INNOVATIVE INFOTECHNOLOGIES FOR SCIENCE, BUSINESS AND EDUCATION

Vol. 1(16) 2014

CONTENTS

IITSBE, **Vol. 1(16) 2014**

Section: Digital Humanities: Studies in Text, Communication and Information

The Essential Contradiction

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Received 4 November 2013, accepted 15 December 2013

Abstract. What does digital humanities share *intellectually* with the humanities? This is a crucial question: if the new discipline has no productive response, then its survival as a coherent field of enquiry is in doubt. In this lecture I centre on the contradiction implicit in representing human culture digitally. I argue that through such representing digital humanities raises and helps us to understand the ancient question of the human in the endlessly novel forms made possible by the dominant engine of 21st-century culture. Thus it finds intellectual common ground with the humanities.

Citations: Willard McCarty. The Essential Contradiction – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 3-8.

Keywords: digital humanities; human; humanities; arts; engineering; sciences; computing; computer science; robotics; Turing.
Short title: Essential Contradiction.

1. Looking into the black box

In May of 2013 an Australian immigration officer at the Kingsford Smith airport in Sydney asked me what I do. "I'm a professor", I replied. "Of what?" she asked. "Digital humanities", I answered. "Isn't that an oxymoron?" she said, smiling. "I like oxymorons", I replied. "Yes", she agreed, "sort of like a friendly immigration officer."

She was not just friendly. She was also quick-witted enough to see past the dazzle of something new to an essential contradiction. Many have dismissed this contradiction as a sign of a passing phase in the cultural assimilation of computing. For decades colleagues have argued that all the disciplines will one day simply become digital, and then no one will give it special attention. Brian Cantwell Smith remarked a decade ago that the genius of computing is to render the fact of digital representation irrelevant [1]. Just this year David Berry has argued that the progressively irrelevant distinction between digital and non-digital resources mark our entry into a post-digital age [2].

But the matter isn't so simple. First, in practical terms, no scholar has the time and few the background to deal with a technology that is designed for change: metamorphic, radically adaptive and recursively embedded in our habits of work and thought. Second, pronouncements about it aren't absolute but relative to the point of view from which they are made. Thus digital representation does not matter to the person interested only in output or effects. But it is crucial to the person, like me, who wants to know what is lost in translation, and more importantly what that loss illumines. Third, motivations for proclaiming this or that about the digital are trickier because they are seldom explicit and so must be inferred. Declaring that a new age is upon us does strike me as better serving the agenda of a social revolutionary than that of a cultural historian or a social scientist. Such a declaration is presumptive and imperative, not descriptive. This one suggests to me what the early history of computing in the humanities attests: a desire to turn away from direct engagement with the increasing presence of the techno-sciences in scholarly and daily life. Foregrounding the digital provokes such reactions. Recognizing it as a clue to the significance of digital humanities requires more thought. This sort of thought occupies me here.

In the first instance I turn for help to the arts because like digital humanities they are experimental and materially innovative. They are also older, more mature. From them I take as guide what Robert Hughes has called "the shock of the new" [3]. This leads me e.g. to Viktor Shlovsky's argument of 1917 on the value of this shock for *defamiliarizing* things in order to see them as they are, "to impart the sensation of [them] as they are perceived and not as they are known" [4]. It leads me also to Bruno Schulz's comparison of the work of art to a baby *in statu nascendi*, in the midst of being born. "The role of art", he wrote in 1935, "is to be a probe sunk into the nameless" [5]. It seems to me that a huge promise of digital humanities is like that: to use the manifest otherness that computing reveals to unseat received knowledge, to look afresh at what we most care about – before familiarity puts us to sleep. I said the arts share with digital humanities two defining characteristics: making and experimenting. Experiment connects both to the sciences; I'll return to them later. Making connects them to engineering. At a similar point in the history of computer science, engineer Richard Hamming

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argued on behalf of his discipline that if the machine were abandoned for the science, as some were then recommending, "almost all of what we do", he declared, "would become idle speculation" [6]. His point was not that speculation in itself is *idle*, rather that in computer science speculation must not be; it must be grounded in engineering practice. Digital humanities is much the same, I think.

So I ask, and recommend that you ask, not only what lies behind the user-friendly interface, rather more what happens in every self-aware moment of digital making. I recommend that you set your sights as much or more on the actual struggle of translating cultural artefacts into digital form than on the end-product, because from an intellectual perspective the struggle is ultimately the point of it all [7]. Scholarship happens there, in that hugely influential act of translation, not merely afterward in use of the product.

2. Prelude to history

Belief in the struggle, which I learned during 15 years of encoding Ovid's Metamorphoses, moved me to use an even more obvious oxymoron than "digital humanities" for the title of my 2005 book, *Humanities Computing* [8]. Unfortunately my favourite oxymoron did not survive competition with the term "digital humanities", which began to overtake it in 2004 with publication of Blackwell's *Companion to Digital Humanities* [9]. The *Companion* was a landmark for the field [10]. Some regard it as marking a decisive sea-change in the discipline, which in a sense it did by coming at a time when the World Wide Web stopped being novel and became part of the furniture. But we tend to think that the Web changed digital humanities more directly than it did because the flood of resources that it brought washed from memory the weak, troubled past of the discipline, from ca. 1949 until the Web's public release in August 1991. (The Web did not begin to affect scholarly research until the mid to late 1990s, but its release almost simultaneously with the dissolution of the Soviet Union and end of the Cold War makes 1991 in retrospect a defining moment.) Today, if the incunabular period is referenced at all in the context of digital humanities, it is dismissed with a casual readiness which suggests confusion of technological progress with historical change.

Why should we care about that past? An immediate reason lies in the fact that the discipline's antediluvian troubles were not overcome or made irrelevant but have resurfaced. Their recurrence suggests deeper problems that knowledge of the past would illumine and so help us solve. We have good reason to believe the period was formative, as childhood is to the adult. Recovering the past thus offers the means to discern a trajectory for the discipline, and so more intelligently to plan for its future – and so for the future of all disciplines affected by computing. I will return to this recovery in a moment or two.

Chief among those resurfaced problems is the lack of a language or "normal discourse" (Richard Rorty called it [11]) with which to flesh out the details of computing's role in the humanities beyond a merely instrumental relation of service. We do have a start, however, in Martin Heidegger's "Die Frage nach der Technik" to confirm a sense that digital humanities, in its oxymoronic position, is in the right place. In 1954 Heidegger wrote that, "Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it" [12]. That the confrontation he describes is urgent I take to be obvious and so will not argue. I also take as obvious the fit of digital humanities to the role he describes. But the devil is in the detail: what does this fit require, what exactly does it involve?

The first detail to address is the referent of this collective noun "humanities": what common concern do these disciplines have that digital humanities might share? Lack of both time and competence means that the best response I can give now is to turn to Immanuel Kant's definition of philosophy in the *Jäsche Logik* (1800) as the set of four questions into "the ultimate end of human reason". The last of these, which I take as my answer, is the anthropological question that, he said, includes them all: "Was ist der Mensch?" [13]. Thence I go e.g. to Roger Smith's *Being Human: Historical Knowledge and the Creation of Human Nature* (2007) [14], to Giorgio Agamben's sketch of the "anthropological machine" at work across the millennia in his short but powerful book *The Open: Man and Animal* (2002) [15] and to Anthony Giddens' demonstration of the anxious construction of the self moment by moment in *Modernity and Self-Identity: Self and Society in the Late Modern Age* (1991) [16].

3. The incunabular period

So, I say, we have a common ground. To get computing onto it I begin, as I've said, with its formative, incunabular period, when scholars encountered computers without ready-made answers. I show that their encounter had existential implications, that for them it raised the Kantian question. Then, to bring it into the present, I ask how their struggle relates to our own.

Again severe limitations of time force me to summarize the evidence from those early years. So let me say merely that at issue for the majority of scholars, or in the immediate background of their daily lives, would have been the question of having anything at all to do with the machine. Few would have been oblivious to the supposed benefits, extensively promoted in the mass media, and to the importance of computing to scientific discovery. Few would not have encountered the jeremiads of public intellectuals against the mechanization of life. Few would have been unaware of the machine's complicity in Cold War militarism or its threat of massive social disruption. We can suppose that academic decorum would have filtered out most expressions of alarm in the professional literature, though we do find scholars expressing their and others' anxieties about computing's effects. Thus, for example, one American scholar entitled her article, "Fear and Trembling: The Humanist Approaches the Computer" [17], with deliberate yoking of existential angst to the actual experience a computer-using scholar of the time would have had – a walk from the office to a massive, sequestered, noisy, rebarbative mainframe, often kept in a physics or engineering building behind glass walls and watched over by lab-coated

technicians. Other sources confirm that, like factory workers bewildered by automation, scholars were asking the existential question: would there would be a role for them in a world dominated by the "thinking machine".

The scene is obviously very different now. Computing is nearly ubiquitous. We interact with our machines not merely without qualm but in many instances unconscious of their presence, in greeting cards, watches, automobiles, phones, televisions and so on. My argument is not that we harbor hidden fears (though I have no doubt we do), rather that our predecessors' fear of computing is not merely an artefact of that time but a clue to something we must not overlook.

4. The computer and science

Since computer science and digital humanities began more or less at the same time, it is helpful to compare the two as a way of enlarging the historical context. The differences are not clear-cut, but they are revealing.

Very much unlike digital humanities computer science was powered from its beginnings in wartime research by applicability to the concerns of the largely American "military-industrial complex" [18]. During the Cold War, which defined so much of life in the civilized world from 1945 to 1991, military funding of computer development helped produce such things as the hydrogen bomb, nuclear missile control systems and the electronic battlefield of Vietnam. More about the dark side later. On the bright side of theory computer science was and is powered by the fascinating intellectual problems arising from the fusion of mathematics, logic and engineering. Let me cite a single example. In 1947 John von Neumann and Herman Goldstine were attempting to figure out how to code problems for the "electronic computing instrument" they were building at the Institute for Advanced Study in the U.S. In an internal report Goldstine and von Neumann wrote with deceptive simplicity that "coding is not a static process of translation, but rather the technique of providing a dynamic background to control the automatic evolution of a meaning" [19]. Note: not a calculation but a *meaning*. Their implicit analogy (one we know preoccupied von Neumann) was to the physical brain. In other words they were arguing that the fundamental purpose of a computer system is not to automate human work but to simulate human thinking, and so to discover what that is.

Now compare the view of a scholar of similar stature: Fr. Roberto Busa, whom we widely credit with the first work in digital humanities. He had begun in the 1940s as a doctoral student in the conviction that St Thomas' idea of inwardness could only be fully understood by inspecting *all* the occurrences of the preposition "in" and the words to which it is affixed throughout the Thomistic corpus. Hence his turn to the computer for help, and the great *Index Thomisticus* which resulted. In 1976, having by then overseen the processing of 15 million words, he asked why in the study of language "the computer can do so little", given that it has done so much for commerce and the techno-sciences? [20] The problem, he wrote, did not lie with hardware and software but with human ignorance. The purpose of computing for philology, he insisted, was not to offload drudgery onto a labour-saving appliance (though he had much of it to cope with) but to deal with that problem of ignorance: "the use of computers", Busa wrote, "is not aimed towards less human effort, or for doing things faster and with less labour, but for more human work, more mental effort; we must strive to know, more systematically, deeper, and better, what is in our mouth at every moment, the mysterious world of our words." (p. 3)

Recall von Neumann's and Goldstine's aim, then hold this thought: not for release from work through automation but for the intellectual challenge from a simulacrum.

Now go further back in time, to mathematician Alan Turing's paper of 1936 on effective computability, from which digital computing originated [21]. He wrote it to lay to rest fellow mathematician David Hilbert's question of 1928: could there be a mechanical procedure by which any mathematical statement could be shown to be provable? That same year the Cambridge mathematician G. H. Hardy had observed that if there were such a procedure, "we should have a mechanical set of rules for the solution of all mathematical problems, and our activities as mathematicians would come to an end" [22]. Turing showed that mathematics was under no such threat. He began his negative proof with a metaphor: "We may compare a man in the process of computing a real number", he wrote, "to a machine which is only capable of a finite number of conditions. . . " [23]. Through a long and complex argument he then proceeded to isolate the man's actions and reduce them to the operations of an abstract machine, later known as the Turing Machine. With this machine he demonstrated that in principle mathematics was inexhaustible – and so by extension demonstrated the essential role of the imagination in the life of the mind, or as Busa said concerning philology, in "the mysterious world of our words".

I hinted earlier that Turing did not invent *the* computer in any sense; he invented a scheme for the invention of an indefinite number of computings, limited only by the human imagination. This is why the phrase "*the* computer" is so misleading – it implies that what our physical machines now do is computing as it always will be. Understanding the open-endedness of Turing's scheme means, for example, that design ideas from the humanities, or from any aspect of life, can have significant effects on the future of computing. Indeed, we humanists must always be asking: How far can current computing go with our problems? What are its limits? Where does it fail? What new computings do its failures point toward? As our colleagues in AI like to say, there is no evidence whatever that computing will not continue to advance on human intelligence. Bring it on, they say. But (here we get to the nub of the matter) there is similarly no evidence that human intelligence is fixed, though we do have evidence that it can be very different. So what we have is a game, a contest – not the Turing Test but something far more consequential.

5. The existential question

Computing advances on us in two ways: by *modelling* how we reason about our problems, and by *simulating* how we might reason about things we cannot observe or predict from law-like behaviour. Modelling covers most of what digital

humanities does now. It works epistemologically as a kind of competition between the modeller and the model, which spurs on conjecture by imitating the modeller's idea of something. Thus it continually raises the question of how humans do what they do or how they know what they know. Simulation is less common – it requires more explicit knowledge of how we construe the object of study than we usually have. Where it is possible, (to use an early digital humanist's metaphor) it acts as a "telescope of the mind" [24], allowing the researcher to see what would otherwise not be visible, hence underscores the limitations of unaided humanity. In a sense, neither modelling nor simulation are novel; both correspond to unassisted modes of reasoning, but physical instantiation in a computing system gives them autonomy, and so rigour, as well as makes them discrete. Attach motive power and they become robotic, and if we choose (as we do), visibly anthropomorphic.

