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Memes and narrative analysis: A potential direction for the development of neo-Darwinian orientated research in organisations.

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Short running title suggestions:

Applying memetics to organisations

A way to look for organisational genes

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Abstract

A number of authors have contributed to a diverse range of views concerning the possibility of evolutionary processes acting in organisations. Theories based on a self replicating cultural equivalent to the gene posit the 'meme' as the cultural replicator. A review of the memetic literature as part of study towards PhD empirical work has highlighted a lack of consensus in the memetic literature leading to difficulties in deciding on a method for operationalising research questions. The article describes how a dependence on the gene analogy, associated with much memetic knowledge, has led to unrecognised assumptions which are carried into memetic accounts of culture and identifies unresolved philosophical dilemmas. To achieve progress beyond the limited existing memetic empirical research a move to mainstream social science method is suggested in the form of narrative analysis.

Key Words: Meme, Memetics, Narrative, Storytelling

Background and Introduction

This paper is based on literature reviewed as part of my PhD study which investigates the possibility of designing a memetic approach to understanding the organisational culture of a small UK printing firm. I had originally approached the subject of memes from a starting perspective which was sympathetic to the value of the meme concept as a potential explanatory theory of culture but in searching for a rigorous methodology for empirical work, which could satisfy the needs of the PhD examination criteria, my viewpoint has become progressively more sceptical. Here, I describe how working with the memetic literature has led to my abduction of one potential empirical method which is *inferred* in the literature.

My background in organisations has been largely based in the sales and marketing functions of firms. However, having spent twenty years in industry I had reached the conclusion that much of what constitutes the body of marketing knowledge i.e. that which appears as the contents of most mainstream marketing textbooks is, at best, difficult to implement in the workplace and at worst, of no practical use as a method of day to day working. In fact, such marketing theory had begun to seem weak when pitted against alternative organisational orientations/functions such as production or finance, for example.

My interest in memes began when I read the theory of the selfish gene (Dawkins, 1976; 1989) during my time working in the print industry. The theory in biology made intuitive sense to me and I was intrigued by the suggestion that culture might have a similar underpinning evolutionary dynamic which could perhaps offer a refreshing alternative view of how life in an organisation may play itself out. My experience of the repetition of working practices, routines and workplace terminology seemed to lend plenty of anecdotal evidence

for repeating or even replicating pieces of culture and I remember, in particular, being struck by how I could enter an open plan office humming a tune and then hear the tune repeated back from a colleague a little later. I was motivated to investigate the possibility of memes in organisations and made the work the basis of my PhD.

In this paper, I summarise some of my insights which followed a review of the memetics literature and I suggest how a potential methodological approach might be designed. I return briefly to the basic principles of replication which underpin Richard Dawkins' description of biological evolution and then discuss the subsequent attempts to apply the same concept to culture via memes. However, it is my contention; having reviewed the various facets of the literature, that the theoretical development of memes has not been accompanied by sufficient empirical research for such a long period of time that the degree of variation in the theory means an empirical study design is not straightforward. Many assumptions are built in to the alternative stories of memes and they cannot all be accounted for at once. However, a critical review of the literature has revealed some assumptions which I feel should be ruled out of an initial empirical investigation thereby increasing, the chance of such a methodology becoming a sufficiently widely accepted approach within the social sciences to encourage and enable further empirical work and in turn more valid reflections on the theory.

Finding Replicators

In 'The Selfish Gene' (Dawkins 1976; 1989) and later in 'The Extended Phenotype' (Dawkins, 1982; 1999a) Richard Dawkins outlines a replicator orientated view of biological life where the gene is the replicator in question. The theory posits the perspective that all such

life is the product of a blind evolutionary algorithm which operates because genes evolve complex life as a result of the natural selection of some genes over others. The organisms which have emerged are no more than the survival machines/strategy combinations which the genes have discovered through trial and error in the environment they populate. The selection mechanism is that of differential survival and reproduction of organisms which results in differential survival and replication of the genes that built the organisms.

