Memes: A Literature of Hogwash

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No one doubts that culture evolves. How that happens, however, is a matter of significant contention. Since the release of Richard Dawkins' 1976 bestseller *The Selfish Gene*, some philosophers, anthropologists, and communications scholars have popularized the notion that it happens through a cultural analog to genes, which Dawkins named "memes." Based on what looks like basically an afterthought in Dawkins' book, a number of anthropologists, linguists, psychologists, biologists, and even a few philosophers have run with the concept of memes, not as a universal Darwinian account—even they aren't going that far, but as a serious and significant part of the explanation of how culture changes. Although Dawkins himself has backed away from the notion of memes, or at least expresses himself very ambiguously these days with regard to them, a large literature has arisen which argues that culture evolves in a largely Darwinian fashion, and memes are the replicators. Already, in fact, many refer to "the science of memetics." We'll return to this point below. In the meantime, I want to try to give a charitable read of memetic theory, and consider whether it meets the requirements for a useful explanatory tool. Ultimate, I will argue that it does not, that other explanations work better, at least in the particular case that I will present.

So, what is a meme? Not those little square pictures with words that we all see making their way around Facebook (although that usage was derived from the memes that we're addressing here). The memes that we're talking about here are instead characterized as a unit of cultural transmission, or the replicator of culture. The examples that Dawkins famously gave were "tunes, ideas, catch-phrases, clothes fashions, ways of

making pots or of building arches."[1] Although the number of items included in the meme family has grown over the years, the nature of the collection remains the same: they are modes of acting, skills, ideas, practices, styles, and beliefs: essentially immaterial things. Despite this fact, the analogy of memes to genes was meant to be taken very seriously, and very physically, understanding mental things as brain things. About this Dawkins says, "Just as genes propagate themselves in the gene pool by leaping from body to body via sperms 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[2]." This brain-jumping business is meant literally. Dawkins quotes N. K. Humprey's assertion that "memes should be regarded as living structures, not just metaphorically but technically. When you plant a fertile meme in my mind you literally parasitize my brain in just the way that a virus may parasitize the genetic mechanism of a host cell."[3] And Susan Blackmore, perhaps the most prominent defender of memes (at least she is the person chosen to do the TED talk on them) states that "my inner self, which seems to have consciousness and free will, is in fact a memeplex created by and for the replication of memes."[4] Memes are thus said to be realized physically in the nervous systems of people, and, of course, like Dawkins' selfish gene, acting for their own sakes. So, if you were already uncomfortable thinking of your body as a vehicle used by your genes, now you can just give up on the concept of self altogether, as your very thoughts are just a self-created vehicle used by immaterial entities in their struggle for continued existence.

But perhaps we shouldn't worry so much just yet, for there are many obstacles to making good sense of the alleged operation of these entities. To begin with, even if the analogy of memes to genes were strong, the representation of genes involved is incorrect.

Genes don't replicate themselves, or *do* anything at all. They are not actors. Genes don't copy, they are copied. So, if memes are analogous to genes, one thing that isn't true of them is that they are going around replicating themselves., much less creating minds through which to do so.

The strength of the analogy of memes to genes is questionable, however, not the least because it is not clear that we can even construct a meaningful concept of memes. This "unit of cultural transmission" explicitly includes, according to its defenders, myriad greatly heterogeneous entities, which creates the puzzle, for one thing, of its scope. How much of a cultural practice, for instance comprises the unit? While defenders of memes say that the size of genes also varies widely, and that where they stop and start is ambiguous as well, we do know some things about the scope of genes. We k now that they are smaller than chromosomes, for instance, and that they're stored in DNA molecules. On the side of memes, nothing clear has been suggested about either their size or the medium through which they are passed from generation to generation, or group to group. According to Susan Blackmore, it doesn't matter; with respect to what counts as the relevant unit, she assumes that as long as something is replicated, memes can be counted as replicators. The first four notes of Beethoven's 5th symphony is a meme on her view, but so is the whole symphony. Some words are memes, but so are some myths and legends. What kind of sense can be made of a replicator that can equally be a hairdo, a religion, and an economic system?