Modelling and simulation are significant in my terms because they demonstrate the power of computing to raise the existential question that so worried our predecessors – and should worry us. We know that computational technology *progresses*, that its devices get ever better at doing whatever they do. That alone would not affect us existentially. But the alignment of computing with epistemology gives it existential force. Turing's machine began as a scheme for demonstrating what a mathematical machine could *not* do that humans can. But very soon after his paper was published, the Turing Machine took on a life of its own, becoming a model *for* mind, and so became a tempting candidate for arbiter of knowledge. Many yielded to that temptation.

By 1943 Turing's machine had become the basis for a neurophysiological model of the brain and so joined the long tradition of what a U.S. National Library of Medicine exhibition entitled "dream anatomy" [25] – speculation since antiquity about "what happens beneath the skin" and its microcosmic likening to the macrocosm, thus also to machinery. By the time of Descartes in the 17th Century and then La Mettrie in the 18th analogizing had become a troubling equation of the machine first with the animal, then with the human [26]. Descartes, you may know, had identified the animal, and so animal nature, as a kind of machine – perhaps as defense against the most corrosive evidence of his age, discovery of the great apes. These were so physiologically similar to humans, physician Nicolaes Tulp wrote in 1641, "that it would be difficult to find one egg more like another" [27]. The anxiety of that discovery came to a powerful focus in Jonathan Swift's portrait of Lemuel Gulliver driven insane by having to own up to his own bestial nature before the creatures of perfect reason whom he emulated.

For us now the locus of confrontation has shifted across the bridge Descartes provided, from the animal to the machine. I say "*the* machine", but again qualification is required. "We have become used to machines that are more powerful, more durable, more accurate, and faster than we are," physicist and industrialist John H. Troll wrote in 1954, "but machines that challenge our intelligence are hard to take. At this point the competition becomes uncomfortable" [28]. Or as Marvin Minsky has pointed out, we must now use the word "machine" in a very different sense than before – in Turing's sense [29].

This machine, our machine, in the form of computational simulation and modelling has for the physical and life sciences become *sine qua non*. As a result, in the shocking words of philosopher Paul Humphreys, "scientific epistemology is no longer human epistemology". It gets worse. "The Copernican Revolution", he declares, "first removed humans from their position at the center of the physical universe, and science has now driven humans from the center of the epistemological universe" [30]. What I want you to heed here is not the truth-value of what he says but language he uses to say it. Oddly, significantly, this language echoes the biblical story of Adam and Eve's expulsion from Paradise after eating from the fruit of that epistemological tree.

Humphreys is not alone. For one thing he is echoing Sigmund Freud's declaration twice in 1917 that scientific research had precipitated three great crises in human self-conception, or as he put it, three "great outrages" to human self-love [31-32]: first, by Copernican cosmology; then by Darwinian evolution; and finally by his own psychoanalysis, which showed we are not even masters of own house. Freud is not merely being the physician here, rather also an inheritor of the whole moral tradition of the physical sciences. At least from Bacon and Galileo in the 17th Century this tradition had identified the cognitively and morally curative function of science acting against fanciful or capricious knowledge. Science for them was not (we now know) anti-religious but conceived as a corrective force with promise to restore us to unclouded Adamic intelligence [33]. Scientists no longer talk like that, but the moral imperative remains. Freud's series of outrages is thus radically incomplete: they do not stop with him because the imperative to set us right is integral to the scientific programme.

What seems undeniably good becomes dark when the scientific perspective is taken as absolute, and so reduces human imagination to narcissism on a cosmic scale. One need only consider, for example, cosmologist and Nobel Laureate Steven Weinberg's sentence "that human life is… a more-or-less farcical outcome of a chain of accidents reaching back to the first three minutes" after the Big Bang, or the words of geneticist and Nobel Laureate Jacques Monod, who proclaims "that, like a gypsy, [man] lives on the boundary of an alien world that is deaf to his music, and as indifferent to his hopes as it is to his suffering or his crimes" [34]. These two and many others are indicative of a mounting attack of ourselves as scientists upon ourselves as humans, summed up by biological anthropologist Melvin Konner: "It would seem", he concludes, "that we are sorted to a pulp, caught in a vise made, on the one side, of the increasing power of evolutionary biology… and, on the other, of the relentless duplication of human mental faculties by increasingly subtle and complex machines." He asks, "So what is left of us?" [35]. (1991: 120). What indeed?

In 1970 the Japanese roboticist Masahiro Mori proposed that as robots become more recognizably anthropomorphic we react more favourably to them until suddenly their resemblance to us becomes uncanny and so provokes a strongly negative reaction. He called this plunge into fright "the uncanny valley phenomenon" [36]. Then and in a recent in-

terview Mori has emphasized the benefit of remaining deliberately in the uncanny valley, so as better to know what it means to be human [37]. Evidence is all around us that Mori's uncanny valley is where we are imaginatively and keep getting glimpses of. Consider, for example, evidence from the cinema, e.g. from the American film *Blade Runner* (1982) to the Bollywood *Enthiran* (2010), the Spanish *Eva* (2011), the Swedish *Äkta Människor* (2012) and "Be Right Back" from the British *Black Mirror* (2013).

6. The question for digital humanities

And so I come at last to the question for which the foregoing has been preparation: how does the confrontation with computing, hence the bond with the humanities in questioning the human, actually play out in digital humanities? I answer with an example from the area I know best: text-analysis for literary criticism.

In its simplest, least technical form, analysis is carried out by marking up a text manually to render elements of it computationally tractable. Standardization of markup has had a majority of the attention, but my concern is different: whatever the standard, or whether there is one, I want to point you to what happens when a computationally intractable element of a text is translated into something algorithmically tractable by inserting a metalinguistic tag into the text.

Markup varies from straightforward tagging of unambiguous but algorithmically unidentifiable elements, such as titles and chapter headings, to attempts at tagging elements that require a high degree of interpretation, such as literary tropes. My interest is with the latter. Here markup fails utterly: the translation it demands, absolutely consistent across the text and totally explicit, is an impossible goal. But it is an exercise of great value for the hermeneutical agony it leads to: it raises the epistemological question, how do you know what you know, in an intellectual world that has for a long time, increasingly since computing, privileged explicit and consistent knowledge. The strong sense of illegitimacy in imposing law-like rules on the role played by the scholar points exactly to the human-*versus*-digital confrontation I have in mind.

The other form of analysis is algorithmic from the outset. It poses the question of whether patterns in a literary text can be detected independently of metalinguistic intervention. Here the greatest and most disturbing success has been achieved in computational stylistics, which depends on statistical analysis. Its principal exponent, the Australian literary scholar John Burrows, has noted that "mounting evidence" accumulated over the last several decades strongly suggests that literary style is probabilistic [38]. This implies that reader recognizes author and the author writes in (one must say, roughly) the same way as we think the natural world and human populations operate. I ask you to pause and think about what that means. Meanwhile, consider Maurice Kendall's humorous but accurate view of 1942: statisticians, he wrote, "have already overrun every branch of science with a rapidity of conquest rivalled only by Attila, Mohammed and the Colorado beetle. They have ousted mathematics from its position as the matrix of the sciences, and they are beginning to appear among the arts" [39]. He cites work in computational stylistics as his example.

This is as far as I go now. There is the question of how computing moves beyond its failures in markup and algorithmic processing to the more serious challenge to the human that should be the digital humanities' supreme desideratum, at least for now: a conversational interlocutor. But that is for another time and place.

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Uniting Libraries And Archives: How An Integrated Metadata Strategy Can Produce A Connected Research Environment

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Received 31 January 2014, accepted 14 February 2014

Abstract. This article details the work of the European CENDARI (Collaborative EuropeaN Digital Archive Infrastructure) project which aims to create a unified query environment for historical archives and form the basis of a digital eco-system on which research infrastructures can be built. The long-established division between metadata practices in the archive and library domains and its obsolescence in the context of the digital information environment are discussed. The CENDARI project has devised an XML-based architecture which aims to bridge this divide. To enable this, a new schema, the CENDARI Collection Schema (CCS) has been constructed which links archival records to library catalogues and also to the Semantic Web. In this way, these historical boundaries are eroded and the full potential of collections can be realised.

Citations: Richard Gartner. Uniting Libraries And Archives: How An Integrated Metadata Strategy Can Produce A Connected Research Environment – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 9-13.

Keywords: metadata; archives; libraries; archival practice; cataloguing practice; digital eco-systems; semantic Web.
Short title: Uniting Libraries and Archives.

Introduction

Although libraries and archives, both key resources in academic research, are inevitably joined symbiotically in many ways (including often in their administrative and physical co-location), they are usually perceived as far apart in their approaches to metadata. For historical reasons, each domain has evolved its own standards for this, often for practical reasons dictated by their divergent functions but in many cases following traditional imperatives which have their origins in the history of their development. In the analogue era in which many of these approaches were initially conceived such disparities could operate without any significant impact on the effectiveness of their respective operations: in the digital era, however, where the boundaries between libraries and archives become much more fluid, they can present major impediments to facilitating research.

In the contemporary research environment, the distinction between archival and library resources is essentially irrelevant for most users of collections. In the digital world, it is necessary to move beyond any suggestion of polarised approaches and seek out methods for integrating resources into dynamic research environments. Such environments not only include pre-existing collections and the metadata necessary to find and utilise them, but also dynamically-created content produced as the research process proceeds. They can, therefore, no longer be regarded as static objects produced by domain experts or practitioners (such as the archivist or cataloguer) but as 'digital eco-systems' [1], constantly evolving systems of which research sources are only one component.

This article examines one method by which the divergent worlds of archival and library metadata practice can be integrated in order to allow them to act as the core of such a digital eco-system. The approach described here was constructed as part of the European CENDARI (Collaborative EuropeaN Digital Archive Infrastructure) project [2], which is attempting to provide a unified enquiry environment for existing archives and resources in the areas of medieval and modern European history. To enable this, the project has produced an XML metadata schema, known as the CENDARI Collection Schema (CCS), which is designed to act as an intermediary between established schemas in multiple domains and as a kernel on which the dynamic content of an eco-system can be built.

1. Divergent approaches to metadata

In the archival sector, the primary method of documenting the contents of a collection is the *finding aid*. This is traditionally a single record which aims to describe the *fonds*, a set

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of documents which are considered to share the same source. In a finding aid, the *fonds* is usually divided hierarchically into subsidiary components, ranging from collections (the next level down), though series, sub-series and folders down to individual items. This hierarchical description of the contents of a *fonds* usually forms the bulk of a finding aid, but it is often supplemented by textual commentaries on such facets as the history of the collection, biographical information on those involved in its creation, information on the repository which holds it, and core administrative information such as restrictions on accessing its contents.

The principles underlying this approach have their origins over 150 years ago: they are generally considered to have been codified by the historian Natalis de Wailly who in 1841 suggested that the archivist should aim "to gather together by fonds, that is to unite all the deeds (i.e., all the documents) which come from a body, an establishment, a family, or an individual, and to arrange the different fonds according to a certain order" [quoted in 3]. The principle enunciated here, generally known as *respect des fonds*, establishes two principles, shared provenance and the assignment of an ordering of materials, which continue to this day; these underlie the contemporary finding aid, in both its scope and its (usually hierarchical) arrangement.

By contrast the library sector has tended to avoid notions of a discrete, closed *fonds* or the imposition of any ordering of collections above the level of the individual item. Libraries have usually concentrated on the unitary object, usually the book on the shelf. This item-centric approach to metadata applies even in the case of multi-item library objects such as the entire run of a journal, which generally receives a single entry in a catalogue as if it were a monograph. These conventions also owe their origins to a major figure of the 19th century, in this case Anthony Panizzi, whose *Ninety-One Cataloguing Rules* from 1841 [4] still underlie the principles of much contemporary cataloguing practice.

These divergent approaches have been carried forward into the electronic age and into the metadata standards which attempt to move their respective cataloguing traditions into formats more suitable for the imperatives of digital metadata. In the archival world, the Encoded Archival Description (EAD) [5], an XML schema for encoding and exchanging information of the contents of archives, effectively translates the structures and conventions of traditional finding aids into a machine-readable syntax. This is particularly evident in its document-centric architecture which retains much of the structure of the printed finding aid, and its hierarchical arrangement with the *fonds* at its top level.

The library sector, on the other hand, remained firmly focussed on its item-level viewpoint when it devised the MARC (MAchine-Readable Cataloguing) standard [6] in the 1960s. This essentially translates the conventions of the card catalogue to the machine-readable age, maintaining many of its conventions which are essentially irrelevant for digital data (such as its differentiation between main and supplementary entries). Despite the limitations imposed by its origins, the MARC standard has revolutionised library science, allowing an interoperability which has allowed the creation of extensive union catalogues, such as WorldCat [7], which are such essential features of the contemporary researcher's resources.

For the researcher, however, archives and libraries are often equally important resources and this divide is an impediment to resource discovery rather than an aid to it. To produce a seamless enquiry environment for researchers which allows them to access archival and library holdings together requires a metadata strategy which integrates these approaches and allows their divergent approaches to become invisible to the user.

2. The CENDARI project

One current initiative which is attempting to do this is the European CENDARI (Collaborative EuropeaN Digital Archive Infrastructure) project [2], a collaboration between 14 universities and libraries in Ireland, UK, France, the Czech Republic, Germany, the Netherlands, Serbia and Italy. The project aims to build a research infrastructure which will integrate digital archives in the subject areas of medieval and modern European history. One of its deliverables is a unified enquiry environment for existing archives and resources in these two subject domains.

These have polarised emphases in their metadata requirements which correspond neatly to the archive/library divide: the medievalists are particularly concerned with complex objects at the item level (for instance, manuscripts), the modern historians more with finding presently undiscovered materials in existing archives. The former are therefore more interested in detailed item-level descriptions, often with complex codicological information for medieval manuscripts, the latter require sophisticated collection-level descriptions to facilitate resource discovery. Uniting the two into a coherent, unified metadata environment is necessary to allow the two domains to integrate into a single research tool.

Some components of this environment can already be encoded in pre-existing schemas; wherever possible the project uses these, adapting them if necessary to the particular requirements of the intended research environment. Descriptions of the collection-holding institutions themselves, for instance, can readily be accommodated in the pre-existing Encoded Archive Guide (EAG) schema slightly modified to allow more precise descriptions of some elements [8].

