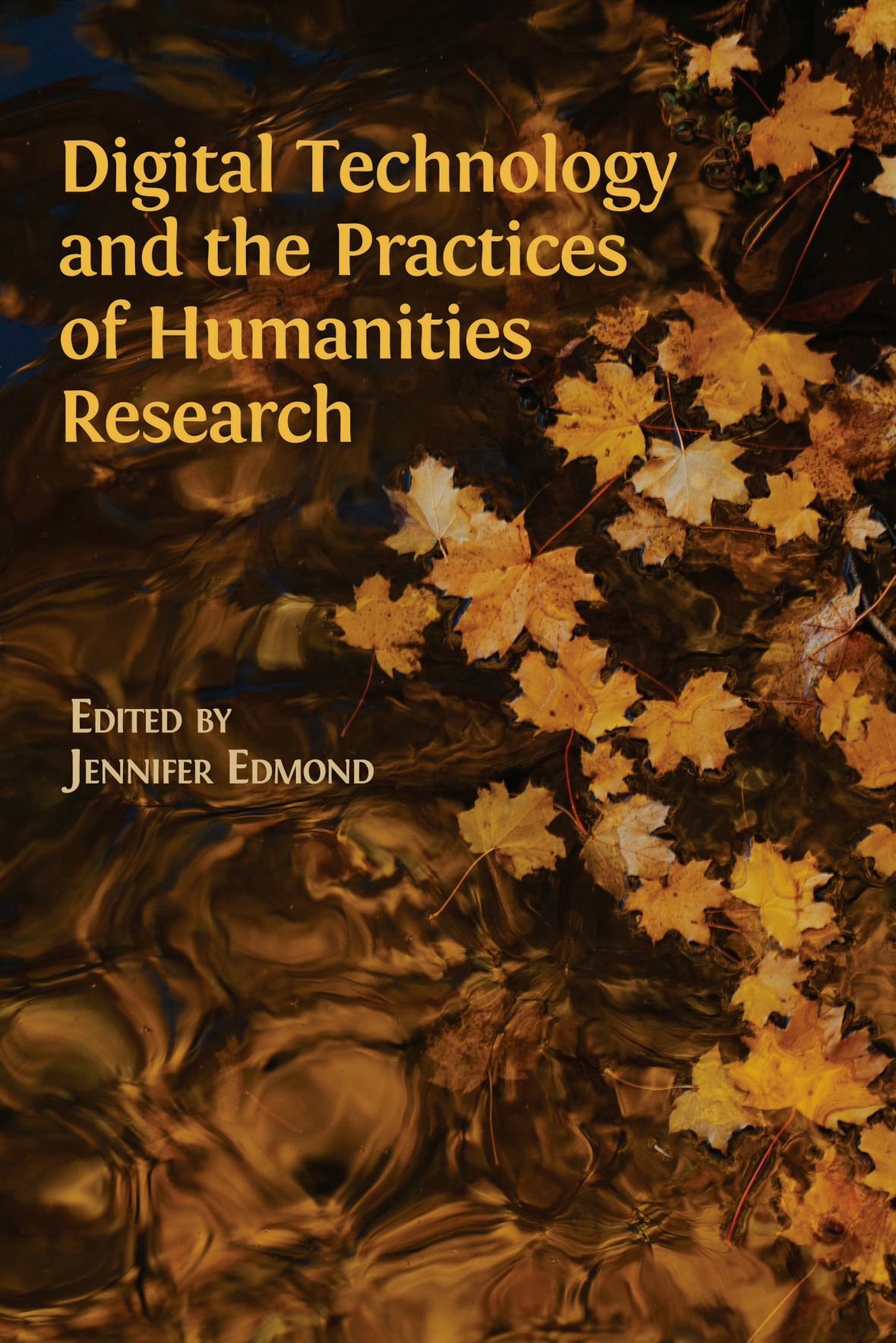
Digital Technology and the Practices of Humanities Research
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1. Introduction

Power, Practices, and the Gatekeepers of Humanistic Research in the Digital Age

Jennifer Edmond

This volume began, in many ways, with an image. A leaf floats downward from a tree and lands on the surface of a river below, from where it is carried away on eddies and ripples, to a new place far from its origin. There it may itself cause the formation of further rills and ripples in otherwise undisturbed water.

This image became a metaphor for how the emerging entanglement of technology and its imperatives with the practices and values of humanities research has become not only a point of intersection, but a roiling flow of both predictable and unexpected contingencies. The methodological moment in the digital humanities is well theorised and documented. At the level of the individual scholar, choosing to use, for example, a set of statistically determined topics generated by a software tool like Mallet, rather than a similar set extracted by the linear process of conventional reading, represents a difference in degree rather than kind. Like any methodological stake, the choice's implications for the knowledge it generates must be queried, understood, and accounted for in the scholarly claims that are based upon it.

