A Meme-Based Approach to Oral Traditional Theory

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The most complex, beautiful, and longstanding tradition in the world is the great and continuous four-billion-year-old web of life, what Richard Dawkins calls "the river out of Eden" (1995). Thirty years ago he showed that the existence and interplay of replicators, entities that are able to copy themselves, are sufficient to explain, in broad terms, the workings of evolutionary biology. Dawkins, whose focus was the biological gene, also noted that there is another replicator on earth besides the gene—the "meme" (1976:203-15). A meme is the simplest unit of cultural replication; it is whatever is transmitted when one person imitates, consciously or unconsciously, another (208).[1] In this essay I will show how an understanding of the interactions of memes can do for culture what the identification of "selfish genes" (Dawkins 1976), "extended phenotypes" (Dawkins 1982), and "cooperative genes" (Ridley 2001) did for biology. Meme theory can explain the workings of several well-known and much discussed aspects of oral traditions: traditional referentiality, anaphora, and the use of repeated metrical patterns. All three phenomena, different as they are, can be understood as arising from the operations of the same underlying processes of repetition and pattern-recognition explained by meme-theory.[2]

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[1] Robert Aunger goes to great lengths to determine whether or not a theorized meme is in fact a replicator (in his view, replicators must have "causation, similarity, information transfer, and duplication"), eventually concluding that memes are in fact replicators (2002:213-17). Although I doubt that everything that has been claimed as a meme is in fact a replicator, the phenomena I am discussing—traditions and their component parts—are indeed replicators in Aunger's sense.

[2] I develop this theory at much greater length with an expanded discussion of the philosophical and literary-theoretical contexts in Drout 2006.

Memes and Repetition

When one person imitates a behavior of another, a meme has managed to replicate itself by being copied from one human mind to another. The classic example of a meme is a tune, such as "Happy Birthday to You," sung by one person and heard and repeated by another.[3] Within the context of a given culture, some memes are better at getting copied than others.[4] Often the memes that are best at getting copied are those that are most effective at combining with other memes, and memes can be parasitic, commensal, or symbiotic. Replicators, competition (there is some finite limit to the number of memes, if only because we have not world enough and time; there is a limited number of human minds, and these last for finite amounts of time), and variation create a situation of "universal Darwinism" (Dawkins 1983:403). The process of natural selection will ensure that, given enough time, those memes that are better at getting copied will end up outnumbering those that are not. Memes will evolve for improved success at being copied because (by definition) those that are better at getting copied will differentially replace those that are not: all the memes in existence are dependent upon the same finite resources. The eventual result of such differential reproduction is an ecosystem of competing and cooperating memes—a culture—populated by memes that are exquisitely adapted to it.[5] An analysis of the design and engineering principles of memes, in this wider context of the memetic ecosystem in which they exist, would be a first step

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[3] "Happy Birthday to You" is a meme, but it can also be seen as an aggregation of the memes for the individual words in the song working in partnership with the already established memes of the English language. Likewise the tune itself is a meme, but so is each smaller verse. "Happy Birthday to You" could thus technically be called a "meme-plex," a complex of memes (Hull 1982). "Meme-plex" is an abbreviation of Dawkins' "co-adapted meme complex" (1976:212-13). The abbreviation was apparently developed by H. Speel in an as yet unpublished conference paper; see Blackmore (1999:19), who gives the "Happy Birthday" example. "Meme-plex" and "meme" are thus different names for the same sorts of entities, and to avoid proliferating jargon I will use "meme" in all cases.

[4] Edward Shils argues that "traditions are not independently self-reproductive or self-elaborating. Only living, knowing, desiring human beings can enact them and reenact them and modify them" (1981:14). But this view is either true only in a trivial sense (and perhaps not even trivially true, because some animals appear to enact traditions) or mistaken.

[5] This analysis is consistent with F. A. Hayek's discussion of tradition (1945). Peter Medawar also argues for analyzing tradition in terms of selection pressure (1961).

towards a cultural poetics that is wholly materialist and thus subject, at every level, to testing, falsification, and modification.[6]

A tradition is an unbroken train of identical, non-instinctual behaviors that have been repeated after the same recurring antecedent conditions.[7] The first time a behavior is enacted cannot be a tradition, but the second time can be, and the first enactment is then retrospectively defined as the origin of the tradition.[8] Repetition is the "same" action engaged in upon more than one occasion, but defining "same" is philosophically problematic: the more fine-grained the focus, the more difficult it is to define something as "same" (see Dennett 1984). Nevertheless, we seem to be able to recognize and agree upon recognizing "same" actions even when we cannot rigorously define them in philosophical terms.[9] For the purposes of this argument such consensus understandings of "same" are sufficient.[10]

In memetic terms, a tradition is a combination of several smaller memes. The traditional behavior can be seen as one meme; let us call it *actio*. The response to the given antecedent condition that triggers the traditional behavior is another meme that enables the first meme; let us call this *recognitio*. The tradition is then, the combination of these two memes: *recognitio*—"every spring equinox, enact *actio*"—and *actio*—"sing the equinox song." The *proto-tradition* (*recogitio+actio*) is: "every spring equinox sing the equinox song."

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[6] I say "first step" because untangling a cultural poetics is likely to be quite difficult. For one thing, if culture does evolve via selection and evolution of memes, it may not be very easy to fathom their underlying engineering principles (Miller 2000): "Genetic algorithms…often produce solutions that work, but one cannot quite understand how or why they work" because genetic algorithms "break the link between innovation and analysis that has been considered a fundamental principle of modern engineering."

[7] Traditions can be characterized mathematically by Markov chains: the continued maintenance of the tradition depends upon a series of successful enactments of the behavior in question (Feller 1957:338-96).

[8] Note that here I disagree with Shils, who argues that a pattern of behavior must be repeated three times to be a tradition (1981:15). It is not clear that one additional repetition makes something a tradition that would otherwise not be one. The key point to keep in mind is that a tradition is defined retrospectively.

