Paradigm shifters: tricksters and cultural science

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ABSTRACT

This paper seeks to link anthropological and economic treatments of the process of innovation and change, not only within a given 'complex system' (e.g. a cosmology; an industry) but also between systems (e.g. cultural and economic systems; but also divine and human systems). The role of the 'Go-Between' is considered, both in the anthropological figure of the Trickster (Hyde 1998) and in the Schumpeterian entrepreneur. Both figures parlay appetite (economic wants) into meaning (cultural signs). Both practice a form of creativity based on deception, 'creative destruction'; renewal by disruption and needs-must adaptation. The disciplinary purpose of the paper is to try to bridge two otherwise disconnected domains – cultural studies and evolutionary economics – by showing that the traditional methods of the humanities (e.g. anthropological, textual and historical analysis) have explanatory force in the context of economic actions and complex-system evolutionary dynamics. The objective is to understand creative innovation as a general cultural attribute rather than one restricted only to accredited experts such as artists; thus to theorise creativity as a form of emergence for dynamic adaptive systems. In this context, change is led by 'paradigm shifters' – tricksters and entrepreneurs who create new meanings out of the clash of difference, including the clash of mutually untranslatable communication systems (language, media, culture).

"The past is a foreign country: they do things differently there."
L.P. Hartley, *The Go-Between* (1953)

The cultural scientist
"Pas d'elle yeux Rhône que nous"

Trickster the Entrepreneur

It may seem perverse to start a presentation on 'cultural science' with a picture of a coyote, even one that seems so well able to 'paddle his own canoe.'

But it transpires that the Coyote of North American mythology, and his equivalents in other lands, may provide the solution to a problem that any attempt at 'cultural science' needs to address.

Lewis Hyde, in his book *Trickster Makes This World: How Disruptive Imagination Creates Culture* (1998), presents Coyote as the appetite-driven, deceiving, thieving, whatever-it-takes trickster, who steals from the gods, travels the open road, and plans to eat your children. How can such a character 'create culture'?

For reasons that I hope will become clear, this scoundrel (and others of his type) makes a wonderful 'model' for an apparently very different figure that stalks the mythology of the creative industries; namely, the entrepreneur.

The word '*entrepreneur*' literally means 'between-taker' (in French); the English-language idiom would therefore be the 'Go-Between.' This is indeed the role of Coyote and other

'tricksters' across many mythologies, including the Greek god Hermes, who has been described thus:
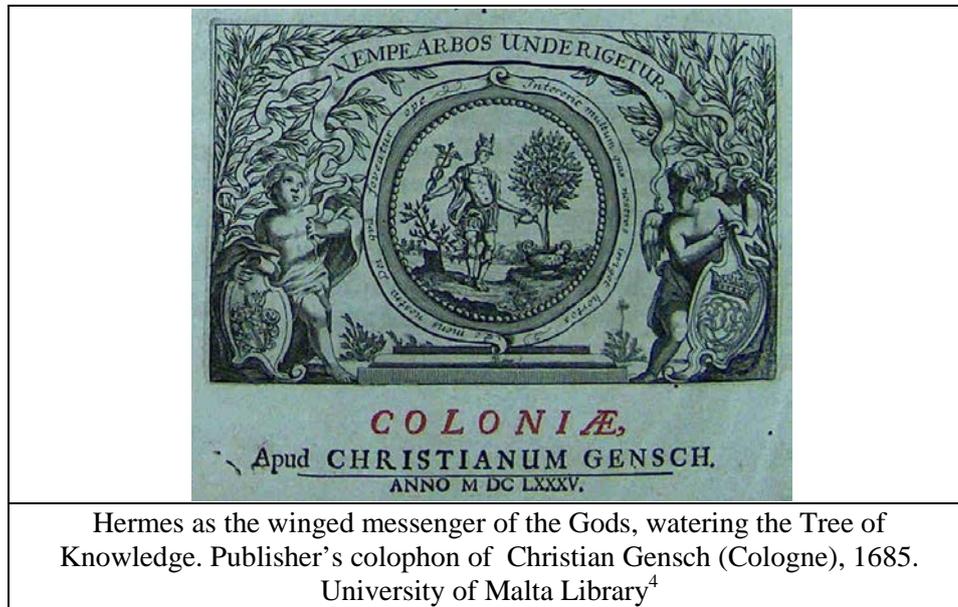
> Hermes ... is the Olympian god of boundaries and of the travellers who cross them ... of thieves and road travellers, of orators and wit, of literature and poets ... of invention, of commerce in general, and of the cunning of thieves and liars. ... Hermes is a messenger from the gods to humans. (Wikipedia)[1]

Ancient Hermes: the fertile boundary marker[2]

Hermes – or Mercury as the Romans called him – was a deified trickster; the Go-Between creator and transgressor of boundaries; messenger-god of communication, whose gifts in translation and oratory are founded on deception, serving him well as the god of commerce, communication ... and thieves.