But when the leaf becomes caught in the swell and passes downstream, the opening frame of its fall may be lost, and the leaf's path can be altered, just as many fallen leaves might later accrete to form barriers that may influence further flows. The sublimation of technology into the fabric of not just scholarly methods, but of the organisation of

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scholars and their work seems marked by a certain inevitability, not only because of the power of the methodological forces at play, but also because of the manner in which similar technologies are changing interaction and communication in the wider society.

The metaphor then became a meeting. In 2013, a very diverse set of stakeholders came together under the aegis of the ESF-funded Network for Digital Methods in the Arts and Humanities (NeDiMAH) in order to discuss how we, as policymakers, as librarians, as funding agencies, as humanists, and as computer scientists, might make sense of the changes technology was, and was not, bringing into our professional lives. The issues that this meeting raised also seemed diverse, even disconnected, at the time, and the measures that the stakeholders proposed to address them were equally multifarious and fragmented. After all, the tensions that technology introduces into research processes are more easily managed during certain phases than others: according to the principles of academic freedom, the scholar chooses her field of enquiry and can (within reason) define the appropriate methods for addressing her research questions. But the creation of knowledge is only part of the scholarly process; the sharing of that knowledge is an equally important part, a fact that can force a mismatch between the media and the message of scholarly communication.

The meeting focussed on these issues, and as a result produced two major outputs, the first of which was a useful taxonomy of objects that could be viewed as scholarship, including suggestions as to how they might be ideally disseminated and evaluated. This taxonomy divided the landscape of scholarly output that one might find in the digital humanities into six categories, only one of which has a clear precedent and place in the traditional flows of production, dissemination, and evaluation, namely print paradigm publications within closed formats (such as PDF documents). Alongside this we included electronic paradigm publications as a broad category that included everything from enhanced publications to blogs and Twitter corpora, to arguments presented in video and audio. Another paired set of entries in the list included single or collected/curated primary sources alongside datasets comprised of simpler objects, such as query results and intermediary processing files. Software was given a category of its own, as were methodological and teaching resources. We also considered patents/

licenses and ephemera (such as exhibitions and performances) as outputs, but concluded that the former category is more of a validation mechanism for other sorts of output, while the latter necessarily requires some documentation, making it ineligible to stand as a category in its own right.

The set of categories we devised made a powerful statement about the future of research, as only one of the six would be readily accepted in many evaluation contexts for many humanists — such as those applying for an academic position or building a case for promotion. For this reason, for each of the categories the group extended their work to include, firstly, the manner in which such work would be disseminated or communicated to an audience (a non-negotiable aspect for any research output, for research that is not ultimately shared with a community of practice cannot form the basis for further work); and, secondly, the basis upon which such work could build its credibility and be validated by the community. This latter category showed a large and interesting variability, encompassing well-embedded classifications such as peer review and citations, but, also, other forms of reuse, extensions in development, funding body review comments, uptake in training programmes, policy impact, community engagement, downloads, and even imitation.

In addition to the taxonomy, the 2013 group also developed a joint position paper aimed at finding common ground on the issues we observed from our various positions in the ecosystem. Neither of these outputs was ever formally released as an independent publication, though the work did instigate some discussion, especially among policymakers and funders struggling to define policies around the evaluation of digital scholarship. As with so many other discussions on the issue of where technology was taking the humanities, the work remained in the powerful, and yet denigrated realm of the informal, as many contributions to this volume will demonstrate. Indeed, this particular separation seems to be one of the primary axes of disruption within the humanities community wrought by the digital: precisely that the lines become blurred between informal communication and validated scholarship. The distinction between, for example, a position taken in personal correspondence and the line of argument in a scholarly monograph is easily distinguished; but the proliferation of

forms — from the tweet to the blog post, to the listserv contribution, to the enhanced finding aid, as well as the public distribution and peer response inherent in many of these formats — has proven to be a test of our assumptions about where acts of scholarship lie, and what they consist of. As knowledge creation and consumption paradigms change, the authority that used to be reserved only for formal communications is shifting.

At the macro level, the growing acceptance of research approaches such as 'citizen science' has pointed toward this shift; but, even within circles of professional researchers, the nature and sources of scholarly authority have become contested. For example, a major issue identified at the 2013 NeDiMAH network meeting was the need to differentiate between two divergent processes: communication and publication. The difference between the two is defined here as: making your data and results public (communication); or, submitting them to peer review or other sort of verification by the scholarly community (publication), which may or may not include the publisher editing, enriching, and enhancing the work. In particular, this configuration (and the hierarchy it implies) is under pressures brought about by the emergence of 'impact' as a new value in scholarship, and the need to justify research spending in publicly-funded systems. The need for both of these processes is increasingly clear, but the relationship between them is increasingly muddy. The issues of evaluation and marketing are implicated here, as is the question of publication format and what to make available: form and content are both very much in play in the current environment, which creates particular challenges and opportunities.