[9] The problem of "repetition" is intertwined with the problem of "identity," usually abbreviated in the philosophical literature as the problem of "The Ship of Theseus," analyzed by many philosophers, but perhaps most famously by Hobbes in *Elements of Philosophy*. I recognize the immensity of the argument and set it aside.

[10] I discuss the philosophical problems in detail in Drout (2006:24-6), where I use Wittgensteinian "family resemblances" to provide a possible solution.

What converts a simple response to a condition into a tradition is the addition of a third meme to the complex that provides an explanation for the behavior. Let us call this *justificatio*: "because singing the equinox song makes the fields fruitful." The full complex for the traditional behavior (*recognitio+actio+justificatio*)[11] is: "every spring equinox sing the equinox song because singing the equinox song makes the fields fruitful." This *recognitio+actio+justificatio* complex is the fundamental structure from which a tradition evolves.[12]

A *proto-tradition* could easily arise in a culture from trial and error, and spread widely due to the general tendencies of humans to repeat actions that appear to lead to successful outcomes, to imitate others who are successful, and to teach valuable information to members of a younger generation.[13] *Recognitio*, *actio*, and *justificatio* are each differently sensitive to transmission error.[14] If *recognitio* (recognize the antecedent condition of "at the spring equinox") mutates, such change has a relatively good chance of not degrading the fitness of the overall meme. For example, if *recognitio* is modified in transmission so that "at the spring equinox" is replaced by "at both the spring or fall equinoxes," the overall inclusive fitness of the meme-

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[11] I believe these terms are sufficiently close to their English equivalents to be relatively easy to remember and distinguish. While it is true that *justificatio* is later Latin and *recognitio* in this sense is earlier Latin, the greater familiarity of *recognitio* over *recognosco* seems a good reason to keep the term. I have chosen Latin rather than English terms because calling something a "justification" would be a kind of rhetorical cheating.

[12] This tripartite view of tradition is not incompatible with Popper's two-part description. Popper notes that traditions are transmitted with a "silent accompanying text of a second-order character" (1965:127).

[13] In *The Descent of Man* Darwin discusses the way that imitation would spread "the habitual practice of each new art," and would thus be linked to the development of culture through natural selection (Ridley 1987:151).

[14] For the fundamental theory of information transmission and degradation, see Shannon and Weaver 1949:34-48. See also Khinchin 1957. Here I part company from Aunger, who insists that "information is physical" (2002:136-58, 193). Aunger's use of quantum theory is provocative, and for a somewhat similar discussion see Pesic 2002. However, my reading of the mathematical literature and my discussions with mathematicians have convinced me that the majority position in information theory is that information is "substrate neutral." Turing's development of the "Universal Computing Machine" (now called the "Universal Turing Machine") seems to support this side of the argument (Turing 1936-37).

plex may be improved, especially if the new *recognitio* is easier to remember.[15]

Actio, on the other hand, is less likely to mutate successfully. Although fitness-improving mutation does of course happen, positive mutation is comparatively unlikely because random deviations from an adaptively effective practice are likely to be less adaptive than the original practice. *Actio*, then, appears to be somewhat more sensitive to mutation than *recognitio* because the ways in which it can vary are more likely to lead to a decrease in fitness.

Justificatio, however, can mutate substantially without necessarily damaging the fitness of the overall meme-plex. Humans can invent a multitude of explanations for their actions even when these explanations have nothing to do either causally or historically with the action in question. Thus there seems to be strong selection pressure on *justificatio* to mutate in ways that lead to a decrease in the possibility of individuals ignoring the entire meme-plex. If we take a meme's-eye view of the situation, we see that the stronger a form of *justificatio* is, the more likely the entire meme is to be preserved.[16] Conditions that affect *justificatio* could also threaten the reproduction of the entire meme. For example, if the meme is enacted but the crops do not thrive, the "fitness" of the meme-plex suffers; people will be less likely to act upon the instructions if their very reason for so acting (given in the *justificatio*) is not borne out by experience. Following John L. Austin (1979) and John Searle (1998), who follows him, we can call this the Word-to-World fit condition.[17]

Word-to-World fit implies the existence of a world that includes the physical world as well as social and cultural worlds, and it also must include the *weltanschauung* held by individuals by means of whom the tradition

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[15] Dawkins (1986:99-100) discusses how the 13- and 17-year life cycles of cicadas serve to protect the adults against predators, because all emerge at the same time ("swamping" their predators with more food than they can consume). The 13- and 17-year life cycles (and there are no 14-, 15-, or 16-year life cycles) seem to have evolved because 13 and 17, being prime numbers, are not multiples of shorter (say, 2-, 3-, 4- or 5-year) life cycles. Memes whose *recognitio* components mutated to unusual periodicities would be unlikely to be remembered.

[16] There are limits, however, to how imperative a *justificatio* can become. If there is selection pressure for memes to become more and more emphatic, then human minds will evolve defenses against such extreme positions lest a single, imperative meme capture the entire organism to that organism's detriment. See Dennett 2003:150-56.

[17] See also Anscombe 1957:56-57.

meme is attempting to replicate.[18] Note that if a *justificatio* is sufficiently vague, it will more frequently fit the world than if it is precise.[19] We could expect, then, that there would be selection pressure not only to make *justificatios* more emphatic, but also more vague. However, extreme specificity in *justificatio* would make a meme-plex more fit by making the *justificatio* more convincing; at the same time that specificity would risk the Word-to-World conflict that could reduce the meme's fitness. Successful memes must negotiate a balancing act between specificity and vagueness.