Classical Hermes (Hermes Logios), arm raised in oratory (lying)[3]
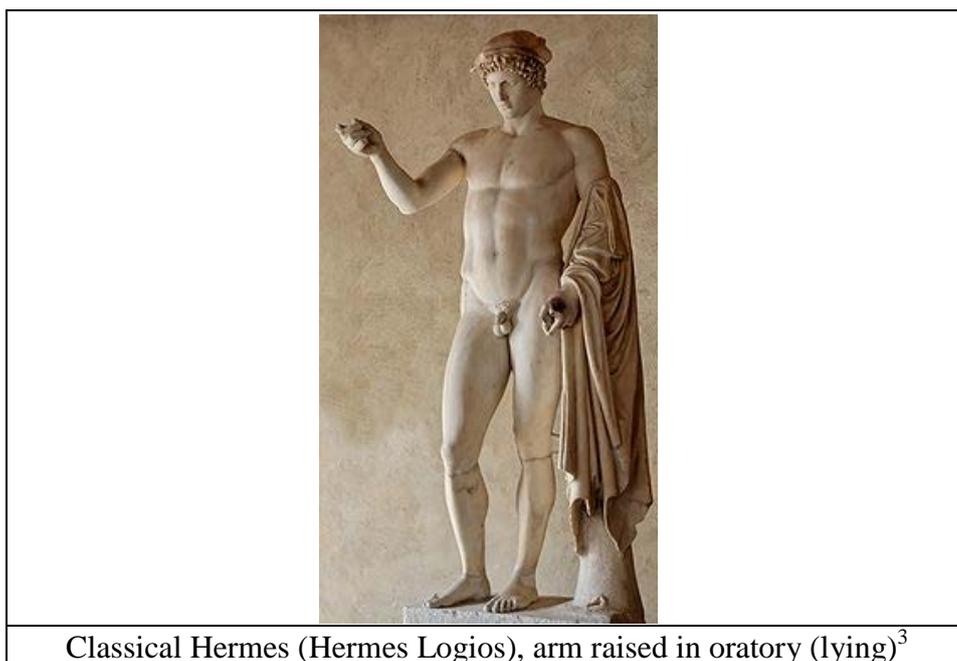
Despite our modernity, we are still living in plain sight of this mythology. Our name for the boundary-defying shape-shifter metal element is mercury. 'Mercury' signifies the open road (Mercury vehicles in the USA), We call the interpretation of hidden meanings 'hermeneutics.' The 'winged messenger' remains a symbol of communication (early newspapers were called mercuries – and still are in Tasmania). After printing was invented, publishers soon appropriated the role of Hermes as he who waters the Tree of Knowledge:

Hermes as the winged messenger of the Gods, watering the Tree of Knowledge. Publisher's colophon of Christian Gensch (Cologne), 1685. University of Malta Library[4]

Hermes – who harks back to Egyptian Thoth (the god of writing and wisdom), forward to Roman Mercury and thence to modern Europe – is obviously a complex figure. The 'Hermetic' tradition claimed one version of him as the founder of magic and thence also science. It may be that this multiplicity of attributes indicates the chaos and irrationality of myth; but it may equally alert us to the possibility that such attributes are linked and have been since time immemorial.

Here, I simply want to claim Hermes – and Coyote – as the archetypal model of the Schumpeterian entrepreneur – the bringer of the new and agent of the 'creative destruction' of old orders and existing rules.

As Lewis Hyde puts it:
> I want to argue a paradox that the [trickster] myth asserts: that the
> origins, liveliness and durability of cultures require that there be a space
> for figures whose function is to uncover and disrupt the very things that
> cultures are based on. (1998: 9).

As far as Hyde is concerned, tricksters like Hermes and Coyote are agents of change, certainly, but change of a particular type, that ensures renewal and adaptation to new conditions:
> In spite of all their disruptive behavior, tricksters are regularly honored
> as the creators of culture (1998: 8).

In other words, the trickster is not a trivial figure, but one whose disruptions are fundamental to the system he disrupts. The trickster is not a mere con-artist or venal politician:

> When he lies and steals, it isn't so much to get away with something or get rich as to disturb the established categories of truth and property and, by so doing, open the road to possible new worlds (1998: 13).

Schumpeter's theory of entrepreneurship was based on exactly this principle:

> The typical entrepreneur is more self-centered than other types, because he relies less than they do on tradition and connection and because his characteristic task – theoretically as well as historically – consists precisely in breaking up old, and creating new, tradition... Our type seeks out difficulties, changes in order to change, delights in ventures.' (Schumpeter, 1934: 91-4)

Schumpeter's biographer Thomas McCraw comments on this passage:

> Breaking up old traditions and creating new ones could just as well describe what Schumpeter himself was doing to the discipline of economics. In passages such as these, he is defining the behavioral profile of the entrepreneur as a type. He is arguing that the entrepreneur, in contrast to the ordinary manufacturer or merchant, is not merely overseeing the daily flow of production and consumption but is actually crafting the future. (McCraw, 2007: 71)

Long before Thomas Kuhn, Schumpeter himself drew the parallel with science: 'The history of science is one great confirmation of the fact that we find it exceedingly difficult to adopt a new scientific point of view or method ... So it is also in the economic world' (1934: 86).

In short, the entrepreneur and trickster are no everyday *beneficiaries* of existing systems: they are *paradigm shifters*.

