Centrum ubique circumferentia nusquam:
Perspectives of and from digital humanities

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What is 'digital humanities'? Allow me to explain by telling some stories and pondering their significance.

When in the late 1970s I first stumbled in the direction of what we now call 'digital humanities', the computing machine had a rather dubious reputation among scholars in the humanities, to say the least. The history of the machine's relation to scholarship is tellingly reflected in the series of names given to the field: first 'computing *and* the humanities' (the title of the first journal, begun in 1966)[1], expressing cautious juxtaposition; then 'computing *in* the humanities', to assert its presence among the older disciplines, whether welcome or otherwise; then, up to 2005, 'humanities computing', the title of my book on the subject.[2] In my case this was deliberately provocative, an oxymoron to many, intended to suggest that the activity posed a worthy intellectual problem, not merely named an institutional phenomenon. But 'humanities computing' began quickly to fade after the less challenging name, 'digital humanities', was adopted for the Blackwell's *Companion to Digital Humanities*.[3] It's a pity the awkward conjunction was lost to us: to this day, and I think for a long time to come, like a gadfly the question it raises can wake us up.

The stories I said I would tell amount to an autoethnographic vignette. I am of an age that permits me this, as Alec Guinness, playing George Smiley, says to Villem and Stella Craven in the movie version of John le Carré's *Smiley's People*. You've already heard about 'the Obi Wan Kenobe of Digital Humanities'[4]—was played by Alec Guinness in the *Star Wars* trilogy. The person who invited me here, my good friend Jan Rybicki, has translated several of le Carré's books. What can be made of that tangle of associations? I take it to mean that I'm in the right place.

My first story follows from the first part of my title (often attributed to the 12th-century theologian and poet Alan of Lille): *centrum ubique*, 'centre everywhere', *circumferentia nusquam*, 'circumference nowhere'—a mediaeval trope for God as an

[1] Sula and Hill 2019. Note that the journal was renamed and shifted emphasis to computational linguistics in 2004.
[2] McCarty 2005.
[3] The change is variously explained; Kirschenbaum 2010, 2-4 seems the most complete account.
[4] https://eadh.org/news/2012/07/31/busa-award-winner-2013

infinite sphere.[5] Spoken by me this might suggest overweening disciplinary ambition and blind arrogance—a Devil pretending to be God. On behalf of the prosecution, I admit to familiarity with the character-type, old enough to have read *The Whole Earth Catalogue* in 1968[6] with enthusiasm, when I was a programmer of a large and powerful machine. I may well have felt the devilish power famously articulated by the author of that book in its first sentence **[FIGURE 1]**—"We <u>are</u> as gods and might as well get used to it".

Overweening indeed. Consider, however, that if such ambition were entirely groundless, if the felt power of the machine were merely the stuff of promotional rhetoric and self-delusion, if the promises were just silly, our world would be very different than it is. I suggest to you that the question to be considered is, rather, what we do with this power, which is to say, it's all about the human-machine relation, and that's no simple matter.

My serious relation to smart machines as a scholar began after my doctorate. Sheltering then from unemployment, I had time to bring computing together with my passion for Ovid's *Metamorphoses*. I conceived a project to do two things: build an unbiased tool for literary investigation of that poem's elusive structure, and at the same time test computer zealots' annoying claims that the machine could *pin literary scholarship down*. I wondered, how might this be done? What aspects of the poem were computationally tractable? What would I find if I looked at the *Metamorphoses* rigorously from a computational perspective?

The theory of literature then in vogue among computing humanists—known in North America as "the New Criticism"—riveted our attention on authorial data, a.k.a. 'the words on the page'.[7] To give me leverage on the poetic narrative and the interrelation of its many parts, I settled on identifying the *dramatis personae*, tagging references to them so that they would be computationally tractable. My aim was, as I said, to construct a theoretically unbiased *Analytical Onomasticon*, or 'book of names', that would allow patterns to found and connections made within the poem. I set out to encode the poet's various devices of language for indicating persons across the ca. 12,000 lines of classical Latin hexameter. Difficulties, however, rapidly grew as the question of what comprised a 'name', what might qualify as a 'person', how to cope with personifications, de-personifications and so on demanded an ever-widening scope and complexity of criteria. Decisions multiplied, and interpretations with them, necessitating numerous revisions and many passes through the poem in light of new decisions. In the end, after years of work, there were ca. 60,000 tags, that is, 5 per line of poetry!

