The PhD in Digital Humanities
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> The dream of every cell is to become two cells.
> — François Jacob[1]

1.   Overview

The PhD in Digital Humanities was established at King's College London in 2005. By 2010 experience had persuaded us that collaborative supervision of interdisciplinary work is the norm for doctoral research in our subject. This, you might think, is obvious, but we had created the PhD deliberately without constraining what students might make of it. (More on origins and developments later.) Discussion with students and colleagues led us to suspect that despite the obvious popularity of nearly anything to which the adjective "digital" might be attached, despite the relative success of the degree program in attracting students, its title remained an impediment. We reasoned that as the identifier for a doctoral program in a departmentalized world, "digital humanities" implies its own subject and so by implication excludes others. In a sense creating this problem in categorization is a positive result from many years of struggle for recognition, but at the same time it leads to a serious problem. In effect the rubric requires a potential student to infer that the humanities subject which most interests him or her can be studied with critical involvement of digital tools and methods. No amount of qualifying prose, we thought, could overcome what the rubric seems to imply. The name of our degree was in effect hiding the interdisciplinary collaboration that our experience had shown was of the essence—and the most compelling, indeed innovative aspect of the degree.

In Autumn 2010, therefore, supported by the evidence our students' projects supplied, I began negotiating with the academic departments in the School of

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[1] François Jacob, quoted by Jacques Monod in *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology* (New York: Vintage, 1972), 20

Arts and Humanities to give the existing degree multiple names, one for each discipline or disciplinary area. (Creating multiple names for the same program rather than multiple program was a far simpler and quicker to accomplish administratively.) The idea was to make the possibilities of the PhD in Digital Humanities explicit rather than keep them concealed under a name that is paradoxically both popular and obscure. Thus, for example, we agreed with the Department of History on a PhD in Digital History and with the Department of English and American Studies on the PhD in Digital English and American Studies.

The resulting programs were launched with the renaming of my department, from the Centre for Computing in the Humanities to the Department of Digital Humanities, CCH to DDH, in Spring 2011. At the same time we retained the "PhD in Digital Humanities" to denote studies of technical, methodological or behavioral subjects mostly in our field or in subject-areas for which a collaborating department is not available but which we could support internally. The scheme was designed so that applications to all the degrees share the same process of evaluation, described below.[2]

2.   Origins

In 2005 the CCH established its PhD program when an MA student of the department showed keen interest in pursuing doctoral studies. In comparison to the process in some other countries this happened quickly, with very little effort, since administrative procedures for creating a doctoral program in the UK are much simpler than they are, for example, in North America. In the UK, as Holm and Liinason have noted, "it is easy to set up courses and degrees in disciplines that can demonstrate market demand."[3] Indeed, anticipated market demand may be sufficient if a plausible case for such demand can be made.

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[2] At the time of writing (March 2011) no students have yet been enrolled under the new scheme, but it seems worthwhile to note the path laid out for the immediate future before turning to the origins and recent history of the PhD.

[3] Ulla M. Holm and Mia Liinason, "Disciplinary Boundaries between the Social Sciences and the Humanities: Comparative Report on Interdisciplinarity," report prepared for the Research Integration: Changing Knowledge and Disciplinary Boundaries Through Integrative Research Methods in the Social Sciences and the Humanities project, University of York, May 2005, 7.

As it happened the initiating student dropped out after a year, but two others joined in 2006. Since then the program has grown at a modest but accelerating pace; at the time of writing there are eleven students in the programme, not including one who transferred into the social sciences, two who have taken a leave of studies, one who has deferred final application for Autumn 2012, and two to three others almost certain to apply and be accepted. I will review the projects undertaken by the cohort of eleven students below. The queue of seriously interested students fluctuates but tends to be about six to eight.

3.   The process of application and admission

The nature of the British PhD has necessarily shaped the degree program. In particular, unlike the North American PhD, the British is research-only, spanning a maximum of four years full-time (eight part-time). Students begin with MPhil status; after approximately a year of full-time work or its equivalent they submit application for upgrade to the PhD. The upgrade interview does not constitute a comprehensive examination of the student's disciplinary knowledge, as in North America, rather the ability to carry out doctoral-level research within the scope of his or her project, or as the Australians denote it, a confirmation of candidature. Throughout the program, before and after the upgrade, reports of progress are now required half-yearly.