For item-level descriptions which mesh with library metadata practices, two pre-existing standards can also be used in conjunction. The more generic elements for these can be encoded in MODS (Metadata Object Description Schema) [9], an XML schema for bibliographic descriptions which is particularly designed for digital objects. MODS is useful for integrating with library collections as it is designed specifi-

cally to interoperate with the MARC standard to which the majority of its elements can be mapped. Using MODS thus allows one link in the intended chain between archives and libraries to be established.

Unfortunately the MODS element set (approximately 80 components) is not in itself specific enough for some of the requirements of medievalists. It is particularly lacking in codicological information necessary for describing manuscripts from this period in sufficient detail. MODS does however, allow its element set to be extended when necessary: for the purpose of the CENDARI project this is done to incorporate a detailed set of manuscript description elements from the TEI (Text Encoding Initiative) [10].

The TEI is a long-established standard for encoding textual objects: because of its modular architecture and extensive set of elements it is often used for digital editions of manuscripts. One of its optional components is a detailed set of elements for describing the features of manuscripts: *the msDesc* (Manuscript Description) [11] set includes elements for such important facets as the physical descriptions of manuscripts, information on scripts used, decorations, bindings, layouts and their provenance in addition to detailed descriptions of their contents.

Including the TEI msDesc as an extension to MODS provides metadata records of sufficient detail to enable medievalists to incorporate these objects into their research while retaining the interoperability with library cataloguing practices allowed by the MODS schema. Some problems can arise with this strategy, however, owing to potential duplications and redundancies between the two schemas. In many cases, the same concept can reasonably be encoded in either schema: both, for instance, include elements for physical descriptions. These can readily be obviated by drawing up precise cataloguing guidelines that detail which schema should be used for each concept, so preventing ambiguities and redundancies.

3. The CENDARI Collection Schema

For the collection-level descriptions used particularly by the twentieth-century historian EAD was initially considered but found inadequate for the interoperability requirements demanded by the project. As stated earlier, EAD is modelled on the traditional paper finding aid and so is designed essentially as a way of encoding the information that would be found in such documents. Much of its architecture is, therefore, populated with textual fields designed to contain descriptive prose. These elements are relatively poor as mechanisms for interoperability as they are inevitably semantically broad and imprecise.

For the CENDARI project, a new schema was devised which offers the potential for a more precise method of referencing the components of a collection description and so making it more possible to link such a description to the wider information environment. This schema was constructed following a discussion with domain experts in archives who were asked to define the components that they considered central to their requirements. A total of fourteen such components (or facets) were defined:

1) collection description (identifiers/titles etc.);
2) holding institution;
3) subject coverage;
4) languages of materials;
5) bibliographies of related literature;
6) rights information;
7) contents of the collections;
8) source information;
9) dates;
10) relationships to external objects;
11) lacunae (gaps) in the collection;
12) impediments to using it effectively;
13) information on the collection's likely future availability;
14) information on the metadata record itself.

Many, but not all of these, have counterparts in EAD's element set: the exceptions to this are lacunae, impediments and information on the collection's future. Even where there is some degree of overlap between EAD and CCS elements, this internal structure of these is often very different owing to the divergent emphases of each schema.

This is most evident in the extensive use of XML attributes to provide semantically precise qualifiers to each facet. For instance, a lacuna in a collection can be described as presented in Table 1.

Table 1. Lacuna description.

```
<lacuna lang     = "en"
         type    = "missing component"
         typeURI = "http://cendari.edu/id/lacunatypes/missingcomponent"
        cause    = "mice"
        causeURI = "http://cendari/edu/id/lacunacauses/mice"
      coverageID = "cendari-sample-1-component1"
       startDate = "1923-02-02"
         endDate = "1924-12-12"
        calendar = "gregorian">
 <p>Years 1923-25 are missing as a result of being eaten by mice</p>
 </lacuna>
```

Table 2. Form of <relation> element.

```
<relation   type    = "part"
            typeURI = "http://purl.org/dc/terms/hasPart"
          target    = "item:3903456"
          targetURI = "http:/cendari.eu/id/item/3903456"
        coverageID = "cendari-sample-1-component1"/>
```

In addition to the textual description of the gap, which in EAD would be recorded in a generic <note> element, this element records the cause of the gap, its chronological boundaries (and the calendar in which these are recorded), the type of gap and the part of the collection in which it occurs (given by *coverageID*). This is a much richer set of information; more importantly, because it is encoded in discrete data components, it is amenable to machine-readable analysis and processing.

This schema provides a rich metadata set for describing collections, but is intended to form only part of a wider network of information. It is designed specifically to act as an 'intermediary' schema, that is a schema which is not necessarily intended as a final delivery mechanism for metadata, but as a mediator between other established schemas [12]. This is achieved partly by mapping the schema to its more established counterpart (in this case EAD) and by using its extensive linking facilities.

4. Establishing the linkages

Extending this capability beyond a single CCS record is made possible by the schema's extensive use of URIs (Universal Resource Identifiers). These are identifiers which precisely reference any concept or thing anywhere on the Internet, and form the basis on which the semantic interoperability of linked open data is built. Several sets of linkages are made possible in this way.

A primary linkage is to item-level records encoded in MODS. This may be achieved either from the CCS document to the MODS file or vice versa. In the former direction, linkages may be formed by using a <relation> element available in the CCS element set which allows any type of relationship to an external entity to be specified. For instance, to specify an item which forms part of the collection, the <relation> element may take this form as presented in Table 2 where *targetURI* records the URI of the MODS record for this item and *coverageID* contains the identifier for the part of the collection in which it is found. The linkage in the opposite direction is achieved by the use of a <relatedItem> element within MODS, which references the URI of the CCS file.

Beyond establishing these linkages, the CCS file can also be used to generate EAD files directly, so allowing the integration of CENDARI records with legacy data already encoded in that schema. As such, CCS operates as an 'intermediary' schema as outlined above. Using this technique allows the project to continue employing schemas which have embedded themselves in their respective communities (such as EAD) but to link them into a coherent whole, so reconciling to some extent their divergent metadata strategies.

A further level of integration may be achieved by employing the CCS schema to generate metadata for the Semantic Web. To achieve this, a simple transformation is written to produce RDF (Resource Description Framework) [13] 'triples', subject-predicate-object units of semantic information which form the atomistic components on which the Semantic Web is built. RDF triples function best when URIs are used for their constituent components, as these allow their precise semantic delineation in a form which should be unique throughout the internet. The consistent use of these URIs in the CCS schema makes the generation of these triples straightforward and allows the ready generation of RDF metadata. The overall set of linkages achieved in this way may be summarised schematically as presented in Fig. 1.

There are many reasons why using XML in this way, rather than encoding these linkages directly into RDF-based ontologies, may be more practical for a working, unified environment. The atomistic approach of RDF, in which each semantic component is encoded in a single subject-predicate-object 'triple', rapidly produces information networks of great complexity involving potentially thousands of triples when objects or collections of any size are involved. Maintaining such networks, and particularly transferring their constituent metadata between systems, is highly complex: for these reasons, using the readily-packaged XML syntax is the better option in working environments.

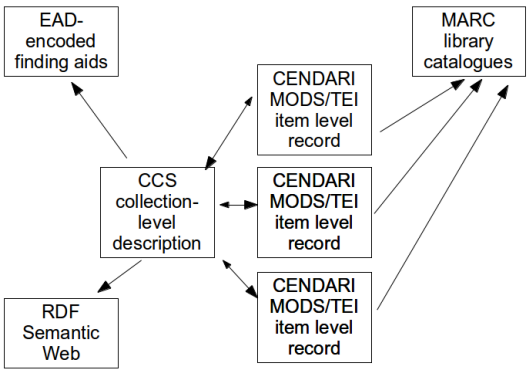

Fig. 1. Schematic of CENDARI linkages.

Conclusions

The imperatives of the digital eco-system have rendered the long-established divide between the archival and library worlds at best irrelevant and at worst a major impediment to research practices. The erosion of boundaries between research resources which has been made possible by the advent of digital technologies and is further realised by the Semantic Web requires a means of making joins across these borders while retaining the key advantages gained by established practices in both domains. The CENDARI project, in particular the CCS schema, should form a solid basis on which these joins can be made and eco-systems built.

It is because, most established schemas were not designed with linkages of this type as part of their functionality that it becomes necessary to employ mediating schemas of the type proposed by CENDARI. By employing these, and incorporating semantic linking features as their core design feature, it becomes possible to allow these sophisticated networks of components to be integrated into a coherent whole. In this way, a unity between the divergent strategies and methodologies of archives and libraries becomes a real possibility and the now obsolete divisions between the two can, at last, be discarded.

Acknowledgement

The research leading to this article has received funding from the European Union's Seventh Framework Programme [FP7/2007-2013] under grant agreement N 284432.

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What is the Digital Humanities

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Received 8 March 2014, accepted 25 April 2014

Abstract. This article will describe current trends in digital humanities around the world. Digital humanities are clearly about more than using a computer for research and teaching in the humanities and methods and strategies such as modelling, visualisation, programming, and collaboration are central. Its connection to the humanities, to asking questions rather than answering them, even to see digital humanities practice as aiming at meaning, is clear. Yet, the term remains hard to define. Through the investigation in this article I will encircle what is meant by the term and how it is distinguished from other areas in academia. I will also show how the term is contested and that the area includes a number of potential and real conflicts.

Citations: Øyvind Eide. What is the Digital Humanities – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 14-21.

Keywords: Digital Humanities: organisations, institutions, history.
Short title: Digital Humanities.

Introduction

Digital humanities is becoming increasingly popular in many parts of the world and is seen by some as the next big thing. Two examples of the novel visibility of digital humanities are the interest for distant reading, not the least connected to the Stanford Literary Lab established by Jockers and Moretti [1], and recent articles in *Nature* and *Science* using quantitative methods to study language and culture [2, 3]. In this article I will give an overview of the field, focusing mostly on the development in the last 5 years. For historical discussions covering the history back to the early starts more than sixty years ago, see, e.g., [4]. As providing an absolute definition of the term "digital humanities" is not very fruitful, I will attempt to encircle it through examples, while also drawing some general lines based on these examples [5].

As a way of introduction I will give an example of a digital humanist, namely myself. I started my university studies in the late 1980s with mathematics and computer science. Getting bored with the focus on "hard" knowledge I moved over to general literature and completed a bachelor with those three subjects. I worked for a while in the library sector until I became involved in The Documentation Project [6] in 1995. This was a large scale Norwegian digitisation project where I had the role of technical consultant, planning and overseeing scanning and text encoding done by people on employment schemes [7].

From 1998 to 2000 I was the manager of the Henrik Ibsen Manuscript project [8], before I got involved in the Museum Project [9], another large scale digitisation project which included a significant system development part. In the project, systems for research and collection management in areas such as archaeology, ethnography, and natural history were established. This included the development of general server based services for media files (image and sound) and digital maps. I was deeply involved also in lexicography, in Norway as well as in Zimbabwe and Mozambique. The work included a hybrid mix of project planning and management, digitisation logistics, system analysis, implementation, and research and development.

In 2009 I enrolled in the first PhD programme in digital humanities at King's College London, using a collection of documents I administered the digitisation of in the Documentation Project as my object of study. I used core digital humanities methods in my work: text modelling, model experiments, and critical mapping. After finishing the PhD I was back in Norway for a year or so before I moved to Passau to be a Vissenschaftlicher Mitarbeiter with a newly established Lehrstuhl für Digital Humanities. Using a terminology which is common especially in North America: I moved from alt-ac [10] to a "normal" academic.

At this point I have a "real" digital humanities education and work in a digital humanities university department. But the road there was long and winding. A similar pattern can be observed more generally. In addition to traditional digital humanists, who often were on the fringe of established academia and focused on creating things (as is seen clearly above in the years 1995-2009), we now start seeing candidates with

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degrees in digital humanities, being more integrated into the ordinary university system, as the last five years of my career is an example of. Someone getting a PhD in digital humanities and going on to a junior academic position is still noteworthy for its novelty [11]. In a few years that may no longer be the case. What is the context for the transformation from digital humanities as an alternative academic activity to digital humanities as an established academic discipline? That will be the topic for this article.

1. Organisations

How has the growing popularity of digital humanities been reflected in organisational development the last few years? The main conference in the area, the annual *Digital Humanities* conference (previously the ALLC/ACH conference) is now attended by more than 500 participants annually, showing a significant growth over time. The number of regional conferences is growing: the traditional annual UK and Canadian conferences has been followed by an annual Japanese conference and a biannual Australasian one after 2010. This includes a development away from the traditional European-North American scope of the digital humanities organisations, with more and more areas becoming part of the international family. Active groups are under development in Latin America and Asia and also in parts of Africa and the Middle East regional and international cooperation is under development. It is a sign of times to come that the first *Digital Humanities* annual conference in the Southern hemisphere, indeed the first one outside Europe and North America, will be organised in Sydney in 2015. We also see a regionalisation and a growth in non-English language conferences, as several regional conferences in Europe are examples of.

In some areas of digital humanities disciplinary conferences has been organised for decades. *Computer Applications and Quantitative Methods in Archaeology* (CAA), both a series of international and national conferences, is a good example. Less regular conferences with shorter histories are found in other disciplines as well. Another tendency is a growing number of digital humanities tracks in established "non-digital" conferences such as the MLA and the ICLA conference. Traditional journals such as *LLC: The Journal of Digital Scholarship in the Humanities* and *Digital Studies / Le champ numérique* has been followed by new journals such as *Digital Humanities Quarterly*. Also new thematic journals appear, such as the *TEI Journal*. All in all we see a multitude of parallel developments creating a multi-faceted picture. This organisational development may to an extent be a driving force for wider changes, but more importantly it is a sign of deeper processes.

Another sign is the organisations themselves, where much has happened at the European and International levels since the early 2000s. Traditionally, there were two organisations in this area, the *Association of Literary and Linguistic Computing* (ALLC, founded 1973) with its centre in Europe and the *Association for Computing in the Humanities* (ACH, founded 1978) with its centre in the US. In 1996 a third organisation was established with a Canadian focus, the *Consortium for Computers in the Humanities/Consortium pour ordinateurs en sciences humaines* (COCH/COSH). The organisations cooperated closely especially on the common annual conference - it was every second year in Europe, under the name ALLC/ACH, and every second in North America, under the name ACH/ALLC.

