

CULTURE, CREATIVITY, & COPYRIGHT♦

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ABSTRACT

Recent literature in copyright law has attacked the traditional theory that economic incentives motivate people to create. Although the onslaught of criticism has come from different directions, it all shares a similar goal: to move copyright law in a direction that reflects actual creative processes and motivations. This Article adds to and diverts from these accounts, arguing that creativity may be a product of memes: units of culture, analogous to genes, that replicate by human imitation.

A memetic theory of creativity focuses on memes as the reference point for thinking about creativity. Under this view, the creator is a brain with limited space, where memes compete for occupancy. Like other views, memetics takes account of environmental and biological factors responsible for creativity, such as nonmonetary motivations and the creator's upbringing. But the memetic account of creativity is different from these theories in one important way: it uses memes to explain the driving force of culture and creativity. The idea that replicators play a role in cultural creation suggests, among other things, that copyright's originality requirement should be heightened, that the derivative right should be loosened, that fair use should be retained, and that moral rights should be discarded or substantially revised.

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INTRODUCTION

No man but a blockhead ever wrote, except for money.

– Samuel Johnson¹

No one writes anything worth writing, unless he writes entirely for the sake of his subject.

– Arthur Schopenhauer²

No one ever wrote, but for her brain.

– This Author

Copyright law seeks to encourage the production of works by providing to the author monetary incentives—the ability to recoup their creation costs.³ But, as scholars have noted, authors may not always create copyrightable works for remuneration.⁴ Some create because they want to engage with the work or because they feel some indescribable urge to do so. Others may create because they have had particular life experiences. Regardless of the specific reasons offered for creation, scholars agree that copyright law should be attuned to the creative process.

Despite this agreement, we still know very little about how, cognitively speaking, people create. This Article works from the premise that, to craft copyright laws that induce creation, copyright laws

¹ JAMES BOSWELL, 3 BOSWELL'S LIFE OF JOHNSON 19 (George Birkbeck Hill ed., 1934), *quoted in* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 584 (1994).

² Neil Netanel, *Copyright Alienability Restrictions and the Enhancement of Author Autonomy: A Normative Evaluation*, 24 RUTGERS L.J. 347, 441 n.351 (quoting ARTHUR SCHOPENHAUER, *On Authorship*, in ESSAYS 13 (T. Bailey Saunders trans., 1951)). Another translation of works provides slightly different, less eloquent rendition of the same statement: “Only he who writes entirely for the sake of what he has to say writes anything worth writing.” ARTHUR SCHOPENHAUER, *On Books and Writing*, in ESSAYS AND APHORISMS 199 (R.J. Hollingdale trans., 1970) [hereinafter SCHOPENHAUER, *On Books and Writing*]. This sentiment accurately reflects what creativity research calls “intrinsic” motivation. *See infra* Part I. Interestingly, Schopenhauer seemed to think the solution to bad literature was fewer laws, not more: “Payment and reserved copyright are at bottom the ruin of literature.” *Id.* at 199. Indeed, he showed disdain for certain rights, such as anonymity, *id.* at 202, and those of women. *Id.* at 80–88. He also seemed to reject the view that imitation birthed true creativity. *Id.* at 200 (“Only he who takes what he writes directly out of his own head is worth reading.”); *id.* at 202 (“To imitate the style of another is to wear a mask, and however beautiful this may be its lifelessness soon makes it seem insipid and unendurable, so that the ugliest living face is preferable.”).

³ *See* U.S. CONST. art. I, § 8, cl. 8.

⁴ *See, e.g.*, William Fisher, *The Implications for Law of User Innovation*, 94 MINN. L. REV. 1417, 1432 (2010) [hereinafter Fisher, *User Innovation*]; Roberta R. Kwall, *Inspiration and Innovation: The Intrinsic Dimension of the Artistic Soul*, 81 NOTRE DAME L. REV. 1945, 1951–62 (2006) [hereinafter Kwall, *Inspiration and Innovation*]; Lydia Pallas Loren, *The Pope's Copyright? Aligning Incentives with Reality by Using Creative Motivation to Shape Copyright Protection*, 69 LA. L. REV. 1, 8 (2008); David A. Simon, *In Search of (Maintaining) the Truth: The Use of Copyright Law by Religious Organizations*, 16 MICH. TELECOMM. & TECH. L. REV. 355, 360–76 (2010) [hereinafter Simon, *The Use of Copyright Law by Religious Organizations*]; Roger Syn, © *Copyright God: Enforcement of Copyright in the Bible and Religious Works*, 14 REGENT U. L. REV. 1, 13–15, 27–28 (2002); Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513, 526 (2009) [hereinafter Tushnet, *Economies of Desire*].