Perhaps no measurable unit of culture even exists. Practices, ideas, and fashions might only be what they are within the context of a whole. Culture, that is, may be a single interwoven entity. If that's the case, then there are no units to be replicated to

begin with. Culture may well evolve, but as an integrated entity, shifting like the waves on the ocean, rather than a like a species, through differentially fit changes happening in individuals. On the other hand, culture may be an emergent phenomenon, that is, a result of groups of individuals, but an irreducible result, not traceable to the views, beliefs, and values stored in individuals' brains. Again in this case there would be no individual "things" to be replicated, because alleged memes would, as emergent, occur at the wrong level of analysis to have them jumping from brain to brain. The very notion of units of culture read as particular neural patterns of connectivity jumping from brain to brain in fact raises another problematic issue—whatever culture is, it comes from the brains of creatures (not just humans, by the way, but also other primates and some birds, at least) that simply don't have enough genes in their genomes to specify the neural connections that would be necessary for it to actually be transmitted from generation to generation.

For this reason, and after Peter Godfrey-Smith pointed out that replicators have to *replicate*, that is, create something new, many memeticists moved away from the replication model to an imitation model. In response to charges of disanalogy with genetic replication, some defenders of memetics have shifted ground, now arguing that cultural evolution is more complex than biological evolution, that cultural evolution carries both Darwinian and Lamaarckian characteristics. That is, they say that memes are reproduced by imitation or by "contagion," rather than by the kind of viral infection described earlier in the words of Humphrey. Even Dawkins was ambiguous about what he thought was the mechanism of action used by memes, for he himself characterized the brain leaping that he described as something that could in a broad sense be called imitation. In defense of the dual-mechanism view, Susan Blackmore distinguishes

between “copying the instructions,” the coding model of replication, and “copying the product,” or the imitation model of replication, sometimes characterized as a kind of transmission by contagion. I’m not even going to address the notion of transmission by contagion, because that representation of an alleged analog to genes is just too metaphorical to try to parse. As for imitation, it need not involve any adaptors performing independent recognition processes, as genetic transmission of information does. That is, it is missing a step. Imitation can be accomplished with no signaling happening at all. Signaling involves *meaning* in an important sense; it involves recognition at both ends of the transmission, and so requires adaptors, in addition to something that is “encoded.” Therefore, if memes are supposed to explain the most obvious examples of social coding, including language, morals, and law, then they are total failures. Conceiving of memes as transmitted by imitation does have a benefit here, though, since memeticists don’t scruple at appealing to Lamarkian evolution as well as Darwinism. Lamarkian evolution at a cultural level would explain lots of things, particularly those such as developing new skills, methods, and technologies, and imitation is just the right mechanism to make this work. But if that is the understanding of replication that defenders of memes accept, then they have to admit that whatever they are doing, they are not developing a science parallel to genetics.

And maybe they ought to just take off in their own direction anyway, because in any case, cultural elements seem to be simply categorically inappropriate for transmission by memetic evolution, despite Dawkins’ explicit claim to the contrary. Cultural elements don’t possess the properties fundamental to the mechanics of biological evolution, in terms of variety, heritability, and fit, nor do they evolve in patterns even roughly similar

to biological evolution. Admittedly, there is no problem with the feature of variety, or introduction of change into the brains of the carriers of memes. In fact, that's part of the difficulty--everything that we do changes the brain, so it seems that here we have an explosion issue. This is not to mention that brains are processes, changing constantly throughout from the time it begins to form from stem cells, so that there aren't actually any structures that we could point to as "holding' these memes. If we are to say that neural firing patterns are doing the job, as with all the rest of our thoughts, feelings, and beliefs, there is so much variety in how individuals instantiate them that it is difficult so see what it is that they share. What are the units here that we could call 'cultural'? Well-known philosopher Daniel Dennett, a familiar proponent of memes (at least in some places—*Consciousness Explained* and *Darwin's Dangerous Idea*—in others he is more critical) suggests that "what is preserved and transmitted in cultural evolution is *information*—in a media-neutral, language-neutral sense. Thus the meme is primarily a *semantic* classification, not a *syntactic* classification that might be directly observable in "brain language" or natural language."[5] This means that the memes in question might be realized in any number of substrates, from hair to paint blobs, to ones and zeros on a silicon chip. But that point raises another serious question: if memes are not syntactic units that could be observed, how could memetics claim to be a science? Despite his supporting the memetic perspective in at least two of his most widely read books, Dennett himself here provides perhaps the most devastating argument available to the whole proposal. Even if you favor the existence of memes, you can't have memetics as a science, and *a fortiori* not as a science analogous to genetics, for it has no observables.