Then, in the early 2000s, discussions started which eventually led to the establishment of an umbrella organisation, the *Association of Digital Humanities Organisations* (ADHO), with the three organisations as constituent organisations. ALLC later changed its name to EADH (the *European Association for Digital Humanities*) and COCH/COSH to CSDH/SCHN (*Canadian Society of Digital Humanities/Société canadienne des humanités numériques*) in order to better reflect their current scholarly foci and also current terminology.

Neither of the three organisations had a strict geographical area and co-membership was and is common. There were also extensive outreach activities. A noteworthy example is the series of workshops in Japan supported by EADH, leading up to the establishment of the *Japanese Association for Digital Humanities* in 2011. Together with the *Australasian Association for Digital Humanities*, also founded in 2011, it completes the list of regional constituent organisations. In addition, an international organisation focusing specifically on digital humanities centres, *centerNet*, is also a constituent organisation of ADHO, bringing the total number up to six.

The main income for the whole ADHO system is EADH's share of the profit of its journal, *LLC: The Journal of Digital Scholarship in the Humanities*. This income makes it doable to run a number of activities at ADHO level, including conference bursaries, prizes, open journals, and general infrastructure. It also finances many activities at the level of the constituent organisations, of which the most important for Europe is the EADH small grants support scheme and the shared infrastructure.

A further development in Europe the last few years is the establishment of national and language based associations. Two are already formed and are now associate organisations of EADH: the German language association *Digital Humanities im deutschsprachigen Raum* (Dhd) and the Italian *Associazione per l'Informatica Umanistica e la Cultura Digitale* (AIUCD).

Other groups are forming in France, Spain, the BeNeLux area, and the Nordic countries. Some are national, some are language based, and others cover several countries as well as several languages. There is great diversity, but the common factor is that there is an urge to organise at new levels and that all of this has gained momentum within the last five years. A similar momentum is also observable at the policy level of the European Science Foundation [12].

2. Themes

All this work we see in establishing and running organisations, conferences, and journals aim at something else, namely, scholarly activities. What is the core of the research and teaching going on in digital humanities right now? To start on the research side, I will base this short survey on the official story of honourable work given by ADHO. How can we understand the values of the digital humanities community as it is communicated through the ADHO bursaries and two of the prizes? [13]

The major prize in digital-humanities is the Busa Prize, given to recognise outstanding lifetime achievements in the application of information and communications technologies to humanities research. It has been awarded six times since 1998:

1998: Roberto Busa;
2001: John Burrows;
2004: Susan Hockey;
2007: Wilhelm Ott;
2010: Joseph Raben;
2013: Willard McCarty.

The application of computers for textual and linguistic analysis is a common topic for all of these winners, and for most of them the development of digital textual resources have been a central area of engagement. The Fortier Prize is an annual prize given for the best paper by a young scholar/early stage researcher at the conference. It has ween awarded four times:

2010: Maciej Eder: "Does Size Matter? Authorship Attribution, Small Samples, Big Problem."
2011: Scott Weingart and Jeana Jorgensen: "Computational Analysis of Gender and the Body in European Fairy Tales."
2012: Marc Alexander: "Patchworks and Field-Boundaries: Visualizing the History of English."
2013: Courtney Evans and Ben Jasnow: "Mapping Homer's Catalogue of Ships."

While it is clearly the case that like the Busa awardees all winners of the Fortier prize were honoured for textual work in a wide sense, the tendency is slightly different in this latter prize, awarded for a single achievement made by young scholars. Even if two of the prizes are clearly in line with the traditional literary and linguistic paradigm, the methods are novel for the other two. While the object of study for Weingart and Jorgensen exist in textual form, the method of analysis is network analysis. And the method used by Evans and Jasnow, again for a study of a textual work, is map visualisation and analysis.

Once we move over to the bursary awards, however, the picture changes more visibly. 10-14 young scholars get scholarships for the conference every year and the topics they present on show a much wider scope. The presenters given bursaries in 2013 are listed in Table 1.

While this list shows that textual work is still important, it has been extended both with new methods and with new objects of study: we have media studies and musicology; network analysis, and visualisation. Also the topics are partly new, with a stronger emphasis on gender and postcolonial issues, and also discussions about digital humanities itself in light of critical approaches. We will come back to some of these issues when we discuss conflicts below.

3. Education

In the area of university teaching there is also a significant development on the way. There is a growth in the number of digital humanities positions at many universities.

Table 1. List of presenters.

Hamed M. Alhoori:	"Identifying the Real-time impact of the Digital Humanities using Social Media Measures."
Adam Anderson and David Bamman:	"Inferring Social Rank in an Old Assyrian Trade Network."
Drayton Callen Benner:	"The Sounds of the Psalter: Computational Analysis of Phonological Parallelism in Biblical Hebrew Poetry."
Alberto Campagnolo:	"Bindings of Uncertainty. Visualizing Uncertain and Imprecise Data in Automatically Generated Bookbinding Structure Diagrams."
Alexandra Chassanoff:	"'Shall These Bits Live?' Towards a Digital Forensics Research Agenda for Digital Humanities with the BitCurator Project."
Constance Crompton:	"On Our Own Authority: Crafting Personographic Records for Canadian Gay and Lesbian Liberation Activists."
Courtney Evans and Ben Jasnow:	"Mapping Homer's Catalogue of Ships."
Paul Matthew Gooding:	"The Digitized Divide: Mapping Access to Subscription-Based Digitized Newspapers."
Andrew Hankinson:	"SIMSSA: Towards full-music search over a large collection of musical scores."
Simon Rowberry:	"Widening the Big Tent: Amateurs and the 'Failure of the Digital Humanities'."
Graham Alexander Sack:	"Simulating Plot: Towards a Generative Model of Narrative Structure."
Ayush Shrestha:	"Digging into Human Rights Violations: Phrase mining and trigram visualization."
Dana Ryan Solomon:	"Theorizing Data Visualization: A Comparative Case-Study Approach."
Lindsay Thomas:	"4Humanities: Designing Digital Advocacy and VizOR: Visualizing Only Revolutions, Visualizing Textual Analysis."

I will give some examples of how this is connected to research strategies and curriculum development on three continents. Are there lessons to be learned for institutions in countries where this development is yet to start?

In the US there has been a number of positions opened the last few years calling for digital humanities competence. Many of these have been issued in English departments. This is an example of departments extending their scope to include a selective component of digital humanities which is felt to be specifically natural to the department in question [14]. It is similar to the situation we have found in archaeology for a long time, where digital methods, such as GIS and 3D modelling, have been topics of teaching and research in archaeological departments. This is a development that may continue, and may work well also for other humanities disciplines. If the digital component is different from discipline to discipline it may even be the best option.

However, it has been argued strongly that there is a core set of competences needed by everyone involved in digital humanities, no matter which is their main discipline - if they indeed have one, which is a question I will return to below. What would this set consist of? I will look at examples of study programmes from four different countries [15], starting with one from an English department, taught by the very same young scholar who is mentioned in [14], namely, the Emory University (USA) course English 389 Introduction to Digital Humanities taught by Brian Croxall. Based on the idea that humanities are already digital, he asks if we can:

i) use the computer to do something only it can do?
ii) read every book published in the 19th century?
iii) visually break down and compare the language in two volumes of poetry?
iv) lay out a novel in geographical space?
v) find out what it would mean to read a book as a distributed crowd [16] ?

At Jadavpur University in India, a one-year postgraduate Diploma Course in Digital Humanities and Cultural Informatics covers the following topics as presented below.

1. Transformation of the study of the humanities by digital technology as a critical and reflective component of DH is at the heart of the proposed course.
2. Digital record-keeping and data processing, engage with new forms of textuality.
3. Practical skills in electronic archiving, processing, editing and presentation of cultural material.
4. Train students to apply principles of textual, editorial and communication theory to technical situations [17].

One of the long-standing digital humanities institutions is the Department for Digital Humanities at King's College London in the UK. Their MA in Digital Humanities has the following twofold aim.

1. To develop a critical understanding of digital technologies and research in the arts and humanities.
2. To teach a set of practical computational skills which enable the creation of digital resources and which can also open up exciting professional perspectives for students [18].

Finally, at the Lehrstuhl für Digital Humanities at the Universität Passau in Germany, the following modules are included in the bachelor level digital humanities certificate.

1. Digital humanities basics: overview and the basics of information technology.
2. Digital humanities methods: digitisation of cultural heritage, computer assisted information analysis and processing, scholarly communication in the digital age.
3. Digital humanities models: modelling of cultural heritage data and information, digital cultures of knowledge [19].

The discussion below will clarify some common denominations for these seemingly diverse topics. But I will mention one fundamental point already here: they all imply a combination of analysing things and making things. While the humanities have always focused on the production of texts, we see here an extended practice of creating. The main novelty for the humanities is not only the making, but also to use the process of making as a method for developing critical thinking. This is the case of critical modelling in digital humanities, whether that label is used or not. So even when digital humanities competence is to be taught to historians, literates, musicologists, or art historians, there will be a core of similar competence which it will often make sense to teach together for students from several disciplines. Thus, to establish a digital humanities department may be a good choice even if the goal is to add digital components to the educations for a number of different groups of students.

There are also good reasons to keep this teaching and research within the arts and humanities faculties and not as part of computer science. While the latter may work in some cases, only some of the digital humanities competences are covered by what is normally taught in computer science, and more importantly: similar topics are taught in different ways. One obvious example is the use of mathematics in undergraduate teaching of programming. This makes sense for the students usually enrolled in computer science also when their main disciplines are other ones, as the disciplines traditionally served by computer science all expect their students to have certain skills in mathematics. Some parts of computer science are in themselves based on mathematics and the students need to understand it. But other parts only uses mathematical examples because they are convenient. Teaching in digital humanities are developing and using other types of examples than the mathematical ones often used in computer science education.

Further, computer science tends to be solution oriented in its approach. When modelling is taught, it is to show students how to solve modelling problems. This is in line with what Mahr calls the leading question of computer science. Note

that [20] is a translation of a German article using the term *Informatik*, which in Germany denotes what in English is usually called *Computer science*. In the English version of the article, however, the term was translated to *Information science* as seen in the quote:

> In information science, this leading question, which forms the standard of all disciplines of engineering, presupposes the situative context of systems development. It runs:
>
> > Does the system S comply with the requirements for its application?
>
> Probably no serious activity exists in information science which does not in some way imply a kind of systems development, whether such development is just conceived of in general or whether it becomes concrete. [20, p. 365-366].

This is surely not about hiding complexity from students of computer science. But the goal oriented approach is different from heuristic modelling in digital humanities. Also in digital humanities many cases are found where models are created with a specific purpose, to solve a specific problem, such as modelling a text in order to display it in a web browser. Sometimes digital humanities is about creating software tools and can hardly be distinguished from computer science. However, the discipline of digital humanities also includes a significant amount of modelling as a tool to explore and ponder on questions, where the models created are just side effects of the intellectual process [21]. To simplify more than just a bit: as a humanities discipline, the focus of digital humanities is rather on asking questions than to develop solutions.

Similar differences between digital humanities and computer science are common. I will mention but one more here. The results of digitisation, such as a scanned image of a manuscript page or a digital photography of a painting, are examples of representations. Also when one creates a transcription of a manuscript page or creates a three dimensional digital model of a statue the results are representations of the originals. But will these four creations be representations of the same kind? In order to study this in digital humanities we use the long tradition of studying representation, in literature, art, intermedia studies, semiotics, and beyond. These traditions give us tools and understanding needed for the exploration of digital representations. But not only that: what is learned will then enable us to enrich the traditional humanities disciplines. Digital representations may not in themselves revolutionise semiotics, but they give additional forms and examples to ponder on.

In my opinion, these two examples, modelling and representation, show digital humanities as something more than an auxiliary discipline. While both modelling and representation are used and studied in many disciplines, digital humanities has its own specific take on these forms of knowledge. I believe there is a need for digital humanities per se, that is, not only candidates with a main subject and the digital in addition, but with digital humanities as their main discipline. They will be able to work as experts in interdisciplinary teams, functioning as interpreters between information scientists and humanists, while at the same time adding their own special competences.

The combination of deep humanities understanding and a mastery of computer science thinking and programming in one person opens up for a technique of rapid hermeneutical circles where questions and computational implementations to explore them goes hand in hand [22]. Such combinations are nothing new in the history of humanities research. A theoretical musicologist will also be able to play the music she or he is studying in order to try out things. Experimental archaeology is an important tradition. And any textual scholar knows how to write texts, even if they may not do creative writing. Being a programmer is not the only way of being a digital humanist, but it is surely an important one. And there are different ways of being programmers and different levels of expertise.

4. Topics and conflicts

The previous sections have described digital humanities from the top, so to speak. The discipline has been described as a coherent, if many faceted and changing area of research and teaching. But the last few years have also seen a growing concern about aspects of digital humanities as it is practiced. One core question is if we should establish borders around digital humanities as a discipline by identifying what falls outside of digital humanities, or rather keep the tent as open as possible.

While an open tent is a nice metaphor, it is important to remember that if use of a computer is the only criterion, then the open tent turns into a house with neither walls nor roof. Then digital humanities will just be the same as humanities. While this is a possible position, it is not one I support, as the previous sections will have made clear. One key aspect with much work in digital humanities is interdisciplinarity. For some, digital humanities may be little more than an excuse to do cross-disciplinary work. I do not really see this as a problem, but the same issues of having some sort of walls remains. Use of computers is in itself is not enough, even if it happens in an interdisciplinary context.

But even if not a criterion in itself, the question of tools is still an important topic of discussion. Tool development has been an important part of digital humanities since the early days and critical reflections on the tools we use have been with us all the time. So has the opposite view: that tools are just tools and how we use them is more important. One specific example is the use of XML (and previously SGML) to represent texts. While such formalisms are claimed to restrict

what can be expressed when encoding texts, it has also been claimed that the restrictions can be overcome, if necessary by clever work-arounds. Thus, XML is still used in the main standard for text encoding in the humanities, TEI. What is clear is that we need a variety of tools for different purposes and in order to work on different research topics. As mentioned above: it may be good to be a programmer in order to solve problems there and then. And the ability to make tools represents a strength: just being the passive consumer of tools may be closely connected to a role as marginalised, and one road to de-marginalisation is to take more active control over one's tools [23].