The need to balance between these two poles creates the opportunity for the Universal Tradition Meme to replace the specifics of any given *justificatio* with a new explanation: "because we have always done so" ("because it is traditional to do so"). At first the Universal Tradition Meme appears to be a variation of vagueness and subject to the same difficulties (a vague explanation may lose out to a specific one if the two are competing). The Universal Tradition Meme is indeed more vague than any specified *justificatio*, which is why it is unlikely to out-compete a narrowly specific *justificatio* when a meme-plex first evolves.[20] But the Universal Tradition Meme should, over time, out-compete a more specified *justificatio* because the more iterations of transmission of the meme, the more true the Universal Tradition Meme becomes: it is more specifically true because the pattern *has* been enacted previously and thus can withstand detailed Word-to-World comparison.

The Universal Tradition Meme makes a given meme more likely to be replicated; thus those memes that are able to be joined to the Universal Tradition Meme are more likely themselves to be replicated. Once the Universal Tradition Meme has evolved in a culture, therefore, it will cause

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[18] For a good discussion of the interaction of the constraints of the physical world with culture (real-world constraints are "non-negotiable and universal"), see Vincenti 2000:174. Pascal Boyer argues that "for anthropologists, the fact that something is culture is the very *reason* it does not vary that much. Not everything is equally likely to be transmitted, because the templates in the mind filter information from other people and build predictable structures out of that information" (2001:47, his emphasis). I agree, but would note that Boyer's conception needs to be linked to the physical constraints of the real world as well as those of the cultural world and the individual human psyche. *Word-to-World fit* subsumes these multiple categories.

[19] A vague *justificatio* allows for a wider range of interpretation, and thus more possibilities of "fit" than does a specific *justificatio*.

[20] On the first or second iteration of a meme, the Universal Tradition Meme should not work as a *justificatio* because it will not fit the world ("we obviously haven't always done this new thing").

the agglomeration of more and more memes together into larger and larger complexes of tradition. But the Universal Tradition Meme is not the culmination of the cultural evolution of a tradition.[21] There is a straightforward evolutionary progression of *justificatios* from "we have always done so" to an unconscious sublimation of that idea, eventually reaching the point where the traditional behavior itself becomes interpreted (when even noticed) as part of the cultural identity of the individuals who engage in it.[22] We can call such an unconscious sublimation the Unconscious Imperative and recognize it as the ultimate *telos* (goal) of the Universal Tradition Meme. But the Universal Tradition Meme can always be reinstated if the Unconscious Imperative fails: if someone were to question an Unconscious Imperative action, a participant in the culture could reply with the Universal Tradition Meme: "we have always done so." Thus, while all traditions are not accessed self-consciously (if they have attained Unconscious Imperative status), they all have the capability of becoming self-conscious at any time and their *justificatios* then again being the Universal Tradition Meme.

Repeated actions will tend toward the Universal Tradition Meme for their *justificatios* (because the longer a practice continues, the better the Word-to-World fit of the Universal Tradition Meme *justificatio* for the practice will be), and therefore repeated actions will tend to become traditions. Given the fallible nature of human memory, it is not surprising that it takes only a few repetitions of some behaviors to generate the idea of tradition (that is, to push the *justificatio* towards the Universal Tradition Meme). This process may appear paradoxical, because the fallible nature of long-term, distributed memory would seem to lead to the loss of traditions. But in fact the combination of fallible distributed long-term memory with the ability of individuals to recognize patterns quickly, and with the human tendency to repeat actions that have had previous success—the "stick with a winner" tendency, leads to the creation and maintenance of traditions. Repetition thus not only leads to stability, but generates the impression that a repeated practice has always been repeated. This idea in turn creates continuity, because we are more likely to see ourselves as being fundamentally like them if we believe that individuals in the past were

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[21] Although it appears to be an Evolutionarily Stable Strategy (Maynard Smith 1982:10-27).

[22] Cf. Lord 1960:220: "For it is of the *necessary* nature of tradition that it seek and maintain stability, that it preserve itself. And this tenacity springs neither from a perverseness, nor from an abstract principle of absolute art, but from a desperately compelling conviction that what tradition is preserving is the very means of attaining life and happiness."

performing the same actions as we are today. Repetition and also identity are thus projected back into the past and forward into the future because participants in a tradition also imagine their descendants continuing their practices.

The effects of tradition and its associated repetitions on culture are substantial. Repetition improves the mnemonic retention of information. Repeated memes, therefore, are more likely to be mnemonically stable than unrepeated ones. The more a tradition is repeated (that is, the shorter the intervals between repetitions) the more likely it is to be mnemonically retained, because if repetition is mnemonically effective, frequent repetition (within some limits) is even more so.

Repetition reinforces not only the *justificatio* component of a tradition (by improving its Word-to-World fit as it evolves towards the Universal Tradition Meme) but also the *recognitio* component, because a repeated *recognitio* is more likely to be entered into and retrieved from long-term memory. Repetition creates patterns, and human brains, among their other talents, are sublime pattern-recognizers. The combination of the patterns created by repetition with the human ability to recognize patterns means that in a culture that includes repeated traditions, information (memes) may be encoded and transmitted in significantly compressed form. Memes can also be retrieved from incomplete or noisy data, allowing traditionally encoded patterns to be transmitted and received in many different situations.

Traditional Referentiality

Once a meme has been stored in a person's memory, and if that meme is part of some kind of repeated pattern, it can be called back into conscious perception by some smaller critical portion of the meme. A poem could be invoked by one or two lines; for example, the phrase "'twas the night before Christmas" may bring up the memory of the entire poem. If the short sequence that operates as a cueing mechanism is distinctive enough, this triggering meme can be very short. In the case of "'twas the night before Christmas," for many people "'twas" is probably sufficient.[23]

The triggering or cuing meme (the "'twas") is called, in oral traditional studies,[24] the "traditional referent." A traditional referent invokes

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[23] If "'twas" does not immediately bring to mind the correct poem, it at least narrows down the search space to either this poem or "Jabberwocky."