The brevity of allotted time for a research-only degree means that a well developed, cogent research proposal is the primary focus for admission. Partly because the subject is new, partly because it is highly interdisciplinary, we have found that most students need a significant amount of help developing their proposals before formal application. Usually a student contacts the Admissions Tutor with little more than a notion, sometimes not even what might be called a research problem. If the notion is plausible and the student undeterred by the commitment to doctoral work and its costs—approximately 20% survive to this point—he or she is encouraged to write a draft of roughly 2 pages (reduced in size from the much longer document formerly required.) Through a cycle of commentary and revision, often iterated several times, perhaps over months, either a cogent proposal emerges or the weakness of the idea becomes obvious. If the Tutor thinks the proposal is sufficiently strong and if one or more supervisors on staff or nearby can support the research, the student is then encouraged to apply. The process is laborious and may indeed be trimmed with the greater number of applicants we expect, but to date it has pushed us to discover potential dimensions of the PhD that we might not otherwise have seen.

In a few cases to date informal arrangement for co-supervision has been made with academics in institutions beyond the College. Arrangements with cultural institutions in London or nearby are certainly possible though none have yet been successfully forged. A mechanism for formalizing such arrangements is now being put into place with the approval of the School of Arts and Humanities. Discussion is also ongoing with a Canadian institution on the possibilities for close ties that would establish cross-institutional co-supervision, perhaps a joint degree.

In the UK the PhD is slowly moving somewhat closer to a North American model by providing instruction in research-related skills for the first year, e.g. at King's through the UK Doctoral Training Centre scheme and through courses offered by the Graduate School. (I teach one of these courses, on interdisciplinary research,[4] which emerged from my experiences in pursuing the digital humanities wherever it might lead.) For the PhD in Digital Humanities and its derivatives the department itself offers modules in its MA programs to which new students may be assigned by their supervisors.

No minimum requirements for a specific level of technical knowledge have been set, thus leaving room for a merely instrumental use of existing tools and for a purely speculative or theoretical project. Where such knowledge is absent, demand is placed on critical use of off-the-shelf tools or meticulously careful, intellectually sophisticated reflection on manifestations of computing. An acceptable dissertation must contribute to the digital humanities as a whole, at minimum by surveying previous work in an area, extending it to new areas of application and reflecting critically on what the dissertation has done.

The norm for the PhD remains full-time study while the student is resident in London, but compelling cases for non-resident study have resulted in the "semi-distance PhD", as we have called it. The practice would seem to be quite common now, especially for an institution located in an expensive city—but even more for a minority discipline that needs doctoral students in order to grow. Basically a student wishing to take up the semi-distance option must agree with

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[4] For a brief description see "Research Development Programme," King's College London, last modified December 1, 2010, http://www.kcl.ac.uk/graduate/school/training/exploringdisciplines.html. The syllabus provided there has been revised subsequently; interested readers should contact me for more information.

his or her supervisor on a schedule of visits, which of course can include those done by internet or by telephone.

Funding remains a problem for many students. One of ours who has been especially clever raising funds from unexpected sources has co-authored (and sells) a booklet, *The Alternative Guide to Postgraduate Funding*, to help address the problem.[5] Otherwise we are actively looking into building studentships into research project applications (as a staff-member, Dr Peter Stokes, has already done for a digital palaeography project, about which more below) and other fund-raising ventures. But the fact that all but two of the students, past and present, have funded themselves or come with non-UK funding does underscore the level of commitment to the idea of this degree. From the beginning it has been demand-driven. But what is the idea?

4.   The originating idea of the PhD

With no precedents of which we were aware, we began more with questions than with a scheme or set of criteria, as I indicated earlier. We wanted to discover if a PhD in the subject was possible, indeed, if the idea itself made sense, and if it were both conceivable and possible, what it might involve and how it might be structured.