There are many levels of possible interaction with the tools applied in digital humanities, from use via understanding, modification, making, to conceptualisation. The border between humanities in general and digital humanities will be somewhere beyond use: everybody use tools but not everybody understand, modify, make, or conceptualise them. The issue is complicated by the fact that there is not linear development. One can conceptualise a tool without being able to make it, and some developers claim they are not able to use the tools they make.

We all have different skills, and we all have additional skills beside the strict curriculum based ones. Being able to code is one additional skill. A humanities researcher may or may not have it. A historian who is also a war gamer has a certain set of knowledge and skills, an anthropologist who grew up as a reindeer herder knows certain things from the inside, and a humanities researcher who is also a programmer knows techniques, methods and has skills which are potentially useful for her or his work.

Tools are created by humans and can be changed. Sometimes they are very hard or even impossible to change, but some tools can be changed easier than we tend to think. Early in 2013, Melissa Terras complained in a twitter message about the fact that in TEI, the two codes for sex were 1 for male and 2 for female. Thus, Simone de Beauvoir was indeed the second sex. By April the same year this was changed by the *TEI Council* [24]. In the communities we are part of mutual respect between people with different skills and different abilities is of central importance when we work together [25]. Criticising is a central point in this, but also knowing, or being open to be taught, what is the most useful way to criticise in order to be heard and to make change. There are systems to handle problems such as the one above in TEI, but they must be used and understood. Critical questioning is a necessary starting point in this process of coming to know, and also to make changes.

Some attempts have recently been made towards categorisations which may help us understanding better the issues involved and why some critique is met by a puzzled lack of understanding by many old timers in the digital humanities. Digital humanities types I and II were suggested by Stephen Ramsay as a way of explaining an experienced lack of communication [26] as presented below.

I. A community of people around TEI, ALLC, ACH, CCH from the early nineties, with roots back in time. This is the tradition of humanities computing, which is multi-disciplinary and connected to a set of practices. Building things is a key aspect of this tradition.
II. The recreation of the humanities itself after some technological event horizon. This is a type of humanistic inquiry that in some way relates to the digital, where the main point is to understand things.

The tool building tradition used to be the major force, whereas the critical aspects have grown significantly the last few years. Marjorie Burghart's three orders of digital humanities offers another structure of explanation which may add important perspectives to the discussion [27].

1. Laboratores: those who work. They are interested in practical aspects leading to concrete results.
2. Bellatores: those who fight. They defend digital humanities, politically and intellectually. The focus is on giving digital humanities their own separate disciplinary status and providing academic careers.
3. Oratores: those who pray. These are non-practising believers interested in the phenomenon. They are enthusiastic, but not involved in any practical aspects of digital humanities.

We see how these two classifications can not only explain some of the critical discussions connected to digital humanities but also reflect on the double or even triple nature of the discipline as it was seen above based both on curricula and on prizes and bursaries. Digital humanities is a many faceted area, but that does not make it impossible to describe and understand it contextually. Such an understanding must also be based on the material foundations for what we do, on basic enablers and hinderances such as resources, languages and cultures.

The tension between the info rich and the info poor has been with us for a long time, with information technology playing a double role. While it is surely an area where penetration to a large extent follows traditional lines of wealth and poverty, the use of online information by first nation organisations is an interesting alternative example [28] addressed contemporary by, among others, David Golumbia [29]. This should be an important area for engagement by the digital humanities community. But the problems faced when we try to develop a truly international digital humanities community goes beyond traditional post-colonial issues, as the discussion the the Global Outlook SIG of ADHO clearly shows [30]. For people with no funds to go to international conferences the networked information, to the degree it is open and available given the bandwidth issues still limiting access in parts of the world, is even more important than among the more wealthy parts of the community.

Languages are important. How can we be truly multilingual? Some approaches, such as accepting papers in mul-

tiple languages for conferences, turns out to be difficult in that it tends to lead to ghettoisation. Translating the call for papers for the annual Digital Humanities conference is important work which is done year by year by volunteers. But the issues go beyond languages in a narrow sense. There are differences in writing styles and scholarly arguments which give many non-native English speakers added problems in addition to the language itself.

I have no simple solutions to such problems, but the discussion goes on in many areas. Within ADHO it is a focal point not only in the committee for Multi-Lingual and Multi-Cultural issues [31] but also in other areas such as the Awards Committee. Why are so many of the bursary applications submitted by participants from countries with English as an official language? Why are the percentage of male submitters higher than female? Again we face problems which has no simple answers but where the community tries to work together to improve the situation.

It is claimed that digital humanities represent the revenge of positivism, that work such as Moretti's threatens critical literary theory by replacing explicit awareness of our theoretical presuppositions with uncritical neo-positivism [32]. While the argument may seem convincing, and while there are methods used in digital humanities which may seem positivistic, this is far from the full story. One counter-example is represented by the creation of database systems in museum informatics in the 1980s and 1990s. The traditional method was to read through source texts and enter the information which seemed adequate by the project team in a normalised form. This was based on an implicit idea of knowing the truth. The process led to a loss of links back to the original textual descriptions and thus a loss in scholarly reproducibility. In *The Documentation Project* in Norway, which was a multi-disciplinary digitisation project, the scholarly thinking which is fundamental to what is now called digital humanities led to a different approach, based on the tradition from digital scholarly editing. SGML, and later XML, were used to encode the texts of the museum catalogues, and then information was extracted from the encoded texts to the database. Thus the links back to the original sources were kept available from the databases [33]. As observed in [34], "The main contribution from the text encoding community to culture heritage information systems was the basic understanding of texts, also seemingly neutral texts describing the real world, as culturally situated" [34, p. 37]. Such understanding can also come out of applying digital humanities methodology.

Conclusion

With the development towards a truly international digital humanities community, issues of cultural and language diversity, which has always been with us, become critical. How can we keep an integrated area of digital humanities while opening up for the diversity of languages and research cultures? We are no longer a marginalised crowd sticking together in small groups; we are rather, if not dominant, then at least visible. A novel position of strength can be a challenge for groups who have traditionally seen themselves as marginalised.

I see the fact that digital humanities is now under attack as a sign of strength and basically a good thing. Some issues people have with digital humanities are clearly based on misunderstandings, but others, including some critical approaches to digital humanities from the postcolonial and feminist side, are well worth listening to. Technology is not culturally neutral, but neither are XML and TEI hidden vehicles of anglo-american imperialism. In order to find useful critical positions between these two extremes it is important to see the political potential of technology.

A similar example, which has a much longer history of critical discussion, is map technologies. Cartography has been, and still is, a power system used by empires, political as well as commercial. But it is also used by the marginalised as part of their strategies. Working in digital humanities is not about being leftish or indeed any kind of -ish. But the tools we use have a political potential which is there whether we acknowledge it or not. Any scholar, digital or not, in the humanities as well as beyond, need a critical approach to what they are doing. So do we.

I believe that digital humanities cannot be defined, but the discipline can be exemplified and encircled, as this article represents an attempt to. Such encirclement is not neutral, and it is important to keep the critical discussions going. It is also important to base the discussions on the real state of the art, which this article is also an attempt to present.

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Knowledge Structuring In Translation Studies

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Received 11 March 2014, accepted 25 April 2014

Abstract. This contribution tries to distinguish between the traditional discourse of translation reflection and the scholarly approach to Translation Studies. Systematicity in the structuring of knowledge is an important criterion in that distinction. In the course of the development of the discipline, several institutionalization factors have played an essential role in the systematizing of knowledge. Both modern online bibliographies and encyclopedias are a case in point. In this article particularly the *Translation Studies Bibliography* and the *Handbook of Translation Studies* are used to illustrate not only the supportive, but also the research possibilities offered by large corpora. Systematical analysis of the data in larger databases can provide us with important meta-information about the development of the discipline as such.

Citations: Luc van Doorslaer. Knowledge Structuring In Translation Studies – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 22-25.

Keywords: Translation Studies; discipline; translation reflection; institutionalization; bibliographies; handbooks; conceptual maps; structuring principles; affiliations.
Short title: Knowledge in TS.

Introduction

At conferences worldwide the discipline of *Translation Studies* (TS) is often still referred to as a 'relatively young discipline'. It seems that this expression has been very productive. But what is the most significant in this expression is the term *relatively*. Compared to *Linguistics* or *Literary Studies*, TS obviously is young and/or much less institutionalized. However, there are also plenty of adjacent (sub)disciplines that are much younger, like *Adaptation Studies* or *Transfer Studies* for example. So it all depends on the other element in the comparison. Over the past 60 years or so, TS has developed into a discipline with a history. It is typical for such a stage in disciplinary development that many new academic tools come into being: historical surveys, handbooks, encyclopedias, textbooks, dictionaries, journals, terminologies and bibliographies are produced. As this is exactly what has happened to TS over the last 10-15 years, we believe that it provides proof of a higher level of structure and institutionalization.

1. Translation Studies and translation reflection

Although only in the past fifty or sixty years research on translation has been carried out systematically along *scholarly* lines, it was preceded by centuries of (intellectually valuable, and sometimes challenging) translation reflection. A seminal textbook like Lawrence Venuti's *The Translation Studies Reader* [1] for instance contains texts by Saint Jerome (4th-5th centuries), John Dryden and Nicolas Perrot d'Ablancourt (17th century), Johann Wolfgang von Goethe, Friedrich Schleiermacher and Friedrich Nietzsche (18th and 19th centuries). These older texts often tried to legitimate an existing practice preferred by the author. For that reason,

> discourse on translation was mainly attempting to prescriptively influence, or critically reflect upon the practices of translators, thus reaching a higher degree of abstraction. But it was only after the emergence of the discipline of Translation Studies, in the 1970s, that the metalanguage of translation started to resemble something like what we gather might be part of a full-fledged institutionalized expert system. [2, p.30].

One of the main differences between the older (often prescriptive) translation reflection and recent TS discourse is the systematic structuring of knowledge in the latter. Whereas personal or so-called idiosyncratic theories were/are usually based on personal observation and introspection, a scholarly approach requires a systematic engagement with the existing theoretical work (see for instance Gile at [3], including his references to Barbara Moser-Mercer). In a discipline that is not so young anymore, any scholar's attempt to gain complete knowledge of all approaches, trends and influences has become an illusion. As a result, the structuring of the existing knowledge is a prerequisite for scholarly dealings with a growing amount of materials.

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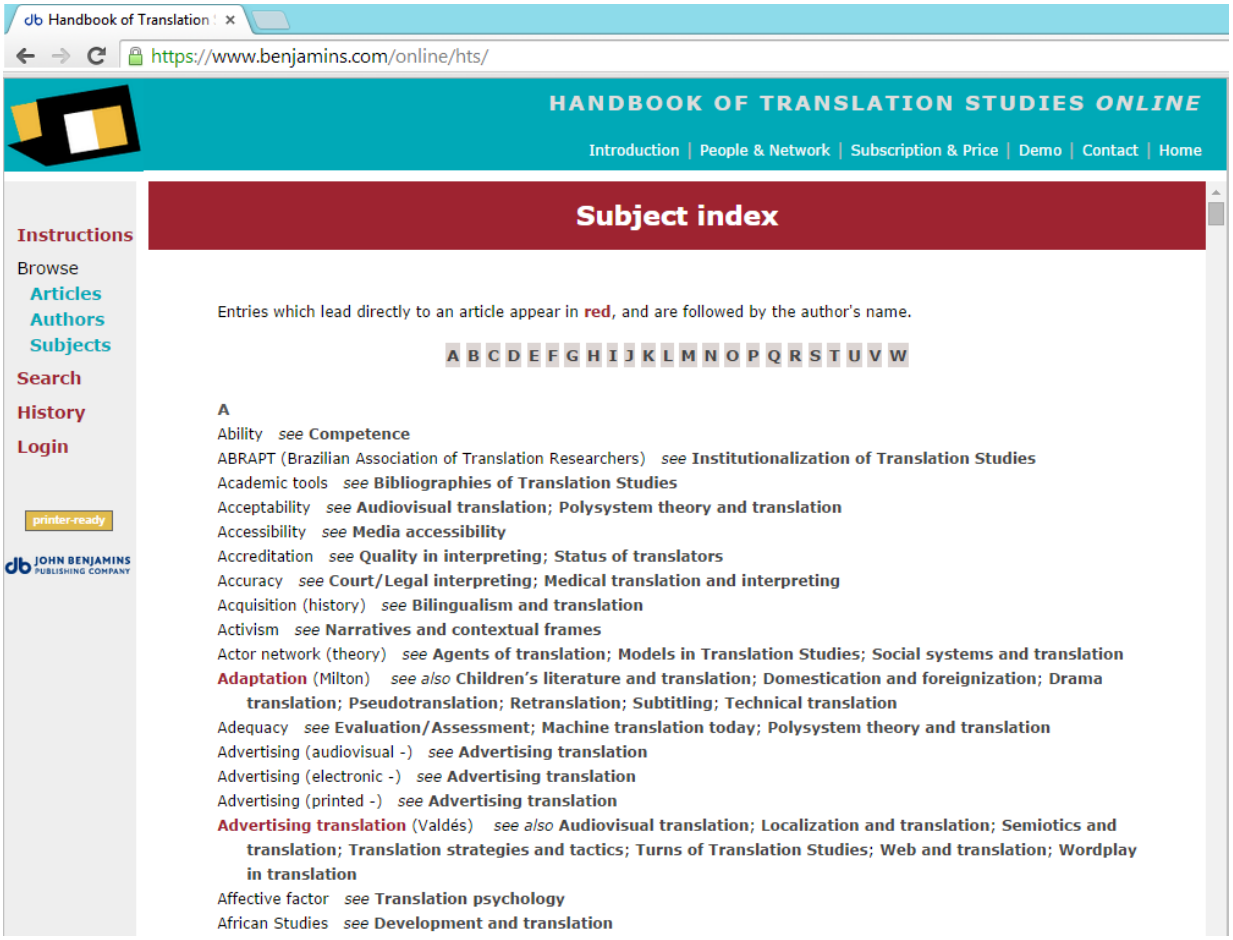

Fig. 1. Part of subject index in HTS online – <www.benjamins.com/online/hts/>.