[24] I recognize that the exact contours of oral traditional theory are a matter of some contention. For the purpose of this argument I invoke the theory as originated by Milman Parry and Albert Lord, summed up by John Miles Foley (1988), and having its

the much larger meme complex with which it is associated by the process of metonymy: the part stands for the whole.[25] Thus the use of a specific formula or type-scene (a repeated traditional meme) can invoke, *pars pro toto*, "a context enormously larger and more echoic than the text or the work itself" (Foley 1991:6-8). A formulaic epithet or "tag-line" like "grey-eyed Athena" or "Hector of the glancing helm" invokes not merely one attribute of a well-known character, but that character's entire persona as developed throughout the epic corpus (Foley 1995:5).

A functioning tradition consists of a set of aggregated *actios* all utilizing the Universal Tradition Meme (or its unconscious *telos*) as their *justificatio* components and all using the same (or harmonized) *recognitios*. Thus the traditional meme-plex exists not only as the historical fact of a series of repeated actions, but also as the memory of those repeated actions. Because one significant problem for traditions is to ensure that they are brought to mind (that is, that the *recognitio* components are triggered so as to enact the tradition), features that would more frequently bring the memory of the tradition to conscious perception would work to make the tradition more likely to be enacted and re-enacted. Traditional referentiality is just such a structure. It works as a meta-*recognitio* component: although the traditional referent does not in itself trigger the tradition, it triggers knowledge of the tradition and thus makes that tradition more likely to be replicated, and, in bringing the tradition to mind, strengthens the association between the tradition and the traditional referent.[26] A traditional referent, then, which is most likely some portion of the conglomerated *actio* components of the traditional meme complex, can bring into conscious perception the entire complex. Therefore traditional referentiality is not only a by-product of the repetition generated by tradition, but also serves to reinforce the tradition itself. The generation of this cycle by the structure and

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current state represented by Foley 1990, 1991a, and 1995. Oral theory now focuses on the ways that orally composed verbal artforms are created and how they make meaning for the "readers who hear" them (to use Foley's evocative phrase), that is, those who are participants in the tradition (Foley 1991b). See also Foley 2002.

[25] Cf. Foley 1991a:7: "Traditional referentiality, then, entails the invoking of a context that is enormously larger and more echoic than the text or work itself, that brings the lifeblood of generations of poems and performances to the individual performance or text. Each element in the phraseology or narrative thematics stands not simply for that singular instance but for the plurality and multiformity that are beyond the reach of textualization."

[26] The traditional referent does not merely repeat the networks of inherent meaning; it *recreates* them (Foley 1991a:10).

elements of tradition, repetition, and traditional referentiality explains in part the ubiquity and persistence of traditions.

The ability of the traditional referent to summon to working memory a much larger complex of memes is enabled by repetition: for a component part to become a traditional referent it must be a recognizable part of some whole, and the best way for the association of the part to the whole to be made is for the whole to have been repeated. Thus traditional referentiality enables some small subset of a larger meme to awaken the referent to conscious memory in the mind of a participant in the tradition. The ability of the traditional referent to summon entire complexes of memes by metonymy means that the use of traditional referents is an enormously effective means of communication (provided that both interlocutors are participants in the tradition).[27]

Oral theory has analyzed the aesthetic effects of traditional referents, but for our current purposes it is more important to note that the combination of traditional referentiality with the repetition inherent in traditions and with the human brain's ability to recognize patterns leads to an incredibly rich and complex network of associations.[28] Within this network not only traditional meme-plexes, but also subsidiary networks of traditional referents (at times decoupled from the traditions they represent, because not every individual is equally participatory in every tradition) can create associations between themselves and other sets of traditions and their referents. The brain's pattern-finding abilities can also recognize patterns in these meta-networks, and the same process of metonymic traditional referentiality can in turn invoke these associations.

The most significant problem for the analysis of networks of traditional associations is the identification of traditional referents. Any feature of the meme can conceivably become a traditional referent as long as this feature is repeated and is susceptible to being recognized by the brain's

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[27] Foley calls this process "communicative economy" (1995:93-95). Note that the communicative economy of oral tradition does not violate any of Shannon's rules about the transmission of information (Shannon and Weaver 1949) because the units of information have previously been transmitted over long periods of time. The triggering meme simply recalls them to memory. See also Aunger 2002:255-67.

[28] I am avoiding using Foley's term "immanence" to describe these networks. Foley is concerned to describe the way that the networks convey *meaning* while I am at this point only discussing the way they are formed. It is nevertheless worth quoting Foley's definition of immanence as "the set of metonymic, associated meanings institutionally delivered and received through a dedicated idiom or register either during or on the authority of traditional oral performance" (1995:7).

pattern-recognition mechanisms.[29] Trying to construct a universal definition of the traditional referent in terms of formal characteristics is thus unnecessary, primarily because the formal characteristics of the referent are determined by the particular network of associations in which it operates. Depending upon the makeup of the memes that are being referenced and the larger network of associations in which they exist, different features of language, style, image, and so on will be "marked" and will work as traditional referents. The technical term for this specificity is "tradition-dependence."[30]

This is a complex but necessary way of approaching the problem of style. A style is a network of traditional referents and associated memes that are recognizable as being related.[31] In many cases the traditional referents to the style will be so subtle and the network so distributed that we may find it difficult to articulate our reasons for seeing one work as included in a style while another very similar work is not. Styles can be conceived of as a series of ever-larger nested sets. The individual style of all the works of James Joyce might be subsumed in the larger set of all the works of early twentieth-century, English-speaking modernists, which might be included in

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[29] Here my approach contrasts with that of Foley and others working on oral tradition and performance studies. The oral traditionalists focus on the notion of performance as being the "enabling event" that informs readers/hearers that they should "interpret what I say in some special sense; do not take it to mean what the words alone, taken literally, would convey" (Bauman 1977:9). Foley, Bauman, and others are undoubtedly correct in noting that the performance arena serves to suggest to hearers/readers that they recognize utterances in that arena as being specially marked. My point is that this process is not limited to performance, but can also include other social contexts, textual presentation and layout, and even verbal style; performance is merely one important subset of the patterns by which human brains recognize traditional referents. See further Foley 1995:28.