This is not to say that all of the meta-discussion about how to assimilate the digital into the traditions of the humanistic epistemic culture has been informal, or even low profile. A 2011 special collection of articles about the evaluation of digital scholarship, edited by Susan Schreibman, Laura Mandell, and Stephen Olsen,[1] presented a very clear-eyed and practical roadmap for considering these issues. The LAIRAH survey[2] had already given us (as early as 2006) an empirical view of

1 'Evaluating Digital Scholarship', ed. by Susan Schreibman, Laura Mandell, and Stephen Olsen, *Profession* (2011), https://www.mlajournals.org/toc/prof/2011/1

2 Claire Warwick et al., 'If You Build It Will They Come? The LAIRAH Study: Quantifying the Use of Online Resources in the Arts and Humanities through Statistical Analysis of User Log Data', *Literary and Linguist Computing*, 23.1 (2008),

the issues underlying how new types of scholarly object might be perceived and optimally matched to their users and environments. Far more recently, Smiljana Antonijević's large-scale ethnographic study of digital humanities (DH) and 'DHers' *Amongst Digital Humanists*[3] has done the same for the question of how skills and capacities are developed within emerging and traditional spaces and interactions of DH. And yet, despite all of the excellent work being done, it seems that the fundamental cultural change required to mainstream uniquely digital activities alongside digitised ones that are construed as surrogates for analogue processes, is still very much incomplete.

Since this discussion began, some things have changed, while others have not. The recognition that the digital is transforming research, including, and perhaps at this moment especially, in the humanities, is more widespread. That said, the critical traditions and strong commitment to qualitative approaches inherent in the humanities leave the digital humanities at risk of being caught between the poles of conservatism and technological disruption. This raises the question of whether the triangulation with digital methods changes the work of the humanities' disciplines only in degree, or indeed in kind. In spite of this, digital humanities is no longer merely a rare or niche approach that is fashionable yet suspect, but is rapidly becoming an embedded modality in the scholarly landscape. As a result, much of the growth in the impact of the digital on scholarship is now happening not so much 'at scale' in the large projects and research centres, but in the 'long tail', among researchers who might vehemently deny being in any way digital scholars, but whose work is still marked by the way in which technology transforms their interactions and interferes with the scholarly ecosystem. The manner in which the policy environment is embracing and encompassing the digital provides an assurance of this, albeit not necessarily a comforting one.

Take, for example, the development of the European Open Science Cloud (EOSC), an institution that, at the time of this volume's release, is still very much in flux, but also very much in the minds and mouths

85–102, https://doi.org/10.1093/llc/fqm045. The acronym LAIRAH stands for Log Analysis of Internet Resources in the Arts and Humanities.

3 Smiljana Antonijević, *Amongst Digital Humanists: An Ethnographic Study of Digital Knowledge Production* (London, New York: Palgrave Macmillan, 2015), https://doi.org/10.1057/9781137484185

of European research policy makers. The prospect of the requirement that all funded European researchers deposit their data in an open repository for reuse by others forces us to face a host of questions that would have otherwise lain unresolved. Who owns the source material that comprises the fundamental building blocks of research in disciplines like literature, history, music, or art history? And if the answer is that we, as researchers, do not own them, how are we to share them? What are the new data streams and sets that humanists create? Should paradata be more formally captured during the research process, and if so, how do we untangle it from the uniquely formed scholarly instrument of the individual humanist so as to make such data epistemically available to others? Indeed, what are humanities research data anyway: should this term be understood to encompass all inputs, outputs, and intermediary products related to our processes; or only those digital, quantifiable, relatively tidy streams and collections that are readily processed, federated, and aggregated? A recent Twitter thread initiated by Miriam Posner[4] illustrates yet again, that many humanists resist the term 'data' as a descriptor for their primary and secondary sources, or indeed for almost anything they produce in the course of their research. The fact that humanists already have a much richer and more nuanced vocabulary to describe these research objects is surely a part of the reason for this resistance, but the manner in which the term 'data' is deployed in disciplines that are primarily data-driven may also be a part of the hesitation concerning its adoption. In computer science, for example, this one word can be used to describe inputs, results, or intermediary research outputs; it can be relatively simple or highly complex; and it can be human-readable, or only intended for machines. The differentiation in provenance, value, importance, and authority of these different types of objects is one that humanists are highly sensitive to, making the adoption of the word 'data', with all of its slippery overdetermination, problematic indeed. It may also be that the lack of recognition of data as a humanistic object, outside of very narrow confines, has to do with the manner in which the practices of humanities research are differently institutionalised from other