It is exactly this huge growth of sources and materials, partly as a consequence of the institutionalization of translation and *Translation Studies*, which constitutes a basic 'problem' for young or starting scholars in the discipline. The selection of sources will directly impact on the kind of hypotheses built, the data gathered and the metalanguage used. A systematized research approach requires intelligent source management through the use of resources or tools. Therefore, this contribution focuses on the use of (online) bibliographies and handbooks or encyclopedias in TS. It will leave aside other aspects of institutionalization, like curricula, publishers, scholarly associations, PhD programs, conferences, Summer Schools etc.

As I am the co-editor of the *Translation Studies Bibliography* (TSB) and the *Handbook of Translation Studies* (HTS), the databases of these two tools are available for my research. I will therefore mainly concentrate on TSB and HTS as case studies, thereby illustrating the research possibilities of larger corpora for meta-knowledge about the discipline.

2. Knowledge-structuring resources

The growing amount of knowledge can be structured in several ways and by making use of several tools and resources. As a more detailed overview of examples for these tools can be found in [4] for instance, I will limit myself here to the larger categories:

i) historical surveys: mostly on geographical, chronological or linguistic criteria;
ii) research journals: both in print and online;
iii) textbooks, as Venuti's mentioned above;
iv) terminologies and/or dictionaries;
v) handbooks and/or encyclopedias;
vi) (online) bibliographies.

In 2011 a second edition of the *Routledge Encyclopedia of Translation Studies* was published [5], a well-known resource in one volume and in print version only. In the same period the publisher John Benjamins had already started with the series called HTS, the *Handbook of Translation Studies* [6], a multi-volume print series, but also available as an online tool. It offers overview articles about TS topics (174 in total, spread across four volumes, and written by 135 authors), including an essential bibliography with each entry.

From the beginning, the HTS explicitly aimed at disseminating knowledge about translation and interpreting and at providing easy access to a large range of topics, traditions, and methods to a relatively broad audience: not only students, researchers and lecturers in *Translation Studies*, or Transla-

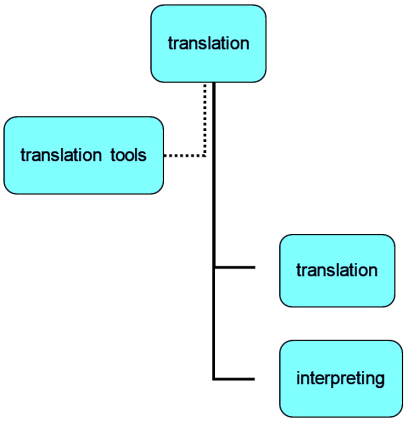

Fig. 2. Basic map of translation in the TSB.

tion & Interpreting professionals; but also scholars and experts from other disciplines (among which linguistics, sociology, history, psychology). Fig. 1 represents a part of the subject index in HTS online.

The HTS project is backed by a network of collaborating universities in South-Africa, Austria, Spain, Norway and Belgium. And interestingly, the *Handbook* is published in English but has started adding translations of individual articles to the online edition. At the moment of writing this contribution, some entries are already available in the online version in Arabic, Japanese, Portuguese, Russian, Spanish and Ukrainian translation. More translations are being prepared in these languages, as well as in Chinese, French, German, Polish and Turkish, partly also as challenging projects for high-level translation students. Although *Translation Studies*, like other international disciplines, has become increasingly dominated by English, the translations of the *Handbook* discourse comprise a strong symbolic gesture in the direction of diversity while at the same pointing to the specificity of a discipline which in essence is language transfer.

3. TSB structuring principles

The online *Translation Studies Bibliography* [7] is a bibliographical tool with already a longer history. This annotated bibliography (with abstracts and key words for almost all entries) in its 2013 release contains approx. 26,000 publications with only scholarly publications on TS, particularly concentrating on the last twenty years (1994-2013).

As far as knowledge structuring is concerned: I have extensively described the open and descriptive character of the underlying conceptual maps as well as the keyword system in an earlier contribution (see [8]). The maps shown there deal for instance with modes of translation, fields of interpreting, transfer movements, translation strategies, procedures and techniques. These maps reflect the bibliography's understanding of the concept and field of translation & interpreting. The basic choice was whether translation (and as a consequence Translation Studies) would be limited to the written aspect of language transfer, or rather used in its extended meaning as an umbrella concept for both written and spoken utterances (translation and interpreting). Other languages sometimes have a separate term for the umbrella concept at their disposal. German for instance uses *Translation* as a term covering both *Übersetzen* and *Dolmetschen*. But English does not, so a basic choice had to be made from the start. In TSB translation covers both, meaning that it is actually a Translation & Interpreting Studies Bibliography. Fig. 2 represents the basic map of translation in the TSB. The large majority of the more than 600 keywords in TSB can be found in the dozens of submaps below the basic map. All these submaps offer a conceptual guideline for the abstracts in the TSB; they structure and homogenize them by imposing a certain degree of uniformity upon them. Here is one more example to illustrate this: in translation quite a lot of procedures are used in dealing with language transfer (in interpreting usually called techniques). A separate submap brings all procedures together and leaves the possibility of adding new procedures or restructuring them in this partial map (see Table 1).

4. From search to research tools

Larger databases with structured information about the discipline also have an additional, often neglected advantage: the (both quantitative and qualitative) data can not only be used for search purposes, the databases contain ample interesting information about the development of the discipline as well. Let me take the bibliography as an example. Next to all the fields in the entries visible for the end user, the TSB compilers also include data like the author's affiliation (when mentioned). One does not need complex bibliometrical or scientometrical operations in order to measure the geographical spread of TS research activity. The affiliations already offer an interesting indication. This can allow us to conduct a refined comparison of publication activity per

Table 1. Partial map: translation procedures.

procedures (T)		
	$\Downarrow$	
acculturation	$\Longleftrightarrow$	adaptation
amplification	$\Longleftrightarrow$	borrowing
calque	$\Longleftrightarrow$	coinage
compensation	$\Longleftrightarrow$	concision
condensation	$\Longleftrightarrow$	denominalization
direct transfer	$\Longleftrightarrow$	dilution
expansion	$\Longleftrightarrow$	imitation
implicitation	$\Longleftrightarrow$	interchange
interpretation	$\Longleftrightarrow$	modulation
modification	$\Longleftrightarrow$	paraphrase
recategorization	$\Longleftrightarrow$	reformulation
addition	$\Longleftrightarrow$	omission
	$\Downarrow$	
...	$\Leftarrow$	

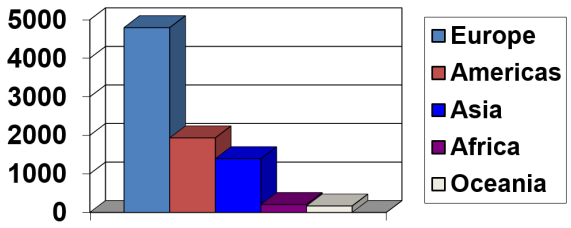

Fig. 3. Analysis per continent of TSB publications.

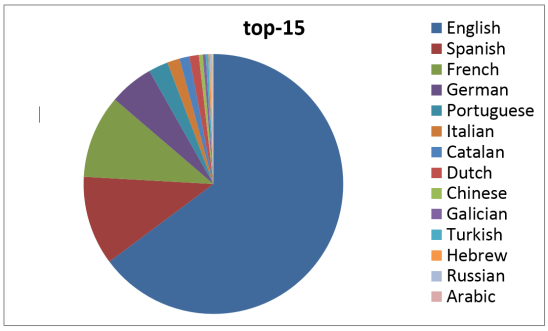

Fig. 4. Languages of publication in TSB publications.

university or per country. Let's here stick to a very general indication regarding continents. The results are based on a TSB database analysis about two years ago, when there were approx. 23,000 publications in the bibliography. 37% of them indicated an affiliation of the author. So the results are based on many thousands of publications over the last 20 years. It comes as no surprise that Europe is the most prolific continent - see Fig. 3.

At the moment new analyses, also including indications and hypotheses for explanation, are being carried out for more refined country level results. In a similar vein, Gideon Toury has shown earlier with an analysis of the first 20 years of *Target*, how insightful such data can be [9]. Another example of highly interesting information contained in the TSB database is the (im)balance in the languages of publication - see Fig. 4. The dominance of English is no surprise, but one does notice interesting changes in the positions of the languages following English when seen from a historical perspective.

Conclusion

The systematicity and structuring principles underlying both TSB and HTS form a case in point in illustrating the fundamental difference between the approach of modern *Translation Studies* and the more traditional forms of translation reflection.

The knowledge structuring resources available nowadays in TS, which contain reliable data about many thousands of publications, not only serve as search, but also as research tools. Such resources are thus not only valuable aids in supporting our research; following systematic analysis of the data they contain, they also offer new insights into the development of the discipline.

After more than half a century of scholarly work, *Translation Studies* has now reached a stage where such meta-information clearly adds value and helps in developing a new line of institutional research about the historical evolution and characteristics of the discipline itself.

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Using The Concept Of Genre To Frame Translational Practices: Stopping Short Of Translation Universals And Laws?

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Received 11 March 2014, accepted 25 April 2013

Abstract. This paper wishes to propose an approach to studying translation that will attempt to strike a balance between (ethical) concerns regarding agency in translation and the need for rigour in verifying significant patterning in bodies of translated text. It is argued that operationalizing the notion of genre and genre-specific translational practices will provide the modus vivendi required. In doing so the article will trace research and lines of thought in TS with regard to translational laws and universals, while pointing to how the concept of genre can offer us ways of gaining a clearer understanding of regularities in translational practices.

Citations: Peter Flynn. Using The Concept Of Genre To Frame Translational Practices: Stopping Short Of Translation Universals And Laws? – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 26-30.

Keywords: laws of translation, translation norms, translation studies, translation universals, genre, cultural turn, Eurocentrism, habitus, corpora, corpus tools.
Short title: Translational Practices.

Introduction

Translation universals such as explicitation, normalization, simplification, etc., proposed by Mona Baker [1] or the "laws of translation" put forward by Gideon Toury [2], like the law of interference or growing standardisation for example, were posited at a time when we were unable to test their validity fully or in any real systematic way. Now that we can build (huge) translation corpora and have developed the software to explore such corpora systematically, it would seem only logical to do so and to go in search of evidence of such universals and possible laws. And indeed this work is being done by such scholars as Sara Laviosa and Maeve Olahan, among others. However, in the wake of the 'cultural turn' and the impact of cultural and post-colonial studies on approaches to translation, universals or any wish to discover them somehow began to smack of western imperialism and its desire for dominance. Subsequently in certain circles, searches for laws and universals have suffered a decline in popularity as possible foci of research and, along with them, general linguistic approaches to translation, which in turn were considered as being too narrow and also indicative of what is loosely and rather evasively called Eurocentrism.

This politicization of research agendas in translation proved nonetheless necessary and dynamic in that it opened up new perspectives on translation and made room for lesser known traditions in translation. At the same time, it has resulted in a degree of methodological, if not say to existential, uncertainty. In some ways this uncertainty contains traces or echoes of the crisis in the humanities, particularly in anthropology, during the nineteen eighties and nineties. At that time it was posited that research methods and agendas were conterminous with agendas of western hegemony and hence intrinsically flawed. How then can we build corpora and go in search of universals in such a climate? This leaves us with a gaping abyss of a question: on the basis of what (evidence) can we make knowledgeable pronouncements about human activities or, in our case, language use and translation in particular.

Consequently, does all of the above mean that we should not continue to search for regularities in translational patterns in given periods and given cultural spaces? Can we indeed make general remarks on the nature of translation without testing their validity by studying translation practices in society or by conducting searches in translational corpora? I believe not.

This paper wishes to propose an approach to studying translation corpora that will attempt to strike a balance between what might be called the political or, perhaps more correctly, ethical concerns regarding agency in translation and the need for rigour in verifying translational patterns in ex-

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isting bodies of translation work. Is it not so, after all, that the shifts found in translations form the basis for forms of theorisation, power-based or other, on translation, no matter how far removed such theorisations might be from each other in terms of approach and basic assumptions? This of course begs the question: what constitutes a plausible interpretation of a given translation or body of translations? How much data, and indeed what forms of data are needed to make such interpretations?

The central thesis of the paper is that a search for universals or laws of translation - if desired or desirable, even in such cases as translator training - can only be undertaken once lower levels of translational inference, ranging from the political to the linguistic, have been dealt with or at least have been taken into account. It is suggested in this respect that the notion of genre offers considerable leverage for dealing with these levels of inference.

1. Laws and Universals in Translation Studies

In positing translation laws, Toury was in fact attempting to move away from prescriptive formulations and directives and ground the rationale underlying translational behaviour in "reality rather than some kind of wishful thinking" [2, p. 259]. In this respect, he was looking for descriptive rather than prescriptive categories to circumscribe translational behaviour, in other words for empirical translational evidence from which to generalise. These generalisations came in the guise of probabilistic formulations of the type "if X then the greater/the lesser the likelihood that Y" would occur (given certain conditions). So translation laws could be discerned by formulating, testing and refining theory in order to gain an "increasingly better understanding of the ways translation and translators, as individuals and members of societal groups alike, manoeuver within the manifold constraints imposed on them and produce texts which look and function the way they do," [2, p. 266].

Toury proposes 2 exemplary laws.

1. The Law of Growing Standardization, within which Toury posits the following, inter alia. "In translation, textual relations obtaining in the original are often modified, sometimes to the point of being totally ignored, in favour of [more] habitual options offered by a target repertoire", [3, p. 268].
2. The Law of Interference: "In translation, phenomena pertaining to the make up of the source text tend to transferred to the target text", [3, p. 275].

This begs the following question: which textual relations and/or phenomena? The question will be address again below but before doing so we will first turn to the notion of laws as such. In a volume dedicated to re-examining Toury's seminal work, Anthony Pym offers us an explanation as to where these laws might lie:

> Our proposed unification has reached this point: Translators tend to standardize language or to channel interference because these are two main ways of reducing or transferring communicative risk" [4, p. 325].

This explanation interiorises or psychologises the laws in question, however, and hence bypasses translation as a social activity involving a network of actors that have a say in the final products, i.e. the very translations we are examining in search of laws. Decisions on communicative risk are not only the preserve of translators. So a fuller explanation as to where the laws might lie still remains forthcoming, it would seem.

