived then such methods are, conversely, likely to be greeted at best with apathy. Thus the way in which humanities scholars who are digital project directors relate to their project team and the infrastructure around it is important, as is the way that its results are communicated to more traditional colleagues.

The IATH/VCDH model insists that scholars stay very closely involved with their projects, through the teaching-release system: for example, academics are required to learn about computational techniques such as markup. But IATH find that as a result of going through the competitive bidding process, scholars are usually very committed to the project and are happy to engage intellectually with the technical issues involved in such a project. (Unsworth, 2001)

At Oxford the Humanities Computing Development Team (HCDT) and its successor the Academic Computing Development Team (ACDT) were created on this model, with bids coming from academics. However a crucial difference is that the university does not offer fellowships to academics. Although they initiate and design the project they are not granted any release from teaching duties. The already overstretched scholars therefore have less incentive to remain actively involved, especially since many resources are created for teaching purposes, and thus are not perceived as especially prestigious. There is therefore a risk that some academics may regard ACDT staff more as courseware developers than technical collaborators in a research project.

The HRI, however, finds that if a project is a complex research undertaking most academics, who are encouraged to get involved in project meetings, remain closely involved and some teach themselves simple computing techniques, such as

web page creation. Christiane Meckseper, the HRI's technical officer, welcomes this, since it also reminds academics how complex and demanding the technical side of the project may be (Meckseper, 2004). The different status of research and service provision is again apparent in the comparison between Oxford and Sheffield. When projects are producing research on which an academic career and promotion may depend it seems that traditional academics may be keener to stay involved than when they perceive that they are simply being provided with a service to support their teaching.

The level of involvement in a project can have an important impact on the way that humanities computing is integrated into, and perceived by, the mainstream of humanities disciplines. Jill Millman felt that although the English department at NTU was proud of its existence, Perdita was something of a mystery to many of its members. As a result the main activity of the department has remained mainstream print publication, and Perdita has not given rise to new digital projects (Millman, 2002). This inability to achieve the critical mass that gives rise to more projects is probably the typical model in English academia at present. Perhaps this should not worry us, if humanities computing is proceeding successfully in centres such as the HRI and CCH. However, the research undertaken for this project suggests that if we wish such research to thrive then it must be respected by mainstream scholars, since these are the people likely to be power-brokers in institutions when decisions are taken about priorities. If humanities computing remains an isolated activity, whose practitioners are not respected for their scholarship, then its existence in an institutional context can be threatened.

Institutional context

Institutional commitment is vital to the survival of humanities computing, partly because of its cost, and this kind of commitment may alter when the institution, or even individuals within it changes. The case of the HCU at Oxford is particularly instructive. The HCU was an internationally renowned centre of excellence in humanities computing, but now no longer exists. This happened because in 2001, following the North report, Oxford University was reorganised into five different divisions. At the same time the director of the computing services, who had been especially supportive of the HCU, retired. Some jobs within OUCS had also become redundant due to greater use of web-based resources and distributed support. Thus a thriving HCU suddenly appeared to take up a disproportionate amount of personnel and resources. OUCS was now jointly funded by all five divisions, and the management of the HCU began to be uncomfortably aware that questions might be asked about why money from non-humanities faculties was being used to support the computing services whose activities seemed so disproportionately beneficial to the humanities (Lee, 2003). This in itself need not have seen the end of such a centre, however. Sheffield University, for example, values the HRI highly because it brings in large amounts of grant money and is beneficial to their RAE rating.[4] However, despite its considerable grant funding and RAE contribution, Oxford did not see the HCU as a comparable asset. This may have been because the HCU was not perceived as researched-based or prestigious because of its service context.

The obvious solution would have been to have moved the HCU into the humanities division. However the departments could not perceive the benefit of doing this, relative to what it would undoubtedly cost them (Burnard, 2003). As a former employee of the HCU and English faculty, personal experience shows that it was extremely hard to convince traditional scholars in Oxford of the value of humanities

computing research. This is partly because so few Oxford academics were involved in any of the work the HCU carried out, and had little knowledge of, or respect for, humanities computing research. Had there been a stronger lobby of interested academics who had a vested interest in keeping the centre going because they had projects associated with it, perhaps the HCU could have become a valued part of the humanities division. That it did not, demonstrates the consequences of a lack of respect for digital scholarship amongst the mainstream.