need to be informed by how creativity—how creative thought—actually works. Part of achieving this goal requires us to follow the current trend in scholarship by stepping away from the purely economic motives for creation. This will entail thinking about creativity as studies suggest we should: as driven by something more than monetary incentives.⁵ Still, postulating incentives or motivations is insufficient. Not only do we need to hypothesize reasons for creation, but we must also explore how the creative mental process might function. Other scholars have undertaken the former inquiry with great zeal, and they have added much to copyright law. They have done this through phenomenology,⁶ as well as work on collaboration and the effects of networks. I want to suggest, though, that we needn't separate out monetary motivations from nonmonetary ones. To preclude such a distinction means focusing on features common to both. Here we can focus on an area to which scholars have not paid much attention: mental processes.

This Article does that by introducing the concept of *memes*—replicating units of culture. Memes are the cultural analogue to genes. A catchy tune or phrase, for example, can be a meme. The tune or phrase (the meme) is copied when listeners hear it, and it is copied again when the former listener regurgitates (expresses) the phrase or tune, which is heard by yet another listener . . . and so on. A memetic theory of creativity focuses on memes as the reference point for thinking about creativity. Under this view, the creator is a brain with limited space, where memes compete for occupancy. In this respect, the memetic account of creativity is both similar and different from current accounts in the literature. Memetic theory, like some others, shifts the focus away from the individual. But instead of looking only to authors' explanations of the creative process, self-expression, or autonomy, it looks to memes for explanations. Like these other theories, memetic theory explores nonmonetary motivations of creation. Unlike these theories, however, memetics views these motivations as a subset of memes.

Although these theories are, to varying degrees, consonant with memetic creativity, they are not identical. Memetics takes a different perspective by focusing on the meme as the force of cultural production

⁵ Diane Zimmerman, *Copyrights as Incentives: Did We Just Imagine That?*, 12 THEORETICAL INQUIRIES L. 29 (detailing studies showing that creativity is largely a process driven by intrinsic factors, and that the possibility of economic reward sometimes decreases creativity, and that, if the studies are correct, copyright's economic creation-incentive is questionable).

⁶ Phenomenology refers to the school of philosophy that "studies conscious experience as experienced from the subjective or first person point of view." *Phenomenology*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, <http://plato.stanford.edu/entries/phenomenology/#1> (last updated July 28, 2008). The phenomenological approach asks and answers: "How shall we study conscious experience? We reflect on various types of experiences just as we experience them." *Id.* I argue later that this is precisely why phenomenology does not give us a complete picture of the mental processes of creativity.

and creativity. Cultural theory, for example, claims that environmental factors influence how and what we create. Memetics does not seek to deny any of these facts. What it does is cast them in a slightly different light—it suggests that *culture is composed of entities that replicate for their own sake*. In other words, it is not merely that our environment influences our culture by, for example, placing us in a situation where only certain ideas are present; it is that those limited ideas are designed to replicate, and their quest to replicate can influence our actions and creations. The creator is a vehicle filled with and surrounded by cultural competition: the winners are the creator's physical products,⁷ her works. In other words, successful memes replicate the most, pushing the creator toward one route or the other. In this way, our culture shapes our creative process, and it can potentially subvert our own creative element by doing so. The idea that replicators play a role in cultural creation suggests, among other things, that copyright's originality requirement should be heightened, that various rights contained in the Copyright Act should be loosened, that fair use should be retained, and that moral rights should be discarded or reconceptualized.

Part I of this Article introduces memetics and uses it to delineate a theory of creativity. It explains how creativity may be, not only a matter of environment or conscious direction of authors (though it includes these), but a product of memes competing for space in a brain that is limited by time, space, environment, and other factors. This conception of creativity provides a useful lens for thinking about how culture replicates and varies, and about the individual's role in creativity. Although scholars have raised objections to memetics, I do not deal with them in this Part. Instead, I address them in Appendix A.