Cultural Science: System, Agency, Disruption, Change

So – what has this to do with 'cultural science'? The answer is that Coyote, Hermes, and other mythological tricksters give us material to think with, specifically about the relationship between *system* (e.g. the eternal order of the gods) and *agency* (e.g. the deceptions of the appetite-driven trickster) in order to theorise *change* (practical adaptations among both gods and humans). What is at stake in the struggle is not simply winnings (e.g. food), but the *rules* for winning and thus the survival – or otherwise – of both system and agent. Indeed, Hyde is at pains to point out that the proceeds of tricksters' larceny are not as important in themselves as is the discipline of delayed gratification. Hermes steals Apollo's cattle, but does not eat the meat: instead, he converts his appetite into knowledge; his winnings into signs, and his 'creative destruction' of the divine order into the conditions of possibility for renewal.

The figure of the trickster allows us to think about the *abstract* or conceptual problem of how to *model* the relations among *systems, agency, change, and knowledge*, via an example that comes not from the scientific world or from contemporary economics and politics, but from the most thoroughgoing and unrepentant tradition of the humanities, which is the study of human *meaningfulness*: i.e. (a) anthropological observation of human cultural patterns over deep time and across wide geographical spaces; and (b) astute discursive and textual analysis of cultural forms and stories (Hyde is exemplary in both of these endeavours).

Here then is a mechanism for crossing another boundary – one that in various guises has bedevilled modern knowledge systems – i.e. the distinction between arts and sciences as modes of knowing. If there is to be a 'cultural science,' then the nineteenth-century settlement of science as the realm of *facts* and humanities as the realm of *values* does not and cannot hold (Lee, 2010: 47-53).

The rarely investigated (with notable exceptions: Edgerton, 2005; Kagan, 2009) but oft-cited phenomenon of 'two cultures' is itself in need of some 'creative destruction.' A Go-Between is needed to reformulate and renew the relations between science and culture. Of course we're not alone in such an endeavour, but the 'cultural science' group of researchers is an experimental start-up (as it were), seeking to change the rules about what counts as science, and what counts as culture, in the study of system, agency, change, and knowledge in the realm of meaningfulness.

The cultural science initiative at the CCI arose from a dialogue between cultural studies and evolutionary economics, which soon posed a clear and challenging question, echoing a similar one that Thorstein Veblen asked of economics itself more than a century ago (Veblen, 1898): 'Why is cultural studies not an evolutionary science?'

Once asked, that question proved to be a bit of a coyote, wandering in from the open road and gazing hungrily at our brain-children. It may cause us to question our own system:
- Why has cultural studies been content to remain a field of contestation and 'position'? Why do we so often refuse the option of cumulative elaboration, testing and revision of knowledge claims that may result in a self-correcting 'science,' in favour of studies dedicated to the justification of the political or moral stance of the investigator?
- How can cultural studies survive as a field when each new entrant can invent it anew, ignoring existing work?
- Why is cultural studies stuck on structures and oppositions (asymmetrical relations of power) rather than on process and change – or what Veblen calls 'causal sequence'?
- And why is cultural studies so deaf to the changes going on in other disciplines, notably economics itself, but also, perhaps even more challengingly, in the biosciences, neurosciences, and neo-Darwinian evolutionary theory?

When people in cultural studies hear the word 'science' – not to mention 'evolution' – they generally reach for their revolvers (Bérubé, 2009). Instead of that, we thought we'd do some reading. The cultural science initiative at the CCI is based on a combination of three interdisciplinary inputs:

- **evolutionary theory:** as elaborated in evolutionary or neo-Darwinian economics (Eric Beinhocker, Jason Potts, Stan Metcalfe, Carsten Herrmann-Pillath, Brian Arthur);
- **complexity theory**: i.e. network theory (Santa Fe Institute, Albert-Laszlo Barabasi, Paul Ormerod, Alex Bentley) and systems theory (Niklas Luhmann);
- **cultural studies**: notwithstanding its current eroded state, the reflexive tradition (CCCS, Birmingham) of in-close textual/contextual analysis of meaning and identity, using textual-discursive ideology-critique (literary/media cultural studies, feminism etc.), ethnography (subculture/audience/fan studies), and language-based meaning systems (semiotics, Umberto Eco, Roland Barthes, Yuri Lotman).

The initiative is motivated by a desire to understand, and if possible to model, how change works in culture at the level of whole populations. We are motivated by the basic 'problem situation' of the humanities – what makes the human and how can we know? We cast that question across social networks of purposeful and meaningful action, and look to recent evolutionary and complexity theory to assist in the quest (of course, these fields have not been idle on the question of culture in the meantime). In fact, with Stephen Muecke (2009: 413) we aspire to 'a new cultural studies inspired by some scientific thought, a cultural science if you like'; which produces a 'new kind of subjectivity' among humanities scholars, one that is 'permanently networked and inter-species' (414).

Thus, in relation to human sense-making, how is it possible to identify and track causal sequence, dynamic process, and rules of transformation; and even to ask to what extent the same 'algorithm' (an 'abstract series of steps': Arthur: 180) applies across seemingly disparate domains or activities (e.g. Alex Bentley's 'random copying' theory)?[5]

Such questions are in contradistinction to a by-now standard or everyday focus on structure, opposition, and the politics of difference in cultural studies; a perspective inherited from structuralism, semiotics and continental Marxism of the 1960s and 70s and institutionalised as 'normal science' in the 'new humanities,' focusing on identity-formation (individual and collective), discursive power, contextualised meaning, and the practices of ordinary life.