From the outset its primary objective was clear: to produce culturally literate and critically as well as digitally adept scholars. Furthermore, we knew we wanted to equip them to pursue compelling research questions with computing, and whenever possible to do this not just in their disciplines of origin but wherever those questions might lead, including into the methodological heartland of our subject. We were much less clear about the kinds of knowledge and experience we might require of applicants, about existing models of research we might adapt and about the mixtures of practical, conceptual and theoretical work which might prove best. We did not proceed strictly from our competencies and interests to specify the range of subjects a student might undertake, nor did we limit applications to pre-existing studentships, but deliberately left the boundaries undefined and the possibility of self-funding open. We preferred, that is, to see what might happen, then adapt ourselves to the demand, if any, and perhaps eventually make these boundaries explicit.

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[5] For more information, see "GradFunding," March 28, 2011, http://www.gradfunding.co.uk/.

The openness of the PhD in Digital Humanities already puts considerable demand on the teaching and research staff of the DDH to match incoming doctoral research projects with adequate technical and non-technical support. But in a market-driven academic economy, as ours is, this demand creates exactly the kind of problem one wishes to have, whatever the temporary discomfort.

5.   Current projects

At the time of writing collaborative supervision is ongoing within the disciplines of these Departments and Programs: Classics; Culture, Media and Creative Industries; English and American Studies; Hellenic Studies; History; Music; Philosophy; Portuguese; and (with a professor at University College London) Translation Studies. The cohort of enrolled students whose projects are sketched here numbers eleven, as I noted above. In addition I include the project currently on hold and the well-developed ideas of the student who has deferred formal application.

Of these projects five involve verbal language, four are historical, one musicological, one anthropological and one socio-philosophical. Three (or perhaps four) of these involve textual encoding, two relational database technology, two corpus-linguistic methods and one (or perhaps two) statistical analytics. In two projects the students are designing and building their own modeling software.

5.1   Projects in language

The first of five projects under this heading is a detailed analysis of how a translator's awareness of linguistic features in the original text affects his or her strategies of translation and so alters the meaning of the rendered text. It considers three twentieth-century American novels recently translated into Lithuanian. Corpus linguistic techniques and XML markup are certain; as of yet the extent to which statistical tools will prove relevant is unknown. For support on the Lithuanian side a senior professor in Vilnius has agreed to collaborate, and for support with translation theory another senior professor from University College London, as just noted. From the digital side the primary question here remains the powers and limits of text-analysis, which despite several decades of work are still not entirely clear, still capable of surprising us.

In another project stylometric analysis is applied to possible co-authorship of *Titus Andronicus*, usually attributed solely to William Shakespeare but possibly involving George Peele. Sentence-patterns are to be used as the primary

discriminator. A senior professor and his research associate in the Institute of English Studies (London) have agreed to collaborate informally on the supervision, as has another senior professor in Australia. Colleagues in stylometrics were involved in evaluating the research proposal for admission. It is at first glance a fairly standard kind of authorship study, but as always the devil is in the detail: what patterns are revealed with what approaches, and how persuasively?

A project in what might be called interoperable bibliography is underway in collaboration with a professor of computational linguistics in the Department of Philosophy. The primary question is the extent to which fully automated techniques can pick out canonical references to classical Greek sources from secondary literature. Here the student is writing the software, which is an integral part of his research; it has potential use well beyond the doctorate, e.g. with bibliographies such as *L'Année philologique*. Further questions pertain to the effects of the tight interlinking of resources that could result from application of such tools across the discipline. The hard problem of interoperability is central, as noted.

An editorial project, co-supervised with Classics, is comparing current work on the digital side with editorial practices in printed critical editions of Homer, using the first book of the *Odyssey* as its focus. The student is considering *The Chicago Homer* and *Homer Multitext* as well as other digital products. The questions here are obvious but difficult: what do scholars of Homer want from an edition that the digital medium can better provide than the codex? What does Homer have to teach designers of digital editions? What accomplishments of the printed critical edition are at least currently beyond the reach of a digital edition? The specific focus on a single work places the questions of design precisely at the level at which scholars work.

The final project under this category is probing the interconnections between changes in publishing and changes in the humanities that stem from digital transformations of the book. It examines not only effects on text and how we relate to it when reading but also how the processes and mechanics of the publishing industry shape the digital text. What is needed, the student argues, is grounding in the concrete realities of the publishing industry, the situations of authors and readers and all the ways in which text is made available for reading. The problematic notion of de-materialized text—of information that moves unchanged through various media—plays a central role in this research.

