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The Problem and Potential of Memetics

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Memetics, in kinship with evolutionary psychology, has arisen as a relatively new Darwinian approach to understanding language, culture, and the human mind, where memes exist as cultural and mental replicators analogous to genes. In its extreme versions, memetics purports to give a total explanation for the origin, grounding, and functioning of cultural and mental events, yet ironically, memetics is rife with conceptual problems and utterly lacking in empirical support. Nevertheless, in spite of the serious technical issues and the unconvincing over-extension of the idea, modest versions of the theory might potentially enlighten our understanding of cultural transmission and the reproductive success of certain ideas. Furthermore and most importantly, since radical memetics presents an aggressive, increasingly popular, and absolutely materialistic conception of human nature that is vociferously anti-theistic, Christian scholars who wish to understand and critique pivotal academic and cultural trends will benefit from understanding the problems and potentials of memetics.

With the recent emergence of Darwinian approaches to virtually every possible academic discipline, evolutionists have proclaimed this the Age of Universal Darwinism. Riding this trend, concerning the study of culture and mind, one Darwinian approach, called memetics, employs the concept of "memes" as cultural and psychological replicators analogous to genes—the biological replicators. Memetics, therefore, is in a sense Darwinian social psychology; however, despite the number of bright memeticists, their bold rhetoric of scientific arrival, and any explanatory potential memetics may possess, it faces numerous theoretical and empirical dilemmas before it can attain true scientific status. These technical problems, some of which are discussed in this paper, may appear superficially insignificant at first glance. However, in relation to an expansive list of disciplines, including linguistics, anthropology, sociology, psychology, and theology, memeticists have made far-reaching claims that impinge upon such vital concerns as the origin of human language, the meaning of personhood, and the grounding and validity of theistic epistemology—as opposed to materialistic epistemology. Put bluntly, in the very words of their more moderate colleagues, some evolutionists are "hyper-Darwinian" (Gould, 2001) "missionaries . . ." placing "little value on empirical evidence . . . " who wish to explain the world and convert it to the "eternal principle of natural selection" (Nelkin, 2001). Therefore, considering the important issues at stake, Christian scholars and anyone desiring to comprehend and critique pivotal academic and cultural trends, will benefit from understanding the challenge that memetics poses to a theistic worldview as well as the limited potential it may have for understanding the psychology that underpins ideational transmission and related processes of cultural change.

Although the idea of memetics has been around for about 25 years and has attained a certain wide recognition in academic circles, a strong consensus is still lacking regarding its actual *status as science*. Moreover, it remains to be seen what real contribution memetics can make to our knowledge of the universes of culture and mind; two subjects that it has especially claimed to illumine. Aunger (2001) says that scholarly opinion regarding whether memetics can become a real science of culture ranges from enthusiasm to disdain. Ironically, my opinion of memetics encompasses both of these feelings, and in this paper, after providing a background critique on basic memetics and its more radical incarnations, I will focus in depth on three problem areas and one area of potential regarding memetics. These areas include aspects of memetics that are: (a) ill-defined, (b) misguided and misin-

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formed, (c) unhelpful and unscientific, and (d) potentially helpful in understanding language, mind, and culture. It should be noted that though the majority of this paper outlines a skeptical view of memetics, the goal is positive–to highlight ways in which memetic theory might better elucidate our understanding of language, culture, and the mind.

Basic Background: Where are the Real Memes?

For Dawkins (1976, 1999), the originator of the idea, memes are units of culture that self-replicate with a life of their own. Blackmore (2000) says, "memes are stories, songs, habits, skills, [and] inventions" (p. 53). Hence, memes are the replicator analog to genes. Lynch (1998) gives a more formal definition of a meme: "A memory item, or a portion of an organism's neurally-stored information, identified using the abstraction system of the observer, whose instantiation depended critically on causation by prior instantiation of the same memory item in one or more other organism's nervous systems" (Thought Contagion, Concisely Defined section, para. 2). Durham (1991) also gives a rigorous rationale for memes and careful definition of a "cultural unit" where (a) information actually affects behavior; (b) information inheres and transmits itself in a duality or multiplexity of means; and (c) information takes shape in discrete bodies and gets transmitted in coherent units. These definitions all fit within the mentalist school of memetics, which beside the "meme as gene" school, also includes the "meme as germ" faction. However, besides a mentalistic understanding of memes, there is also a behaviorist understanding, which reduces memes only to observable artifacts and behaviors in order to be the focus of empirical work. In short, it appears obvious that, as Aunger (2001, p. 7) says, there is no "standard codification of the concept."

Moreover, besides the problem of standard codification, there are also numerous empirical problems facing memetics. For example, memeticists have yet to produce truly empirical results, and this problem is intensified by the fact researchers will need to design ingenious experiments in order to obtain such results. In this slippery empiricism, where not only memes but also methods for finding them remain evasive, *the blunt fact is that researchers have not yet found any memes or any mechanisms for their replication*. Moreover, as mentioned above, some memeticists claim there is an independent replicator dynamic for cultural change that is at least partly separate from human intentional and intelligent agency; however, elusive evidence is lacking for this as well. Lastly, this search for putative memetic bits of culture is made all the more complex by the fact that culture is a comprehensive and consistent totality of elements (and thus intrinsically hard to define and reduce). Hence, in spite of the claims of some leading memeticists, it is highly dubious that memetics will ever become an all-encompassing theory of culture and the minds that produce it. Nevertheless, memetics could still benefit from small empirical successes that might come from a more modest agenda.