Having elevated the gene to a starring role in his story of evolution, Dawkins speculated about the assumed primacy of genes as the sole type of replicators influencing life on Earth, by postulating how an alternative replicator may also be making copies of itself via a separate but similar process of evolution leading, in turn, to an alternative complexity. The replicator suggested to 'cut the gene down to size' (Dawkins, 1999b) was a replicator that could explain those aspects of human behaviour which stretch beyond explanations based wholly on genetics, i.e. those behaviours which constitute human culture.

Memetic Theorising

Having suggested this *hypothetical* replicator and named it the 'meme' (Dawkins, 1976) a number of writers, who presumably like me intuitively appreciated the clarity of the concept, were inspired to construct their visions of how such a replicator may manifest a system of evolved cultural phenomena and how the process and its products may explain human cultures and how we experience them. These visions, notably Blackmore (1999), Dennett (1991), Aunger (2002), Brodie (1996), Lynch (1996), Distin (2005) have been accompanied by a number of applied versions of the theory, some related to organisations. For example, Price and Shaw (1998) develop an explanation of how the cultural patterns

experienced in organisations could be construed as the product of memes and Weeks and Galunic (2003) suggest the organisational form known as the 'firm' could be the product of a successful complex of memes. However, none of the above studies are based on primary empirical research. Rather, it is the usual practice to *selectively* pick examples from culture to help illustrate how memes may work and therefore convenient memes tend to be invoked to help description rather than candidates for real memes discovered in their cultural settings.

Despite a lack of the primary empirical evidence for memes which would usually be characteristic of both valid theory building and testing (Gill and Johnson, 2002), the field of study which links memes and culture has come to be known as memetics, thereby assuming in language at least, the status of a scientific discipline. Of course, genetics provides a mainstream sister science and those who have written on the subject of memetics lean heavily on genetic analogy for ideas, metaphor and validity. The notion of universal Darwinism (Dennett, 1995) lends this practice legitimacy. For example, Distin (2005) searches for cultural DNA, Brodie (1996), Dawkins (1993) and Lynch (1996) warn of viruses and contagion of the mind and Blackmore (2010) refers to cultural evolution as the offspring of a biological species. In spite of the paucity of empirical evidence those exploring the theoretical aspects of memes have not been deterred from progressively adding to theory. For example, for Blackmore (1999; 2010) *anything* which people copy constitutes a meme. Based on this assumption Blackmore (2010) has invoked yet another replicator which is enabled by the success of the memes, the teme, or a unit of information which is copied by technology alone without the need for directly using the human brain for transmission.

Problems with Memetic Theorising

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The lack of empirical pruning of memetic theory has led to wide variation in the body of memetic theory maintained by, in some cases, the rather glib truth claims, such as Blackmore's naively empirically circular argument mentioned above. Such arguments are eschewed by mainstream social science, cognisant of the reflexive nature of social knowledge (Johnson and Duberley, 2000). The resulting mass of unsubstantiated theory, in place of empirically demonstrated research findings, means there is no obvious methodology for the would-be memetic field researcher to adopt, especially a researcher who wishes to not assume the existence of memes at the outset of their investigations.

The variation in theoretical standpoints in the memetics literature can be illustrated by reviewing the different assumptions regarding human agency. Such basic assumptions obviously have major implications for the ontological and epistemological underpinning of truth claims (Johnson and Duberley, ibid) and there is a huge body of knowledge concerning issues of consciousness, self and agency which is yet to be integrated with memetics in a significant manner. See Leary and Price Tangney (2003) for a summary.

The scope for argument related to agency can be traced back to Dawkins' original explication of the meme concept. Dawkins (1976) suggests that selfishness is the defining characteristic amongst replicating entities such as genes and memes. Therefore, the concept can be taken from genes, where the gene is portrayed as the ultimate selfish entity bent only on its own replication, and applied to culture. Dawkins (1991) clearly rules out any design in biology and subsequently bases his ideas concerning memes directly on the gene analogy rather than the selective cultural examples he cites as potentially memetic.

"Just as genes propagate themselves in the gene pool by leaping from body to body via sperm or eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation." (Dawkins, 1989, p192)

So, the trend is set for basing memetic theorising on the gene analogy but from the outset unsubstantiated elements have been carried forward from biology. In referring to sexual reproduction, which is an evolved trait of *some* genes, genetic replicating machinery is carried forward to memes. There is no reason to expect that a cultural replicator would evolve the same sexual replicating machinery. Also, and perhaps fatally for memes, the selfish replicator concept is diluted for memes because Dawkins suggests people can choose their memes. This is a major departure from the foundations of the selfish gene where no design is countenanced, whatsoever.