With the theory in place, Part II explores how memetics compares with current (legal) scholarship discussing cultural creation and creativity (mostly) in copyright law. To introduce the concept of creativity in copyright, I first explain the general economic theory of copyright. With that basic background out of the way, we confront three general themes discussed in legal-cultural scholarship. Although the particular subject of each scholar's inquiry is different, all scholars, at one point or another, discuss creativity. I focus here on that topic. One line of literature focuses on the creator as a discrete entity propelled to create by either internal or external forces, such as spiritual forces or inner desires to enhance autonomy. The second line of literature focuses on the process of creation, arguing against the conception of the creator as a singular, isolated entity and in favor of copying as part of the creative process. The final line of literature builds off the first two.

⁷ Memes also can be nonphysical products, such as "ideas" or "behaviors." Physical products are not always required to spread memes, as some can be transmitted simply by talking or doing.

It views the creator in a cultural context, as a being limited by time, space, and her current milieu.

Part III laces together Parts I and II. It explains the implications a memetic account of creativity has for copyright law.⁸ It shows that, because creation is a product of natural selection among memes, our laws focus too strongly on the individual, frequently asking questions as if culture does not replicate because of certain features. Changing our perspective and asking questions about memes shows us that the current originality standard is too low, that derivative rights should be relaxed, that fair use should be retained, and that moral rights law focuses too strongly on the author. In this Part, I make only a few but substantial suggestions to achieve these ends. The purpose of which is to show that changes are needed and, consequently, how we can make them.

I. MEMETICS AND CREATIVITY

It is not Goethe who creates Faust, but Faust which creates Goethe.

– Carl Gustav Jung⁹

It is ironic, though excusable, that courts have been “fascinat[ed] with the mental component of being an author”¹⁰ but have given actual mental processes little attention. Courts do not consult psychological journals for precedent, and so they shouldn’t be expected to eagerly incorporate insights from psychology or cognitive science. It is less

⁸ A few legal scholars have employed the discipline of memetics to analyze legal problems. See JACK BALKIN, *CULTURAL SOFTWARE: A THEORY OF IDEOLOGY* (Yale Univ. Press 1998); Thomas Cotter, *Memes and Copyright*, 80 TUL. L. REV. 331 (2005) [hereinafter Cotter, *Memes and Copyright*]; Thomas Cotter, *Prolegomenon to a Memetic Theory of Copyright: Comments on Lawrence Lessig’s The Creative Commons*, 55 FLA. L. REV. 779 (2003); Michael S. Fried, *Evolution of Legal Concepts: The Memetic Perspective*, 39 JURIMETRICS J. 291 (1999); Neal A. Gordon, *The Implications of Memetics for the Cultural Defense*, 50 DUKE L.J. 1809 (2000); Jeffery Evans Stake, *Are We Buyers or Hosts?: A Memetic Approach to the First Amendment*, 52 ALA. L. REV. 1213 (2001). Only Thomas Cotter has applied the discipline to copyright law directly. One other article bears noting: Over twenty years ago, Jack Balkin wrote about the replicating *structure* of legal arguments, viewing them as self-replicating and competing against one another for territory. See generally Jack Balkin, *The Crystalline Structure of Legal Thought*, 39 RUTGERS L. REV. 1 (1986).

⁹ Carl Gustav Jung, *Psychology and Literature*, in *THE CREATIVE PROCESS* 230 (Brewster Ghiselin, ed., W.S. Dell & Cary F. Baynes trans., 1980). For full disclosure, Jung made this statement because he conceives of the artistic vision as controlling the artist. *Id.* at 229–32. See *infra* Part I.A. Jung was not talking about memes, though I think this statement is certainly in the spirit of memetics. This statement, for example, embodies the idea that memes can push the creator in one direction or another.

Also, I find it both interesting and telling that Kwall cites this same statement in her book to illustrate the principle that creativity is a sort of “self-surrender.” ROBERTA ROSENTHAL K WALL, *THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES* 16 (Stanford Univ. Press 2010) [hereinafter K WALL, *THE SOUL OF CREATIVITY*]. (For disclosure, I decided to use this statement before reading Kwall’s book—perhaps because of this memplex’s replicative power.) In some sense, this Article agrees with this statement.