Basic Background: Memetic Diplomacy, Pragmatism, and Mechanisms

Besides these empirical problems, there are also diplomatic problems facing the field. For example, some meme research has alienated anthropologists and other scholars in the humanities for failing to enjoin the vast literature on culture and the mind. This apparently willful ignorance is complicated by the fact that memeticists and some Darwinists make grandiose claims without empirical results. This rhetoric of scientific arrival combines itself with the failure to recognize that ravenous reductionism is the opposite of what we may need to fully understand the complexities of cultures and the intelligent minds that create them. Hence, the allegation is justified that memetics is another attempt at the colonization of the social sciences (Rose, 2001), following the tradition inherent in social Darwinism, sociobiology, and evolutionary psychology. For memeticists to escape this already merited criticism, they must avoid this diplomatic and tendentious deficiency of neglecting other disciplines in the future. If this were not enough, some aspects of radical memetics tend to confuse metaphysical presuppositions with empirical conclusions. For example, as I will discuss in more detail below, the eliminative materialism of radical memeticists (Blackmore, 1998; Dennett 1995), is not a conclusion supported by (still non-existent) empirical memetic research, but rather a philosophical presupposition conflated in the confused science of some materialists who utilize Darwinism to promote a metaphysical agenda. Thus, this confusion between philosophy and science, and its extreme reductionism applied to culture and mind has also alienated some scholars in

sociology, anthropology, and psychology. However, most of all, it often serves as an empirically and logically unjustified assault on theistically based world views. Therefore, it alienates scholars whose disciplines relate to theology and who could benefit, for example, from potential insights into how theological ideas spread through culture memetically.

On the brighter side and in spite of these serious problems, philosopher of science David Hull (2001) still suggests that the standards for memetics may have been set too high, for example higher than even now established sciences could attain in their early stages. Thus, Hull, while ignoring the diplomatic issues, urges memeticists to postpone definitional concerns and concentrate on getting empirical data, which could help dialectically, refine conceptual conundrums. He, thus, positively advises memeticists to develop their theory in the context of testing it, suggesting specific goals. For example, he urges memetics to generate a memetic theory of conceptual change; attempt to reconstruct conceptual phylogenies in memetic terms; develop an understanding of the mechanisms of memetic transmission, especially regarding replication and relevant environmental interactions. However, Hull also provides an important caution, for he acknowledges that meme researchers must remember that information theorists cannot distinguish between the replication of information and its implementation. Hence, memeticists will need to clarify the difference between memes and memetic phenotypes.

Besides Hull's encouraging assessment of memetics in spite of the aforementioned basic empirical and diplomatic problems, there are still more serious concerns for memetics, especially as they relate to what has been called the "radical memetics" of Susan Blackmore, (1998), for example. To a degree, Blackmore can be credited with the level of popularity and scholarly debate on memetics today. However, many consider her views radical because of the following issues. For instance, Blackmore claims that imitation is the sole mechanism for memetic replication. However, there are many problems with this claim. Imitation cannot account for the more complex processes of how concepts are transmitted abstractly, such as through recombination, invention, deduction, induction, and abduction. Moreover, counter examples abound. Conte (2001) shows that the opposite of imitation may cause cultural trends–where people behave a certain way because they do not want to imitate others. Sperber (2001) claims that localized instructions, instead of blueprints, can transmit culture. Also, Boyd and Richerson's (2001) work incorporates other Darwinian population processes, besides natural selection, which are not based on replication and may cause cultural evolution. Hence, it will be prudent for scholars who wish to apply the memetic approach not to over-limit their research by focusing only on imitation, but also to look at other means of replication.

Background of Radical Memetics

Perhaps Blackmore's "imitation memetics" is radical because it rests on incoherent and baldly conjectural assertions. However, in addition to these basic difficulties with Blackmore's approach to memetics, her truly radical views are much more problematic. For example, she claims that without the memetics, evolutionary theory would fail to account for the complexities of culture and the mazes of the mind. This is a rather daring claim because other reputable scholars have applied evolutionary principles to culture evolution and change (Boyd & Richerson, 1985; Durham, 1991) without using Blackmore's imitation-based memetics. And what is so scary anyway about the prospect that natural selection alone could fail to explain culture and mind? Perhaps the more frightening prospect is for numerous brilliant scholars to invest their best efforts to apply memetic theory to subjects, such as culture and the mind, which are inherently non-amenable to such an approach, especially any totalizing or meta-narrative version of it. However, Blackmore's version of memetics is fascinating–in spite of the fact that it is misguided in some ways, and as I will show later, seriously flawed in others. This is simply because she is so bold and expansive in her claims, and because her book, *The Meme Machine* (1998), has forced a wide debate on the issue (see Aunger, 2001; Rose & Rose, 2001). One bold assertion resulting in such debate is the claim that memes are selfish replicators in that they "serve their own selfish ends, replicating wherever they can" (Blackmore, 2000, 54). Blackmore does seem to give some logical support for this concept of the memetic-independent-replicator-dynamic by showing that some memes have a "viral structure," which includes a "copy me" instruction along with "threats" and "promises" that insure the meme's reproductive survival. However, in a huge logical lurch, Blackmore reasons that memes imitate selfish

gene selection, (Dawkins 1976) where humans become meme machines, vehicles for the propagation of the selfish memes. Blackmore (2000) sums up the perspective brazenly: "We are neither the slaves of our genes nor rational free agents creating culture, art, science, and technology for our own happiness. Instead we are part of a vast evolutionary process in which memes are the evolving replicators and we are the meme machines" (p. 54).