Some of the constituent parts of the HCU have survived, however. When OUCS was reorganised, the teaching-related functions became part of the Learning Technologies Group (LTG), and the HCDT, became the ACDT; a development team for computational resources in all disciplines. The RTS now provides a home for the Oxford Text Archive and Humbul and other grant funded research projects. Many of the same people are still involved in the work of the RTS, but the service itself has a different focus. Work must now always be of direct benefit to the university as a whole, and research projects tend to emphasise not only computing, but also ways that it will aid the university's general mission. So, for example, the usefulness of Humbul is not only in the service it provides to humanities users, but also in its use of emerging technologies such as web services, portals and access management (Burnard, 2003).

No such thing?

Stuart Lee and Lou Burnard both feel that this move to a more general computing focus is sensible, since especially after the advent of the web, few technologies are applicable solely to the humanities. Lee has not found it difficult to work with scientists, since although he may not be knowledgeable about their disciplines, still

the nature of the work that they require, such as mounting databases on the web, or designing e-learning resources, is familiar. (Lee, 2003) Neither he nor Burnard are convinced that there is such as thing as humanities computing, if constructed as a discrete discipline. They argue that although there may have been a technological moment in the late 1980s to mid 1990s when specialist software and resources were needed for humanities scholars, that is now no longer the case (Lee, 2003, Burnard, 2003). Lee feels that there is simply a need, as there has always been, for intermediaries between academics and technologists, who can speak the language of both, in what ever discipline this may be (Lee, 2003). Burnard also feels that such a unit, whose emphasis is on computing research, helps to avoid the stigma of research assistants being seen as 'second-class humanists' and instead allows them to be perceived as first-class computational researchers (Burnard, 2003). This may be the case, but there is a danger that first-class computing researchers might feel that their talent should be remunerated at commercial levels, whereas those who define themselves as humanists of whatever class might be more likely to stay, from a genuine interest in the material on which they were working.

Since the emergence of the web, and the development from SGML, which had been a humanities-dominated technology, to the much broader application of XML there may be less difference between the needs of different academic communities. Burnard (2003) also argues that the purpose of all humanities research should be to make connections between people and themes. It was also remarkable how many early adopters of humanities computing technologies had acquired technical knowledge from colleagues or friends in disciplines such as engineering or social sciences (Unsworth, 2001, Fraser, 2003, Duggan, 2001, Ayers, 2001, Crane, 2001). They nevertheless chose to apply these skills to humanities problems: although Greg

Crane stresses the importance of making connections with other disciplines, Perseus is still very much a humanities resource (Crane, 2001).

It may be that to perceive humanities computing as a discrete discipline is misleading indeed. However it seems regrettable to see humanities scholarship and dedicated research units swallowed up into a generic whole. Humanists are realistic enough to know that their disciplines are likely to constitute a much smaller part of the university budget than sciences and medicine, which while they require massive funding may also earn large amounts of grant money. But the precedent of budgetary pressures causing the disappearance of a specialist unit seems worrying for those of us who care about humanities subjects whether with or without the use of computers.

Prestige is not only measured in financial terms, however. It may also be perceived in terms of the reputation of the institution, and its ability to compete internationally and attract students and staff. Indeed research that is thought of as important may not even be especially lucrative: it is arguable that biomedical research costs English universities more money than it makes. Yet any decision to cut this would be seen as a risk since such research is high profile, prestigious and recognised by the world beyond the university. In a similar way, Virginia sees research in the humanities as highly prestigious and a driver of the reputation of the university, and IATH is perceived to be central to this. Oxford, which has an international reputation for excellence in the humanities did not perceive the HCU as important in advancing this reputation. This difference in perception has been vital to the survival of computational research that is specifically directed towards humanities problems, since university authorities will support research even if it is expensive, when they perceive a benefit from it.

Whatever justifications can be offered, most computing humanists would probably rather be valued for their unique combination of computational knowledge and humanities research, than simply for the skills they possess. Thus the prospect of being swallowed up into generic whole seems unattractive enough to be worth fighting against.