¹⁰ Russ Versteeg, *Defining “Author” for Purposes of Copyright*, 45 AM. U. L. REV. 1323, 1355 (1996); see also Alan L. Durham, *The Random Muse: Authorship and Indeterminacy*, 44 WM. & MARY L. REV. 569, 606 (2002) (“As we have seen, courts generally view authorship, by virtue of the originality requirement, as requiring some form of intellectual labor, imagination, or planning.”).

clear why legal scholarship, which has broached the subject, has yet to address just how the mental creative process works, though this appears to be changing.¹¹ Developmental psychologist Howard Gardner's own "awakening" to the pertinence of cognitive structure and function illustrates why such subjects are important to studying creativity:

Throughout my student days I was innocent of knowledge about (and, for that matter, devoid of interest in) the human brain. . . . I felt no need to discover the 'brain correlates' of the artistic behaviors I was trying to understand. In fact, when I was not conducting psychological experiments with children, I was content to talk with artists and ponder the way their developed skills produced fluent and highly original works of art.

But soon enough, I encountered an impasse, owing to one single fact: in competent artists, skills unfold with such fluency that it is extremely difficult for a nonprofessional to figure out the skills involved in artistry and how they are deployed.¹²

While Gardner eventually realized the importance of understanding mental processes, much of copyright scholarship does not deal with this issue directly.¹³ This Part seeks to add to existing scholarship and address creative thought processes using a theory of culture called memetics. This account examines the creation of culture from the perspective of the *meme*: the individual unit of culture. This Part begins by briefly explaining the basis of memetic thought. It then uses memetics to craft an account of creativity—one that describes creation in terms of memes and brains, rather than just authors.

For those not convinced of memetic theory, I recommend they

¹¹ This Article represents an attempt to undertake this task, which Jeanne Fromer, Amy Landers, Gregory Mandel, and Diane Zimmerman have recently begun to do. See, e.g., Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441 (2010); Amy L. Landers, *Ordinary Creativity in Patent Law: The Artist Within the Scientist*, 75 MO. L. REV. 1 (2010) (discussing the new standard under *KSR International v. Teleflex Inc.*, 550 U.S. 398 (2007), and explaining how creativity research can apply to the new *KSR* test); Gregory N. Mandel, *Left-Brain versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283 (2010) (discussing creativity in the context of joint authorship and joint inventorship); Zimmerman, *supra* note 5. As to other areas of copyright law, interdisciplinary work already is underway. See, e.g., Laura R. Bradford, *Parody and Perception: Using Cognitive Research to Expand Fair Use in Copyright*, 46 B.C. L. REV. 705 (2005).

¹² HOWARD GARDNER, *ART, MIND, & BRAIN: A COGNITIVE APPROACH TO CREATIVITY* 318 (1982).

¹³ In some sense, these theories focus on "macro-level" explanations. By "macro-level," I mean the theory focuses on individuals or groups of individuals, rather than the processes occurring in those individuals' brains. The macro-approach can be thought of this way. Imagine an individual who sought to understand how the game of basketball was played by examining only the statistics. If she followed every team in the National Basketball Association, she may be able to tell you who scored the most points, who had the most assists, and probably make some approximation about the value of each player and team. But she would never understand how basketball was played per se. She would not know what the difference between a "pick" and a "bounce pass." She would not know the *rules*. Memetics is an attempt to look for and identify the rules—to understand how the game is played.

consult the Appendices. In Appendix A, I address common objections to memetic theory. In Appendix B, I review a recent scholar's attempt to instantiate memetic theory. For the time being, however, we will take a look at meme theory and how it can add to a discussion of the creative process.

A. Memetics

1. What Are Memes and What is Memetics?

Imitation is a necessity of human nature Most of the things we do, we do for no better reason than that our fathers have done them or that our neighbors do them, and the same is true of a larger part than we suspect of what we think.

– Oliver Wendell Holmes, Jr.¹⁴

Imagine you knew everything about past culture. You could, if you wanted, plot cultural products on a graph to depict the existence, popularity, differences, and extinction of various cultural objects, such as particular styles of vases or genres of music. With such information, you might start to wonder why certain cultural products were more successful than others. Why did the popularity of the guitar outpace that of the oboe? Why did top hats fall out of style? Tough questions. To answer them, you might start by asking questions about current events, world leaders, and other societal influences. That would be a good start. But that would take you only so far. Even if societal influences or controls provide some explanation, we still might wonder why those certain controls or influences enjoyed success, pushing culture in one direction or another. Part of the answer may lie in precisely *how* culture develops—in the nature of cultural development. You might, that is, focus on *culture itself*.