This is why, according to Blackmore, memetic selection, driven by imitation is what is missing from modern theories of human evolution, and hence only memetics can enable us to explain our uniquely human mental attributes and the complexities of our cultures. In short, Blackmore's memetics says humans exhibit a discontinuity from other species only because we have been designed not by one replicator, but by a dynamic duo of both genes and memes. That is, we are generated by genes and made by memes through a dualistic form of evolutionary design. The emphasis on discontinuity and duality, however, borders on serious irony, especially because selfish gene selection (Dawkins, 1976), which forms the theoretical basis for the selfish meme concept, is essentially reductionistic. However, the introduction of the meme replicator itself is an expansion of entities, not a reduction. And not to mention the fact that memes are abstract, ideational, and non-physical entities, which replicate themselves in a world that according to Blackmore is ultimately and utterly materialistic. Hence, in an apparently paradoxical twist of fate, this form of memetics comes close to reintroducing a kind of unfashionable dualism back into the discussion of the Darwinist's understanding of the mind.

Definitional Problems with Radical Memetics

Besides these issues, there are also definitional problems regarding Blackmore's concept of memes that need clearing up. First of all, regarding the fundamental meaning of the concept, Blackmore (2000) says: "Memes are best thought about *not by analogy* with genes but as new replicators, with their own ways of surviving and getting copied" (p. 61; emphasis mine). This statement reveals a basic confusion about memes, which lies at the root of the concept: that is, *are memes actuality or allegory?* Simply put: the existence of memes is unproven, and even though Blackmore attempts to clear up the confusion by calling the concept "not an analogy," the *Journal of Memetics* does define memes as the "analog to the biological unit of inheritance, the gene or the genetic replicator." Although Blackmore may be stretching evolutionary meaning of analog (i.e., structures similar in function to one in another kind of organism but of dissimilar evolutionary origin), and if without evidence, the fact remains that memes will be allegorical until proven as actuality. This problem demonstrates the aforementioned lack of consensus about memes: some memeticists refer to the "meme analogy" and others call memes an actual replicator. However, Aunger (2001, p. 4) reminds us that the existence of memes is "yet to be proven." Though some may settle for memes as a convenient analogy to genes for referring to mental and cultural processes behind social change (i.e., evolution), memetics as science will not survive unless real memes are found. Therefore, instead of the apparent doublespeak of calling memes actual when in practice they remain allegorical, it would be better to state unambiguously that the memes are theoretical entities pending empirical confirmation. With this in mind, Aunger (2001) provides commonsense advice: "fortunes will surely be much brighter if foragers for memes have a clear 'search image' in place" (p. 4). In the conclusion of this paper, I provide a proposal for a clearer search image. However, before a consensus for such an image comes into focus, before we figure out what memes are, and before we find out even if they exist, memetics simply remains unconfirmed theory at best, in spite of the confident posturing from the likes of Blackmore.

Moreover, the if the aforementioned "analogy" were not problematic enough, there are still more serious conceptual dilemmas facing radical memetics. First of all, scientists know how genes get copied, and they have mapped the human genome, and in very few cases, possession of particular genetic traits enables researchers to measure the differential reproductive fitness of organisms with those traits. However, even though Blackmore suggests ways to test memetic theory (to be discussed later in this article), the basic operational definition of memetics is seriously lacking or non-existent. That is, it is difficult or impossible to measure the transmission and reproductive fitness of memes. In Blackmore's view, imitation is supposed to be the copying mechanism for memes; however, besides the problems mentioned above, imitation in memetics is also poorly defined as "copying a novel behavior or skill from another animal" (Blackmore 2000, p. 56).

Hence, as Plotkin (2000, p. 60) clarifies, if imitation *simply* means learning to do from seeing, then it transmits nothing of cultural import, and if imitation *broadly* constitutes every manner of communication, then memetic imitation is too vague and becomes meaningless. That is, simple imitation – "observe and copy" – cannot account for the transfer of complex knowledge. Moreover, if memetic imitation encompasses all communication, it becomes a term that explains everything, and thus nothing. Such a concept is simply too vague. Most importantly, to reiterate, both the simple and broad definitions of imitation fail to account for more complex processes of how humans transmit ideas inventively, inductively, deductively, and abductively.

In addition to these problems, it is also indeterminate as to what constitutes "memetic adaptiveness." In the aforementioned view where memes have a "viral structure," they may be more *structurally* fit than memes without it. However, according to the theory, adaptive memes may evolve alongside non-adaptive memes. For example, Blackmore discusses (2000) how adaptive fire building and hunting skills may evolve along with less or non-adaptive traits, such as body decoration and rain dancing. Nevertheless, it is unclear as to whether body decor and rain dance can be called non-adaptive memes, for example, it is reasonable to suggest that body decor enhances sexual attractiveness and therefore reproductive fitness. Moreover, though rain dances cannot stir up storms, the dances may provide a means for the best dancers to demonstrate their reproductive prowess, which may have a bearing on reproductive fitness. In short, given the nature of some evolutionary explanations, it remains vague as to what constitutes memetic adaptiveness because what is called maladaptive can also bear an adaptive explanation. Hence, the question remains unanswered as to what truly constitutes memetic imitation and adaptation.

