With the Hedgehog or the Fox?

Willard McCarty

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aus:

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Narratology, Digital Humanities and Beyond

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1 Avoiding the extremes

In his essay on Tolstoy as historian, Isaiah Berlin looked to a dark saying by the ancient Greek poet Archilochus to open up the mind of his subject: "The fox knows many things, but the hedgehog knows one big thing", *πόλλ' οἶδ' ἀλώπηξ ἀλλ' ἐχῖνος ἓν μέγα* (Berlin, 2013 [1953], p. 1). Berlin acknowledged that no clean division is possible but argued that this one "offers a point of view from which to look and compare, a starting-point for genuine investigation" (p. 3). The trick in general is neither to dismiss nor to take on dichotomies of this (or any sort) uncritically but to pursue what lies between. Thus, in his essay *Anti anti-relativism*, anthropologist Clifford Geertz set out to locate a truth between views that strict polarisation had drained of the truths that had launched them (Geertz, 1984).

The view I want to recommend here,[1] in celebration of Jan Christoph Meister's scholarly life, is somewhat the same in reverse: ferociously to embrace a foxy nature, knowing many things, but never to lose sight of the hedgehog's vision of that "one big thing". These days, the Web makes knowing many things perhaps easier than ever before. The Web is, I suspect, not a cause of our foxy-mindedness, rather an expression of an overall drive to plurality and diversity with many contributing factors.[2] Many aspects of this drive are welcome indeed, and long overdue, but with radical change in intellectual fashions comes the moral imperative not to forget the genius of the fashion left behind. To my mind, remembering the truth of the hedgehog's way is the problem now; foxiness is everywhere and at least for now can take

[1] Straying across languages and cultures, from Anglo-North American to German, as I do here, necessitates this apology for inadequate recognition and use of scholarship in that other tradition. I trust omissions and corrections will happen in the mind of the reader.

[2] It is, I suspect, neither pure coincidence nor causal relation that Tim Berners-Lee's proposal of what became the Web (March 1989) and its public release (on alt.hypertext, 7 August 1991) coincided rather closely with the fall of the Berlin Wall (9 November 1989) and dissolution of the Soviet Union by the signing of the Belavezha Accords (8 December 1991).

care of itself. The point is to see what the world looks like once we escape polarisation of views, into only what the fox sees or only the hedgehog. At both extremes is essentially the same Foucauldian panopticon (McCarty, 2019b, p. 155).

2 A brief auto-ethnographic vignette

The cat(ma)-and-dog(ma) fight humorously and playfully alluded to in the work of Jan Christoph and colleagues at Hamburg is waged of course in the realm of text-analysis and centres on metatextual encoding. My own view on this subject was formed from my attempt from ca. 1984 to 1998 to see what would happen if one were to set out rigorously to encode a challenging poetic text for its meaning-making components – to think insofar as possible with the mind of a machine.[3] By 'rigorously' I mean unwaveringly faithful to the imperative of absolutely consistent and completely explicit representation of these components. Setting that course brought me into stark, often psychically and morally painful collision with the inherent inconsistencies and allusiveness of language as we find it. This collision taught me a great deal about the poetry I chose, Ovid's *Metamorphoses*, whose relentless ambiguity made it ideal for my purposes. Hence the learning I gained from my attempts to pin it down was negative, that is, it proceeded by way of a powerful *via negativa* which illumined what I saw, or thought I saw, but was not able encode without violating that imperative. Adhering to it, I had to conclude that apart from taking notes on a text or editing, indexing and formatting texts, markup in principle has only this *via negativa* to offer the interpreter. Yes, I was being dogmatic, but I wanted to see close up where the dogma of algorithmic rigour would lead me, what it would expose to view. What I missed at the time was the active, positive role of markup in defamiliarising the poetry. More on that later.

At about the same time, at a Symposium on Unintended Nuclear Warfare in Budapest, computer scientist Brian Cantwell Smith took the next step by explaining why in principle no computing system, no matter how sophisticated, could ever be absolutely correct (1985). The near-miss on 5 October 1960, when the American Early-Warning System falsely identified the rising moon as "a large contingent of Soviet missiles" heading its way, was his wake-up call. But for my purposes here his important contribution was to foreground the problematic relation between a computational model and the thing as modelled under the interpretation of the modeller. When it came time for me to theorise the subject about 20 years later, I realised that a focus on any particular model, that is, on the referent of the noun 'model', singular or plural, was the wrong way to go about understanding what the digital machine

[3] The account here is based on McCarty, 2017.

could do and was doing reciprocally with all of us (McCarty, 2014 [2005], pp. 20–53). We required, I argued, not the noun but the verbal form, the gerundive/participle 'modelling', and needed to start talking seriously about the *modelling relation*. In Digital Humanities, at least in the Anglophone world, serious talk about it began to happen in the first decade of this century.