Because of the apparent impossibility of a science of memetics characterized as mental entities, some memeticists have rejected that model in favor of a behaviorist version. On this view, it is behaviors' replicating themselves that drives cultural change. Behaviors, it is true, at least can be counted. But again the problem of just what to count as a behavior arises: when I walk into a room and flip the light switch, am I just flipping, or am I turning the light on, or am I frightening the intruder? All happen, but which one would be the countable behavior? The case is even worse if we identify artifacts as the replicators of behavior—while artifacts can clearly be counted, on what conception can we take seriously that they replicate themselves? What is more, when memes get together (think of different movie genres or political platforms, or religions), they do so serendipitously, and even accidentally. They can recombine back and forth, across eras, and laterally, among contemporaries. In fact, the vast majority of cultural change seems to be transmitted laterally, within generations, through war or economic interactions, in the old days, and via social media now, rather than vertically, whereas biological evolution occurs by constant divergence, never returning to earlier stages. Clothes fashions, hairdos, and political institutions cycle; eyes and hearts don't. The topologies of these two kinds of change are completely different. Something that changes biologically does so through accumulated mutations in the face of particular selection pressures, and gradually enough so that those factors can be traced through specific lineages. With memes, though, change happens far too quickly to be seen in this way, and in any case cultural change often happens as a function of mere coincidence, associating or combining in different individuals or groups in unique ways. Given this evolutionary structure, it would hardly seem possible on the memetic account for any

culture to have long-held, stable traditions, which many obviously do. Not only that—some cultural mutations are effected consciously, as when Hitler rose to power or when Mao's Cultural Revolution took place in China. This is hardly a model of blind evolution driven by mutations that stick because they happen to provide some kind of advantage relative to the environment in which they arise.

It's not clear, then why Dennett of all people would favor the memetic approach. One would think that taking memes seriously as an analog to genes would mean at the very least that these entities should share the hallmark characteristic of genes, of employing a syntactic coding language. On any understanding of memes, though, there is no set of rules establishing a correspondence between objects of two different worlds. Whereas genes encode in the syntactic language of the relatively stable DNA molecule, and computer viruses are encoded on chips in the syntactic languages in which they are programmed, if Dennett is right that what is preserved in cultural evolution is *information*, then no such code even COULD exist through which memes could replicate. With no code script, says Luis Benitez-Bribiesca, "a mutation, which is nothing else but a change of code, could not take place." Semantic content could be realized in anything from architectural materials to religious practices to clothing to words and melodies, and with no systematic set of rule-governed symbols. But with no rules of transformation, fidelity in replication would be a lost cause. And it is, with respect to cultural entities; all we have to do to see that is play one round of the children's game "Telephone." For this reason, Benitez-Bribiesca characterizes the memetic approach as "nothing more than a pseudoscientific dogma encased in itself"…and worse, one "that poses more confusions than solutions for the study of consciousness and the evolution of culture.[6]

Finally, and perhaps sufficient on its own to defeat the project of memetics, is the fact that it flagrantly violates Occam's Razor. It would be completely otiose to appeal to a non-empirical, metaphysical entity to explain cultural processes, when every human activity and artifact can that comprise culture be explained naturally, without appeal to anything like memes. Ordinary processes, at bottom biological can account for learning and transfer of ideas and practices at every level of sophistication. Memes, then, do no work, and as such, despite their being advocated by many good thinkers, provide nothing but just-so stories for a specific set of examples.

Why spend so much time on a bad theory, one might well ask at this point. Why not just leave advocates of memes alone and in the dark? Because we are experiencing a global epidemic of addiction to drugs, foods, and video games, and one way of explaining how this situation has arisen so quickly has been through appeal to memes. The addiction meme itself, some say, is spreading itself ever more broadly worldwide. One advantage to considering memes as an explanation of the rapidly-growing phenomenon of addiction is that the strength of the approach is that it does have a story to tell about the rapid transmission of cultural practices, institutions, and even problems. From the perspective of the selfish meme, it doesn't matter that the style of living that involves serious attachment to an increasingly wide variety of substances and activities is damaging to its hosts. As long as the meme itself flourishes, the story goes, its goal has been met. It is this coming apart of the flourishing of the organisms or cultures and the flourishing of memes that has convinced some thinkers that memes are to be understood on the "selfish gene" model, despite the fact that that characterization misrepresents what happens even in biological evolution.