4 Miriam Posner (miriamkp), 'Humanists out there, specifically non-digital humanists: If someone were to call the sources you use "data," what would your reaction be? If you don't consider your sources data, what makes them different?', 31 October 2018, 11:50 AM (tweet).

disciplines. For example, a lack of tools such as licenses and patents to protect intermediate or early stage findings drives a certain amount of caution in the readiness to release certain kinds of research output. If you cannot protect your knowledge capital at a granular level, then the potential to recognise these objects as elements in a category with a value and status of their own, diminishes.

The expectation implicit in the development of EOSC is, as one recent policy paper stated, that 'the researchers' job is based on data and on computational resources'.[5] However, very little humanities research is based on a single form or source of knowledge, with corroboration or triangulation between sources being more the norm. While big data research may be a rising paradigm across disciplines, humanists rarely value this form of foundation for research, seeing it as lacking a theoretical basis.[6] The digital does not just change the method, it changes the possibilities. The dark side of the digital humanities has always been its gravitational effect in pulling scholarship toward positivism, that is, towards the pursuit of research questions not because they provide insight into who we are as a species and where we have come from, but simply because the material to answer these questions is readily available and fits the tools and methods we have been able to borrow from elsewhere.

In this we return to the meta-level of organisation, the locus for sharing and valorising scholarship in the humanities in the digital age: what we are really speaking about here is power, and the shifting of power relations and conceptualisations of valid and invalid claims to epistemic agency. Péter Dávidházi, in the introduction to the volume he edited on changing scholarly publication practices, gives an interesting historical account of how this can operate.[7] Viewed on another temporal plane, I have written elsewhere about what I refer to

5 European Commission, *Prompting an EOSC in Practice: Final Report and Recommendations of the Commission 2nd High Level Expert Group on the European Open Science Cloud (EOSC)* (Luxembourg: Publications Office of the European Union, 2018), https://ec.europa.eu/info/sites/info/files/prompting_an_eosc_in_practice_0.pdf

6 Thomas Stodulka, Elisabeth Huber, and Jörg Lehmann, 'Report on Data, Knowledge Organisation and Epistemics', *KPLEX* (2018), https://kplexproject.files.wordpress.com/2018/06/k-plex_wp4_report-data-knowledge-organisation-epistemics.pdf

7 Péter Dávidházi, *New Publication Cultures in the Humanities: Exploring the Paradigm Shift* (Amsterdam: Amsterdam University Press, 2014), https://doi.org/10.26530/oapen_515678

as the 'generational fallacy',[8] an assumption according to which cultural change will inevitably result as new generations of scholars with a different relationship to technology enter the ranks of researchers. While it is true that those who are only starting their careers now may have a different level of comfort with technology and the kind of communication it fosters informing their assumptions and personal practices, what is obscured by underlying assumptions of this fallacy is the pervasive impact of the power relations and hierarchies, in particular in such a self-regulating system as a research community. Early career researchers may have excellent ideas for how to disrupt the system of scholarly communications, but if they also want to be successful in the fiercely competitive academic job market, they will have to make sure they do not try to push the paradigm too far or too fast, or they will risk alienating the most conservative reviewers of their work, be that on a key journal's editorial board, an appointment committee, or a promotion review board.

A discipline must maintain its ability to validate the work created within it, else it risks fracturing, and possibly even fissuring. This issue comes to a head in the evaluation process, but can also be seen, for example, in the discussion around whether humanists have data, or whether digital work lacks methodological rigour. Technology is not necessarily creating new points of pressure, but rather re-revealing old ones, such as disagreements about the differences between scholarship and service (a demarcation that impacts upon the credit given to coding humanists now, just as it has upon scholarly editors for decades, if not centuries), between important and average results, between quality measures and their proxies, and between the goals of our processes and the compromises we have negotiated to reach them in different times and under different conditions. Even the fact that the set of disciplines we so often refer to under the blanket term of 'the humanities' are themselves highly diverse — in terms of methodologies, in terms of expectations, and in terms of the availability and nature of sources — is implicated here. This is not so much a change in static, neutral processes (though it is that too) as a change in culture, in the values we promote,

8 Jennifer Edmond, 'OA, Career Progression and the Threat of the Generational Fallacy', *Open Insights Blog* (Open Library for the Humanities, 17 September 2018), https://www.openlibhums.org/news/304/

in the behaviours we tolerate, and in the language we refine to describe our experience as scholars. Not only do the current trends have deep roots, they also have a grounding in professional identities that are subconsciously cherished: facts that make them all the more difficult to resolve.