The relation between laws and system is also challenged in the volume:

> "new concepts like those of metissage, transculturalism and transnationalism have ... induced yet another toning down, this time of the notion of "system" ... replacing it with that of "network", less rigid, more sensitive to individual usage, more open and porous to exchanges, suggesting bi-directionality or multi-directionality... In many ways, the concept of "network" seems to be to globalization what "system" was, and continues to be, to the more traditional notion of the nation-state, [5, p. 339].

But is it not so that networks predate and have always co-existed within and across nation states? Nevertheless, it is not hard to imagine the advantages, particularly in the era of "clouds" and "big data" of envisaging laws of translational behaviour as rising above or extending beyond national borders but this further complicates the issue by making them more difficult to frame and locate.

The universals posited by Mona Baker ([1] and Laviosa [6], inter alia) arose in response to a realisation of the potential of large electronic corpora. The idea was to use recently developed corpus tools to explore such corpora in search of translational universals i.e. characteristics that are typical of translated discourse in contrast to non-translated discourse:

i) *simplification:* the idea that translators subconsciously simplify the language or message or both;
ii) *explicitation:* the tendency to spell things out in translation, including, in its simplest form, the practice of adding background information;
iii) *normalisation or conservatism:* the tendency to conform to patterns and practices which are typical of the target language, even to the point of exaggerating them;
iv) *levelling out:* the tendency of translated text to gravitate around the centre of any continuum rather than towards the fringes, [1, pp. 176-177].

As was mentioned in the introduction, these formulations, though seemingly obvious and intuitively sound, were made with a view to being tested by researchers who took up Baker's challenge. As the following quote illustrates, this has indeed been undertaken in part by scholars:

> "In Laviosa's studies of simplification, some of the results (those concerning sentence length) differ according to whether the hypotheses are tested on a corpus of translated narrative [7] or of translated newspaper articles [8], which suggests that the norms may not be the same across different text types. But again, the emphasis is on what is pervasive across the genres and not on what is different and unexpected", [9, p. 40].

This work has been done despite the fact universals beg questions that are hard to answer when examining translated text alone, the translator's 'subconscious' simplification being a case in point. Other sources of data are required in conjunction with translations to obtain a fuller understanding of regularities in translational practices and these sources can only be accessed by examining translation in its full generic context. The Saldanha quote [9] also voices the concerns that this paper is attempting to articulate: "norms may not be the same across different text types". If this is so, then why look further?

In contrast, translation laws have been challenged both conceptually and from the point of view of power, and have not been researched in any systematic way, especially not to the same degree as translational norms have. This is probably understandable as evidence of normative behaviour can be more easily demonstrated and be more readily made available from analysis. To be fair, universals have also been challenged conceptually (see Pym [4], for example). It would seem that translational laws can only be discovered at a high level of abstraction, which is probably also the case for universals. One can then ask in both cases what their relevance might then be for translation scholars and possibly for translation pedagogy, which is where most translation research is operationalised.

2. Genres in Systems and Networks

As was argued at the beginning, the conceptualisation of and search for laws and universals, whether they are located in interlocking national or cultural systems or transnational or globalized networks will seriously diminish in relevance for translation scholars if the work fails to take account of one level of inference.

Genre is usually understood as belonging to the sphere of literature but can be understood in a more basic sense: "Language is realized in the form of concrete utterances (oral or written) by the participants in the various areas of human activity. These utterances reflect the specific conditions and goals of each such area ... Each sphere in which language is used develops its own relatively stable types of these utterances. These we may call genres", [10, p. 60] or "Genres are how things get done, when language is used to accomplish them", see Refs. [11, 12, 12a].

It is argued elsewhere [13] that genres are the matrices within which text types take shape and what systems cluster around or what give networks their linguistic and other forms of sustenance and by extension their translational substance. Simple examples of such networks are: website / software localisers, poets, legal translators, etc., all of whom work within given genres across languages and cultures. Their language and translational practices are largely and primarily determined by the genres they are working in. Translators engage directly with the various elements of language and style that are typical of a given genre (legal, medical, philosophical, scientific, literary, etc.) in which they are often specialized. As translators, they participate in generic activity. They also understand how these elements play out across languages and cultures and have developed theories and articulated discourses on these matters. Looking for laws and universals while ignoring this level is probably precarious as there is probably very little we can conclude from what we might find. Take the following two illustrations for example.

1. A pharmaceutical company wouldn't be at all happy if its instructions for use manifested the Law of Interference - imagine the legal consequences.
2. On the other hand, an international law firm might be happy to discover levelling out in translations of its legal contracts, especially when it comes to consistency and regularity in the use of legal terms and concepts.

The point is that evidence of a possible law would definitely have been edited out in the first example and probably very much promoted in the case of the universal in the second, in which case it would begin to overlap with another universal namely "normalisation or conservatism". Here we may certainly witness the recent impact of translation memories (TM) and resultant normalisation or standardisation practices they may inadvertently promote or force translators to comply with.

Whether we are looking for evidence of power differentials or laws and universals, we usually reach for translational shifts as our main explanatory mainstay. Though the history of the debate on shifts is long and the body of literature large (viz. work by Catford, Vinay & Darbelnet, Nida, Van Leuven-Zwart, Munday and many others), its basic distinctions seem rudimentary at best: obligatory versus optional / system-driven versus arbitrary / Micro- and/or (resultant) macro-level shifts. These binary distinctions are broadly based on the following assumptions: that the language system and the "laws" of grammar, lexis and syntax are the first and most important obstacles facing any translator; that beyond this level translational choices become arbitrary, individual or optional. It has been shown elsewhere [14] that genre conventions have a considerable constraining effect on, if not determine, many translators' choices, especially in the case of literary translation, where they reach beyond and at times supersede grammatical or language system constraints. This of course is not case for other genres but this does not mean that these genres do not have constraining factors of their own.

The observations made here has been recognised in part by

translation scholars and have been used extensively by those working within functional approaches to translation pedagogy where the concept of text types and their related categories and features has been used for generations in training translators [15, 16]. One proviso is that linguistic or textual features cannot be conflated with text types; this has been pointed out by Chesterman, [17]. Functionalist approaches and Skopos theory in particular consider translation as a social activity in which many actors play a part. Given the interaction involved one could then ask if translation laws or universals are the sole preserve of translators at all.

Where does this leave us? Genre can be seen as a way of understanding and framing language use (including text types) and the translational activity involved. In shifting the focus away from the textual features that are usually viewed as defining genre, Hanks [18, p. 670] distinguishes three aspects of genre: orienting frameworks, interpretive procedures and sets of expectations. The texts, including translations that form the precipitate of generic activity all manifest features of that specific activity. Though much can be learned from examining genre-specific features in texts and their translations, they will not tell us everything about what has been going on. Such analyses will, however, provide a sound basis for understanding translation in all its complexity, including not just the textual and translational strategies but also the power relations involved, hence contributing towards bridging the gap between approaches to translation pointed out in the introduction. How then can we visualize Hanks's model when it comes to translating within a given genre?

1. Orienting frameworks can be understood as points of departure, skills, tools, and goals both tangible and intangible envisaged when undertaking a translation.
2. Interpretive procedures comprise understandings of the genre that are shared and indeed contested by the actors involved.
3. Sets of expectations comprise the various stages of internal and external reception, outcomes, etc., both on the part of translators and their clients.

Identifiable traits of a (translated) text in a given genre, all of which bare evidence of points 1 to 3, will then form the basis for analysis and evaluation of the success and possible ethical soundness of such translational activity. But as was argued above, analysing translated texts alone will not suffice. More contextual data and other forms of discursive data are required, i.e. a full sociological inquiry, [19]. William Hanks then goes a step further and ties genre to practice and to Bourdieu's notion of habitus:

"Genres then are key parts of habitus... Rather they embody just the kinds of schemes for practice that constitute the habitus. And like it they are unequally distributed among agents in any social world. For access to certain genres involves power and legitimacy and serves as a form of sociocultural capital", [20, p. 246]. In relation to the habitus of the translator, Daniel Simeoni has the following to say: "Indeed, norms without a habitus to instantiate them make no more sense than a habitus without norms", [21, p. 33]. Only by bringing together studies of genre-specific translations and studies of the various types of habitus and of the translators involved, i.e. engaging in contextualised studies, can we gain an understanding of the translational patterning and, moving from there, perhaps discover possible laws and universals.

Conclusion

The purpose of this article has been to argue for the importance of genre in understanding translational practice. Translation is one point of entry into or a way of participating in genres across languages and cultures. There are other actors who participate in these genres, all of whom taken together form the local, regional, national of global networks in which translators also participate. Taken together and with their translations, translators' and others' discourses on the genres they work in form a vital step towards understanding regularities in translational behaviour.

Identifying genre-specific translational practices provides a sounder and more contextualised footing from which to go in search of laws and universals. But it is this author's firm conviction that genre-specific studies will have more explanatory power and hence provide more leverage in terms of translation research and training in the stages before discovering possible laws and universals. Now that we are on the verge of exploring 'big data', it would be interesting to bear in mind the enthusiasm that gave rise to thinking in terms of laws and universal, and build some generic filters into the evolving exploratory architecture.

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Pedagogical Approaches To Adaptive Expertise In Conference Interpreter Training

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Received 27 September 2013, accepted 25 October 2013

Abstract. This article explores expertise in conference interpreter training and reports on a preliminary study on the use of reflective practice as a pedagogical approach in the development and evaluation of 'adaptive expertise' (following Moser-Mercer, Ref. [1]). The discussion considers the potential for locating the object of study within the emerging digital humanities paradigm as a result of the new possibilities offered by technology for capturing cultural practices of learning and performance in conference interpreting. It ends with a call for more ethnographic research on curriculum design and delivery to complement interrogations of practice through digital technologies.

Citations: Rebecca Tipton. Pedagogical Approaches To Adaptive Expertise In Conference Interpreter Training – *Innovative Infotechnologies for Science, Business and Education,* ISSN 2029-1035 – **1(16)** 2014 – Pp. 31-36.

Keywords: adaptive expertise; conference interpreting; reflective practice.
Short title: adaptive expertise development.

Introduction

As a complex activity that is often conducted in high stakes environments of diplomatic and international relations and business, conference interpreting and, by extension, interpreter training entails a focus on what could be termed initial expertise development to an extent not reflected in other areas of translation-related training. This claim finds echo, for example, in the Quality Assurance Standards of the EMCI consortium [2] (2012), according to which "the quality of the candidate's interpreting should be such that s/he can be recruited *immediately to work alongside accredited conference interpreters* in meetings in regional and international Organisations and on the private market" (emphasis added). While "[i]t is understood that beginners are not normally assigned to the most technical or demanding meetings" (ibid), the EMCI Standards set out professional entry-level criteria that imply a mastery of *skill* particular to the field and a highly developed meta-cognitive *capacity*; 'expertise', then, is necessarily viewed as taking multiple forms.

This article explores pedagogical approaches to the development of 'adaptive expertise' (following Moser-Mercer, Ref. [1]) in conference interpreter training. Rather than viewing expertise in terms of an intended learning outcome or goal in itself, a process perspective is adopted which allows emphasis on the emerging identity of the 'expert learner' in conference interpreter training and the transferability of practices between the learning environment and professional contexts of practice. Finally, building on Moser-Mercer's approach, the article critically appraises the value and purpose of reflective practice within a multifaceted approach to expertise development by reporting on a preliminary study.

This focus is considered important for several reasons: first, because of the long neglect in conference interpreting studies of pedagogical theory and the ways in which it informs curriculum design and delivery; second, because of wider issues of employability and the increasing need to acknowledge that entry level into professions requires high levels of expertise, and third, because the specific requirements of professional practice entail the ability to foster resilience and self reliance (capacities that can be grouped under the umbrella of adaptive expertise). Arguably, current approaches to interpreter training consider developments in these areas to be natural outcome of training as opposed to something that needs to be *attended to* in teaching and learning.

1. Conference interpreting research and the digital humanities

As this article forms part of a volume dedicated to the digital humanities, consideration is needed concerning the extent to which the object of study fits within this emerging paradigm. Although the nature and scope of the digital humanities is still the subject of debate [3], considerable consensus

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has emerged regarding its potential for interrogating cultural practices in different areas of social life and scope to open new forms of inquiry; to date, such potential appears to have been seldom discussed in relation to conference interpreting research. In part, then, this article aims to open up debate; however, it is important to distinguish at the outset between technologically-mediated practices that fall beyond the scope of the paradigm and the interrogation of cultural practices through digital technologies - interconnections between the two, however, are acknowledged.

Conference interpreting, and in particular simultaneous interpreting, has long been a technologically-mediated activity even in its earliest, most rudimentary forms. In the contemporary context, the impact of technologies extends to all aspects of service provision: from mediating performances *in situ*, to prior preparation and research, and the digital capture of performances in institutional settings, among others. Developments in digital capture have transformed the way in which the 'product' of interpreting is conceived, since it has led to a durable materiality in the public domain which confers upon it the status of a 'cultural artefact'. This shift in status has made it possible for both enhanced public engagement with multilingual institutions (through post-hoc access to public meetings) and for scholars to explore the activity as a cultural practice in ways and on a scale hitherto impossible to achieve [4].

In the field of education, the availability and ability of technology to capture experiences of a broad range of learning activities provides increasing scope for programme teams to interrogate approaches to teaching and learning as a form of cultural practice on a broader empirical basis. Furthermore, scrutiny of such cultural practices is considered crucial for the effective assessment of the nature and range of so-called 21st century literacies that individuals need to handle the changing demands of the (conference interpreting) work place and social life more generally, which in academic terms concern 'language, power, identity and what counts as knowledge' [5]. A clear link emerges therefore between the development of such literacies and Moser-Mercer's focus [1] on the importance of a technology-rich learning environment in supporting the development of adaptive expertise in conference interpreters, a concept to which I return in section three.

2. Research on expertise in conference interpreting

Conference interpreting research to date has illuminated many aspects of expertise with an overarching emphasis on expertise-as-interpreting-performance; however, connections between research findings and their pedagogical implications remain under-examined.