[30] Failure to recognize the tradition-dependence of the formulaic style has led to logically flawed analysis of Anglo-Saxon texts in terms of other oral traditions (such as Benson 1966; for a critique of Benson see Foley 1995:75, n. 32). Certain features in certain traditions probably cannot be "marked" due to their potential to be swamped by an unfavorable signal-to-noise ratio. Thus standard grammatical features such as articles or pronouns (in Modern English; Old English dual forms may in fact be marked) probably *cannot* become traditional referents because there are simply too many of them in any given collection of sentences.

[31] My use of "style" is basically equivalent to Foley's use of the more technical term "register" (1995:49-54). Foley intentionally limits the notion of register to traditional oral performances. I want to point out that style works the same way in many other contexts. For a technical definition of register, see Halliday 1978:111.

turn in the set of all twentieth-century, English-speaking writers.[32] Other sets of relationships may be noted by comparing Joyce's style to that of other Irish writers, or other men, or other members of his circle of friends. These sets of relationships may be further ramified by subsequent writers who adopt the style of Joyce (by reproducing some of the same memes).

The recognition of style is possible due to the repetition of elements (traditional referents and the traditions they refer to), which leads to the recognition of similarities. The network of meanings established by the traditional referents can eventually become completely free-floating: traditional referents can refer to other traditional referents in relationships that, once established, do not need to be tied to any existing tradition. The referent is not only a signifier that is linked to the existing tradition to which it refers; the process of cultural evolution can create networks on top of networks on top of networks, thus making it potentially very difficult to move from signifier to signified.[33]

A traditional referent need not be a specific word, phrase, or formula but can amount to the use of certain grammatical constructions in certain situations ("a figure of grammar") or the tendency to use long or short sentences or to invert subjects and verbs or any other feature that serves to mark the text in the minds of readers or hearers.[34] The diffusion of the marked elements throughout the network of associations that makes up the style is limited only by the pattern-recognition abilities of the brain. Someone with a good "eye" can pick up on patterns (repetitions) among two

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[32] Within the "style of James Joyce" set there might be subsets of "early Joyce," "later Joyce," "Joyce writing on days during which he had read Dante," and so on. The subdivisions, because they are products of post-facto analysis, can be infinitely fine-grained.

[33] This analysis appears to contradict Foley's contention that oral theory presupposes that signifiers are linked to signifieds (1991a:xiv), but Foley is explaining how traditional referents would work for original participants in the tradition, while I am trying to show how they work in general. Foley explains how oral traditional texts can "speak to readers who hear"; I am explaining how texts speak also to readers who do not know how to listen, those who are ignorant or partially ignorant of the tradition, as well as those who are full participants in the tradition. From the point of view of any one individual in any one tradition, the signifiers of traditional referents do in fact link to signifieds: whatever the individual believes the meaning of the signifier to be, whatever associations it metonymically invokes, may be the signified. My analysis points out that the networks of signifieds that undergird the system can in themselves be signifiers of another system because conjoined meme complexes can exist at a nearly infinite number of nested and interpenetrating levels.

[34] For syntax as marking allusions in Latin poetry, see Wills 1996:15.

paintings that are not necessarily known to be related to each other and find that they were created by the same artist, or by an artist and his or her teacher. Style, then, is in the eye (and ear) of the beholder. Regardless of what the traditional referent is, the way it works is the same: it invokes the entire larger tradition.[35]

If the tradition referenced by the style is large, no one will be able to hold it completely in working memory. One may be able to recognize the style of James Joyce from a small sample of text (the traditional referent), but that does not mean that the entire texts of *Dubliners, Portrait of the Artist as a Young Man, Ulysses*, and *Finnegans Wake* are transferred into working memory. Rather, some reasonable subset of the diagnostic features of that tradition exists in the working memories of a diffuse network of individuals and in the textual record. This memory of the tradition must be encoded in radically compressed or abstracted forms. Thus different individuals reading the phrase "forge in the smithy of my soul" may reference different parts of the tradition.[36] The tradition so referenced, via the metonymic power of traditional referents, then, is the population of tradition-fragments and elements—along with the traditional referents that are associated with them—that is spread through all the various human minds that have been exposed to enough of the memes in the tradition to be able to recognize the style.[37] That the tradition is a *population* of things being remembered, written, and talked about by various individuals does not make it any less real.[38]

To review, any functioning tradition produces patterns via repetition. Humans recognize these patterns, and therefore the traditions that generate them can be invoked metonymically via traditional referentiality. Traditional referentiality mnemonically reinforces the tradition to which it refers and

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[35] Note also that "style" therefore does not need to be under the *conscious* control of an author.

[36] Some individuals may even pull up the "wrong" tradition, confusing Joyce with later imitators or with, say, Morrison or Faulkner or some other Modernist writer.

[37] Cf. Foley 1991a:xv: "any single performance merely instances an unexpressed, and inexpressible, whole, a larger story that will forever remain beyond the reach of acoustically recorded, oral-dictated, or even written textualization."