To illustrate this further Dawkins' (1976; 1989) original vision of how memes arose and how they relate to genes is depicted in figure 1 which shows how genetic evolution led to certain animals (in particular, humans) with a brain capable of imitating their conspecifics. This genetically enabled survival strategy then enabled units of imitation to occur which could compete for recognition/attention in the human brain on the basis of their innate attractiveness in some way, i.e. they are replicators. So, a new level of replicator driven evolution began based on units such as language, fashion, ceremonies and customs, art, and engineering (Dawkins, 1989, p190).

By suggesting that memes arise as soon as the brain can achieve imitation, it should be expected that memetic evolution will control people in the same way as genes control the

behaviour of animals. There is no obvious scope, in this model of two selfish replicators, for human agency. However, Dawkins (1993) later developed his ideas surrounding memes by suggesting that they constitute viruses of the *mind* (not the brain) and the subtle change from *brain* parasite to *mind* virus which justifies the claim that humans can rebel against their memes, goes unrecognised. Here also, the difficulties of applying the gene analogy are highlighted because anyone who has ever caught a cold knows that viruses aren't limited to sperm and egg transmission. Therefore, Dawkins previous analogy used to describe meme transmission as similar to sperm and egg is contradicted without critical reflection. The result is that assumptions have been built into meme theory.

Of course, the assumption of a mind enables the potential for human agency distinct from replicators but once agency occurs memes lose their selfish replicator status and die as a cultural equivalent of the gene because they are no longer replicated due to their innate qualities. In this case there can be no neo-Darwinian process in culture although other types of Darwinian evolution, which are not replicator based, may still occur (Aunger, 2002). Indeed Aunger (ibid) criticises Dawkins' examples of memes for this reason and also points to the types of measures of meme fecundity Dawkins suggests, such as the number of people whistling a tune, as inaccurate ways of measuring the memes inside peoples brains. People can know a tune without whistling it.

To accommodate the agency issue with respect to the virus analogy Dawkins (1993) invokes two kinds of epidemiology. Firstly, descriptive epidemiology where scientists, for example, consciously choose more valid claims to knowledge and secondly, causal epidemiology where the memes are responsible for their own spread, for example religion. Unfortunately, the claims to validity for this dichotomy have yet to be borne out via the very

scientific method which Dawkins extols. Indeed, Distin (2005) criticises Dawkins for applying value judgments to replicators in culture which he is so careful to avoid when discussing the impact of genes in biology.

Memes as Viruses

Undeterred by these dilemmas Richard Brodie and Aaron Lynch both developed the 'meme as virus' analogy. Lynch (1996) defines memes as contagious ideas because they are so appealing to people they tend to be caught (like a cold) and suggests seven methods of transmission. However, the support for these assertions is extremely anecdotal and largely limited to parental influence on children and ideas which tend to encourage proselytising behaviour. The issue of whether this is due to human agency or memetic replication is not engaged with. Brodie (1996) acknowledges the question of agency but only by openly presuming no 'self' along with disavowing any claims to absolute truth, a move to subjectivist ontology which is at odds with Dawkins' realist underpinning philosophy of the replicator view of life (Dawkins, 1998). So, actually the agency issue is still side stepped in a way which undermines any rigorous philosophical grounding of the arguments but in this way Brodie (ibid) is still confident enough to suggest memes *can* be consciously chosen by a person.

"Consciously spreading ideas you consider important is one way to combat mind viruses." (Brodie, 1996, pXX)

In Brodie's account memes become viruses only when they are wrongly assumed to be true resulting in spurious cause and effect linkages which people believe because of the appeal they have to humans' genetically inherited predisposition to fight, flee, feed, and find a

mate. Subsequently, another value laden dichotomy is posited, similar to Dawkins' epidemiology dualism, where cultural viruses arise naturally and designer viruses are invented by people. However, this dichotomy cannot be sustained whilst at the same time the issue of agency is ignored because there is no explanation of who does the designating of any particular cultural trait as either naturally occurring or designed. Designer viruses also threaten the replicator status of memes as recognised by Aunger (2002) because if they can be designed then surely they can be consciously chosen. Brodie appears to divide the human species into those with agency who can design and choose their memes and those without agency that are gullibly infected. Is this a previously unknown genetic distinction or something completely new? Brodie suggests that he is capable of free will but how do we know he is not just a proselytising meme machine? What a mess!