Our approach is also divergent from the rational choice and equilibrium states of neoclassical economics, a field which turns out to be just as turbulent as our own (see *Adbusters*, 2009). In other words, we do see cultural science as a 'paradigm shifter' for both cultural studies and economics.

Perhaps this is why we became interested in *studying* as well as *attempting* disruption, renewal, and innovation of knowledge domains. In order to study culture itself more adequately, it is necessary to renew what can be meant by 'cultural studies.' For instance it needs to include population-wide macro-systems as well as micro-descriptions, and to account for change from an evolutionary perspective rather than from an oppositional one, while at the same time not letting go of its interest in meaning, identity, situational context, textual and discursive forms and histories, and the politics of knowledge and culture.

New Firms

In part this line of thinking was provoked by the CCI's practical need to engage with interlocutors in government, business and technology, where the question of the moment – this was about 2004-5 – was not about resistant subjectivity, contextualised meaning, or orders of knowledge, but about *innovation*.

This term is heavily accented by its usage in business literature, where it describes the hoped-for source of growth for knowledge-based economies, following the technological inventions associated with ICTs, digital networks, and the internet.[6] When we were planning the CCI in 2004-5, 'national innovation systems' were imagined entirely within the confines of science and technology. The biosciences were included but the humanities were not. Creativity and culture were more likely to be accounted for as 'sticky' resistance to change or backward-looking 'suboptimal behaviour' (Bednar & Page 2007)[7] than as part of a growing knowledge economy or national-competitive innovation system.

Could there be 'innovation' in culture? Is it possible to conceive of culture and the cultural as a domain of emergence rather than the 'heritage' of sticky, left-over, legacy systems? Here the term 'creativity' becomes crucial,[8] a Go-Between term to link business strategy (creativity as a key to wealth-creation in firms), to the humanities, where it has referred most readily to the creative and performing arts – i.e. to *artistic* creativity.

The CCI was invented about this question: how can the idea of the 'creative industries' harness both 'creativity' (individual talent) and 'industry' (commercial scale) in the pursuit of innovation, across local, national and global contexts?

And here an observation of Schumpeter proves prescient. He 'emphasizes the role of *new* companies in making innovations that interrupt the circular flow' (McCraw: 74). In other words, the way to beat IBM is to found Microsoft; the way to beat Microsoft is to found Apple ... etc. This truism of entrepreneurial innovation is also relevant to intellectual renewal in institutions of knowledge (e.g. disciplinary arrangements, university departments, etc.). You might be better off starting a new firm than seeking to reform the established dominant player.

This is what we think about creativity and culture. To *rethink* them we have needed to get out of the modernist-humanist box. We recognise that the CCI is a 'new firm' – the odds are against it but the need for renewal requires risky experimentation, and the chorus of criticism from those who thought we should know better (e.g. O'Connor 2009) is predictable – almost a requirement.

The A word

The reason that the CCI needed to set up as a 'new firm' was not simply to escape the clutches of contrarian cultural studies; there was also the knotty problem of the 'A Word': Art.

Over the past century and more, the notion of *artistic* creativity has been captured by the modernist discourse of the avant-garde, where 'the New,' as Barthes (1975; 1989) put it, contests the hegemony of 'repetition machines' in popular culture, media, education systems and the like. Here, *originality* (associated with minority or 'difficult' art) takes precedence over *distribution* (associated with mass production, popular culture and cheap goods) in the cultural value hierarchy.

It may seem that this emphasis on originality is perfectly suited to the rhetoric of innovation. And indeed, the century-long insistence on the precedence of 'minority culture' over 'mass civilisation' could easily be ventriloquised into the new discourse. It could even be claimed that the creative artist and the entrepreneur shared important qualities in common (Gu & O'Connor 2006).

Before you know it, there's a master-metaphor for the creative innovator of our age – 'the designer,' who takes over the mantle of progress from 'the engineer' of the industrial age. Designers can be both entrepreneurial and creative, providing value-added knowledge-based services to otherwise stagnating advanced economies, spreading innovation throughout the entire consumer economy.

However, there's a problem with this development. It keeps firmly in place the model of minority expertise, superimposing the creative artist onto the expert-pipeline model of industrial production, preserving the distinction between producers (active firms, and their *expertise*) and consumers (passive populations, and their *wants*).

The way to scale up creativity for innovation systems, according to this model, is to fuse art with industry, which results in the 'copyright industries,' 'design labs,' and policies such as strong IP regimes. But those nurtured on critical modernism see it as systematically impossible – the system does not allow it – to admit that the *creativity* of the artist can be scaled up in this way, because popularisation, commercialisation and repetition at industrial scale is thought to systematically blunt the radical edge of 'the New.' The model does not allow that avant-garde critique, resistance, countercultural activism and progressive politics can coexist with or emerge from commercial culture. This worry has preoccupied the CCI's critics.