[38] Wittgenstein's concept of "family resemblances" is useful for explaining how we sort out the various memes in the population into somewhat discrete traditions, but this fallback position merely shows that the "essence" of a tradition is a post-facto construction, not a natural kind: we can come up with rules for recognizing and delimiting traditions, but any groups we define are likely to be fuzzy around the edges.

also reinforces the link between the tradition and the referent. Thus traditions that are particularly good at producing repetition, and those that are particularly good at throwing off traditional referents (having consistent recognizable parts) are more likely to maintain themselves and to be replicated. Memes that are able to become linked to such traditions are themselves more likely to be replicated. And because very subtle variations in style can become traditional referents, memes that can imitate certain already established styles are themselves more likely to be replicated. Thus, all else being equal, memes that imitate a traditional style are more likely to be replicated than memes that do not. A meme's imitation of a traditional style, which parasitizes an existing tradition and joins the meme to that tradition, is a version of the same process by which meme-plexes utilizing the Universal Tradition Meme or the Unconscious Imperative become conjoined. Networks of traditional referentiality, generated by the repetitions created by tradition, thus provide a niche for parasitic imitative memes. This process creates additional selection pressure on memes to evolve into harmony with the existing traditional style.

So while there is no reason to discount the fact that individual writers intentionally imitate authoritative styles, from a meme's point of view whether or not the imitation is deliberate is beside the point.[39] Something that imitates the traditional style is simply (in the right context) more likely to be replicated. Note that the Word-to-World fit constraints we have previously discussed are still operational. Memes that clash with ideology, aesthetics, or mnemonic tendencies violate the Word-to-World fit condition and are unsuccessful. But when the parasitic meme is sufficiently "fit," it can get itself incorporated into the network of referents by imitating an already existing style.

Traditional referentiality thus explains the persistence of formulaic elements even long after the oral component of a traditional text has been eliminated by textual copying and reading. It also shows some of the ways that memes may spread themselves from one mind to another and integrate themselves into a culture. Traditional referentiality, and the poetics developed from this notion by Foley and others, also links memetics and mnemonics: not only are memes that are mnemonically stable more likely to be propagated, but those memes that are linked to other mnemonically

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[39] And in fact a memetic analysis need not discount intentional imitation at all. We simply need to note that in memetic terms "authority" is the tendency to be replicated. Writers adopt a certain style because they want people to enjoy what they write, believe it (copy it into their memories), act as if it is true (increase its Word-to-World fitness), and spread it to other people. From a meme's point of view, then, whatever style is authoritative is simply an improvement in its memetic fitness.

important elements are more likely to be able to be re-transmitted and thus spread to other individuals. Thus this cultural poetics helps to explain how information gets put into and accessed from what Maurice Halbwachs in 1950 called the "collective memory."[40]

Anaphora

Foley has discussed the way traditions create the effect of what he terms "anaphora" (1991a:9-10). As a poetic figure, anaphora is used to describe the repetition of elements at the beginning of a poetic unit. For example, the Anglo-Saxon poems "The Gifts of Men" and "The Fortunes of Men" both contain long lists of potential outcomes for human lives, each of which is introduced by some variant of the words *sum sceal* ("a certain one shall"), followed by a description of the specific outcome.[41] Likewise in Runo 10 of the Finnish *Kalevala*, which describes the forging of the enigmatic Sampo, the Smith Ilmarinen repeats the same actions over several days. Each stanza begins and ends with repeated actions: Ilmarinen looks at the underside of the forge, removes an object (a crossbow, a boat, a heifer), then is unsatisfied, breaks the object, and pushes it back into the fire.[42]

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[40] I invoke Halbwachs (1950/1980) here not because I agree with his analysis, but because his phrase "collective memory" has been so influential. One of the great benefits of memetics is that it enables us to replace fuzzy "collective" abstractions with a more philosophically rigorous analysis of *populations* of memes in *populations* of individuals. Rather than a collective memory, which is a nebulous term, we can instead note that there are specific memories (memes) in the minds of various specific people in a social group. If an individual has not encountered the meme in question, he or she has no memory of it. The "collective memory" (if we must keep the term) is then made up of only those individuals whose brains contain the meme in question, but it is still not in any real sense "collective," because it is not clear that all the individuals share the full context and content of each others' memories. In fact, as traditional referentiality shows, the situation is more complex because individuals may have more or less of the total cultural context of a meme-plex activated by traditional referentiality.

[41] For example, lines 67-71 from "Fortunes of Men" (Krapp and Dobbie 1936:63-64, my translation): "To one, wealth; to one a share of miseries. To one glad youth; to one glory in war, mastery in battle. To one skill at throwing or shooting and glorious fame, to one dice-skill, talent at chess." These poems are not oral, but they are certainly traditional (cf. Howe 1985).

[42] Kaukonen 1956; for an English translation, see Bosley 1989:114-17. I recognize that the *Kalevala* is not a primarily oral traditional text because it was greatly revised and re-worked by Elias Lönnrot, but the ontological status of the *Kalevala* is not particularly relevant for this portion of the argument, and the particular section of

Similarly, in the South Slavic *narodna pjesma* about Marko Kraljević entitled "Marko drinks wine during Ramazan," the same list of prohibitions and Marko's violations of those prohibitions are repeated while the actions between the repetitions varies (Foley 1983). And in the Zuni tale "The Women and the Man," the repeated greetings and colloquies with each of the animals (mountain lion, bear, badger, eagle, crow, mole, hawk, owl) are not used for the coyote (Tedlock 1972:87-132).[43] These repeated constructions are examples of anaphora, and the repetition serves to link together the non-recurring parts of each poetic unit as well as the repeated elements.

Foley's description of anaphora extends beyond the poetic line into formula, scene, and theme. Because the repetition in a tradition creates anaphoric effects, readers who are literate in the tradition end up reading differently than readers who are not. Encountering the repeated initial element, the reader who participates in the tradition is able to infer the rest of the unit via the metonymic process of traditional referentiality (Foley 1995:13). So when readers encounter a type-scene that they have previously encountered in an oral traditional poem—for example, the "beasts of battle" or "hero on the beach" in Anglo-Saxon, the "shouting in prison" theme in South Slavic oral epic, or the feasting scene in Homeric Greek epic (Foley 1991:33-35)—they can bring to mind the other "conclusions" to the anaphoric line, formula, or scene that had obtained. The presence of anaphoric elements thus causes readers not only to "fill in the gaps" in the current text with the traditional elements invoked by traditional referentiality, but also to forecast the shape of portions of the narrative that they have not yet encountered.