But it seems that a story that more closely connects to the people who experience addiction (I'm not sure that I'd even necessarily say "suffer" anymore, for some people clearly enjoy their addictions) would better capture the phenomenon. And I have such a story. On my account, addiction is an emergent phenomenon, dependent on complex and dynamic systems that include coding at many levels. We know, for instance, that heritability accounts for about 50% of proneness to addiction, and that stress hormones present in the mother during gestation also factor into a person's vulnerability. But human brains are slow to develop, requiring two years after birth to finish growing, and more than 20 years to fully mature. Throughout this time, but particularly in the first several years, they depend for normal development upon stimulation of just the right kinds, in both their internal and external environments. Rushes of dopamine and endogenous opiates, as well as oxcytocin and other chemicals flood synapses in certain parts of the brain every time a baby's caregiver engages with her, which both motivates the baby to seek further interaction and causes her to code certain faces, objects, and events positively. Stress, though, such as that brought on by separation from a caregiver, or by interaction with a highly stressed or an unresponsive caregiver, reduces the amount of the relevant neurotransmitters available, which in turn reduces the development of dopamine and the other pleasure-related receptors. Because the baby couples with the caregiver at first in getting soothed when in distress, the quality of the caregiver's state and actions significantly influences the way in which the baby's nervous system develops. This has been shown repeatedly in rodent, human, and other non-human primate studies. Because we are talking about complex dynamic systems, very small changes in inputs at certain points can make huge differences further downstream. So,

since everyone's sensory apparatuses and emotional processing systems develop uniquely, with differing degrees of sensitivity, the same degree of environmental stress will code actions, people, and events differently for different individuals. The same physical encounters will then carry different meanings: "a hug feels tight and *secure* or tight and *frightening*; a surface feels cold and *aversive* or cold and *pleasant*; and a mobile looks colorful and *interesting* or colorful and *frightening*."[7] This sort of psychological coding of experience continues throughout our lifetimes, and always within a strongly influential system of social codes

Everything we experience is affect-laden, and so whether we code objects and events with positive or negative valences is more than a little bit important to how we build the world of our experience. For those who are regularly stressed or suffer trauma, the setpoint, or norm, of the feeling of well-being is much different than it is for those who have a calmer, more integrated understanding of themselves in the world. The story of addiction, then, has much to do with meanings. The world as we know it is gradually carved out from an undifferentiated buzzing multiplicity, over a lifetime. The world that we experience as adult intellectuals has only a little in common with the world that we lived in as teenagers, which was very unlike the world that we lived in as young children. The world for any individual emerges as an increasingly complex and increasingly defined system of meanings, as we develop and have more experiences. Important here is that it is a *whole world* that emerges for each individual, in which things have the meanings that they do because of and within the context of their relationships with everything else in the world. And a world in which sensitivity to such stressors as isolation plays a big role (isolation is the single biggest stressor for humans: social

separation engages a deficit-triggered motivational system in primates that outweighs even food and water deficits) is a world in which pleasure-creating dopamine or endogenous opiate floods are of great value, because the difference between feeling horrible and feeling great is far greater than the difference between feeling secure and peaceful and feeling great.

But let's consider the kinds of isolation to which young people in particular, but all of us in general, are increasingly exposed to: first in school then in work we are encouraged to engage in competition (in fact, we can't avoid engaging in it). The value of competition in capitalism is obvious, and assumed, but the extent to which it affects us psychologically is not often considered. The whole idea in competition is to single oneself out, to stand out from the crowd. While certain kinds of competition can be fun and entertaining, the prevalent focus on competition to get into the right schools, to earn top grades, to get the job, sets up a stress reaction that could lead one to seek relief. We also experience isolation in our current culture because of the increasingly alienated nature of our labor. Without even mentioning family farming and other clan-based ways of making a living, even in the industrial age, particularly after the union movements, when people got jobs they kept them. People retired with pensions from companies that they had joined as young adults. Now, however, an individual can expect to make 8 major career changes over a lifetime. With work increasingly contracted for short terms, not only is one deprived of long-term relationships, but one is additionally stuck in chronically insecure and competitive conditions. Just consider that in 2014 Oxfam reported that the 85 richest *individuals* on the planet owned as much of the world's

resources as the poorest half of humanity combined. Growing economic inequity and distress cannot be without its effects, and proneness to addictive behaviors is one of them.