The role of libraries

It may be that libraries can provide an alternative institutional base, which allows humanities computing to continue as a specialist activity, but within a more generic context. Like the HCU, CETH's survival was threatened when Princeton withdrew from a joint arrangement to run the centre with Rutgers University. Some of the activities that CETH had run, such as summer schools, had to be curtailed, but the centre itself has survived, albeit in a more modest form, as part of the library. Its director Brian Hancock began his career as a librarian, and has, like many other researchers interviewed in this study, taught himself techniques such as XML. Although on a much smaller scale than IATH, CETH now functions as a research and development unit, and publicises its work to academic departments, and runs projects jointly owned with humanities departments. This dual relationship is seen as a benefit, since CETH and its staff can benefit from networking with librarians with other areas of knowledge, which in its turn may filter back to academic departments (Hancock, 2001). For example its current research is on distributed operating systems, particularly Plan 9 and Inferno, which it is using for a Humanities Grid shared between CETH, Philosophy and Classics: the first known use of Inferno for a computing grid specific to the humanities. (Hancock, 2003, Hancock, 2004) This could be seen as the library performing its traditional function as an organisation for

the intermediation of knowledge, in this case using information technology to do so. It may be that Rutgers is more aware of the expertise of its librarians, due to the influence of its prestigious library school. However, they are not the only university where there are strong links between the library and humanities computing. UVa library has also long been involved in the creation of digital resources in the humanities with its E-text center. IATH and VCDH are physically housed in the Alderman library building, and although IATH is not part of the library in management terms it collaborates closely with the E-text center. Graduate staff members such as Steve Ramsay may work successively in either centre and the library often takes responsibility for the production of digital projects where IATH feels that the technical context is not sufficiently novel, but the humanities input should be produced (Ramsay, 2001, Unsworth, 2001).

Although libraries and library schools have long been thought of as bastions of dry traditionalism, recently some humanities computing professionals who have previously worked in centres discussed in this article have moved to such departments.[5] This may show a welcome realisation on the part of the library and information profession of the importance of work being done in the area of humanities computing and digital resource creation. Certainly the library and archives community is increasingly innovative in its use of digital materials in the humanities, and this seems a further area with which humanities computing could communicate.

This kind of formal, infrastructural link has not been made at Oxford. However, Stuart Lee, of the then HCU, was seconded to work on the digitisation of the Bodleian's collections. The Oxford Digital library was formed in 2001 and is managed by the former head of the Oxford Text Archive, Michael Popham, and there is growing collaboration between the RTS and Oxford University Library Services on

issues such as Eprints, preservation, electronic resources, resource discovery and portals (Fraser 2004). However, as the experience of CETH shows, it is possible for a humanities computing centre to retain a specialist focus, yet be part of a larger library infrastructure. Oxford has decided to restructure the functions of both the library and computing services, but to keep them separate, and not to retain a specific focus on the humanities. Opinions about the success of this decision among library and OUCS staff differ, and it may seem regrettable to outsiders with a vested interest in humanities computing. However, it is clearly perceived by the University as a better way to further its current and future strategies.

Conclusions and recommendations

As Francis Crick memorably remarked, 'communication is the essence of science' (Garvey, 1979, p.ix). But as most researchers know, traditional humanities scholars tend to be less prone to sharing knowledge than their scientific colleagues. Nevertheless, it is the contention of this research that communication is just as vital to the continued success of humanities computing. The period in which the research was done happened to coincide with major institutional changes which profoundly affected the mission of one of the centres studied, the HCU in Oxford. It lost its distinctive focus on humanities research arguably because other humanities scholars within the university did not perceive its unique value to their disciplines. While the humanities computing community itself held the HCU's work in high esteem, many humanists in its own institution, it appears, did not.

Olsen (1993) has argued that it does not matter if more traditional scholars do not understand research in humanities computing, since the recognition of our peers should be sufficient. Indeed, in an ideal world, humanities computing researchers should not have to sell their work to a traditionalist community. However, this study

shows that in the real world of academic institutions, politics and funding, such an attitude is too optimistic. Many of the scholars who began the projects discussed above, such as Ed Ayers and Greg Crane, have indeed worked very hard to publicise their projects, to sell their research in the cause of funding and continued support.