Before moving on to the next section, it is important to deal with one more problematic definitional aspect that is related to the idea that memes like genes "compete to get copied *for their own sake*" (Blackmore, 2000, p. 53). This means that memetic evolution occurs not in the interest of the genes, individuals, or groups, but that it proceeds according to the "interest of the memes" themselves (Blackmore, 1996). In memetic terms, "every human is a machine for making more memes, a vehicle for propagation and a resource to compete for" (Blackmore, 2000, p. 54). In terse shorthand, therefore, *memes want to use humans for their own reproductive success, and nothing else*. Blackmore discusses this form of shorthand:

> We can say that memes are 'selfish,' that they 'don't care,' that they 'want' to propagate themselves and so on when all we mean is that successful memes are the ones that get copied and spread, while unsuccessful ones do not. This is the sense in which memes 'want' to get copied, 'want' you to pass them on and 'don't care' what that means to you or your genes. (Blackmore, 1998, p. 7)

However, this is at best a careless explanation. Saying that "memes want to get replicated in humans" is short for saying that reproductively fit memes get copied and spread reproductively, unfit memes do not. However, as Endler (1986) has pointed out, this kind of thinking results in tautology. "If fitness is used in a careless fashion, it can lead to tautology, since by definition the most fit survive or otherwise do better than the less fit" (Endler, 1986, p. 33). Moreover, Wilson (1999) echoes this very concern about memetics:

> The ability to define fitness independently of what evolves saves the concept of natural selection from being a tautology. For the meme concept to escape the same problem, we must define cultural fitness independently of what evolves. If the first four notes of Beethoven's fifth is a powerful meme only because it is common, we have achieved no insight. (p. 205)

Hence, the tautology problem in memetics reveals the following line of circular thinking at least as stated by Blackmore above.

1. The fittest memes survived and reproduced.
2. Why did these memes survive and reproduce over and against other memes?
3. They possessed more adaptive and profitable memetic traits than memes that didn't survive and reproduce.
4. How do we know that these traits were the most profitable and adaptive?
5. The memes that possessed these traits survived and reproduced.

This does not mean that memetic evolution as a concept is trapped in a tautology (if fitness is defined separately from what evolves), but it does show the careless way the meme concept has been defined. Besides this however, the shorthand used by memeticists such as "interest of the memes, selfish memes, memes want get copied, etc.," reveals an even more serious problem. In an approach that not only prescinds from any teleology in nature as all Darwinism

does, radical memetic theory also claims that the mind and cultures exist as fully dysteleological entities produced by non-teleological processes. Nevertheless, much of the language describing memetic processes is couched in teleological shorthand, and although this kind of shorthand may not be inherently problematic, in the next section, I argue that this tendency reveals another set of problems inherent to much memetic thinking today.

Misguided and Misinformed Aspects of Memetics

To continue with shorthand analogies, it is possible to make the following statement about memetics: *Memetics is a Darwinian dysteleological theory of culture and mind that is often forced to use teleological language to describe what it claims to be non-teleological processes and events*. This personification or "teleologicalization" of natural events in scientific writing is not inherently wrong or misleading in certain contexts, even though literary scholars call this kind anthropomorphism the *pathetic fallacy* (i.e., attributing human emotion or responses to material nature). However, when memeticists go beyond appropriate methodology, which explains cultural and mental processes in dysteleological terms, and make the overextended philosophical claim that culture and mind are fully non-teleological entities or events, I am going to argue that this is simply a *fallacy*. It might be perfectly acceptable to view culture as something designed by and for the memes, and to view humans "not as rational free agents" whose minds do not and cannot create culture, *if all this were true to experience*. However, in the simplest terms, human experience, perception, and common sense clearly confute the "dysteleological theory" about mind and culture.

Ironically, however, it is obvious that very intelligent people espouse this idea, which raises the simple question: Why would anyone hold to a theory that is so radically counter-intuitive and that clashes so harshly with human experience? First of all, a basic fact about science is that it has had tremendous success *prescinding from the question of telos in nature*. Because this kind of methodological naturalism has proven to be such an important approach throughout the history of science, it is logical and intelligent to continue to apply this empirical method in our study of culture and mind. However, it is important to distinguish methodological naturalism from epistemological naturalism and metaphysical naturalism, which are pre-empirical notions derived from a philosophical doctrine that claims everything that actually exists is material or physical. It is not necessary to argue here for the alternatives to these views; however, it is important make a simple point about the memetic dysteleological theory of culture and mind (MDTMC). Even based on the aforementioned simple (but not simplistic) confutation of MDTMC, it safe to state that when memeticists say, "we are non-free, non-rational agents" that they are *not* making a scientific and empirical claim emerging from naturalistic methods. Instead, at best they are stating a theory, or allowing their pre-empirical, philosophical beliefs to prematurely influence their scientific claims, and at worst they are simply making bald metaphysical statements and wrenching them under the authority of science. In short then, memetics can and should benefit from a methodology that prescinds from the question of telos in both its explicans and explicanda. However, it is pure philosophy (eliminative materialism, which claims that notions of belief, experience, and sensation are fundamentally mistaken) unsupported by empirical evidence to scientifically claim that mind and culture are non-teleological entities and events.