Finally, we experience isolation in our increasingly social-media driven society simply as a result of our being in front of screens for much of our day, rather than face-to-face with humans. Easy access to others via email, text, SMS, and a growing variety of social media gives us the feeling that we are connecting to people when we really aren't. We get skewed, unreal pictures of other people's lives through seeing only what they want us to see on Facebook, which has the result, according to several psychological studies, of making us feel like our own lives are somehow inferior. And in the United States at least, online access to nearly everyone (and particularly everyone at school), 24 hours a day, has brought bullying to a whole new level. Cyberbullying, as it is called, has become so pervasive, and it is so damaging that the U. S. government has set up a website and blog to address the problem. In the gaming community this has even extended outside the already vicious virtual world, through "voxxing", the practice of giving someone's personal information out to thousands of people as an intimidation measure. This practice has caused people to move, change jobs, or even go into hiding. Another practice, called "S.W.A.T.T.ing" involves calling in a very serious but fake emergency to the police, spoofing the phone number of the victim, who then has police with assault weapons show up at her home, putting everyone involved in danger. With all of these kinds of alienation and isolation increasingly encroaching on our communal lives, it is no surprise that more and more people are seeking their dopamine and opiates from substances and rewarding behaviors, such as gambling, video games, and sex.

Another factor contributing to the upsurge in addiction rates is the power of pharmaceutical companies, whose products are currently the fastest-growing kind of substance addictions. Money plays a significant role in the story of addiction. According to the U.S. Center for Disease Control, 44 people die every day from prescription opioid use, three times as many as die from heroin, meth, and cocaine combined. In 2012 drug overdose was the leading cause of accidental death. And to whose advantage is that? Well, consider that in 2010 Novonordisk earned 2.67 billion dollars in sales, while in 2009 Bristol-Myers Squibb enjoyed 18.8 billion dollars in revenue. The rate of rise in profits, though, is perhaps even more telling. Eli Lilly's profits, for example, rose from 875 *million* dollars in 2003 to 23 *billion* in 2010. We don't need to posit memes to account for the exploding addiction phenomenon given these numbers.

In many nations these companies are allowed to advertise directly to consumers, increasing their power significantly. But even without those advertisements, affluent nations' citizens are bombarded constantly by pitches for products encouraging indulgence, in everything from chocolates to beer to vacations to automobiles. Meanwhile, and sometimes within 15 seconds, messages are sent that one ought to be fiscally prudent, healthy, and in shape, creating a cycle of contradictory demands for consumer goods. These market-created needs encourage binge-and-purge types of thinking, and in an increasingly isolating and alienating environment, opens the door to addictive thinking and behavior. Comfort and relief, when they can't be found in social relationships, are sought in everything from gambling to drugs to food.

So, to sum up this argument: we have an increasing worldwide epidemic of addiction currently manifesting. Some writers believe that an appeal to a gene-like

replicator is the best way to account for this and all other cultural evolution. While there some advantages to appealing to these entities in terms of accounting for the speed of cultural change, even when the flourishing of the practices and ideas comes apart from the flourishing of the individuals who embody them (the "selfishness" of memes), not only is the memetic approach unnecessary to explain these phenomena; it is moreover incoherent. In the case of addiction we have to simply give up the idea of looking at memes or any other single cause, in favor of seriously treating the emergent phenomenon as arising from a complex dynamic system of interacting forces, approachable at a number of levels of analysis, and all of them natural. I believe that we'll find something similar to be true in other cases.

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[1] Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976), p. 206.
[2] Dawkins, p. 206.
[3] Dawkins, pp. 206-207
[4] Susan Blackmore, *The Meme Machine* (Oxford: Oxford University Press, 2000), p. 41.
[5] Daniel Dennett, *Darwin's Dangerous Idea: Evolution and the Meaning of Life* (New York: Simon & Schuster, 1995), pp. 353-4.
[6] Luis Benitez-Bribiesca, M.D. "Memetics: A Dangerous Idea" *Interciencia*, (Jan, 2001), Vol. 26 No. 1. Pp. 29-31
[7] Greenspan and Shanker (2004), p. 48.