What began then for the *Geisteswissenschaften* was a crucial recognition of the process not just the product of digitally enabled scholarship. Modelling rendered that product in principle unstable or temporary. Philosophically, that is, computing these sciences brought with it a shift from thinking in terms of ontology (Quine's *On what there is*, 1948) to practices of ontologising. But saying this raises questions: at what do these practices aim? How do we regard what they achieve? Quine would say they are approximations of *the* ontology, about which we can never agree; Simon (and many computer scientists after him) that the aim is 'satisficing', i. e. achieving the good-enough for whatever purpose; Goodman that ontology in Quine's sense "is evanescent, and no one account of it will do".[4] Ontologising can transgress somewhat metaphor does in Goodman's description, "drawing significant boundaries that cut across ruts worn by habit" (Goodman, 1984, p. 73). In the history of the digital machine this happened very early, as designers of the ontologising machine "bit by bit (byte by byte) deconstructed the notion of a tool itself as [it] came to stand not for a tool, but for nature itself" (Galison, 1996, p. 157). And so, Keller writes, in biology we come to realise that,

> the question 'What is life?' is a historical question, answerable only in terms of the categories by which we as human actors choose to abide, the differences that we as human actors chose to honor, and not in either logical, scientific, or technical terms. It is in this sense that the category of life is a human rather than a natural kind. Not unlike explanation. (Keller, 2002, p. 294)

Not unlike the temporary state in a modelling exercise.

My own next step was, you might say, implicit in what I have just said: the result of asking what happens when modelling is turned loose, when the goal is not to approximate something known ('modelling of') or to converge on something specific ('modelling for') but computationally "to imagine what you don't know", that is, to *simulate* the possible.[5] Thinking like this, as I did, leads to the conviction that our machine is fully realised when it becomes a device of the imagination, not an information-vending appliance or means of social intercourse (though both of these are quite important).

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4 On ontology in Quine and subsequently in computer science, see McCarty, 2019b, pp. 149–151; on satisficing, Simon, 1956, p. 136 and Feigenbaum, 2001; Goodman, 1984, pp. 73, 130.

5 McCarty, 2019a; McGann, 2001, p. 82.

3 Mimesis to alterity

I've described my own path of research over the last 35 years to lay groundwork for questioning where we go from here: fox-like, in the spirit of the age, to look into many things, but I would like to suggest one big thing in order to honour the hedgehog. Whatever its lineaments, this one big thing must have been implicit in the past, so I begin there, borrowing from economic historian and philosopher Philip Mirowski's portrait of his discipline in its 20th-century transition, *Machine Dreams: Economics becomes a Cyborg Science.* Mirowski uses Steven Millhauser's story, *The New Automaton Theatre* (1999), as précis of his own. It serves the same purpose here for my proposal of the intellectual matrix I think is most important for our disciplinary future.

Millhauser tells of a small German city whose social life orbits staged performances of miniature, artfully crafted automata made by a small group of master craftsmen, who generation after generation train apprentices to succeed them. From childhood to old age the citizens are utterly devoted to "these little creatures". Over time, advances in clockwork ensure "an ever-increasing mastery of the illusion of life" and more gripping exploration of it. One extraordinarily gifted apprentice, Heinrich Graum, rises to mastery like none other, lifts the mimetic art to new heights "with the revelation of ever-new spiritual depths, and making us yearn for darker and deeper beauties. It was as if his creatures strained at the very limits of the human, without leaving the human altogether". Then without explanation Graum falls utterly silent and unproductive for ten years. On his return, he startles and shocks the citizens with a performance "like a knife flashed in the face of our art". In the Neues Zaubertheater,

> we are asked to share the emotions of automatons themselves. The clockwork artifice, far from being disguised, is thrust upon our attention… Graum's new automatons suffer and struggle; no less than the old automatons do they appear to have souls. But they do not have the souls of human beings; they have the souls of clockwork creatures, grown conscious of themselves. They are the race of automatons, the clan of clockwork; they are new beings, inserted into the universe by the mind of Graum the creator. They live lives that are parallel to ours but are not to be confused with ours… And the new automatons begin to obsess us. They penetrate our minds, they multiply within us, they inhabit our dreams. They waken in us new, forbidden passions we cannot name. (Millhauser, 1999, pp. 93–95)

We must not let the latter part of Millhauser's tale, generically familiar to us from all the clatter about AI, obscure what comes before; we must keep the whole story before us. What matters is *the story of transition to alterity*, from a tour de force profoundly imitating the human to the stark realisation of automata *in their own terms*. Through his notion of the "uncanny valley", Japanese roboticist Masahiro Mori hinted some

years ago at the existential lessons to be learned (Mori, 2012 [1970]; Kageki, 2012). More recently, implications of the same have arisen in successes of the AlphaGo Zero system at the ancient game of Go, winning through moves previously unknown in the millennia-long history of the game (McCarty, 2019b, p. 154). Ongoing ethnographic and ethnological studies of AI systems are looking into the native characteristics of AI systems (e. g. Rahwan et al., 2019; Wang, 2016).