The virus of the mind approach to memetics highlights the pitfalls of invoking yet to be substantiated elements of the genetic/biological analogy in culture. As Distin (2005), in rejecting the 'meme as virus' model points out, identifying memes as viruses presupposes some kind of memetically evolved survival machine and Distin's selfish meme theory does not allow for any such machinery[1]. Of course, the paucity of empirical memetic research means the existence, or otherwise, of memetic replicating machinery remains an open question but a question which is yet to be asked in empirical research.

Addressing the Agency Question

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[1] Distin (2005) suggests the phenotypes of genes also act as memetic survival machines.

Dennett (1991) has recognised the brain/mind dilemma, which is raised by the 'meme as replicator' perspective, as important in memetic theorising and has developed a theory of consciousness able to accommodate memes which is modelled in figure 2.

Dennett (ibid) is careful to avoid the virus of the mind perspective by noting that in his theory memes parasitize brains rather than minds and that they can be either beneficial, tolerable or pernicious to people. The resulting materialistic theory of consciousness[2], where a 'pandemonium' of various thoughts and nerve impulses struggle for expression, posits that what we comprehend as a serial stream of consciousness is actually a retrospectively experienced stream of narrative which was subject to continual editing as the various areas of the brain made their contributions.

"At any point in time there are multiple 'drafts' of narrative fragments at various stages of editing in various parts of the brain." (Dennett, 1991, p113)

This is Dennett's 'multiple drafts model' and the various competing pieces of information are the memes (Dennett, 1991).

Similarly, Blackmore (1999) addresses the agency question and suggests that a minority of memes are pernicious. Rather, the majority of memes should be considered as the basic constituents of our minds which have co-evolved with the human genome thereby influencing the development of the large human brain and our language ability.

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[2] Dennett (1991) looks to eliminate any place for unexplained 'mind stuff' in his theory. All mind related phenomena must be able to be accounted for by the material which makes up the brain.

"Indeed, the vast majority of memes (like the vast majority of genes) cannot be considered viral at all – they are the very stuff of our minds. Our memes are who we are." (Blackmore 1999, P22)

However, Blackmore's claims must be viewed with scepticism because of the naive epistemic circularity with which she justifies the existence of memes and the dependence on imitation which is pivotal to her theory but not justified in terms of a demonstrable process.

Dennett (1991, p418) develops his theory by suggesting that the fundamental tactic of humans is telling stories and the stories posit a self, a centre of narrative gravity where the words of the stories are the memes. However, as part of this model people still need to think to enable their memes so space is reserved for free will (Dennett, 2003). Blackmore (1999), on the other hand, adapts the narrative centre of gravity concept to suggest we are meme machines which experience a 'selfplex' of memes, the only escape possible being the brief glimpses of alternative conscious states via meditation. In this way our library of stories which can make itself known through the narrative centre of gravity/selfplex then act as a repertoire of strategies for managing the future. Where Brodie assumes a privileged position of free will, Blackmore suggests her writing is simply a result of the competition between memes which plays out as she types.

"It is more accurate to say that we are just human beings doing complex things that need memory and who then construct a story about a self who does the remembering." (Blackmore, 1999, p227)

Distin (2005) and Aunger (2002) both develop memetic theory which reserves greater degrees of human agency than either Dennett or Blackmore, although the theories are less well developed in this respect because the agency issue is not at the heart of the theories. Distin (ibid) resorts to the suggestion of innate mind ability and common sense, for example. However, it seems clear that empirical work and then the further theorising that it will encourage should either address the agency question or at least avoid a naive acceptance of replication at the outset.