That is the goal of memetics. The theory is designed to explain culture by, in large part, its micro-structure. And what is culture but information? Memetics attributes a certain force to information—a *replicative* force. In other words, it posits that information—which comprises culture—can be broken down into small units, analogous to genes.

Memetics is based on Richard Dawkins' idea of the selfish gene¹⁵: life evolves based on genes' desire—their *only* desire—to replicate themselves.¹⁶ “Desire” does not imply thoughts or feelings. Replicators do not feel or think or have “real” desires, as we would call human desires. Instead, they are programmed to replicate—that is their

¹⁴ OLIVER WENDELL HOLMES, JR., *The Path of the Law*, in THE PATH OF THE LAW AND THE COMMON LAW 16 (2009).

¹⁵ DAWKINS, THE SELFISH GENE 187–201 (1989) [hereinafter DAWKINS, SELFISH GENE].

¹⁶ See *id.*

function, and when I speak of “desire” I am speaking of this *drive*, not any conscious thought.

In this respect, Dawkins sharpened Darwin’s principle observation—that natural selection, the process by which nature exerts “survival pressures” on organisms and drives evolution, works on the genetic level: it “selects” which *genes* survive and which perish).¹⁷ When Dawkins talked about genes, he was talking merely about a specific kind of *replicator*. Qualifying as a replicator entails three conditions: selection, variation, and retention.¹⁸ Selection means that replicators will be “selected” for or against based on environmental factors—surviving or dying based on their ability to replicate.¹⁹ Variation means that the replicators will not always successfully make accurate copies of themselves; variations arise through sloppy copying or recombination.²⁰ Retention means that the replicator can be passed on (from host to host).²¹

Memetics is an extension of the replicator concept. Despite disagreement about the relative size of a meme, memeticists agree that memes are units of information analogous to genes; they are replicators, whatever form they may take.²² This information can be recast to describe “culture”—the societal construct in which we exist.²³ Thus, culture exists as units (memes), and combinations of units (memplexes), of information that replicate themselves.²⁴ The term “units of information” includes things like beliefs, social practices, and behaviors. A complicated behavior may include many different memes working in concert, or it may include only one.

As replicators, memes exhibit selection, variation, and heritability.²⁵ In the first instance, they undergo selection—memes are, like genes, competing for room in their host. Memes find a home in their hosts’ brains (indeed they might not even exist outside of it)—the

¹⁷ *See id.*

¹⁸ *See id.* at 15–18; *see also* SUSAN BLACKMORE, *THE MEME MACHINE* 14–15 (1999).

¹⁹ Dawkins notes that selection, under his conception, works on “the active, germ-line replicator”; but he also acknowledges that a vehicle in which the replicator is possessed operates in a hierarchy, which can be broken down into various “levels.” RICHARD DAWKINS, *THE EXTENDED PHENOTYPE: THE LONG REACH OF THE GENE* 112–13 (1999) [hereinafter DAWKINS, *THE EXTENDED PHENOTYPE*]. Thus, while selection acts on the replicator (not the vehicle), the level at which selection works on the gene may influence the replicator’s success.

²⁰ *See* DAWKINS, *SELFISH GENE*, *supra* note 15, at 15–18; *see also* BLACKMORE, *supra* note 18, at 14.

²¹ BLACKMORE, *supra* note 18, at 14.

²² For a discussion of what constitutes a meme, *see infra* app. A.

²³ For a full and rich philosophical discussion of social construction, *see* JOHN R. SEARLE, *THE CONSTRUCTION OF SOCIAL REALITY* (1998).

²⁴ *But see* Derek Gatherer, *Why the ‘Thought Contagion’ Metaphor is Retarding the Progress of Memetics* 2 J. MEMETICS 1, § 3 (1998), available at http://cfpm.org/jom-emit/1998/vol2/gatherer_d.html [hereinafter Gatherer, *Thought Contagion*].

²⁵ Some have argued that more than these three basic traits are required. *See, e.g.*, William Calvin, *The Six Essentials?: Minimal Requirements for the Darwinian Bootstrapping of Quality*, 1 J. MEMETICS 1, § 1 (1997), available at http://cfpm.org/jom-emit/1997/vol1/calvin_wh.html (outlining six elements for memetics).

place where they can be stored and eventually expressed and replicated—where space is limited. The limitations on space and resources (cognitive effort used to spread memes) cause selection to occur. Memes are chosen based on a variety of factors (see *infra*),²⁶ including their attractiveness to the brain, which also is a function of genes, environment, and other memes.