In addition to these issues, this simple refutation of MDTMC that it contradicts basic human experience, perception, and common sense is not the only problem that this theory faces. There is also an apparent contradiction with the dual replicator concept and the so-called memetic concept of self, or "selfplex." First of all, this *self-concept*, which Blackmore (1997) seems to revel in calling a terrifying fact, is described below in audacious and nihilistic terms: "In fact we know that selves are a myth. Look inside the brain and you find only neurons. You do not find the place where 'my' conscious decisions are made. You do not find the thing that lovingly holds all those beliefs and opinions. Most of us still persist in thinking about ourselves that way. But the truth is—there is no one in there!" (pp. 43-47).

It is simply an abuse of science to claim that we *know* that selves are a myth, as if Blackmore's eliminative materialism were empirically confirmed by memetic research. She befuddles her philosophy with science. Moreover, there are other intelligent approaches to the idea of the self, which do not simply nullify it. For one example, Polkinghorne (1999, p. 22) has suggested that the self is the "information bearing pattern of the body." This seems to fit better with experience than Blackmore's "only neurons"

reductionism, which falls short of accounting for this coherent and continuing body of information inherent to human experience. Perhaps Blackmore would suggest that only the memes are there, but it is simply much more consistent to propose that some aspects of this information pattern constitute a self. Moreover, excising the self from our understanding is no more parsimonious than including the self, because in its place memes simply take the seat.

Besides this, it does not take much to show how "memetic self-lessness" clashes with common sense, and even though this common sense view could be wrong, memeticists must seriously engage the issues raised by common sense and experience instead of just dismissing them by definition or disdain. The following rhetorical passage illustrates these problems, which memeticists must respond to in the context of a fair defense of the common sense view. For now however, it will suffice to demonstrate that self-less memetics faces a logical challenge here. That is, in the selfplex view (i.e., no self, only memes), caring only for their replication, influenced the writing of this paper. Moreover, if another non-person were to read this paper, his non-self would only be but a physical entity submitting its-non-self to memetic processes controlled by and for memes. Therefore, a non-person wrote this paper, and non-persons will read it in a purely self-less and impersonal process. Moreover, if this paper were read at a conference, no-particular-individual would hear it, and no-person would respond to it personally because persons and personalities do not exist. Hence, if some non-person were to disagree with the contents of this paragraph, for example, it would only be the appearance of a person who is disagreeing because non-personalities cannot agree or disagree in any personal sense. Actually it would only be memes in competition and 'disagreement' with other memes, contending for survival in human neuron space.

Moreover, if a non-person-reader were to become enraged over the contents of this article and kill the non-person-writer, the scientific fact would emerge that "no person killed no person," and therefore "no person" is responsible for the murder—only the memes are accountable—as they compete for their survival. That is, if the memes residing in the material-reader-entity were able to physically arouse rage in the reader-entity, animating "it" to kill the material-writer-entity, then only the memes would be ultimately responsible for this murder as they competed for neuron-space to ensure their reproductive fitness. Of course, in most societies, law requires that such non-persons control their non-selves, or their memes, or whatever, even though, according to radical memetics, *no such selves* exist. Moreover, since the writer-entity is now dead, we can conclude this thought experiment by saying first, the bad news (or is it good?): *no person will mourn this dead non-person's death and the good news: some memes may have increased their chances for survival through this homicide.* However, there is a complication. If the memes that dominated the writer-entity found out about the expiration of their neuron-space, they might arouse a flow of justice memes throughout relevant human population whose presence might in turn endanger the memes that had caused the death of the writer-entity after all. Hence, memetic justice could be attained, stopping or decreasing the killing of human entities that contained this writer-entity's memes, and of course, providing an excellent explanation in memetic terms as to why murder is prohibited in almost all cultures: *it maddens the memes*. Incidentally, issues concerning moral responsibility, free will, and culpability become genuinely problematic in this context (Nelkin, 2001), but are superfluous to the scope of this article.

Of course, Dawkins (1976) does not seem to hold to this eliminative materialism, which eradicates personhood. He claims we can and should rebel against the tyranny of the selfish replicators, that is, memes enable us to rebel against genes, but Blackmore (1998) counters by saying that there is "no one to rebel." Perhaps Blackmore is serious, or perhaps this is some kind of academic posturing. However, because the conclusion that personhood does not exist is non-empirical and fails to cohere with human experience, and because of the extreme counter-intuitive consequences and ethical dilemmas that it implies, the argument must be based on flawed premises. Moreover, as previously mentioned, it is also clear that Blackmore is overstating her case, confusing her metaphysics with science, for memetics and the unproven existence of memes cannot even begin to prove eliminative, materialistic philosophy. Hence, as a psychologist, Blackmore unfortunately uses philosophy, not data to drive her conclusions. Nonetheless, at least she can be commended for correctly reasoning from her presuppositions; however, this seems to have lead to a kind of scientific madness eerily reminiscent of the "Unman" in C. S. Lewis' science fiction novels (1944).

Moreover, the "no such person" argument also reminds us of the *danger of correctly reasoning from* ***erroneous*** *premises*, which is especially risky in this case due to so much being at stake. In any case, Blackmore (1997, pp. 43-47) herself has admitted that this "scary idea may explain why memetics is not more popular. Memetics deals a terrible blow to the supremacy of self." Real cures for human vanity and arrogance are scary, even though potentially helpful, depending on what kind of universe one assumes the cure to come from. Because Blackmore's universe pre-empirically supposes metaphysical naturalism and random purposelessness, her cure not only strikes the supremacy of self but also the traditional understanding of the value and purpose of all forms of life, not just human life. That her philosophy strikes at the self, we can easily acknowledge, but when she insists that it belongs in the zone of science, we can only point at the lack of empiricism behind this wild pitch and wonder if the umpire needs new glasses. Therefore, it is much more reasonable to conclude that this so called "scary idea" makes memetics unpopular because it is empirically unconfirmed philosophy parading as science, and that this is simply poor public relations, especially for a scholar who desire scientific status for memetics.