Criticism of Memetics

The wide range of theoretical perspectives and the subsequent unresolved criticism within memetics has made the 'discipline' an easy target for critique from other social science perspectives. For example, Midgley (1979) criticised both the selfish gene and selfish meme concepts shortly after Dawkins first published his ideas and despite Dawkins (1981) reply which exposes Midgley's misunderstanding of the selfishness rhetoric used to demonstrate replication[3], the points raised about agency are still yet to be answered today despite this particular point being later reiterated by Midgely (1983).

Some critique of the fundamentals of memetics can also be heard echoed within the memetic community alongside the theoretical disagreements. Aunger (2002) is astonished that the failure to find a single meme has not raised alarm bells amongst memeticists and Edmonds (2002) suggests that the memetic community should stop the over ambitious theoretical discussion, in which it has been indulging, and do some of the mundane footwork that will actually advance the knowledge of memetic processes.

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[3] Midgley seemingly has a desire to anthropomorphise animals in some way, and this being easier to do at the organism level rather than at the level of the gene leads to her inability to consider the replicator concept clearly.

Three challenges for memetics are posed by Edmonds (ibid). Any empirical work towards satisfying these points would presumably constitute the mundane footwork of which he speaks.

1.   To provide a conclusive case study that demonstrates a replication mechanism.

2.   To provide a theoretical model for when it is more appropriate to use a memetic model.

3.   A simulation model showing the true emergence of a memetic process.

There are problems with a modelling approach at this stage in the development of memetic knowledge. Although there are plenty of theories which could all be modelled, because the extant theory is so heavily based on assumptions which would have to be built into the models to make them work, they could all show interesting results which are, however, devoid of any resemblance to how culture actually happens.

An example of how, a game theoretic, modelling approach can be applied to the meme concept in voting behaviour is provided by Conley, Toossi and Wooders (2006) and the reflective nature of the work openly highlights the degree to which variables have to be constructed on the assumptions of how replication may or may not work. In addition to this the work also includes less apparent assumptions such as a presumed dichotomy between rationality and public spiritedness, which is investigated without the acknowledgment of wider social discourse effects such as the pressure to vote because democracy 'is a hard won human right', for example. In the end the model overtly avoids discriminating between innate genetic effects and learnt effects so any appeal to memetics is diluted.

Similarly, Vos and Kelleher's (2001) suggestion of four hypotheses for memetic study also suffers from the assumption of the existence of memes combined with an inconclusive definition of memes based on a combination of Dawkins and Blackmore's meme concepts without recognising the associated inconsistencies between the two, for example, the brain/mind dilemma which overshadows and undermines such a combination.

In light of this I would suggest that any work on memetic modelling needs to be preceded by more fundamental work so the avenue for progress seems to me to be limited to the search for instances of replication (Edmonds' point 1) which would support the basic validity of the meme idea. Memes are based on the premise of replication, after all. Therefore, no assumption of memes can be included in the methodology for memetic empirical work because, as yet, memes' existence as replicators is yet to be demonstrated.

Examples of Empirical Research and its Problems

The few examples of memetically orientated empirical research published to date suffer from the insecure theoretical foundations discussed above. The following two examples illustrate some of the difficulties.

Firstly, Lord and Price (2001) use secondary data gathered from the websites of various Christian denominations to conduct a cluster analysis based on traits they attribute to the profile of each group. The traits are assumed to be memes. This is then compared to an historical account of the development of the religious groups and the clustering is shown to match the historical account of their relationships to one another, thereby failing to falsify the premise of an underlying memetic explanation. However, the work assumes memes as

replicators and the organisations as evolving entities. Despite the assumption of replication the choice of religious groupings for the analysis seems to suggest Dawkins' 'meme as virus' perspective and indeed this is supported by the invocation of Dawkins' version of the meme concept.

The assumption of the existence of memes leads to a theory laden sampling of data with built in expectations about the heredity of certain groups. There is also a later adjustment made to the data to achieve a better fit to the expected outcomes and this is only reflected upon from within the assumption of memes existence rather than as a threat to the meme concept. Similarly, there is no reporting of the strengths of the associations used for clustering but dendrograms are used to report the findings, thereby borrowing credibility from similar applications in genetics and the more secure evidence for replication in that sphere. This rather overshadows the discussion of whether such approaches should be applied to memetic or phenotypic distinctions although the existence of memes as replicators rather than theoretical constructions let alone memetic phenotypes has yet to be demonstrated, of course.