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[5] Harries 1975.

[6] Brand 1968; for the author's technological enthusiasms, see Brand 1987 and Turner 2006.

[7] For incisive critical comment on adherence to this school see Wittig 1977.

[Figure 2]

It took an embarrassingly long time for me to wake up: to realise that ultimately interpretation cannot be avoided, hence my principal ambition for an unbiased tool had been defeated. But from this jolt out of intellectual came crucial realisations. The first was that translating poetic text into computationally tractable data, or indeed any text whose semantics is of interest, runs aground on the digital requirement for *completely explicit and absolutely consistent* representation—'the axiom of digitalisation', I have called it. In other words, markup is of limited use. The second, far less obvious lesson is that how you conceptualise the machine and how you theorise its input come to reflect each other, even to converge.[8]

My problem was that I had taken on the wrong literary theory, which radically constricted my view of the machine to a datum-by-datum, one-word-after-another processor. Meanwhile scholars such as Jan had started with a much better idea based on a view of the machine as a mathematical, combinatorial device, adept at sorting, ordering and pattern-matching at speed—*ergo* fit for statistically analysing quantities of data. For many years they have been using it to analyse the style of written language statistically, a method that the late 19th-century Polish scholar Wincenty Lutosławski was the first to name 'stylometry' in his work on Plato's dialogues.[9] Computational stylistics—the name of the field now—has progressed much further than I did by considering literature computationally stochastic, as if the data that convey its expressive meaning were non-deterministic, then using statistical techniques to look for emergent patterns that the author's text somehow encodes and the reader somehow takes in—and by considering all words, not just those someone like me would consider worthy of tagging. More about that last point shortly.

Jan and company world-wide, with me bumbling along behind as an observer, have all learned from the great Australian pioneer in this field, John Burrows. In 1987, Burrows began his great book *Computation into Criticism: A Study of Jane Austen's Novels and an Experiment in Method* observing that,

> It is a truth not generally acknowledged that, in most discussions of works of English fiction, we proceed as if a third, two-fifths, a half of our material were not really there. For Jane Austen, that third, two-fifths, or half comprises the twenty, thirty, or fifty most common words of her literary vocabulary. (1987, 1)

It is with those most common words which we commonly ignore—conjunctions, articles, particles and so on—that he wove his scholarship, with the help of statistical

[8] McCarty 2019, 147.

[9] Lutosławski 1897, vii, 145-61; see Collingwood 1945, 58.

tests he modified or devised himself. In his Wisbey Lecture in London years later, he noted that,

> the very nature of evidence in literary scholarship has changed. Whereas [once] we would gather examples to illustrate a proposition and test it on our fellows, we can now gather all the relevant examples and put the case more firmly. (2010, 26)

Note that he is talking about one of the most complex and subtle of human artefacts: literary *style.* His statement in 2010 (as I would have said in 1968) still blows my mind:

> We have mounting evidence that work by different authors, work in different genres, work of different eras, work in different national forms of English can all comprise statistically distinguishable groups. (2010, 29)

Note well Burrows' phrase "mounting evidence", implying no end in sight, because achieving an end is not the ambition of scholarship. Nevertheless scholars sometimes seem to cherish this ambition. David Lodge satirises them in his novel *Changing Places,* in the person of a fictional American professor Morris Zapp, whose "ambitious critical project" was, Lodge tells us,

> a series of commentaries on Jane Austen which would work through the whole canon, one novel at a time, saying absolutely everything that could possibly be said about them… The commentaries would… be designed for… the specialist, who, looking up Zapp, would find that the book, article or thesis he had been planning had already been anticipated and, more likely than not, invalidated. After Zapp, the rest would be silence. (1978, 44)

We can hear that gadfly buzzing about our heads if not feel its bite.