But in my view a more serious problem remains unresolved. Substituting the artist-designer for the R&D lab, and claiming the artist as entrepreneur, simply revamps the expert-system. It excludes the *majority of the population* from productivity in creative innovation. Art and commerce simply reinforce each other. Neither is transformed. A truly radical approach would be one that sought to explain and promote creative innovation among *whole populations* (using 'population' in a biological not Foucauldian sense, although the edges between these may need careful delineation in practice). The transformative change would be one that worked not to shore up the existing beneficiaries of expert systems but to extend the social base of creative productivity to – in principle – everyone.

And of course this is exactly what the development of the internet and associated social network markets brings into the realm of practical possibility, perhaps for the first time.

Now *everybody* is a producer of what Clay Shirky calls 'public thought.' This 'shock of inclusion' is most disruptive for existing interests:

> The beneficiaries of the system where making things public was a privileged activity, whether academics or politicians, reporters or doctors [and, we may add, artists], will complain about the way the new abundance of public thought upends the old order, but those complaints are like keening at a wake; *the change they fear is already in the past. The real action is elsewhere* (Shirky 2010).[9]

The way to move forward is not to insist that 'art as we know it' be included in the creative industries, as Kate Oakley (2009) among others has done, but to reform what we mean by art. Here is where you need 'cultural ratbags' like Marcus Westbury, whose concept of 'not quite art' – where creativity meets digital networks – shows the way:

> *Not Quite Art* traces how our culture is shifting from the hierarchical, local and parochial structures to a global and networked world where Australian artists have audiences around the world, yet often remain relatively unknown in their local community.[10]

Here we can glimpse the possibility of rethinking creativity for whole populations, and thinking about *distributed* art (not just 'original' work by accredited artists) as a game-changing disruption for whole systems. If we are to consider culture in evolutionary terms, this is a vital move: to get art, culture, creativity and innovation away from their association with minorities, experts, the avant-garde and firms, and to rethink them from first principles.

Distributed Talent

This approach to creativity is by no means novel. It is part and parcel of the same democratic drive that resulted in modern representative government. One of the most successful popularisers of the idea of democratic government, based on the abilities of the whole population, was another radical ratbag – i.e. an intellectual entrepreneur and political trickster – Thomas Paine, who played an active role in both the American and French Revolutions, and tried very hard to provoke one in Britain too. In *Rights of Man* (1792) he wrote:

> It appears to general observation that revolutions create genius and talents; but those events do no more than bring them forward. There is existing in man [humanity] a mass of sense lying in a dormant state, and which, unless something excites to action, will descend to him, in that condition, to the grave. As it is to the advantage of society that the whole of its faculties should be employed, the construction of government ought to be such as to bring forward by quiet and regular operation, all that extent of capacity which never fails to appear in revolutions. (Paine, 1792: 149).

Paine was convinced of the rightness of representative government because he thought 'mental powers' and wisdom were scattered, albeit unevenly, throughout society: 'there is always a sufficiency somewhere in the general mass of society for all purposes; but with respect to the parts of society, it is continually changing its place'; as is also the case for

literature, where 'the republic of letters brings forward the best literary productions, by giving to genius a fair and universal chance' (p. 148).

In short, modern democratic theory, at its inception, conceptualised 'the mass of society' not as passive consumers but as a *resource* for both imagination and decision-making, because wisdom, like other talents 'rises in one to-day, in another to-morrow, and has most probably visited in rotation every family of the earth, and again withdrawn.' (148).

Therefore, thought Paine, government should be conceived not as external control but, on a self-organising principle, as 'some common centre, in which all the parts of society unite,' that 'concentrates the knowledge necessary to the interest of the parts, and of the whole.' Thus, 'a nation is … like a body contained within a circle, having a common centre in which every radius meets.' (154).

Self-organising systems: simple (Paine) and complex (Barabasi) hub and spoke models.
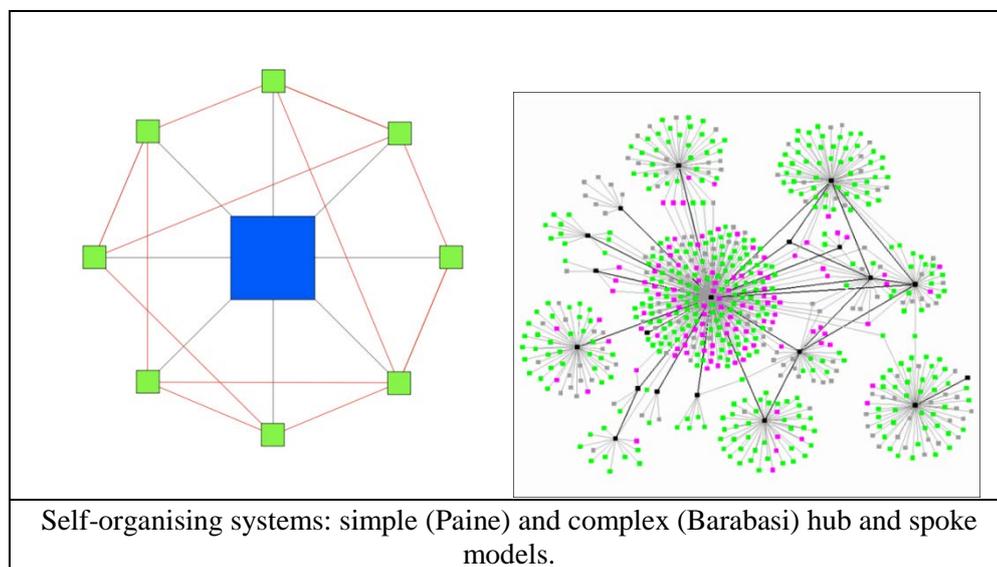
Although he was no mathematician, Paine was imagining a *complex system*, to explain how whole populations could be modelled in their interactions and mutual 'interests.' He also understood time-based dynamics: talents that lie in a 'dormant state' may be excited into action during times of revolution.