5.2   History by prosopography, by text-analysis and by palaeography

One of the historical projects involves a study of political language, the other two involve prosopography, i.e. history derived from the historical actors. The prosopographical projects use relational database technology, and one of these uses mapping software. The study of political language uses corpus techniques. All three are co-supervised with colleagues at King's.

One of the database projects focuses on the fourth- to early fifth-century *Ecclesiastical History* by Socrates Scholasticus. Its aim is to analyze biases and interests of the author and to chart the embedded geographical information. This project continues in the footsteps of the Prosopography of the Byzantine World, developed at King's, and seeks on the computing side to refine our understanding of digital prosopography by critiquing earlier ones as well as by exhibiting new approaches.

The other database project concentrates on high officials of the Portuguese court under the reign of John III (1521–57). It uses correlated assertions about these officials to enquire into the commonplace but incompletely understood notions of courtly service, social mobility, power and social reproduction. It asks if the group of individuals in service constitute a homogeneous group, whether patterns of social promotion can be discerned and a number of other questions to which answers are currently unknown. Categories of roles and typologies of interrelation, enforced by database entry, are themselves research questions. As with all such projects, the question of technological adequacy is forced by the normal intractability of historical data.

The corpus project is a study of late nineteenth- to early twentieth-century grassroots politics in East Anglia through a corpus linguistic analysis of speeches as transcribed in local newspapers. The student has laboriously built his own million-word corpus of election speeches, 1880-1910, and has to hand two larger reference corpora. From his corpus, using simple concordancing tools and elementary statistics, he argues quite persuasively for the close fit between the language of electioneering and the capabilities of the tools we have. He shows the inadequacy of remembered instances and broad generalizations drawn from long familiarity with historical data. Here, digitally, is an extension of known methods to a relatively unexplored kind of language, demonstrating their utility and power. Historically it demonstrates how close attention to the data upsets received knowledge.

The palaeographical project, which is just beginning, involves analysis of 6000-7000 Norwegian manuscript fragments from the period c. 1000-1300 in order to investigate ecclesiastical connections between England and Norway. To date the

corpus has proven too large for manual analysis. For this reason the student will use digital methods under development in the department and within Scandinavia. These methods will be applied to suggest heretofore unnoticed relationships e.g. between letter-forms and layout and to identify fragments which were likely produced by the same scribe or scriptorium, or indeed were once part of the same book. These relationships will in turn help to address key questions about English influence in Norway, ecclesiastical links between the two countries, and English script types in Norwegian scriptoria and their influence on Norwegian vernacular styles. The student is also planning to create an online resource that makes some of this research available to scholars and the general public. The dissertation is also intended to promote links between the digitisation projects in Scandinavian and at King's College London.[6]

5.3   Musicological editing

The question here begins with the same dilemma as the Homeric edition: the still fluid and hotly debated nature of digital textual editing. The focus, however, is on the strongly performative dimension of musicological editions; several difficult but fascinating technological issues are faced, including development of recommendations from the Music Encoding Initiative. The student has begun with these recommendations but is writing his own software to model forms of the musical text. As expected this project involves collaborative supervision with the Department of Music, but the student is also working closely with the Carl-Maria-von-Weber-Gesamtausgabe or WeGA project (http://www.weber-gesamtausgabe.de/) in Paderborn on a digital edition of Carl Maria von Weber's opera *Der Freischütz*.

5.4   Narratological geography

In this project the student is investigating the differences between verbal and cartographic information for geographical purposes, asking what is the

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[6] For the project, see "Digital Resource for Palaeography," King's College London News and Events, last modified December 7, 2010, http://www.kcl.ac.uk/newsevents/news/newsrecords/2010/Dec/DigitalResourcef orPalaeography.aspx. For the attached studentship, see "PhD Studentship: Digital Resource of Palaeography," King's College London, last modified January 20, 2011, http://www.kcl.ac.uk/schools/humanities/grad/phdstudpmd.html. I am grateful to Dr Peter Stokes and Ms Matilda Watson for help with the text of this section.

difference between a text and a map? His project is supported informally by three scholars in Norway as well as by colleagues in the department at King's. He is using testimony of Norwegian and Sami people along the border with Sweden/Finland in the mid 18th Century as collected and transcribed by an army major at the behest of the Danish government. From this testimony, which was printed in the mid twentieth century, he has produced an XML-encoded text. He is using the encoded text to model the kinds of information contained in the verbal testimony so as to see if, as he suspects, words tell more than maps or at least differently. Historical, philosophical, geographical and anthropological investigations thus sit alongside software modeling techniques. Each informs the others.