The usefulness and progressive nature of statistical applications to written language brings us, of course, to the far better known, latest and greatest flash-child of artificial intelligence, ChatGPT, hence to artificial intelligence. I have only a very few points to make about this vast topic, which threatens to swallow us whole.

First: let us put aside the cacaphony of hype to ponder Marvin Minsky's beautifully simple, quiet statement of a goal we can all surely respect. AI's aim, he writes, is "not some definite thing but only the momentary horizon of our ignorance about how minds might work".[10]

Second, let me recommend attention to the possibility that ChatGPT, now a brilliantly performing "stochastic parrot",[11] may by putting together the bricolage of human utterances hold promise of giving voice to what has been forgotten or

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[10] Minsky 1990, 214.

[11] Bender et al 2021; Scott 2022; Blackwell 2022, Chapter 4.

suppressed. See Italo Calvino's anticipation of this promise in his brilliant lecture, "Cybernetics and Ghosts" (1967).

Third, that for an artificial intelligence the point for us is not to admire or fear its mimicry, but in anthropologist Marilyn Strathern's words, "to see a difference. The question is the kind of connection one might conceive between entities that are made and reproduced in different ways – have different origins in that sense – but which work together" (2004, 37).

Fourth, the dangers and the worries: too many to enumerate, some of them scary indeed. The question here is how we move, or teach those who have a chance of moving, "into the driver's seat",[12] so that we may—I quote Donna Haraway here—"get at how worlds are made and unmade, in order to participate in the processes, in order to foster some forms of life and not others".[13]

Haraway's imperative leads us to the necessity of interdisciplinary research, and that in turn leads us to look closely at what is happening to mundane research practices in the scholar's study. The study is the research library in miniature, and increasingly, because of digital resources, the primary if not sole one. Here, for example, is my own **[FIGURE 2]**.

Unquestionably, the research library is one of the greatest and longest lasting of human institutions. John Milton, in the *Areopagitica*, wrote in 1644 that "books are not absolutely dead things, but do contain a potency of life in them to be as active as that soul whose progeny they are". In reading that potency comes alive. Göttingen librarian Bernhard Fabian writes in *Buch, Bibliothek und geisteswissenschaftliche Forschung* (1983) that the library in a real sense represents the 'memory' of scholarship and the locus of *de facto* collaboration across cultures, languages and historical periods. It is, he argues, the realisation of scholarly reciprocity and the cultural heritage it accumulates and cares for. In it, by it, scholars collaborate. But (note the computer in my study) what about now? What do digital humanities and the research library have to do with each other?

Hence to another story.

In the Epilogue to his masterwork, *Mimesis: Representation of Reality in Western Literature*, written between May 1942 and April 1945, Erich Auerbach catalogues the "difficulties…too great" that made it impossible to fulfil his ambitions for *Mimesis*: "texts ranging over three thousand years"; knowledge of scholarship "beyond the confines" of his own field; and confinement by war to Istanbul, to which he had fled,

[12] Mahoney 2003, 122.
[13] Haraway 1994, 62.

giving him no access to the relevant books, periodicals, critical editions, friends and colleagues in European studies. "On the other hand", he concludes,

> it is quite possible that the book owes its existence to just this lack of a rich and specialized library. If it had been possible for me to acquaint myself with all the work that has been done on so many subjects, I might never have reached the point of writing. (1953, 557)

Now we, from anywhere in the urbanised world, can easily do what was out of reach for Auerbach. But the very abundance of scholarship at our fingertips gives us the very problem he imagined. Hence we need to think differently about scholarship, how it is done, how communicated, how used.

The American pragmatist philosopher Richard Rorty finds an answer in Hans-Georg Gadamer's sentence, "Being that can be understood is language". Up to recent times, Rorty argues, we have conceived the pursuit of knowedge heavily influenced by the natural sciences, as if research were chiefly to drill down narrowly to the core of something, to find out what it really is. But now, Rorty argues, "to understand something better is to have more to say about it—to be able to tie together the various things previously said in a new and perspicuous way."