The assumption of replication obfuscates all the other explanations for the changes in religious groups. Such changes could be due to people making conscious free decisions about how their religion should be practiced or could be the result of church leaders' conscious political motives for instigating change. Indeed, Henry VII is endowed with the agency to see himself as defender of the faith but the implications of this degree of agency for the research in question, is not recognised. It would be more interesting, from a replicator perspective, to compare the stated tenets of religious groups with how people actually behave and what they individually believe, i.e. the memes in their minds (Aunger, 2002) rather than authored accounts. Also, formal accounts such as the historical record and websites, both of which could be considered as authored narratives, should be expected to reflect associated content so

without the demonstration of replication rather than its invocation there is no reason to adopt a memetic approach in favour of all the alternatives available to the social scientist.

Secondly, Shepherd and McKelvey (2009) identify their study as the first attempt to operationalise memes. Bereft of an existing memetic methodology, recent research in genetics is used to justify focusing on variation rather than selection but in doing this the existence of memes is yet again assumed before the analysis stage of the work and stated as unsubstantiated fact.

"Memes, like genes, vary and are selectively retained." (Shepherd and McKelvey 2009, p38)

Subsequently, there are serious contradictions regarding the nature of the evolutionary algorithm. It is first suggested that only variation in culture is blind, then the whole variation, selection, retention process is referred to as blind and then later it is suggested that variation can be consciously managed by people which, in turn, implies agency.

To make the assumption of memes work, a choice from all the available definitions has to be declared and Dennett's (2006) definition of memes as independent knowledge based units of meaning that can be chosen or transmitted with more or less accurate transfer with or without alteration of meaning, is adopted by Shepherd and McKelvey (ibid) from the range of definitions available. However, there is no discussion of the justification for this choice of definition over the others which are available and later support for the methodology employed is invoked from writers whose definition of memes varies from Dennett's, e.g. Blackmore (1999) who would disagree with 'chosen' in terms of the implied free choice.

As a result of the above inconsistencies the sampling method used is deployed assuming objectivity of the observer at the same time as a theory laden sampling technique is proposed. Similarly, the analysis suffers from a similar dualism because memes are located by *interpreting* participants meaning in language. Subsequently, the results fail to address replication due to the assumption of memes existing in the data and the hesitation concerning agency. Therefore, the work cannot claim to be memetic. In fact, the appeals to content analysis and grounded theory, which is inappropriate because no theory is generated, only highlight how little the apparently memetic method adds to more mainstream social science methods.

Reasons for Thinking about a Narrative Approach to Methodology

Whilst reviewing the literature which is commented upon above there is, despite the variation in the theories, a recurring theme which seems to offer a link to more established social science methodology. The link is stories/narrative and storytelling.

Blackmore (1999) struggles to maintain a theory wholly dependent on imitation and overtly expands the definition of imitation to include reading, writing and direct instruction, and storytelling. Blackmore also makes use of examples of storytelling to illustrate memetic transmission, for example, urban myths, alien abductions and near death experiences.

"Millions of people tell millions of stories everyday but most are completely forgotten. Only a few achieve urban myth status." (Blackmore, 1999, p15)

Dennett (1996) later compliments his narrative centre of gravity theory of consciousness by suggesting a macro perspective of how narrative is deployed in the social world by people as a way of navigating the social landscape. It is suggested we then use a small stock of stories as narrative schemata, with which we anticipate future events and model how to behave. The concept of schemata provides links to complexity theory, for example Gell-Mann (1994), where schemata are the manifestations of the complexity generated by evolving systems. This hierarchy of narrative effects, i.e. within brain and between people, is mirrored in Aunger's (2002) description of neuromemes, which replicate in a single brain and their 'signals' which instigate a replica in another brain. Aunger (ibid) also suggests people use life stories to create permanence from the constant flux of memetic activity but the idea of narrative is not developed further. Pratchett, Stewart and Cohen (2002) also develop a link between memes and narratives at an interpersonal level by suggesting that humans have evolved to use mental models which are based on stories. They even adopt the format of a novel to tell their own story of the theory, where humans are characterised as Pan narrans, the story telling chimpanzee. Unfortunately, they reserve an unsubstantiated place for human agency by suggesting that memes are attractive to minds rather than brains and don't develop storytelling into a narrative methodology. Of course, the suggestion that narrative is an important mode of knowing is not new to social scientists familiar with narrative studies, for example, Czarniawska (2004) links the narrative mode of knowing to innate evolved tendencies in humans, characterising humans as Homo narrans, the story telling hominid.