Thus, memetics is handicapped because of its non-empirical and contradictory concept of self, and because of its dual and dualistic replicator component. In addition to these problematic characteristics, Blackmore claims memes also have the putative power to contravene the physical processes of the genes, something Blackmore (2000) calls memetic-drive. To a certain extent, this also seems to imply anthropological dualism, and even the "s-word," that is, the soul, something that Blackmore denies outright in her claim of non-personhood. Thus, it is as if memetic theory almost asserts that memes are the immaterial soul of man, or as the previous paragraph implied, the "meme-devils" that commit murder but live on after the death of murderer and murdered. All of these problems show that Blackmore's radical memetic theory is misguided and therefore needs radical revision, especially if it is going to provide any helpful explanation of mind and culture in non-teleological and physicalistic terms. And all of these problems are exacerbated by the fact that memes are information, which Devlin (1997) claims are non-physical. "Information is all around us. All people have some information. And . . . absolutely any physical object does carry or store information. But information itself is not physical; it is abstract. Information is like the Cheshire Cat's grin; it is stored or represented by physical objects but appears to have an abstract existence beyond those physical objects" (Devlin, 1997, p. 243).

In short, memetics must not only come to terms with the non-physical aspect of memes as information, but it must also deal with the fact that complex memetic information is generally the product of intelligence which may be inherently purposeful. (See Dembski's [1998, 1999] discussion about complex and specified information and its relationship with purposeful, choice driven intelligence.) Thus, as memetic researchers prescind from teleological questions related to culture and mind–*a method that may yield excellent results*–they may need to realize this approach is limited, and therefore, memetics cannot become the all encompassing theory of mind and culture that some people claim for it. Conversely, it may even be helpful to expand memetic theory so that within its methodology it can account for telos in culture and mind.

Finally, before moving to the next section, it is important to emphasize other ways memetic theory may also be overstrained by a pre-empirical metaphysical agenda, besides being positively guided by methodological naturalism. That is, it is not uncommon for memeticists and other evolutionists to deal directly with metaphysical and theological themata in their writings (see Nelson, 1996; Hunter, 2001). For example, Dawkins (1976) and Blackmore (1997) regularly apply memetics to the metaphysical topic of religion, calling it a virus of the mind. In addition, they approach the topic of religion scientifically, and when religions contradict the established facts of science, they provide welcome criticisms, which as scientists and educators they should rightly feel obligated to do. Nevertheless, it is not uncommon for them to deal with these issues in ways that stretch the relationship between the topic of their discourse and its connection with religion as a putative memeplex. For example, when Dawkins (1993) uses the catchy phrase "viruses of the mind" to describe religions, though the metaphor is not inherently negative, Dawkins use is intentionally so, as he describes religious people as hospital patients and "faith sufferers." Dawkins seems to consider faith a kind of memetic sickness because "faith sufferers" believe (in God or something) not only without evidence, but also consider this lack of evidence to be a virtue

of faith. Frankly, I tend to agree with Dawkins on this point, that some faith packages that cause people to act out of fear, lack of knowledge, or based on twisted evidence are quite dangerous. However, the acute flaw of Dawkin's argument is that he over-generalizes. Not all faith claims come without rational support or evidence, and Dawkins simply ignores any rigorous counter-claims, for example, by the physicist theologian, Polkinghorne (1999), or the biologist theologian, McGrath (1993), or the philosopher theologian, Moreland (1987), or the philosopher, mathematician theologian, Dembski (1999). That is, Dawkins simply fails to deal with the more rational, rigorous, and robust "faith memes."

Hence, if one is not careful with this approach, it may backfire and give a bad name to memetics, showing that it has a tendency (and perhaps an agenda) to be driven by issues that are either irrelevant to memetics or unfounded on scientific data. For example, besides helpful critiques of maladaptive memeplexes in religions, Dawkins is known to set up straw men examples that no intellectually robust theistic memeplex would contain, as (Midgley, 1985) has complained. Moreover, both Blackmore's (1997) and Dawkins (1976) insistence that religious belief is the "anti-testing meme," which encourages people to believe in things against evidence clearly shows these two authors' failure to understand the rational aspects of theistic epistemology and to interact with any memes of theistic rigor. Even the Apostle Paul said: "Test everything. Hold on to the good" (1 Thessalonians 5:21, NIV). Hence, these authors would improve their critiques of maladaptive religious memeplexes, if they attempted to submit their ideas to some sort of critical peer review, or at least attempted to critique theistic memes presented by academics of their same stature. However, as a scholar, I also find some of the theological themata in their writings to be inaccurate and, therefore, a misuse of academic stature and the authority of science. Moreover, since the atheism of Dawkins and Blackmore is well known, and because their criticisms of "theistic memes" are fatally flawed, it seems obvious that tendentiousness and not balanced scholarship has produced their views. It is not within the purview of this paper to treat the problematic theological themata in memetic literature with appropriate rebuttals. Raising the issue and citing rigorous scholarship (see above) that defends "theistic memes" should suffice at this point. In short, for memetics to become an accepted science, memeticists need to be careful not to report inaccurately on topics they do not specialize in, not to be overruled by a socio-political agenda, and most of all not to confuse their science with their metaphysics.