Anaphora also provides a means by which a parasitic meme that is contradictory to something elsewhere in the meme complex may nevertheless get itself incorporated into that complex. An otherwise conflicting or non-traditional meme that is similar in form to the anaphoric elements of an existing style can be included in a meme even if it did not organically evolve as a traditional referent for the elements that it invokes via anaphora. Because an existing style is, by definition, sufficiently fit to have spread through a culture via tradition and repetition, imitating that style is a strategy with a high likelihood of success. Using a traditional style creates an anaphoric environment that reduces cognitive demands (that is,

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interest, the forging of the Sampo, is not under suspicion as having been invented by Lönnrot (see Kaukonen 1956).

[43] The use of anaphora in these widely varying traditions supports the idea that anaphora is a feature of tradition in general, since there is no genetic connection or direct influence among the specific traditions noted above.

the reader knows what to expect next) and it is an effective strategy for a meme to get itself copied. And there are other good reasons that memes that imitate a traditional style are likely to be copied. A new meme is, by definition, not part of an existing traditional complex of memes. Thus a new meme in the process of parasitizing an existing tradition needs to disguise itself. Imitation is a very effective form of disguise.

In the Anglo-Saxon "The Gifts of Men," the Latinate catalogue form (Howe 1985:108-9) of the poem is filled mostly with traditional, Germanic skills, gifts, or talents (Russom 1978). The catalogue is characterized by the use of distributive *sum* ("a certain one") followed by a description of the individual's particular talents. This formula, which is obviously anaphoric, is repeated 40 times in the poem. The great majority of the descriptions are in fact traditional Germanic, aristocratic skills such as swimming, fighting, and horsemanship. But in the last section of the catalogue these warrior attributes are augmented with five sentences, still in the "*sum* x" form, in which the gifts and skills are obviously Christian and perhaps even monastic (lines 86-96):

Sum her geornlice	gæstes þearfe
mode bewindeþ,	ond him metudes est
ofer eorðwelan	ealne geceoseð.
Sum bið deormod	deofles gewinnes,
bið a wið firenum	in gefeoht gearo.
Sum cræft hafað	circnytta fela,
mæg on lofsongum	lifes waldend
hlude hergan,	hafað healice
beorhte stefne.	Sum bið boca gleaw,
larum leoþufæst.	Sum biþ listhendig
to awritanne	wordgeryno.

One here eagerly embraces in mind the needs of the spirit, and he chooses for himself the favor of God over all the earth-riches. One is brave-minded in devil-struggles, is always ready in the fight against sins. One has strength in many church duties, is able to praise loudly the Ruler of life with praise-songs, has an elevated, bright voice. One is book-wise, lay-fast in lore. One is skillful at writing word-mysteries.[44]

Here we see how anaphora enables one very elaborate complex of memes (Benedictine Reformed monasticism) to incorporate itself into

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[44] Text from Krapp and Dobbie (1936:139-40); translations are my own.

another tradition (the Germanic catalogue of aristocratic gifts and talents).[45] The recurrent anaphoric element, the "*sum* x" formula, is easily repeated, with new material readily incorporated into what would appear to be—even to a primary participant in the tradition—a traditional form.

Anaphora also requires less memory to store the same length of poem: the repeated element only needs to be stored one time and then can be accessed in the form of *repeated element + novel element*, where the entire repeated element needs only to be stored one time regardless of how many iterations of it are used.[46] This communicative economy also enables memetic parasitism and hybridization, as new memes and complexes of memes attach themselves to existing meme-plexes by being incorporated into the existing forms. Anaphora and traditional referentiality, then, help to generate stylistic inertia because the imitation of style is a way for memes to increase the likelihood that they will be replicated and passed from mind to mind. In fact, one characteristic of traditions, particularly oral traditions, is their stylistic conservatism: this is one of the ways we recognize traditions. But we should not expect to see no changes in style whatsoever. To be reproduced, memes must find ways to be imitated. While mimicking an existing style is one way to accomplish this goal, it also risks leaving the mimic unnoticed and therefore unimitated and unreproduced. There are therefore advantages to standing out just as there are advantages to going unnoticed. The successful meme negotiates a balancing act between making itself a very noticeable signal and hiding in the noise, and that balancing act must change over time, because the presence of new memes and new minds and new combinations of memes and traditions is constantly changing the memetic landscape, making memes that were adaptive today maladaptive tomorrow. Styles are therefore likely to develop via hybridization, as some memes incorporate themselves anaphorically, while the major elements of the style remain.

Repetition of Metrical Patterns

One of the major features of any traditional poetic style is meter, however construed (whether by stress, quantity, syllable count, and other

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[45] I discuss the Benedictine Reform connections of this poem in much greater detail in Drout 2006:242-50.

[46] It is this form of communicative economy that enables a reasonably long children's story, *Green Eggs and Ham* by Dr. Seuss, to consist of only 50 different words.

tradition-dependent criteria).[47] Meter serves as an important feature of poetic, traditional language that marks it as belonging to a special category. It thus promotes, in the case of traditions, recognition of that tradition. The *recognitio* component of the traditional poetic meme-plex can be:

> *Recognitio*: when you hear metrical language,
> *Actio*: interpret the words as important, traditional poetry.

If the meter is a marked feature of the poetry, then it is likely to be imitated, and in fact this is exactly what we see across oral traditions: meter is strongly conserved, so strongly, in fact, that conservation of meter is taken as one of the tests of traditionality of poetry.