So, a narrative approach to memetics seems to me to be a worthwhile venture when compared to the current state of the discipline. The connection between memes and narrative has not been expressed in a form which will immediately enable empirical research but interestingly, a suggested approach can be found in Dawkins' original theorising. Dawkins

(1999a) suggests that without the knowledge of specific genes their effects can still be studied by investigating the strategies, averaged across the individuals that use them. The strategies *can be operationalised by writing them down in English, i.e. a narrative account.*

> "Instead of comparing the success of individual organisms, it is often in practice more useful to compare the success of strategies or programs, or subroutines averaged across the individuals that use them." (Dawkins, 1999a, p118)

Here is the clue which could help to open up the study of replicators in culture in a way which justifiably links memetics to genetics via a parallel study of replicators rather than an analogy to the gene. In doing so, and if replication can be discovered, an approach which is amenable to large numbers of researchers in the social sciences will be justified.

In turn, support for such an approach can be found in complexity science. Gell-Mann (1994) posits the Complex Adaptive System as the process by which 'effective complexity'[4], emerges and cites both biological evolution and culture as the complex products of such systems. When a complex adaptive system (possibly an observing person) encounters data, a schema is developed which constitutes the rules for reacting in that environment and Gell-Mann (ibid) suggests schemata are selected in light of the feedback encountered. Importantly, the complexity in a schema should be recorded and measured by writing down, in English, the regularities which are embodied in it. The congruence of the perspectives outlined above is shown in figure 3.

Conclusion

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[4] Effective complexity is the order observed by a complex adaptive system excluding data which has not been incorporated as order.

If Dawkins' vision of a cultural replicator suitably able to cut the gene down to size is to be realised then perhaps a clue to how to proceed towards finding examples of such a replicator can be found in returning to the core characteristics of replicators. The empirical work on memes should focus, in the first place, on identifying instances of replication in culture. Until examples of memes can be found, memetics will remain an impotent body of knowledge and speculation. The biological/genetic baggage must be stripped away from memetics so subjects, such as the possibility of memetic replicating machinery, including memes as viruses, or the assumption of replicator based heredity in religions, can be safely shelved for the time being.

An intuitive liking, such as my own, for genetic theory is not sufficient justification for carrying forward genetic theory into culture but intuition is a good source of the motivation needed for sustaining a systematic and rigorous exploration of how culture may emerge. If memetics is to be considered a useful addition to the social sciences, which can engage questions of culture whilst reflexively recognising its inherent claims to the nature of epistemology and ontology, then a feasible and justifiable methodology for empirical research should be adopted. The candidate I propose for this role is narrative analysis. The key factors underpinning my proposal are:

- The seemingly unavoidable references to stories/storytelling and narrative which appear in the literature.
- The narrative orientated accounts of self and consciousness which show how units of culture could be conceived.
- The suggestion of written (narrative) accounts to illustrate replicator strategies

- The link between narrative accounts and measures of effective complexity

- The body of knowledge concerning narrative research is well developed and provides a rigorous approach to research which does not presume memes' existence but acknowledges potential links to innate ways of knowing.