5.5   Socio-philosophy of digital traces

The basic premise of this project (currently in suspension while the student completes engineering-related doctoral work in Japan) is that a new meaning of identity has arisen out of the prevalence of mobile digital devices and the frequency with which they are used. On the social scientific side, the student proposes to track the actual behaviors of selected people; on the philosophical side he is examining the idea of personal identity phenomenologically; on the technological side he has been involved in designing and constructing devices. He has also written software for the iPhone to monitor such behaviors. Originally the philosophical questions had priority, but with the engineering work it has become obvious that these questions need to be postponed until the behaviors they seek to illumine are more adequately manifested.

5.6   Philosophical questions of performance

In research that is about to begin the student proposes to examine the ontological questions raised by the involvement of dance with digital technology. Considering the multiple technological interfaces with which we engage when watching recorded performance, she will investigate the ontological repercussions for dance of this new mode of watching. She is concerned with the metaphysical nature of online performances in their multiple forms. Looking at full-length documentations, edited representations, performances made for the screen and specifically for the Internet, she will assess the differing ontological status of these multiple formats and work towards an understanding of how multiplicity of representations impacts on the ontology of dance.

6.   Conclusions

What may we conclude from these last 5-6 years of the PhD in Digital Humanities? Again, it seems obvious that the degree is defensible from a scholarly perspective as well as attractive to students, who from the outset have driven its development. Until Autumn 2011, however, no student will have completed this degree; only one is in the final "writing up" year; and only 3 of the current 9 enrolled students have converted from initial MPhil to PhD status. In other words, as should be clear from the discussion, we still have quite a bit to learn, perhaps even more than our students do.

One lesson we have learned concerns what one student has called "the openness of the program," that is, the license it gives to do research of any kind that involves critical work with digital tools and methods. The generosity of this license is by design, which is in turn a response to the plasticity of computing studied methodologically. But it would not be practical to offer were it not for the supervisory talent provided by a major research institution located in one of the principal cities of the world. It would never have flourished were it not for the remarkably collegial academic culture in Arts and Humanities at King's and the understanding built up over many years that the discipline we now call digital humanities is no less nor more than one among many.

So far the results of the program are largely unsurprising though very gratifying, especially to someone who has been arguing for the last quarter century that our subject is genuinely and independently academic at the highest levels. Perhaps the most important result is that a PhD in the digital humanities makes sense. But crucially the sense-making has in its first six years been almost entirely the work of the students. Earlier I said that the development of the PhD has been from the outset demand-driven, but neither "demand" nor "driven" are the right words to describe these students' contribution to our discipline. It is not demand that has driven but desire that is creating. "Real scientific research," John Ziman has written, "is very like play. It is unguided, personal activity, perfectly serious for those taking part, drawing unsuspected imaginative forces from the inner being, and deeply satisfying."[7] Partially subtract "scientific" and, for now, "unguided" to name what our students are doing.

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[7] John Ziman, "Puzzles, Problems and Enigmas," in *Puzzles, Problems and Enigmas: Occasional Pieces on the Human Aspects of Science* (Cambridge: Cambridge University Press, 1981), 3. Ziman's essay originated as a BBC Radio broadcast in January 1972 as part of the science curriculum of the Open University.

What, then, is the PhD in Digital Humanities, exactly? The simple fact is that we do not have a stable answer, but all the evidence suggests that the intelligent desire powering its evolution will provide us with one. The simple fact is that this PhD is not just a framework for research, providing supervisory support and ensuring quality, but is itself empirical research into the best framework within which further to develop the intellectual culture of the digital humanities. Meanwhile advertised jobs in the field are proving difficult to fill because qualified applicants are in short supply. Demand, need, desire and ability to produce them are not, however.