When he wrote this in the first year of the millennium, digital resources on the scale we have were unknown, but it seems to me that his suggestion anticipates a way forward now available. More than a century earlier than Rorty, lexicographer James Murray described his physical method of composing entries for the *Oxford English Dictionary* by bringing together instances of words from quotations on paper slips. He would, he wrote, spread "them out on a table or on the floor… [spending] hour after hour in shifting them about… striving to find in the fragmentary evidence of an incomplete historical record, such a sequence of meanings as may form a logical chain of development."[14] Coming across Murray's words while working on my dissertation, I discovered the bare bones of a method I had already been using for getting ideas from research notes. Since then I have computerised the process a bit, but I have kept to Murray's use of paper slips and his kinaesthetic method of grouping them. **[FIGURE 3]** Here is a photo of my desk in 2018.[15]

Thus for some time I have been going wide rather than deep with satisfactory results, I think. I'm certainly no Auerbach, but my research trajectory has led to an attempt to reach out from questions in digital humanities towards all disciplines of relevance. This explains my title, but closer to what I do is the secular version of it eloquently spelled out by the great literary scholar Northrop Frye in *On Education*: "It takes a good deal of maturity", he wrote, "to see that every field of knowledge is the centre of all knowledge, and that it doesn't matter so much what you learn when

[14] Murray 1977, 203, quoted by James Murray's granddaughter from his Presidential address of 1884.
[15] McCarty 2020, where I consider note-taking in broad scope.

you learn it in a structure that can expand into other structures."[16] Thus Alan of Lille's infinite sphere.

Where does this lead, for me, for others, for the research library? I conclude from Frederic Holmes' book, *Investigative Pathways* (2004) and my own experience, that ways of doing research should never be regarded as canonical nor necessarily reliable, rather dynamic, unfolding in the moment, varying from one project to the next, sometimes within the same project. But this does not mean we cannot make progress with the seriously challenging problems in going wide rather than deep, the difficulties in calling a halt and peril in venturing across borderlands into foreign territories. Time may tell. As for the research library, all I can do is to agree with Fabian that the research library a "institutionalle Bedingung", 'an institutional condition'.

Digital humanities as an institutional phenomenon presents me with a somewhat similar problem: the field has grown too large and diverse for me to survey it competently. That is the job of the several edited collections and handbooks. The question remains, however: is it one thing or many different things we tie together by virtue of the one machine and a shared "methodological commons", as I named it long ago? I do see much evidence of good work. But I am also reminded of a wise tale told about the 13th-century Muslim sage, Nasrudin, here told by Idries Shah in *The Sufis*:

> A neighbour finds Nasrudin on his hands and knees, looking for something, and asks,
> "What have you lost, Mulla?"
> "My key," said Nasrudin.
> After a few minutes…the other man said, "Where did you drop it?"
> "At home."
> "Then why, for heaven's sake, are you looking here?"
> "There is more light here."[17]

Nasrudin did that sort of thing to drive home the lesson that looking in the wrong place because it's easier to do is silly; the key is found by searching where there isn't much light.

Apart from taking that to heart, digital humanities badly needs to cure its disciplinary amnesia by seeing to it that writing the unwritten history of computing in the humanities prior to the Web is undertaken along with its interconnections with other histories.[18] Far more attention to its connections across *all the ways of coming to know* is urgently needed. An enormous opportunity for interdisciplinary

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[16] Frye 1988, 10.
[17] Shah 1964, 62; see also Wikipedia s.v. "Streetlight effect" for several other versions and uses.
[18] See the scope of

conversation on a very wide scale presents itself, an education that would equip students and practitioners to face and satisfactorily to answer critical questions from beyond digital humanities, beyond the academy. The relentless demand for relevance to the world, if not to the human planetary agenda, requires from us all a persuasive case—an account, I would hope, that scholars such as Auerbach would recognise and find sympathetic.

Hence to another story.