These tensions are not without their effect on the ecosystem as a whole. The system is riddled with markers of quality, prestige, and authority that are reliant on established proxies. Some of these, such as journal impact factors and citation analysis, not only create artificial demarcation of the places where quality scholarship can appear, but also, by their very nature, constrain the manner in which scholarship should be presented (which, for humanists, may in the first instance, mean books, chapters, and articles). Scholars must make a calculated decision when choosing to embark on a digital project. This decision not only concerns their research questions, their digital tools and methods, and how best to address and implement them; it also concerns their careers, their institutions, and their scholarly record. In spite of a general recognition of the value of digital scholarly outputs, many institutions and national systems still struggle to judge the merit of such outputs and to credit their creators accordingly. Interestingly, many of these trends, slow though they may be, point toward an even more fundamental disruption in scholarly communication, one that transcends the focus on output and products, to see scholarship instead as something living and evolving as processes. The idea that the work of scholarship needs to be 'fixed' before it can be evaluated is an essential aspect of our current system, one that is challenged by many aspects of the system we now see emerging: one of blogs as well as articles, open as well as double-blind reviews, and co-creation with citizens as well as unchallenged scholarly authority. But how can we trust what we cannot hold fast?

The manner in which trust is negotiated in the digital realm is an issue that reaches far beyond the question of how technology is changing the practices of humanities research. But it is most certainly another area where the foundation of our community consensus about the definition of scholarship, and how it acquires authority, is being tested. Print editions would have borne the authority of their authors as well as that of their publishers and editors who invested in them.

The digital edition may have no such proxy available, although many do prominently display the equivalent badges of the funder, project, or institution who sponsored them. Humanities research has largely been spared evaluation via blunt bibliometrics, as the data and instruments available are still ill-matched to the practices within these disciplines. But with the processual shift and the rise of alternative metrics, the question of how we can distinguish authoritative work and popular work adds new layers of complexity to these issues. Similarly, the use of sources of material that themselves may not have been validated in a formal or informal process, such as blogs or even Wikipedia, give rise to further concerns about what merits scholarly consideration and what does not.

The territory downstream from the digital humanities (and perhaps the territory of digital humanities as a whole) is, if nothing else, plagued by fragmentation: of institutions, of projects, of infrastructure models, and, indeed, even of the different understandings of what digital humanities and, more importantly, what digital scholarly communication flows in the humanities are or should be. Tensions in the wider research and publishing culture seem likely only to exacerbate this. For this reason, the authors of this volume believe that the work presented here is both timely and necessary, as both an attempt to create consensus across some of the existing boundaries and silos, but also to ring a warning bell for any of the systematic perversity we may be creating.

Scholarship does not arise in a vacuum, but rather within a complex ecosystem of ideas, people, structures, institutions, marks of esteem (like acceptance at a high-profile conference or invitation to sit on a board), and marks of negative judgement (like denial of promotion). In the current climate, many of the wider social drivers toward digital forms of communication and publication of and about scholarship come into direct conflict with the still dominant traditional modes of rewarding that scholarship. Many of our communal norms regarding quality are actually proxies that are dependent on the old model for their relevance, for example, journal impact factors only apply to journal articles, and publisher reputations only apply to books.

Within this system, institutions are beginning to recognise their own power to define new hallmarks for scholarly quality; but national and other pressures for comparability between institutions, and the

continued persistence of the old heuristics within the community itself, do not necessarily support them in taking these courageous steps. Instead, we have seen the parallel development of a new rubric for evaluating knowledge creation, that is of impact, rather than excellence. However, many measures of impact, such as hit rates or media attention, are viewed as almost antithetical to the traditional norm of scholarly excellence of new knowledge being so rarefied as to be only accessible to other experts.

There is, of course, the question of how we counteract the insidious, transitional misgivings we still seem to have about digital sources not being 'real', and scholarship conducted in a virtual environment as somehow being less worthwhile because it is viewed as having been in some way 'easier' to create than via traditional modes of scholarship, which involve travel and discovery among dusty records without the assistance of Google Translate or our digital camera. Again, if we are to make progress in supporting the scholarship that is appropriate for our age and our disciplines, we will need to return to the primitives of knowledge creation and value those, rather than the romantic vision and symbolic authority of our accepted proxies.