Early, and largely personal accounts from the field served to cultivate an image of interpreters as figures of wonderment in the popular imagination [6,7]; however, the ascription of expertise on the basis of unspecified criteria precludes *explanation* as to what actually constitutes it as Ericsson [8, p. 190] observes: "in many domains the assessment of expertise is questionable because individuals' reputation and their levels of training are often used as substitutes for individuals' level of expert performance". For Ericsson, working within the cognitive psychology tradition, the investigation of expert performance must be predicated on a science of performance, involving the identification of phenomena that can be isolated and repeated under laboratory conditions; however, there is a risk that by decontextualising performance in this way, the impact of wider features of context and their impact on performance are neglected.

Sloboda's research [9] on expertise in musical performance opens the discussion to more fundamental questions about the purpose of research on expertise; for instance, the extent to which it is designed to 'get inside the expert's head', explain 'exceptional performance', and why, even if the same amount of input (i.e. practice) is undertaken, some never achieve 'expert level'? [9, p. 154]. The latter points to a 'common sense view' of expertise that Ericsson [8, p.187] counters by drawing attention to the limited empirical evidence available to support such a view; by contrast, he asserts that research does suggest that performance can be improved through training, and that motivation can impact on attained levels of performance.

In seeking to define expertise, Sloboda [9, p. 155] also challenges the common sense view and observes: "[i]t is difficult for me to escape the conclusion that we should abandon the idea that expertise is something special and rare (from a cognitive or biological point of view) and move toward the view that the human organism is in essence expert". He posits a definition of an expert as "someone who can make an appropriate response to a situation that contains a degree of unpredictability" as opposed to "someone who performs a task significantly better (by some specified criterion) than the majority of people" [9, pp. 154-155]. In many respects, the 'appropriate response' perspective has informed approaches to research on expertise in conference interpreting, in recognition of the unpredictability inherent in the activity and the desire to develop 'tools to gain *more control*' over the interpretation [8, p. 206, emphasis added]; examples include, research on language processing which is characteristic of research in the novice-expert paradigm [10], investigations into improved efficiency in working memory [11] and the process of allocating resources to the various cognitive tasks involved in simultaneous interpreting [12, 13]. In related research, attention to 'optimum quality' in interpreting [14] is also indicative of such an approach to expertise.

Research on expertise in interpreting performance has therefore helped to illuminate the mental processes of novice and more experienced interpreters, but as mentioned above, the pedagogical implications of the research remain

under-explored. Of particular concern to pedagogues is the need to unpack the apparently unproblematic linear trajectory of learning and development promoted through the dichotomous 'novice-expert' pairing, and emphasis on isolated tasks in expert performance analysis which yields insight into process but does not allow due account of the relation between performance and situated activity. Finally, the transitional phases in learning and the literacies students need to develop in order to move through such phases point to the need to focus direct attention on developing the 'expert learner' (and the 'expert trainer') as part of a more holistic approach to the understanding of expertise in interpreter training and performance.

3. Developing adaptive expertise

Moser-Mercer builds on previous research [1] in conference interpreting by exploring human performance theories and the extent to which they shape the nature and forms of expertise that are commensurate with the needs of the modern and increasingly technologically-mediated conference-interpreting world, and allow due account to be taken of learning needs of lower and higher ability students and students with different age profiles. She presents a triangular model of human performance (in which performance is conceived as an interrelation between opportunity, capacity and willingness) in which she locates a cognitive theory of adaptive expertise with reference to interpreting activity. The aim is to improve understanding of the 'basic psychological factors' that promote improved performance, and also to show how recent educational research can develop effective learning environments that support expertise development in its multiple forms [1, p. 24], thereby marking a clear attempt to bridge the gap between cognitive approaches to skills development and pedagogy.

The approach highlights the need to distinguish between different types of expertise and account for them in teaching and learning in ways that are mutually supportive. A distinction is made, for example, between 'routine expertise' (i.e. an ability to solve familiar problems) and 'adaptive expertise' (i.e. an ability to adapt to new situations and improve performance over an individual's career trajectory). The distinction is supported *inter alia* by research that suggests that 'skill acquisition is not coextensive with expertise' [15, p. 312] and by a critical appraisal of traditional approaches to interpreter training that have tended to focus almost exclusively on routine forms of expertise - in part explained by the privileging of teaching input from practising interpreters without formal pedagogical training. While this approach has a number of clear advantages for students, it risks over privileging didactic approaches to learning to the detriment of others [16]. Furthermore, the potential lack of continuity between sessions risks skills being taught and perceived in isolation; as a consequence the overarching 'pedagogical narrative' risks being lost, or rather the onus is placed on students to create their own narratives, and they are - initially at least - unlikely to have the skills to do this.

'Adaptive expertise' is understood by Moser-Mercer (following Ref. [17]) as 'meta-cognitive' in the sense that adaptive experts are considered able to perform tasks efficiently *and* at a higher level [1, p. 8, emphasis added]; further, that the development of this type of expertise can best be fostered through a technologically-rich learning environment in which student and teacher-led, individual and collaborative approaches to learning are employed. In her approach, the literacies students need to develop to operate successfully in such an environment and transfer skills to the professional sphere are fostered through a socio-constructivist approach to learning. Salient features of the approach concern the emphasis on whole activity systems as opposed to isolated skills exercises [18], and on learning as a meaning-making process [19].

A key claim of socio-constructive approaches to learning concerns its ability to allow account to be taken of the complexity of the learner [20]; however, the practical applications of this claim often appear taken for granted. Since many conference interpreting programmes contain multicultural cohorts, the cultural norms of learning are likely to considerably differ. Arguably, many interpreter training programmes assume that students are similarly culturally situated at the start of the programme, i.e. as novices in the same educational context, and will automatically and unproblematically become culturally acculturated over time [5]. The extent to which socio-constructivist approaches *overestimate* the ability of individuals to successfully adapt and 'construct' learning, even advanced learners such as those engaged in conference interpreter training, therefore merits additional scrutiny in order to build in appropriate compensatory strategies.

There is insufficient empirical evidence available to determine the extent to which socio-constructivist approaches to interpreter training can and do foster *inter alia* relevant diagnostic skills for trouble shooting, the capacity to discern the suitability of materials / activities to meet particular learning needs, the capacity to reconcile relations of the self with technology and with co-present others in the learning process, and assess the benefits / pitfalls of individual and collaborative learning to a depth warranted by the complexity of the activity and demands of the (future) workplace. The cultural location of the student in relation to the over-arching pedagogical approach and the manner in which this is attended to by the teaching team, will necessarily have a bearing on meta cognitive development entailed by the abovementioned list of actions.

For pedagogues wishing to develop adaptive expertise, then, consideration needs to be given to the nature of 'scaffolding' provided to support learning activities and the evidence base needed to evaluate development for assessment purposes (whether formative or summative). Moser Mercer

suggests that development can best be evidenced through evaluating the discursive practices of students (in the written mode), and promotes journaling as a method to capture student experiences over time; however, analysis of their validity and utility is beyond the scope of her article. It is posited that while journaling may assist the individual in articulating his/her cultural location in relation to the learning experience, it may be limited in its ability to provide evidence of the of social interactions and broader sense of community and identity that emerges within a cohort of students - an important part of transitioning between academic and professional practice. The need to capture the interdependencies involved in its realisation suggests that a broader range of methods and alternative theoretical approaches to learning need to be considered.

4. Cultural production, situated learning and identities of expertise

O'Connor [21] provides insight into alternative methods of capturing and evaluating learning experiences and the development of adaptive expertise. He reports on an investigation into the emergent 'identities of expertise' (i.e. the adaptive capacities) of a group of students from two institutions representing different educational traditions, who came together to work on the same project in engineering aimed at elevating the status of practical aspects that were considered to have been devalued. The project involved reconceptualising expertise developed in educational research based on theories of cultural production.

Drawing on linguistic anthropology the project sought to show, through the analytic mechanism of 'idexicality', i.e. the way in which linguistic meaning is related to context and how "language is used to produce a world in which certain kinds of expertise are valued (or devalued) while at the same time speakers position themselves and others within those ways of understanding expertise" [21, p. 63]. Through recordings of spoken interaction between the two groups O'Connor analysed how identities across the academic boundaries of the two institutions were negotiated and the extent to which their discourses reinforced or challenged the status of certain engineering practices (e.g. manufacture).

The research was premised on a situated learning approach, through which the notion of the "mutual constitution of persons and contexts" is promoted over (decontextualised) cognitivist approaches that are believed "to emphasise the acquisition of knowledge in the production of educated persons" [21, p. 64]. Contextualisation processes were captured in the form of oral interactions, which according to O'Connor help to show "how individuals take up positions, and position one another, with regard to the interaction and broader communities in which they are participating" [21, p. 72]. The fact that the students in the study were found to commonly reproduce the discourses that had served to devalue those aspects of the profession that the project was seeking to address, shows the level of difficulty involved in firstly developing a level of self awareness of one's 'cultural location' and secondly, in acting in ways that permit transformation of cultural formations and foster more adaptive behaviours over time.

In the study discussed in the final section, the aim was not to see how certain types of expertise were valued or devalued by learners, but rather to evaluate the extent to which an individual approach to reflective practice helps to discern the emerging identity of the conference interpreter as an expert (i.e. adaptive) learner; in this sense then, in common with O'Connor, discursive practices are viewed as a window on the positions taken by students to the many facets of the learning process. However, a key question concerns the extent to which individual approaches to the written logging of experience provide insight into the extent of its realisation, or whether they risk reinforcing a cognitivist approach that proponents of situated learning approaches seek to avoid. I return to these questions in the final sections.

5. Reflective practice

Despite being well embedded in curricula across higher education, reflective practice has only recently emerged as a component of translator and interpreter training. Viewed by many as a means for 'dealing with complexities challenges and uncertainties inherent in professional practice' [22, p. 121] and as an 'organising framework for professional preparation' [23, p. 192], reflective practice nevertheless raises problems in relation to its promotion and measurement among others, and cannot therefore be invoked uncritically. Boud and Walker [23] for instance assert that undue focus on isolated problems risks perpetuating the decontextualised approach to reflection on action that these authors, among others, have identified in relation to Schön's [24] early approach to reflective practice.

For Moser-Mercer, the incorporation of self and peer assessment and reflection in the learning environment is described as 'a mechanism to externalize [students'] metacognitive processes' [1, p. 14], with the implication that they are reinforced in the process as Tennant et al [5] assert. Other scholars (e.g. Boud [25]; Moon [26]) highlight the importance of reflective practice for helping students to both understand their own learning processes and increase their *ownership* of learning, which has resonance for practice beyond the academic environment.

Conspicuous by their absence in many of these discussions, however, are notions of time and a clear sense of when and why reflective practice might be relevant at particular points in the programme. Assumptions that it is relevant from the start and that a single form of reflective practice (e.g. journaling) is suited to all aspects of development merit further discussion. It is perhaps to be anticipated that students - at least initially - pay more attention to skill acquisition (and

'routine expertise') and are intrinsically more interested in this aspect than the arguably less tangible notions of meta-cognition. Some of these issues are teased out in the preliminary study discussed in the final section.

6. Discussion of a preliminary study

At the University of Manchester students on the MA in Conference Interpreting (MACINT) complete a module on professional development in the second semester of the programme, as part of which they participate in a series of simulated multilingual conferences. The module is designed to foster skills in conference preparation, performance and wider awareness of standards promoted by professional bodies such as AIIC, and to lay the foundations for effective transitions to the profession and future professional development. Assessment on the module includes a component of reflective practice which is designed as an exercise in 'meaning making' on the part of the student and to provide insight for lecturers of the nature and range of responses and actions taken by students in relation to teacher-led input and their individual and collaborative approaches to learning. Students receive comprehensive written guidance on the exercise and dedicated in-class input on the principles and practice of reflective learning. The preliminary study involved analysis of 44 journal entries of approximately 500 words in length. Entries were made over a three-month period and individual feedback provided by teaching staff on each entry.

The regular feedback on the journals led students to develop increasingly targeted approaches to preparation and evaluation after early entries suggested difficulties in making a distinction between identifying a realistic short-medium term goals and relevant subtasks to complete to achieve them. Nevertheless, the tendency to orient reflection to prescriptive statements was evidenced in almost all entries across the module, suggesting students consistently felt the need to show their reader that they were *aware* of the appropriate professional practices even though they had not achieved them yet, evidenced through statements such as 'the internalization of information should be prioritized at the preparation stage'.

The tendency towards prescriptivism appeared linked to an apparent reluctance to place the self at the centre of the discussion (i.e. in articulating the relation between prior learning and new situations in the conferences) suggesting the group found it difficult to articulate their changing positions to practice as emerging expert learners and how they (re-)positioned their learning and development in relation to others in the group. As a result, activities and reflections tended to be presented as discrete tasks without a broader 'narrative' of learning being established. Overall, the journals primarily externalised connections between routine expertise development and experiences the simulated conference and much less emphasis was placed on the meta cognitive aspects discussed in relation to adaptive expertise, despite the activity being executed during the later stages of training and deliberate pedagogical input on these aspects.

Conclusion

The findings from the preliminary study suggest that students can find it very difficult to bring all of the elements of their learning together in ways that are meaningful for them and at a level of sophistication that provides a compelling evidence of increased market readiness and awareness of the nature of the wider professional community they are soon to join. This raises questions of whether too much is expected of the practice. In terms of evidencing the extent to which both routine and adaptive expertise have emerged, the approach appears useful but limited because of the individual cognitivist focus it entails and also, in the case of this study, perhaps due to the limited word count available for each entry and the large number of international students in the group who were encountering this approach to learning for the first time.

The digital capture of journals, however, over time allows banks of evidence to be built that can show the impact of changes to teaching input on the students' approach to reflection over time; in this sense it has important potential as a pedagogic tool. For students, however, the oral externalisation of experience in lecturer-coordinated feedback and reflection sessions may be a more conducive way for students to develop understandings of their positioning in relation to the activities undertaken by hearing others' views and being directly prompted to consider particular aspects (such as prior experiences of learning) by teaching staff (as discussed by Tsang [27]). Removing the need for the formal assessment of such practices within the curriculum may also be a way to reconfigure the activity in ways that allow greater flexibility and responsiveness to group learning patterns, which by their nature, change with each cohort of students. Overall, the study suggests that there is scope for more ethnographic work in this area to complement digital repositories of reflections in the written form.

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