Additionally, memes exhibit variation. Sometimes variation in memes occurs by accident, as where you hear a three-note melody (A, G, Eb), but remember a slightly different one (A, G, E). Other times, variation will result from conscious adaptation. You might, for example, receive a recipe for cookies, and later think to add chocolate chips.²⁷

Finally, memes also can be transmitted, though their development is not limited to “vertical transmission” (generation to generation)—memes also can be transmitted “horizontally” (person to person).²⁸ Because memes need not “descend” from parent to child to replicate (in the way genes must), they have been objected to as Lamarckian (an objection I explore in Appendix A).²⁹ During transmission memes may undergo variation and selection, as well. All three processes—transmission, variation, and selection—are interrelated and present in memetic replication.

In this sense, memes are like genes: their sole “goal” is to replicate themselves.³⁰ Thus, human bodies are merely “hosts” or “vehicles” that memes use to propagate themselves³¹ through the host’s ability to imitate.³² To put it another way, human brains replicate memes, but

²⁶ See *infra* Part I.B.

²⁷ As I will argue below, this is part of a creative process that draws on previous memes and involves a variety of factors.

²⁸ Liane Gabora has suggested that this qualitative difference between genes and memes provides insights into the structure of memes. She argues that memes are more akin to emergent life, conceived of as a web of interconnected organisms that can exchange information “horizontally.” See *infra* note 68 and accompanying text.

²⁹ DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19, at 112; see also Liane Gabora, *The Origin of Evolution of Culture and Creativity*, 1 J. MEMETICS 1, § 5 (1997), available at http://cfpm.org/jom-emit/1997/vol1/gabora_1.html [hereinafter Gabora, *Culture and Creativity*]; H. Allen Orr, *Dennett’s Strange Idea*, BOSTON REVIEW, Summer 1996, available at <http://www.bostonreview.net/BR21.3/Orr.html> (“While it is true that many different kinds of substrate can be selected, it is simply not true that Darwinism works with any substrate, no matter what. Indeed Darwinism can’t even explain old-fashioned *biological* evolution if the hereditary substrate doesn’t behave just right. Evolution would quickly grind to a halt, for instance, if inheritance were blending, not particulate. With blending inheritance, the genetic material from two parents seamlessly blends together like different colored paints.”).

³⁰ See DAWKINS, SELFISH GENE, *supra* note 15, at 192, 194; BLACKMORE, *supra* note 18, at 30; see also DENNETT, DARWIN’S DANGEROUS IDEA: EVOLUTION AND THE MEANINGS OF LIFE 363 (1996) [hereinafter DENNETT, DARWIN’S DANGEROUS IDEA].

³¹ See DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19, at 114 (“A vehicle is any unit, discrete enough to seem worth naming, which houses a collection of replicators and which works as a unit for the preservation and propagation of those replicators. . . . [A] vehicle is not a replicator.”). Memes, of course, are not conscious entities. They do not “try” to do one thing or another—they just seek to replicate. As Dennett notes, “Meme X spread[s] among people because X is a good replicator.” DENNETT, DARWIN’S DANGEROUS IDEA, *supra* note 30, at 364.

³² See BLACKMORE, *supra* note 18, at 43; DAWKINS, SELFISH GENE, *supra* note 15, at 194.

memes do not replicate to benefit humans. For this reason, certain cultural aspects exist as they do “simply because [they are] *advantageous to [themselves]*.”³³ Memes do not “care” about us, nor do they need to care,³⁴ though their replication depends on our esteem for them.³⁵

One helpful way to think about memes is as little organisms with which we have a mostly mutualistic symbiotic relationship. They live in our brains and use them for their own selfish purposes. At the same time, we use memes for our own purposes. We can discard and vary them as we see fit. Sometimes, however, the memes can replicate without our control, or even in spite of our control. In these circumstances, replication can harm us.³⁶ Although other possible analogies might also illustrate the point (viruses of the mind is one³⁷), viewing memes as having an interactive and mostly mutualistic symbiotic relationship with our brains seems to be the most effective. Changes in circumstances can alter the nature of the relationship, making it parasitic (beneficial to one organism and harmful to the other) or commensal (beneficial to one organism and neutral to the other).