Our meme-based theory can explain how such strongly conserved metrical patterns may have arisen. Meme-theory interprets the memetic ecosystem (human culture) as arising from differential imitation of human behaviors. Imitation spreads memes throughout cultures and causes them to evolve according to Word-to-World fit conditions. If the foundational imperative of tradition is to imitate, then we can expect to find people imitating the speech of others. Let us assume that a prestigious or talented individual makes up a phrase that is imitated by others, and that imitation first occurs as direct copying of the word or phrase. When there is direct imitation, the copying manifests very high fidelity, but as the copying spreads throughout a human group, people who did not hear the original do not necessarily know what exactly they are copying; they do not know if they are copying the entire phrase or some aspect of the phrase such as its intonation. Some feature of the phrase could then be imitated and spread even if the original phrase was no longer being copied exactly. Those features would then become marked and would be more likely to be copied. If a new phrase mimicked those particular features, even if it was not similar to the original phrase in any other aspects, it too could be copied. Thus marked features of the original phrase could provide a pathway that other phrases could imitate in order to be successfully copied. If the marked elements of the original phrase happened to be its stress patterns, then repetition of those particular stress patterns would be the origin of a metrical tradition.[48]

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[47] The scholarly literature on meter in various traditions is vast and far beyond the scope of this study. Even in the more narrow field of metrics in Anglo-Saxon, Middle English, and Modern English a massive bibliography exists; I have found Woods 1985, Bliss 1962, and Fulk 1992 to be particularly helpful guides.

[48] These metrical traditions are obviously language-dependent as well as being tradition-dependent: a language (such as Japanese) that is not stress-based, for instance,

Metrists will note that I have just reinvented the "Word/Foot" theory of Germanic metrics. Word/Foot theory postulates that all allowable metrical patterns in Germanic poetry arise from the abstracted metrical profiles of allowable words in the language (Russom 1987). Although metrics is a particularly contentious field, with many scholars supporting Eduard Sievers' (1893) theory of "types" (allowable lines) for Germanic meter, Word/Foot theory has the benefit of explaining how repeated metrical patterns might arise with Germanic languages and at the root of Germanic poetic traditions.

The combination of memetics and Word/Foot can explain the evolution of metrical patterns, even the Sievers Types. A word's stress profile provides a template for a particular foot. Once these templates are integrated into a tradition, their imitation will produce "types" founded on the metrical profile of the original word even if that original word has been forgotten. A Sievers Type is merely an abstracted pattern that is being imitated (regardless of how that pattern was originally generated). Memetics and Word/Foot thus show how an underlying simple process of imitation can generate the sophisticated and conserved metrical patterns that characterize traditional poetry.[49] Thus there appears to be a consilience between meme theory and a pre-existing, well-developed approach to understanding the genesis of metrical patterns.

This evolutionary speculation supports the idea that specific metrical patterns are traditional referents, but rather than referring to some particular content of the tradition they invoke the tradition in broad terms. There is no evidence that a Sievers Type A line, for example, is a traditional reference to any one part of the Beowulfian epic tradition (although there is much speculation that hypermetrical lines may have had a traditional association, there is no agreement as to what that association might be). Particular meters also mark specific traditional genres in traditions other than Old English. For example, the "heroic decasyllable" or *junački deseterac* marks South Slavic oral epic; likewise the "Homeric hexameter" (Foley 1990:61, 85). When someone begins to sing in the meter of *Beowulf* or in *Kalevala* meter, expectations and pre-existing knowledge are invoked in the audience (here is an epic and these sorts of things are likely to happen), in the same way that "Beowulf maðelode, bearn Ecgþeowes" ("Beowulf spoke, son of

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will not develop stress-based poetry but will instead use other formal criteria, such as syllable-counting.

[49] I also want to note that I arrived at this theory independently of my original knowledge of metrics (which was scant) and my knowledge of Word/Foot (which was even more limited).

Ecgtheow") or "Vaka vanha Väinämöinen" ("steady old Väinämöinen") invokes, *pars pro toto*, the epic personae of the two characters. The part is the traditional, metrical pattern, abstracted from the metrical patterns of allowable words. The whole is the metrically bound tradition.

Conclusions

Meme-theory as I have discussed it above can explain three separate and distinct phenomena of oral tradition: traditional referentiality, anaphora, and the repetition of metrical patterns. The theory, even in these early stages, thus appears to demonstrate a *Zussamenhang* or consilience. If meme-theory is correct in its general contours, then a literary scholarship built on the theory could serve as an additional fruitful approach toward understanding oral- traditional artforms.

A criticism based on memetics would give us additional ways in which to "read an oral poem." The approach of oral traditional scholarship—understanding the aesthetics of oral traditions as perceived by participants in the traditions—is the absolutely essential first move toward a more complete understanding of oral traditions. The next step is the analysis of oral traditions in terms of some underlying principles. This can be accomplished using memetics, which can decompose traditions into their component parts and explain how these parts combine, recombine, mutate, and remain stable. Reading oral traditional literature in light of memetics suggests ways to argue whether or not something was aesthetically successful even from outside the tradition by examining what memes turned out to be most frequently copied or adapted and by investigating the ways in which they were adapted. This approach is in fact essential (and already practiced, though perhaps not consciously) when dealing with traditions in which no living participants remain (Homeric Greek, Old English). Memetics does not provide a prescriptive aesthetics, but when applied to literature from the past a memetic aesthetics at least provides us some small scaffolding upon which to base aesthetic judgments.

I am hopeful that the time is right for the development of a cultural version of the neo-Darwinian synthesis, a synthesis of the study of culture that brings together the disparate observations of various fields and shows that they are all variations of the same underlying processes. To my mind memetics is thus far the closest anyone has come to finding such an explanation for human culture. Memes are the atoms and their combinations are the molecules of culture, and, now that they have been recognized, our

next task is to figure out the regularities by which they mix and recombine in the continually evolving chemistry of the cultural world.[50]

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