Scientists think it is important communicate their results so that they can be verified and advance the status of knowledge in their field. In pragmatic terms, they also do so because prestigious publication and a track record of excellence leads to research funding, career advancement and increased status in their institution, not only for themselves but for their research. As we have seen, in comparison to traditional scholarship, humanities computing research is expensive, and so issues of prestige and reputation are also vital in humanities computing. This is because if university authorities perceive humanities computing as valuable they are willing to support research even if it is expensive.

Universities such as KCL, UVa and Sheffield, have, in their different ways, chosen to promote humanities computing, specifically because as a new and relatively unusual research area, it is seen as an activity that will enhance their scholarly reputation. A stark contrast has emerged from this study. Where humanities computing was thriving it was seen as a prestigious research activity. But it has struggled to survive in cases where its value was not evident to the university, such as Perdita, or the STG, or where humanities computing was associated with the less prestigious areas of support, service or teaching, such as CETH or the HCU. This is because few academics, if they are honest, believe that international reputations are to be made through excellent teaching, and fewer still value support personnel as technical or information experts who make academic research possible. Universities themselves therefore see support as a financial drain, and usually derive much less of

their income and prestige from teaching than from research. Thus whatever we may think is desirable, in pragmatic terms for humanities computing to thrive it must have a strong research element, and must promote itself as such.

The active support of the institution in which humanities computing takes places is clearly vital, and coupled with this is the question of funding. In many ways US universities have an advantage in this area, since there are simply more avenues that researchers can explore when seeking funding for a humanities computing project. It would be naïve to expect that the UK taxation structure might suddenly be changed to facilitate charitable giving by private foundations or grateful alumnae on the US scale. The amount of fee income of UK universities is also much smaller than their American counterparts, even at state level. As a result academic salaries are not at the level where universities pay a premium for stars whose own institutions will then make counter offers to keep them. This therefore means that at present the US has a considerable financial advantage over the UK in this area.

One way in which UK universities might cope with this problem is by learning from the US experience and using paid graduate students to work on humanities computing projects. A well-trained graduate research assistant could do the job that post doctoral RAs perform just as well, and perhaps without the attendant frustration of their skills being under used. With debt an increasing problem, graduate students would no doubt be keen to do this kind of work, not least since teaching opportunities in most universities outside Oxbridge can be scarce. Those students funded by the AHRB are limited to six hours of work a week, but this is only two less than the work load of a research assistant at UVa. Research assistants in the USA also feel that they have learnt a number of transferable skills, whether in computing or management, as part of their project work. So an imaginative solution would be to allow such work,

properly certified by the university, to count towards research council training requirements. The benefit to the project would also be that such workers would cost much less than a post doctoral researcher. The requirement that humanities PhD students finish their degrees in a maximum of four years would mean that it is unlikely that graduate students would be allowed the time to be project managers. But this seems short sighted if the research councils really are concerned that students have skills that make them more employable after finishing their doctorate. With the support of research councils it is possible to imagine a scenario where doctoral students would be allowed to complete later if they had been carrying out a project manager's role.

Although graduate research assistants also perform the much-needed role of carrying humanities computing knowledge into the more traditional humanities communities in the US, the problem of involving younger researchers remains. It is here that the UK system of central grant funding may be more advantageous than the American model, yet it can still be very difficult for young, unknown scholar to be funded to large humanities computing projects. Although most young humanities scholars write a book to establish their reputation after their PhD, a young scholar who wants to establish him/herself in humanities computing is in the position of the young scientist, who may not have anything to write about until s/he has money to fund practical research. One way to promote the work of these scholars would be a ring-fenced competition specifically for young scholars, on the model of the scheme run by science funding councils. This might provide enough money for a project to be started. It would prove the ability of the young scholar, and reassure funders that it was no more of a risk to give money to a younger scholar than to someone already

established. Without this, there is a real disincentive to practical humanities computing activates by young scholars, except as a research assistant.