Paine's writings demonstrate that there's nothing newfangled about an approach that not only seeks to incorporate the capacities of whole populations within large-scale systems that require some form of institutional coordination, but also wants to mobilise the population in question and release their energies via self-organising action.

Evolution

However, although he demonstrated in his own career and ideas the steps Brian Arthur (2009: 176-80) describes as the 'core mechanism' of evolution – the evolution of the 'technology of democracy' if you like – Paine himself did not have conscious access to appropriate theories to help him to model the replacement of *ancien regimes* by self-organising population-wide systems that would release and harness the creative talents of all.

We, on the other hand, do have access to such newfangled approaches (Arthur, Beinhocker, Santa Fe, Barabasi, Metcalfe, etc.).[11] The use of these approaches to date has largely been confined to digital networks and innovation economics, i.e. to *technologies and firms* – the current beneficiaries of expert-pipeline invention. But the cat is out of the bag: the lessons available from such approaches may be applied for more general benefit. What's needed are 'new entrants [to] bring in new innovation' (Gay, 2008: 79). [12]

A Go-Between trickster-entrepreneur is needed both to *change* the system as its performance declines, and to *preserve* the system from potential overall collapse. Or, as one of my Mambo T-shirts has it, 'To Destroy the World We Had to Save It.'

'To Destroy the World We Had to Save It.' (Mambo)
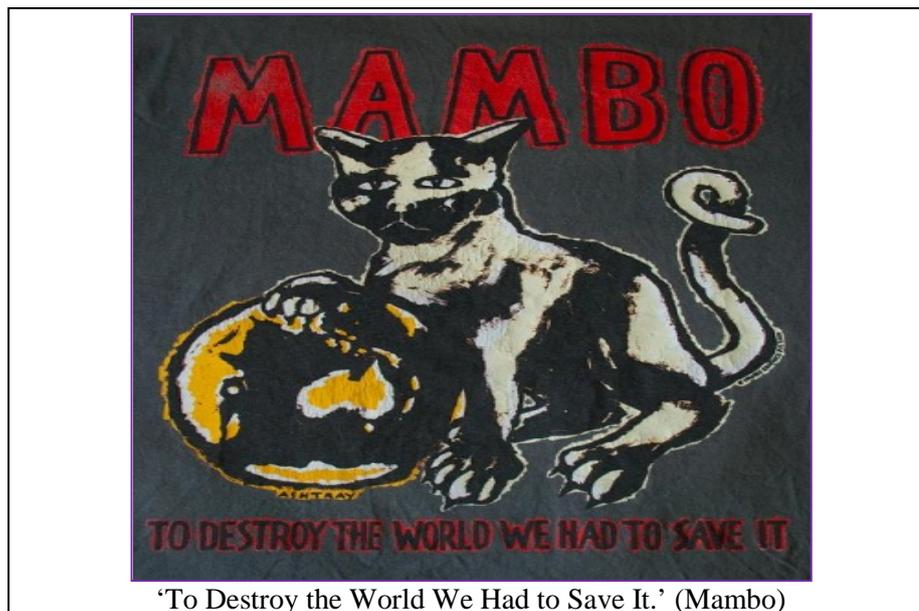
Lying Worm and Cry Baby

Before I finish, I want to scale down to the micro-level, and also to bring back the figure of the trickster, but this time in the guise of a lying worm and the human infant.

Lewis Hyde (1998: 58-61) raises the issue of *deceit* in his exposition of the nature of the trickster. He suggests that what we think of as consciousness – the mind – arises only when animal appetites are *not* pursued; when Hermes *does not* eat the meat of Apollo's cattle that he has just stolen on the day of his own birth, a self-imposed prohibition that allows mere meat (nature) to become a sign (culture). Hyde ascribes this move to Hermes' duplicity – 'only a thief' could have effected this shift. He invokes Umberto Eco's 'theory of the lie' to point out that such duplicity is the fundamental property of language itself:

> Semiotics is concerned with everything that can be taken as a sign. A sign is something which can be taken as significantly substituting for something else. ... Thus semiotics is in principle the discipline studying everything *which can be used in order to lie.* If something cannot be

used to tell as lie, conversely it cannot be used to tell the truth: it cannot
in fact be used 'to tell' at all (Eco, 1976: 7).

Hyde explains this by reference to the trickster's earliest mythical exploit, the invention
of bait to trap food:

A worm with no hook in it ... has ... no significance, but the worm that
says 'I'm harmless' when in fact it hides a hook tells a lie and by that lie
worms begin to signify... Only when there's a possible Lying Worm can
we begin to speak of a True Worm, and only then does Worm become a
sign. (Hyde: 60)

It may be counterintuitive but it should come as no surprise to find that lying Hermes is
credited with the invention of language, not least by Plato (Hyde: 75-6).