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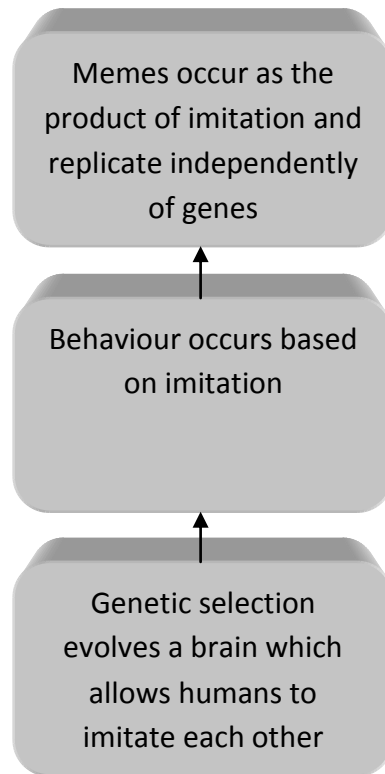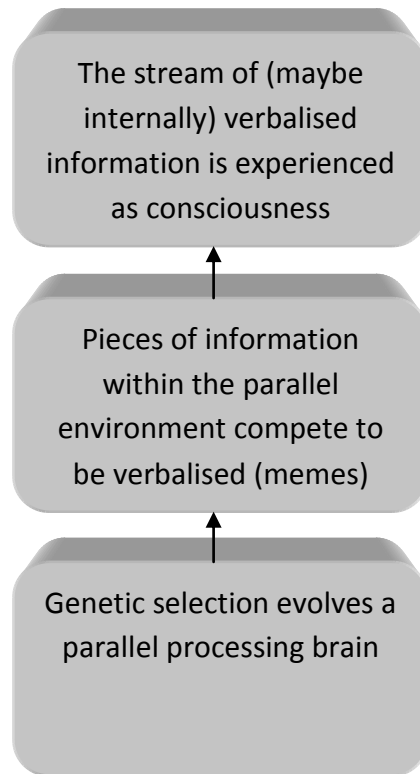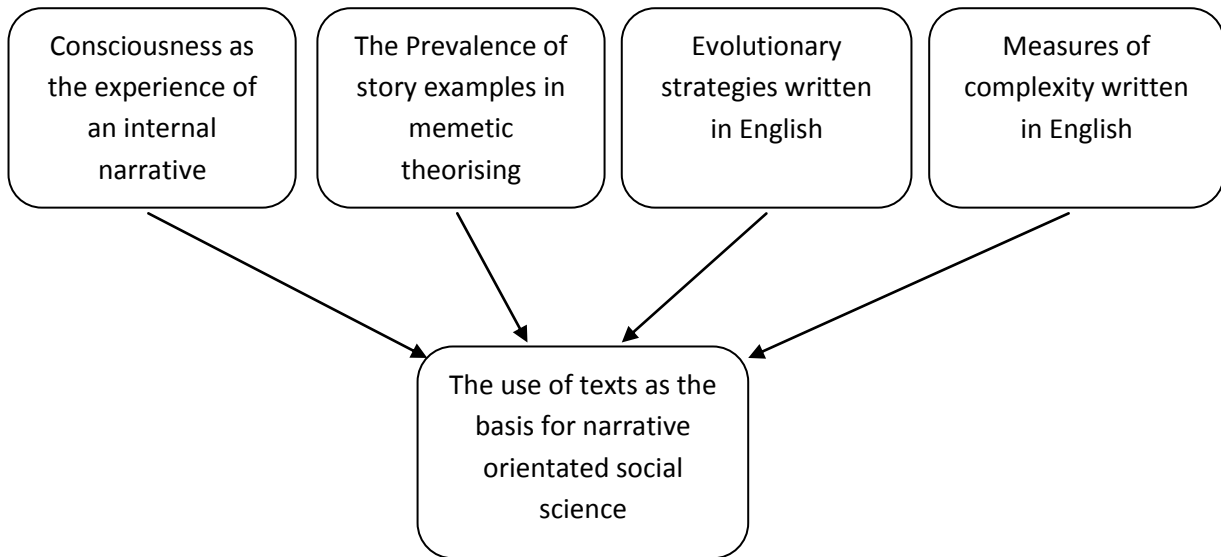
Figure 1

Figure 2

The stream of (maybe internally) verbalised information is experienced as consciousness

Pieces of information within the parallel environment compete to be verbalised (memes)

Genetic selection evolves a parallel processing brain

Figure 3

Figure Captions

Figure 1 Dawkins' version of how memes arose, adapted from Dawkins (1989). A genetically evolved ability to imitate led to replicating units of cultural information which then began their own process of evolution.

Figure 2 Dennett's view of the memetic process by which humans experience consciousness, adapted from Dennett (1991). Consciousness is the product of the retrospective experience of our parallel processing brains.

Figure 3 The congruence of ideas which suggest a narrative approach to memetics.