I owe my apparently unstoppable desire to be a scholar to my paternal aunt's superstitious reverence for higher education and the mythic image she conjured of my pious and learned grandfather, whose right arm, it was said, was longer than his left from carrying heavy Greek and Hebrew lexicons for so many years. She was in the eyes of my brother and I (and I suspect in her own), an ignorant shop-girl, as she remained until the end; she had no idea of a university, having never finished school. But she had absolutely no doubt that the best life one could aspire to was that of a university professor. Such reverence seems mostly a thing of the past, I fear. It underwrote the form of life I treasure. How do we replace it? We cannot go on without at least the respect if not understanding of our fellow citizens.

A starting point is with teaching digital humanities to our students, in the process informing the technical practice with its connections and applications to other disciplines. Another starting point is with colleagues. For both I am particularly attracted to the emphasis on making things, since in doing so the 'thing' comes from some other domain. An example from the study programmes of the Institut für Digital Humanities at the Universität zu Köln is constructing simulations of Ibsen's *A Doll's House*, in which the drama and the techniques of modelling it interact and lead to fascinating discussions. Two examples of collegial making are the projects described in a new open-access book, *On Making in the Digital Humanities*, and exemplified by the King's Digital Lab at my own institution.

By 'making' I mean, of course, programming. Its popularity in computer science had by the early 1980s led to the realisation that its immediate focus is not on real-world objects but on the activity of constructing and manipulating models of them. As the scope of work in computer science grew to ever more complex systems, programmers needed a way of thinking about them as domains or worlds with properties and relationships. In 1980 computer scientist John McCarthy (one of those who founded artificial intelligence as a research field in 1955) casually observed in a technical paper the need to introduce into "our *ontology* (the things that exist)" certain categories. He italicised the word 'ontology' and knowledgeably defined it[19]— without fanfare but enough emphasis to mark the term as a new import from

[19] McCarthy 1980, 5.

philosophy. Subsequent usage of it then made the implication of his remark explicit: that there are as many ontologies as there are different ways of construing the world.

This was not new: philosopher Willard van Orman Quine (who was quite familiar with the digital machine) had pluralised the term in the mid to late 1940s.[20] Almost simultaneously to McCarthy's remark, Nelson Goodman was writing *Ways of Worldmaking* (1978), and just then the Polish medical clinician Ludwik Fleck's prescient treatise on how the *facta* of science are made was brought out of obscurity and published in English translation with the help of Thomas Kuhn. Thus, I suggest, the programmable, world-making machine drew from and influenced, participated in, amplified, spread and made actionable a profoundly influential and important way of thinking. And more than that, much more: I suggest that the machine embodies a potency that has resonated with its contexts from the get-go.

So, again, where from here? I think the best answer is for us individually do what we can with what we have, to the best of our abilities; to begin with a problem of interest and relentlessly pursue the question of what the great engine of our time can do with it. As for myself, I don't know any better than to follow the smell of food on the wind, wherever it leads. All around us are fields of opportunity for collaborative and solitary scholarship that reciprocates near and far afield, work that engages colleagues and students directly and indirectly. And so begins rebuilding of the bridge between the academy and those whose support we need to continue our work.

Is it a surprise that someone from a field tagged with 'digital' should keep getting mired in historical and philosophical problems and end by declaring that above all is scholarship, above all is the passion for it and communication of that passion in one's teaching and research? I trust not. Much work lies before us.

Allow me to end with the late Seamus Heaney's masterful poetic version of what I have been struggling to say:
I remember this woman who sat for years
In a wheelchair, looking straight ahead
Out the window at sycamore trees unleafing
And leafing at the far end of the lane.

Straight out past the TV in the corner,
The stunted, agitated hawthorn bush,
The same small calves with their backs to wind and rain,
The same acre of ragwort, the same mountain.

[20] McCarty 2018, 34.

She was steadfast as the big window itself.
Her brow was clear as the chrome bits of the chair.
She never lamented once and she never
Carried a spare ounce of emotional weight.

Face to face with her was an education
Of the sort you got across a well-braced gate –
One of those lean, clean, iron, roadside ones
Between two whitewashed pillars, where you could see

Deeper into the country than you expected
And discovered that the field behind the hedge
Grew more distinctly strange as you kept standing
Focused and drawn in by what barred the way.

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