Hyde concludes that evolution itself relies on the trickster; or at least that the trickster is a
figure for turning evolutionary process into instructive story. Citing the Nobel Laureate
economist Jacques Monod, Hyde talks of two types of chance (118-21). One is path-
dependent, the outcome of gradual cumulative sequence, whether this is evident or not.
The other is a 'convergence of the twain' (Titanic meets Iceberg) sort of chance, where
independent chains of causation intersect, and random uncertainty produces something
absolutely unpredictable and therefore new.

This is the kind of chance that drives evolution – a random mutation and an 'opportunity
niche' (as Arthur calls it) meet at the crossroads. And there sits Hermes. Thus, the
trickster myth is a 'thinking machine' for telling how two (mutually incomprehensible)
systems may intersect, and how new meaning may arise from that encounter – even as
great destruction occurs: 'And consummation comes, and jars two hemispheres' (Hardy,
1915).

In short, the trickster is an anthropomorphic figure of *emergence*. Emergence is 'the
process whereby the global behavior of a system results from the actions and interactions
of agents' (Sawyer, 2005: 2).

But if there are two types of chance there must be two types of emergence. One is
endogenous, the evolution of complexity within a system. But the other type requires at
least two systems to interact, and the agent of interaction is the trickster, entrepreneur,
Go-Between. Here emergence is the product of the clash between systems.

The concept of two systems intersecting in order for meaning to emerge is the basis for
the theory of language developed by Yuri Lotman, based on his concept of the
semiosphere. He says:

A minimally functional structure requires the presence of at least two
languages and their incapacity, each independently of the other, to
embrace the world external to each of them. This incapacity is not a
deficiency, but rather a condition of existence, as it dictates the
necessity of the other (another person, another language, another
culture).

Immediately, 'interaction' is a matter of interpretation, of *translation across difference*. Elsewhere, Lotman (1990) illustrates what he means by describing the 'language of smiles' by means of which a mother communicates with her infant baby. Neither knows the language of the other, but they work things out, as they must, both for the individual survival of the infant, and the collective survival of the species.

It may be added that every baby turns trickster almost at once. Their *first* cry may be a direct expression of an inner state – hunger, usually – but the *second* cry, cognisant that the first one attracted the mother, is a lie: it says 'I am hungry' but it means 'I want attention.' Only the second cry is communication. As Eco insists, this lie is the founding move of language and of any general theory of semiotics (Eco, 1976: 7).

Structural Change

Lotman adds a new dimension, that of time, with his concept of 'culture and explosion.' Change, like chance, can be gradual and disruptive, and both types are necessary to explain this fundamental question: 'how can a system *develop* and yet remain *true to itself*?' (Lotman, 2009: 1). How can a system cope with both *succession* (of the same) and *innovation* (of the new)? For cope it must, or it faces extinction.

The answer is that cumulative or incremental change coexists with 'explosion' or what Tom Paine would have called revolution. Cumulative change is path-dependent; disruptive change is random chance. Both require openness to the possibilities of the future.

Brian Arthur makes a similar point when he argues that our thinking about change is in need of paradigm-shifting, from the 'ad hoc, case-by-case basis' of historians (i.e. the humanities) towards a means to think abstractly about structural change' (i.e. the sciences) (Arthur, 2009: 194-5). Once shifted, neither humanities nor science thinking would remain the same:

> The shift in thinking I am putting forward here is not large; it is subtle. It is like seeing the mind not as a container for its concepts and habitual thought processes but as something that emerges from these. (193-4)

For Arthur, structural change – evolution – is a 'sequence of problem and solution – of challenge and response' (196). The agent of challenge, the trickster-entrepreneur, may break the rules in order to renew the system, sitting at the boundaries between otherwise mutually unintelligible states, brokering the moment between past and future, when the infinite possibility of potential choice is reduced to the meaningfulness of present action. Or, as Arthur puts it, 'we hope in something we do not quite trust' (215).

He writes: 'This way of thinking carries consequences. It means that the economy *emerges* – wells up – from its technologies' (193-4). Therefore it exists always in 'a perpetual openness of change – in perpetual novelty' (199), a situation of 'messy vitality' (213) that can nonetheless be subjected to algorithmic analysis.

The 'two cultures' of culture and science can be brought into meaningful dialogue through the figure of the trickster, the agent of emergence, and the deceiver who provokes emergencies. The task facing cultural science is to think abstractly about creative destruction and renewal wrought by lying.

Bridging Culture and Science

The point is that culture itself is perfectly susceptible to analysis by means of the approaches that have been developing in complexity theory, systems theory, evolutionary theory, and the like.