Alongside the issue of how we understand scholarship in emergent formats is the concomitant issue of how we give credit for work done. The entrenched practice of quoting an original source, rather than the edition or digital facsimile you may actually have consulted, gives *short shrift* to both the hard work of scholarly editors, and to resources, particularly digital ones. With the current expansion of style guidelines to include citations for all sorts of works and formats, as well as tools like Zotero to make this process easier, there is no longer any reason for this complete misrepresentation of the point of access to research materials that we use. Both new and digital forms of scholarly output may need to include recommendations for users as to how the resource can be cited (be that in a monograph or within software code), but we also need authoritative confirmation of the importance of this practice. Should standards such as the MLA (Modern Language Association) style (or any other of the myriad options developed for specific disciplines) include a reference to a resource's site of access? How do we ensure we fully cite collaborative, non-traditional work? Do we need to reassess the demarcation between reference works (like

bibliographies) and primary works? Primary and secondary works? How do we cite with the granularity of page numbers in a digital work (or does it matter anymore when we can simply issue the 'find' command)?

There is a lot of concern in the community about the reliability of digital scholarly outputs: after all, how do we evaluate, or indeed how do we even reference, what we cannot 'fix in place'? The guarantor of a book's durability is established in the institution of the library. The existence of multiple copies of a physical object (beginning from the point when the age of print was established) means, in the end, that these collections provide a relatively trustworthy, but perhaps less than systematic, guarantee that things held to be important in their own age will likely be available to future scholars somewhere when they need it. We have no such guarantees for the objects being created now, as neither libraries, universities, presses, research centres, or national agencies have a clear (funded) mandate to ensure these objects remain accessible in their current formats and in migrated formats into the future. This fear that resources could disappear, wholly or in part, diminishes the coinage of the digital output. Addressing this difficulty will be a part of the process of ensuring their equal status with traditional publications. Self-archiving is a good strategy for this in many cases, with copies maintained at institutional level, nationally, or by pan-European organisations, but this will have its limitations if there is a reliance on 'not for profits', lack of semantic encoding, or insufficient sophistication applied in archiving.

Of the many issues that intermingle and influence each other in this complex and fast-changing environment, three in particular — one 'upstream' and two definitively 'downstream' — merit a further detailed introduction. Each of these represents a paradigm in which identities, positionalities, and power hierarchies are either being exchanged or entrenched in the face of great change. These three factors are: the impact of collaboration as a mode of work in humanities scholarship, and the places of both publishers and evaluators as 'gatekeepers' for the acceptance of scholarship.

The Impact of Collaboration

We are not only moving toward a different paradigm of communication, but also toward different paradigms of knowledge creation, an additional shift that will have significant impact. Collaboration is a term that has come to mean many things in the current environment, from co-creation and co-authoring,[9] to the casual sharing of information and validation of others' results that has always occurred within scholarly communities. Knowledge sharing paradigms are perhaps still primarily imagined as unidirectional processes, flowing from expert to novice; but in reality, the complexity of the research questions being tackled today is such that knowledge is increasingly densely networked, partial, and reliant upon multiple intelligences in order to reach conclusions. This move toward greater integration between disciplines should not, indeed cannot, be forced (although it can, and needs to be, taught), but when it does occur it should be possible to validate and reward it. However, rewarding collaborative work is more than just an issue of deciding how much credit should go to how many people. Collaboration also brings a cross-fertilisation of methodologies, which is productive for enquiry, but creates tensions in a system where senior colleagues may be asked to evaluate the work of others whose epistemological frameworks have been defined according to a foreign idiom (critical theory, at least, was text — but software?). As such, the collaborations at the heart of the digital humanities tear at the fabric of the disciplines and many of the institutional structures that support and organise scholars and scholarship — hardly safe or solid ground. And the nature of these collaborations is not only interdisciplinary, but inter-sectoral. No one ever promoted an editor to full professor on the basis of their work on another author's book, and yet the importance of our collaborators across disciplines and sectors is growing so rapidly that the emergence of such a practice seems not just possible, but imminent. Nonetheless, there remains a deep discomfort in many places in the academy, even with co-authorship, in spite of its central role in supporting digital methodological approaches and their diverse outcomes. This stymies individual professional pathways, and also the development and

9 Joe Parent and Joe Uscinski, 'Of Coauthoring', *CRASSH* (19 June 2014), http://www.crassh.cam.ac.uk/blog/post/of-coauthoring

visibility of the digital humanities. A better understanding of what the various actors in the system, including potential industry and non-academic partners, 'want' and what they 'do', would go some distance to addressing these inconsistencies.

Until we can see coding as a generic capacity like reading or writing, the collaborative model of the digital humanities is likely to endure. But how does this become something that can transcend the power structures and the pitfalls between the disciplines? The ideal would be to see research questions and collaborations negotiated on the basis of reciprocity, that is, a relationship where each researcher brings their own questions to a given trajectory of research, and in which humanistic questions are pursued in concert with an advancing baseline of technological capacity. Until we are all fully 'multilingual' as pertains to technology, we will continue to need translators; but within a research context where the baseline assumptions and strengths of the convergent disciplines are so different, it does not make sense to view these individuals as lacking epistemic impact. Digital humanities work cannot be based upon the maxim of 'garbage in, gospel out'. Just as the precondition for the use of any text-based methodology would be that one read and understand the critical, theoretical, or methodological material being applied; the precondition for the application of digital tools must be that a scholar understands how they work and what they can be used for.