Unhelpful and Unscientific Aspects of Memetics

The final critical section of this article goes beyond conceptual issues and focuses on how successfully memetic research supports its scientific claims. Blackmore (2000) contends that "memetics neatly resolves the mystery of the human brain's vastness" (p. 56) and how "memetic drive explains language [origin] by its conferring survival advantages on memes" (p. 58). Regarding the brain, Blackmore claims that the reproductive fitness of human ancestors became more and more dependent on imitative ability; better imitators thrived, "and the genes that gave them the bigger brains required for [imitation] consequently spread in the gene pool" (2000, p. 58). This cycle continued and it intensified pressures for larger brains. The process of "memetic drive" occurs when memes control genetic selection and when memes evolve and genes respond by augmenting imitative ability and brain size. Sexual selection also would take affect because people would mate with the best imitators and, thus, spread big brain genes in the gene pool. This is an interesting theory, but far from confirmed. It is a fact that humans have large brains and are the best imitators in the world, but it simply does not follow from any evidence that imitation, memetic drive, and genetic response produce large brains. Blackmore suggests that "scans of brain activity could test whether the human brain has evolved to imitate and spread memes" (2000, p. 59). This statement is more like an irrational leap of faith than a claim of science. However, even if imitation produces the most brain activity, as Blackmore's writings suggest, there is no evidence cited that this activity has any affect on brain size, not to mention the problem that there is no way to measure memes in the brain. Therefore, Blackmore's claim that memetic theory "neatly resolves the mystery of the human brain's vastness" is yet unhelpful as empirical science. At best it should be viewed as a theory that needs development and testing, but it deserves to be viewed with a healthy dose of skepticism, something that its originator is ironically well known for (1997).

Regarding the memetic theory for the origin of language, it is similar to the foregoing view on the

largeness of the human brain. Contrary to popular theories by Dunbar (1996) and Deacon (1997) which attribute language evolution to the genetic advantage that it would have conferred on human ancestors, memetic theory suggests that memetic drive explains language by conferring survival advantage to memes. The fittest memes would be those with high fecundity, fidelity, and longevity. First, Blackmore claims that sounds have more *reproductive fecundity* than gestures because they can be copied without being seen. Second, memes built from discrete units of sound, phonemes and morphemes, would have higher *copying fidelity* than those based only on single discrete units because this kind of combinatorial system allows for a greater number of memes to be communicated. Moreover, the rules for combination would provide a more accurate copying mechanism. Third, memes with greater fecundity and fidelity would obviously have more *memetic longevity* and would likely replace and out compete memes with lower fecundity and fidelity. Along with this, memetic drive affects the genes as well as sexual selection, and the same process that designed big brains would cause the genes to make not only larger brains but also those best at copying articulations with the most fecundity, fidelity, and longevity. Hence, language "was designed by memetic competition and memegene coevolution" (Blackmore, 2000, p. 58).

Although I personally appreciate this attempt to explain the origin and evolution of language, this scenario remains fanciful and speculative. There is no demonstration of how the mechanism of natural selection could have operated with imitation of memes to cause the origin and development of complex human language. Moreover, even if imitation were to require more brain power than other kinds of cognition, and even if imitation also implicates putative newer and more evolutionarily advanced areas of the brain, what does this say about how the imitation of memes drove genes to design and enhance the language capacity? Showing that imitation requires newer and greater brainpower really tells us nothing about how brains got bigger or how language actually evolved. Moreover, as Dugatkin (2000) clarifies in a counterpoint to Blackmore, animals imitate too. In fact, he asserts that if animals use memes, and he claims they do imitate within the memetic definition of imitation, then memetics is insufficient to explain culture and mind. Moreover, since animals imitate too, and some are rather good at "aping" behavior, then one would expect to see memetic drive at work on other creatures developing in them increased linguistic capacity. In the end, Blackmore's proposal is interesting, but it must be clearly admitted by memeticists that currently such claims exist without any empirical support, and statements such as "memetics neatly explains the conundrums of language, mind, and culture" need to be reserved till *after empirical confirmation, and not before*.

The Potential of Memetics in Metaphysics and Science

I have intended to keep the tone of this article fair and open in its consideration of memetics. Because memetics is a *Darwinian* theory of social psychology and may be resting too much on the general popularity of Darwinism and presuming the explanatory potential of natural selection in areas where it may prove limited, I may have alienated some of my readers with this attempt at fairness. Perhaps I should reject memetics outright, especially because its promoters readily utilize it in negative attack on theism and that mainly on a caricature of my own confidence in Christian theism. However, it is important to clarify that Darwinism *is not a scientific attack* on Christian theism; instead, it is often a theological or philosophical attack. That is, as Hunter (2001) demonstrates, much Darwinian argumentation bolsters itself by claiming that God could not have made nature the way it is; however, this claim must be based on a concept of God (and I would contend an erroneous one). In any case, such a claim is theological and not scientific. In this way, one could say that the scientific aspects of Darwinism are relatively insignificant compared to its sociological and metaphysical influence. That is, the scientific facts of Darwinism speak of biological change in varying degrees, but this science does not–indeed cannot–tell where we ultimately came from, why we are here, or who ultimately made us. However, it is the sociological and metaphysical aspects of radical Darwinism that tell us *where we did not come from, that we are here for no reason, and that nobody made us*. These claims provide Darwinism with its social power and influence, and ironically they come from where the theory over-extends itself–extremely far beyond what its science tells us. Except for philosophical issues (and they are the main ones), I have not tried to discuss limits of the Darwinian replicator dynamic, which some memeti-