I haven't left enough time to work through the contributions made by the writers from whom the cultural science group has drawn inspiration, which in this context would include:

- Brian Arthur on the evolution of recombinant technologies (and thence, he argues, of the economy),
- Brian Boyd on the evolution of stories (and Eric Beinhocker too on the link between storytelling and population-wide reasoning),
- Carsten Herrmann-Pillath (2010) on the 'economics of identity and creativity,' which he situates in a naturalist, externalist and neo-Darwinian framework,
- Niklas Luhmann on systems theory (and see Cary Wolfe, 2009, on how Luhmann may be reconciled with Derrida in the pursuit of posthumanism),
- Yuri Lotman on language as an evolving dynamic system, especially in his 'latest' book *Culture and Explosion* (and other writers on evolution and language, e.g. Bickerton, Hrdy, Hurford, MacNeilage, Deutscher),
- Actor Network Theory (Latour, Callon, etc.); Keith Sawyer on social emergence, and W. G. Runciman's sociological theory of cultural evolution.
- Michael Hutter on the cultural sources of newness (and economic sociology) (e.g. Hutter & Throsby, 2008).
- And numerous domain-based studies in the realms of fashion, games, intellectual property, and consumer co-creation.
- Elinor Ostrom and Charlotte Hess on knowledge commons.
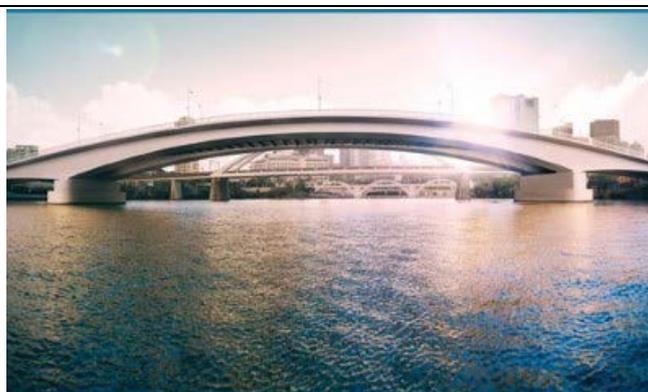
The Go Between Bridge, Brisbane, Australia[13]

It is certainly my view – shared by others in the cultural science group – that these writers and others (the list is not infinite, but it's not short) are producing the conceptual

tools by means of which we may be able to model and thence investigate the evolution of cultural systems. This is the work of the coming months.[14]

Cultural science is a Go-Between, seeking the rules that underlie messy vitality. This is an appropriate enough task for Brisbanites, where the 'Go Between Bridge' has just been opened:

But beware: as Ian Paisley, firebrand leader of the Democratic Unionist Party, once commented (cited in Francis, 2006: 19): 'a traitor and a bridge are very much alike, for they both go over to the other side.'

Notes

[1] And see: http://home.vicnet.net.au/~hwaa/hermes.html

[2] Left: Herm, ca. 520 BCE, from Siphnos: http://en.wikipedia.org/wiki/File:0007MAN-Herma.jpg; Centre: Herm at the Getty Villa, California: http://homepage.smc.edu/jones_janie/getty_villa.htm; Right: Herm from ca. 100 BCE: www.csulb.edu/~csnider/hermes.c.100BC.jpg; and see Snider (2005).

[3] http://en.wikipedia.org/wiki/Hermes_Logios_%28sculpture%29

[4] www.um.edu.mt/lib/onlinexhibitions/rare_books/Content.html

[5] 'Our first studies, published in 2003-2004 in *Proceedings of the Royal Society B*, showed how a simple model of random copying, with a small amount (i.e., < 2%) of innovation, can explain many patterns of popular culture change at the national level, including "long-tail" distributions of popularity, discussed by Chris Anderson's book (*The Long Tail*, Random House 2006). Our studies suggested that popular success does not necessarily require any inherent qualities -- it can happen just by luck through the process of people randomly copying each other. What was amazing is that such a simple model could work so well -- that at a population level, a model of random copying with occasional innovation can explain the data as well as anything else.' www.influxinsights.com/blog/article/1357/influx-interview--dr--alex-bentley--random-copying-and-culture.html

[6] 'The knowledge economy (KE) can be defined through analysis of four characteristic areas (the "four pillars" of the knowledge economy): (a) the policy and institutional framework; (b) an innovation system; (c) education and lifelong learning; and (d) information technology infrastructure and electronic development ("e-development").' (Goel et al, 2004: 1)

[7] 'The hallmarks of cultural behavior include consistency within and across individuals, variance between populations, behavioral stickiness, and possibly suboptimal performance' (Bednar & Page, 2007: 65-6).

[8] 'Crucial' = 'of the crux,' i.e. crossroads, the god of which is Hermes.

[9] See also: www.edge.org/q2010/q10_index.html.

[10] Not Quite Art aired in 2 3-episode seasons in 2007 and 2008: http://www.abc.net.au/tv/notquiteart/ For Westbury as 'cultural ratbag': www.theage.com.au/news/tv-reviews/not-quite-art/2007/10/15/1192300666820.html. and see: www.marcuswestbury.net/

[11] 'The growth of knowledge cannot be formulated meaningfully as a constellation of equilibrating forces,' because knowledge maintains 'a potential for change that is ever present' (Metcalfe, 2002).

[12] 'The dynamics of knowledge diffusion and imitation will reduce variety among firms unless new innovation is created. Central firms thus have some degree of control over their market environment which, unless they seek new innovations, is eroded as specialized innovation is absorbed by others and new market innovation is brought in, mostly by new entrants inside or outside the industry' (Gay, 2008: 79).

[13] http://bridge.mipo.jsadigital.com.au/

[14] John Banks, Jason Potts and I were commissioned in 2010 to write a book on *Cultural Science* for Bloomsbury Academic (London).

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