Evaluators as Gatekeepers

A further area of downstream concern for the digital humanities is that of how one evaluates the scholarly quality of these non-traditional publications, and traces their impact. Not everything produced by a scholar is a work of scholarship, and not everything produced within the digital humanities is of equal quality. Funding agencies and university departments alike are struggling to reimagine their evaluation processes, and are becoming less reliant on their own ability to see and judge the merit of their colleagues' work on a comparative basis with their own, and are instead investigating opportunities for accepting and evaluating the quality and impact of the work on its own terms. Even citation norms, which generally see researchers citing an 'original'

print edition,[10] even if the work was based largely on digital surrogates, represent an ineffectual transfer of analogue habits to a digital context. While it may be seen by the individual scholar as irrelevant how exactly they reference their work, this ineffectual transfer may hide the potential contribution of the digital edition, and the possible impact of its construction and organisation on the trajectory of further investigations based upon them.

This crisis of conscience in scholarly evaluation hits the digital humanities particularly hard: the catch-22 of the new forms of scholarly output is that one wants to feel assured that one's work will be recognised, but that recognition is generally contingent on a certain familiarity and critical mass of accepted examples. Early adopters applying digital methods are at times 'punished' for making this choice by being required to write a traditional interpretive essay to accompany their digital work (with this essay being the only part of the output actively evaluated). A renewed requirement for deepening our understanding of what we expect from scholarship is created not just by new methods, but by the new objects produced by scholars in the digital age: books, journals, blogs, collaborative texts (wikis), databases, algorithms, software, coding, maps, images, 3D models and visualisations, videos, schemas, and documentation. The old proxies of press and journal reputations will not assist us in appreciating these highly influential new forms of scholarly communication: so, a part of the solution must lie in an enhanced need for explicit methodologies, which are documented and, therefore verifiable. All too often, technology, once applied to a problem, retreats into a 'black box' and fades from the discussion. This, however, undercuts the desire for rigorous, repeatable scholarship. The ideal scholarly output would allow others to manipulate the same data and to verify a colleague's results, or to produce new knowledge with the same data. This would be a realisation of the trend, discussed above, to reposition the end goal of scholarship from a fixed product to an evolving process, but the expectation that this could happen easily would be naive, as it is the nature of the humanities scholar to build his

10 Jonathan Blaney and Judith Siefring, 'A Culture of Non-Citation: Assessing the Digital Impact of British History Online and the Early English Books Online Text Creation Partnership', *Digital Humanities Quarterly*, 11.1 (2017), http://www.digitalhumanities.org/dhq/vol/11/1/000282/000282.html

or her personalised epistemic instrument on the basis of a long process of curating and assimilating resources and influences. This fact, which makes it difficult to step into the process of another scholar, or even to reuse of their data, is something we struggle to adapt to.

Publishers as Gatekeepers

The role of the scholarly publisher, traditionally our primary gatekeeper for the validation and production of scholarly resources, is splintering. The physical production of tangible book objects is only a small part of the process, so the reduction in importance of this stage in the process alone does not in any way mean that all points in the chain from author to market are being adequately covered by the new landscape. The acceptance process was, and still is, a powerful marker of perceived quality, a proxy upon which we seem reliant, in spite of our slightly bad consciences about it. The editing function and rights clearance must also still exist. The creation of a durable object is easy with a book, and much harder with a web publication, a tool, or piece of software. The marketing and selling functions also should not be underestimated as being part of scholarly dissemination, in particular as audiences are becoming multiple and varied: from the small community of specialists, to works of vast, popular, as well as scientific, interest. Finally, with the democratisation of publishing itself, came also a raft of difficulties with understanding who was reading what and why. Usage metrics are complex and often flawed, in part because what we know (and what we need to know) about reading books is not comparable to what we know (and need to know) about reading online. In an ecosystem where traditional publishers (with and without their own online presence) and new open access (OA) publishers coexist with independent peer reviewers, self-publishers (from individuals to universities), and everything in between; a new understanding of the scholarly communication's 'value chain' and the best practice for forging all of its links is a fundamental requirement. This new understanding should be able to encompass all forms of publishing, from the traditional to the avant-garde, utilising the strengths and mitigating the weaknesses of each.