cists assume is unlimited. Others have done a much better job than I can at pointing out these limits, (see Behe, 1996; Dembski, 1999; Denton, 1986; Dover, 2001; Gould, 2001; Johnson 1991; Midgley, 2001; Wells, 2000). In a similar vein, by outlining the limits and defects of memetics, I have attempted to show that any memetic challenge to theistic epistemology and its grounding for personhood is fragile, flawed, and founded on tendentious misconstruing of any rigorous defense of the Christian view of human nature. *Thus, memetic metaphysics is incoherent and baseless*. In spite of this negative criticism, I may have appeared to be too fair to memetics, for it is an approach into areas where Darwinism may find itself severely limited. However, my intent was to grant memetics the benefit of the doubt at least to the degree that the Darwinian replicator dynamic, that is, natural selection, has been empirically confirmed in biology. Therefore, in the following paragraph, I will attempt to outline a modest redefinition of memetics, with the hope that such an approach might give us some insight into the differential reproductive fitness of memes depending on the environment that hosts them.

As a linguist myself, and with the encouragement of Hull (2001, p. 42) who says we can conceive of memetics as a version of linguistics based on "selection as it functions in evolutionary biology," I offer a basic definition of memetics that should avoid the pitfalls mentioned in this article. First of all, the meme must be a physical entity, that is, materially coded information. Hence, linguistic-memes would consist of all the ways language is stored and transmitted through physical objects. To avoid confusion, when this information resides or gets copied in humans, it is only residually memetic, and cannot be quantified as such. Instead, linguistic memes that reside in humans and affect their behavior become phenotypic because they are getting expressed. This approach attempts to keep the genotype and phenotype distinction intact. If this is possible, then we can measure the copying of physically encoded linguistic memes, in books, emails, computer virus, etc., and the influence these memes exert on the behavior of the people who receive them. For example, one could measure the linguistic-meme variants (written in tracts, for instance) for proscribing a particular kind of behavior, like the prohibition of smoking on a college campus. In this case, we can know what the memes are, how many copies exist, and how many copies of these memes get transmitted into subject populations. Also, through surveys, we could measure how these memes affected subject behavior. Advertisements might prove another fruitful area for memetic research. The challenges would be (a) devising a rigorous experiment to test the fitness of competing memes, and (b) determining what memes are the most successful. This would include reasons for that fitness, whether fitness would come from something inherent to the meme, like an independent replicator dynamic, some pressures in the environment, or other factors involving intelligent agency or differential cultural values. Of course, this basic definition of memes and the related experimental design would need further clarification. Nevertheless, this could be the beginning of the hard work of designing a memetic experiment. In the end, such an approach may not even yield any valid or novel insights, but ironically, this kind of practical and empirical approach has been sadly lacking in memetic research to date. Instead, we have seen much philosophizing, aggrandizing, and the rhetoric of scientific arrival, but without the arrival of scientific results.

In sum, however, it should be transparent that memetics has really not resolved any questions about the origin, grounding, and meaning of language, culture, and mind. Clearly, some memeticists have boldly overstated their declaration that we cannot explain human nature without appealing to memetics. This overconfident claim, along with unsubstantiated philosophical assertions, definitional and conceptual problems, misguided and misinformed sociological agendas, and unscientific affirmations about the origins of language and large brains have given memetics its public relations problems. Moreover these problems have kept it from attaining positive status as good science.

However, there exists a more reasonable and less ambitious research agenda for memetics, which could increase our knowledge of how Darwinian processes may operate on the transmission of memes in minds and cultures today. For example, Aunger (2001) suggests empirical ways of evaluating how cultural values and beliefs are learned by individuals and how groups keep these beliefs over time. This kind of agenda or the one I mentioned above could help memetics gain a better scientific reputation. Moreover, the evolutionary psychologist Plotkin (2000) and the evolutionary anthropologist Durham (1991) provide a more nuanced and scientific view of memetics that show how memes, mind,

and culture interact. It is also possible, for example, that memetics, using a rigorous definition of natural selection (Endler, 1986), may be able to help inform us why some memes are more reproductively fit depending on the linguistic and cultural environments they reside in. For instance, why are certain moral memes more prevalent in some cultures than others? Why is it, for example, that the meme for explicit communication is more reproductively fit in American culture than in Japanese culture? Would this cultural value have an effect on the reproductive fitness of the democratic "meme" of free speech in these respective cultures, for example? What aspects of the language and culture as host environment for the meme for greater or lesser explicit communication would affect the reproductive success of such memes? Answers to these kinds of questions—and others of even greater import—may provide us with fresh insights into intercultural communication or how to increase the reproductive success of some memes. In any case, memetics may be best equipped to answer questions like these. This is a much more humble approach for an academic discipline that purportedly helps us explain the very origin of culture and mind. However, it is also an approach that may yield real results—as opposed to the creation of memetic myths that have no basis in empirical fact and tell us nothing truthful or helpful about the origin, replication, and descent of language, mind, and culture.

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