The foxy-minded reader will already be aware of the pluralisation of 'intelligence' by ethologists and plant biologists, preceded by work on the multiplicity of kinds in humans against the century-long attempts to nail intelligence down, e. g. by means of psychometric research.[6] To this we must add the work of many anthropologists, historians and comparatists demonstrating the falsity of benchmarking intelligence, e. g. by the inclination to count and ability to perform abstract numerical calculations.[7] Again, a most welcome diversification, to which studies of AI are beginning to contribute.

4 "The one big thing"?

I want to replace the hedgehog's one big thing, in its pure, uncompromising obsession, by the tendency of mind to long for closure but to refrain from closing down the many possibilities that frustrate it. This may seem a foxy way to think midway between fox and hedgehog, but what I am suggesting is a hedgehogian corrective to the fox's undirected curiosity: corrective to the fox's pure seeing of differences without comparing the different things. I am suggesting a Keatsian "negative capability",[8] which does not resolve the enigmatic into knowledge but leaves it to have its effects on us. I am suggesting the inconcluding and indeterminating power of mind that Viktor Shklovsky found in works that estrange the known, sometimes with crude language or jarring scenes (as the digital does to poetry),

> that one may recover the sensation of life… The purpose of art is to impart the sensation of things as they are perceived and not as they are known. The technique of art is to make objects "unfamiliar", to make forms difficult, to increase the difficulty and length of perception because the process of perception is an aesthetic end in itself. (Shklovsky, 1965 [1919], p. 12–13; cf. Berlina, 2016)

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6 For ethology, see McCarty, 2019b, p. 149; for plant biology, Mancuso & Viola, 2015 [2013]; for varieties of human intelligence (and commentary on the psychometric work), Gardner, 2011 [1983].

7 Vilaça, 2018, and the commentaries on her lecture, Lloyd, 2018, and Verran, 2018. Cf. Lloyd & Vilaça, 2019.

8 Keats, letter to George and Tom Keats, 22 December 1817, in Scott, 1958, p. 60; see Ou, 2009.

Like Berlin, Shklovsky turns for an example to Tolstoy, who "makes the familiar seem strange by not naming the familiar object. He describes an object as if he were seeing it for the first time". This is, for most mortals, impossible to sustain; no one could operate in daily life always seeing everything for the first time, not even a fox, who must recognise food, enemies, opportunities and so on. Drawing the foxy and the hedgehogian into the space between them and marrying these tendencies is, then, to create a perpetual state of tension. Thomas Kuhn wrote about it in *The Essential Tension: Tradition and Innovation in Scientific Research* (1977/1959), forming the two forces into an historical rhythm of revolutionary change in physics.

In computer science, public policy and other fields with unsolved but known problems, research is spurred on by 'grand challenges' (cf. Omenn, 2006). That is obviously not what I have in mind. By and large, the solutions to grand challenges are expected to be what one expects, though perhaps not achieved by usual means. For often, at least in my experience, the motivating force or idea may be beyond one's power to articulate or even suspect. Some, like me, follow their noses, then in retrospect see a path. In his meditation on several of his own close studies of laboratory notebooks, *Investigative Pathways: Patters and Stages in the Careers of Experimental Scientists*, Holmes puts the matter just as I need it: the investigative pathway is not "a preexisting, well-traveled route that the investigator *follows* but [...] one that she creates while exploring territory previously untraveled [suggesting] that one proceeds step by step, each step guided by those taken previously and by uncertain intimations about what lies ahead" (Holmes, 2004, p. xvi). The hedgehog's mind is essential to keep from being lured too far into fascinating byways, many of them, in my experience, anything but irrelevant. The fox's mind is equally essential to stay aware of them all, not canonising the one that you happen to be on but remaining open to the possibility that a byway, once cautiously explored, will turn out to be the highway.

The opportunity to take in and become both creatures simultaneously, and to live the life they conflictingly make possible, is rare indeed, and not always realised. Surely Jan Christoph, though known for his catmatism, and so openly on the side of the fox, has assimilated the genius of the hedgehog and so will have no trouble staying imaginatively on track into the open fields offered by his richly deserved retirement.

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