All too often, the discussion about the emerging role and responsibilities of these particular gatekeepers becomes overdetermined by concerns of the cost of providing access to scholarly materials. More and more scholarly materials are now available online (whether created as a digital native object or not), and some research methods (such as those based on data-mining techniques) and collaborative relationships are contingent and reliant upon this availability. Furthermore, even within a largely digital ecosystem, less established researchers, or researchers from less affluent countries or institutions, may have substantially less access to material. It is therefore of the greatest benefit, from a researcher's perspective, to have them as widely accessible as possible. Open access does not mean free, only free at point of access, and key elements of this development would be to create business models for this mode of publishing that fit the humanities' publishing practices (such as print on demand for monographs, for example). We need, as well, to understand when openness is inappropriate, for example, in cases where copyright or confidentiality may prevent any publication if open access is the only option. There are both ethical and economic arguments for the provision of greater access to scholarship, but we also need to be wary of the turning of the current discussion to article processing charges (APCs) as a solution to the imperatives to provide wider access to scholarship: while this might ease the situation on the user's side, we could easily create a different risk, that is, that publication in the best journals will become tied to the author's ability to pay, rather than to the quality of the scholarship only. The 'green/gold' debate around open access to research outputs has focussed a lot of attention on this part of the pipeline, but it is important to be aware of the potentially perverse incentives this focus might bring. Underlying it are, for example, assumptions around access to funding and/or that the best research takes place in the context of an externally-funded project. While the humanities will be required to respond to the wider trends in research policy, it is important to make sure that the core values of the research, along with the value of the research itself, is protected, even as the social contract with its gatekeepers is being actively revised.

However, access is an issue that goes beyond the parameters of the debate around the deposit of scholarly research with trusted public or institutional repositories. Access to materials also encompasses issues

of conservation (for it is to the analogue originals that many people want access, with the digital surrogate being just that, a surrogate), and linguistic availability to scholars who may not have mastery over the language of a particular discourse. While these issues may be beyond the reach of a project with its basis in digital methods, their impact must be recognised and incorporated (if only at a background level) into any discussion of humanistic scholarly communications in the digital, or any age.

Finally, there are macro-level issues surrounding the technical and legal frameworks for sharing the output of digital humanities projects. How can we be sure that individual works of digital scholarship will be available in the long term? How can we reimagine issues of copyright and 'fair use' so as to enable the kind of deep citation and linking these projects might utilise? While these debates extend in their scope from the divergent copyright laws found in individual nations, all the way down to the preservation mandates of universities, they still must be recognised as significant, potential barriers to the widespread uptake and mainstreaming of digital humanities' methods. As the role of the publisher changes, our traditional partnership in the negotiation of these issues may deteriorate.

This Volume's Contribution

The chapters in this volume are perhaps not so much about scholarship as they are about the scholars who create them and the manner in which they negotiate the relationships and flows of knowledge that pass between them. It is, after all, people and the systems around them that decide what is and is not a meaningful contribution to knowledge. Some of these contributions date back to the time of the NeDiMAH network meeting, and, though they have been updated, the issues they raise still seem astonishingly fresh. Other contributions respond to some of the latest trends in the research environment and how the issues expressed in this introduction are being stymied or promoted by wider trends in research policy and scholarly communications.

In general, this volume can be seen as consisting of discursive pairs of contributions (although the authors of the individual chapters are not necessarily responding directly to each other's work). The Chapters

1 and 2 look at traditional publishing models, the functions they serve, and the changes occurring in how they act as gatekeepers for scholarship. Focus then moves in Chapters 3 and 4 to the question of the validation of scholarship as seen through the lenses of both impact and scholarship as a market. The Chapter 5 looks at disruptions and continuities in specific forms of research practice, exploring in particular the narrative argument in codework. The next pairing, Chapters 6 and 7, delves into the history of our discussion of these changes, exploring early evidence for how we might evaluate digital scholarship in the humanities, and how emerging venues for scholarly communication come to be associated with certain kinds of validation and certain points on the continuum between formal and informal communications. Finally, Chapters 9 and 10 take a macro-level perspective and look at changing practices through the lenses of two emerging trends driven by European research policy: first, the development of bespoke research infrastructures for the arts and humanities, and second, the acceptance of the paradigm of FAIR (or 'findable, accessible, interoperable, and reusable') data, and its applicability to the humanities.

Through these various explorations, this volume sheds significant new light on the shifting practices in humanities research, which have been facilitated by technology but driven by a far wider range of impulses from scholars and scholarship. From product to process, from formal to informal, from published to communicated, these pieces delve into the shifts that many of us take for granted, exploring the impact they are developing on our work and identities as scholars. They prove that humanists not only welcome technology, but take ownership of it in unexpected ways. As such, it contributes not only to our meta-understanding of our work and world, but also empowers us to make a case for what form our scholarship takes, whatever it may be.

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