Interviewees throughout this research have insisted that connections must be made between humanities computing and work in other disciplines. Perhaps the argument that there is no such thing as humanities computing is indeed persuasive, if we envisage it as a discrete entity practiced only in a certain type of subject or centre. Although we must of course try to discover commonalities with other disciplines and not circumscribe our activates within any one context, such communication must be welcome, since the major lesson of this research has been that it is in collaboration, communication and the building of connections that we can ensure the continued prestige of a subject that does retain its distinctive humanities focus. It is by doing so that we must explain to our more traditional peers why it is important that there is, and should remain, such a thing as humanities computing.

Notes

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[2] England was chosen in preference to the UK in general, despite the presence of an excellent humanities computing centre at the University of Glasgow. This decision was made because academic funding structures in Scotland are different from those of England and Wales. Since the issue of how universities themselves are funded and their relationship with government funding for students became so crucial to the research, this is intended to avoid any possible confusion.

[3] Those known to the author are William Thomas, Department of History, University of Virginia, Allen Renear, GSLIS, University of Illinois, Susan Shreibman, MITH, University of Maryland.

[4] For details of the RAE timetable and procedure, please see http://www.rae.ac.uk/

[5] For example, John Unsworth, (IATH to University of Illinois, GSLIS) , Allen Renear (STG to University of Illinois, GSLIS), Susan Hockey (HCU and CETH to

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UCL, SLAIS) Claire Warwick, (HCU to Sheffield, Department of Information Studies

and UCL, SLAIS)

References

All interviews were conducted by the author.

Ayers, E. (2001) Interview at the Center for Digital History. University of Virginia.

Bradley, J. (2004) Comment made at the delivery of the paper version of this article at the 16th Joint International Conference of the Association for Literary and Linguistic Computing and the Association for Computers and the Humanities, Göteborg University, Sweden, 11-16 June, 2004.

Burnard, L. (2003) Interview at Oxford University Computing Services.

Caton, P. (2001) Interview at the Scholarly Technology Group, Brown University.

Crane, G. (2001) Interview at the Perseus Project, Tufts University.

Duggan, H. (2001) Interview at the Department of English. University of Virginia.

Fraser, M. (1998) CTI Textual Studies 1984-1999: What Have We Learnt? Paper delivered at the Digital *Resources for the Humanities conference*, Glasgow University, Sept 1998 **http://users.ox.ac.uk/~mikef/pubs/DRH98_fraser.html**

Fraser, M. (2003) Interview at Oxford University Computing Services.

Fraser, M. (2004) Email communication to the author, dated 15/7/04.

Garvey, W.D. (1979) *Communication: the essence of science - Facilitating information exchange among librarians, scientists, engineers and students*. Oxford, Pergamon Press.

Hancock, B. (2001) Interview at the Center for Electronic Texts in the Humanities, Rutgers University.

Hancock, B. (2003) Reinventing Unix: an introduction to the Plan 9 operating system Library Hi Tech. 21.4. 471-476.

Hancock, B. (2004) Email communication to the author, dated 17/7/04.

Laue, A. (2001) Interview at the Institute for Advanced Technology in the Humanities, University of Virginia.

Lee, S. (2003) Interview at Oxford University Computing Services.

Meckseper, C. (2004) Humanities Research Institute, University of Sheffield. Personal communication.

Olsen, M. (1993) Critical Theory and Textual Computing: Comments and Suggestions, *CHUM,* 27:395-400

Ramsay, S. (2001) Interview at the Institute for Advanced Technology in the Humanities, University of Virginia.

Short et al. (2003) Meeting with Harold Short, Willard McCarty and John Lavanigno, Centre for Computing in the Humanities, Kings College London.

Thomas, W. (2001) Interview at the Center for Digital History. University of Virginia.

Millman, J. (2002) Interview at the Department of English and Media Studies, Nottingham Trent University.

Morrill, J. S. (1999). Personal communication.

Unsworth, J. (2001) Interview at the Institute for Advanced Technology in the Humanities, University of Virginia.

Warwick C and Carty, C. (2001) Only Connect, a Study of the Problems caused by platform specificity and researcher isolation in humanities computing. In Arved Hubler, Peter Linde and John W.T. Smith, (eds.) *Electronic Publishing 01, 2001 in the digital Publishing Odyssey.* Proceedings of an ICCC/IFIP Conference at the University of Kent at Canterbury, 5-7 July 2001 pp. 36-47