Let us take a moment to summarize. Memes are replicators—all they do is replicate; that is their “goal” or “function.” Memes have no “intent” or “desires” about the world. They just want to propagate themselves. To be successful, memes must actually replicate, which they do using a human brain. Human brains, and their capacity to imitate, produce the necessary medium for memes to arise. Memes, then, are entirely human in the sense that they did not exist before culture—memes *are* culture. Nevertheless, memes are just replicators, using human brains to replicate themselves. They do this in the same way genes use human beings or fish to replicate themselves. Genes do not “want” anything other than to make more copies of themselves, and they achieve this “goal” by working together (co-adapting³⁸) in the form of organisms.

³³ DAWKINS, *SELFISH GENE*, *supra* note 15, at 200 (second emphasis added).

³⁴ DENNETT, *DARWIN'S DANGEROUS IDEA*, *supra* note 30, at 363 (“[T]here is no *necessary* connection between a meme’s replicative power, its ‘fitness’ from *its* point of view, and its contribution to *our* fitness (by whatever standard we judge that).”).

³⁵ *Id.*

³⁶ See *infra* note 48 and accompanying text.

³⁷ See, e.g., Richard Dawkins, *Viruses of the Mind*, in DENNETT AND HIS CRITICS: DEMYSTIFYING MIND 13 (Bo Dahlbom ed., 1993); RICHARD BRODIE, *VIRUS OF THE MIND: THE NEW SCIENCE OF THE MEME* (2004).

³⁸ Coadaptation refers to genes (or groups of genes) that “work together” to enhance their own fitness. RICHARD FRANKHAM, JONATHAN D. BALLOU & DAVID A. BRISCOE, *INTRODUCTION TO CONSERVATION GENETICS* 383 (2d ed. 2010) (“Coadapted gene complexes are groups of alleles at multiple loci whose fitness depends on interactions among loci (epistatic interactions).”); DAVID T. PARKIN, *AN INTRODUCTION TO EVOLUTIONARY GENETICS* 165 (1979) (“When a high biological fitness depends upon the interaction between a series of alleles, they are described as ‘coadapted’ genes.”).

2. When Memes Cooperate: Memeplexes

But I almost believe that we are ghosts, all of us, Pastor. It's not only what we inherit from our fathers and mothers that keeps on returning in us. It's all kinds of old dead doctrines and opinions and beliefs, that sort of thing. They aren't alive in us; but they hang on all the same, and we can't get rid of them.

– Mrs. Helene Alving, speaking to Pastor Manders, in *Ghosts*³⁹

Thus far, I have been discussing memes as if they act as discrete entities. Memes, though, are not always simple, lone-standing units. Memes frequently are tied to other memes, and this “bundle of memes” may be selected for because of some memes, but not others. In other words, some memes are not selected for or against; instead, they free-ride on the interacting meme and are replicated with it (i.e., they act as replicators). Many of the proposals in a bill or policy plan, for instance, are not discussed but are nevertheless selected for because of their link to a potent meme.⁴⁰ This is precisely the mechanism by which “pork barrel” legislation is passed into law: it is attached (sometimes in the form of a rider) to large, complex bills to avoid being selected against. There are other memes, which may or may not be free-riders, as well, that make up the memeplex (bundle of memes). In other words, “[m]emes are not transmitted independently . . . [t]hey are, to borrow from genetic terminology, ‘linked.’ Indeed many of these memes may be dependent on each other”⁴¹

Thus, while sometimes memes interact as small and discrete individual entities, other times the interaction occurs among various memeplexes and within the context of one or more memeplexes in the brain.⁴² Professor John Langrish notes that people making decisions

³⁹ HENRIK IBSEN, *GHOSTS* (1881), reprinted in *FOUR MAJOR PLAYS VOLUME II* 37, 76 (Terry Otten ed. 2001).

⁴⁰ Hans-Cees Speel, *A Memetic Analysis of Policy Making*, 1 J. MEMETICS 2, § 2 (1997), available at http://cfpm.org/jom-emit/1997/vol1/speel_h-c.html (“Most memes are never discussed, but simply make it into approved proposals because they are linked to memes that are discussed and selected for. They are not selected for, but there is (positive) selection of them.”).

⁴¹ Derek Gatherer, *Macromemetics: Toward a Framework for the Re-unification of Philosophy*, 1 J. MEMETICS 1, § 3 (1997), available at http://cfpm.org/jom-emit/1997/vol1/gatherer_dg.html [hereinafter Gatherer, *Macromemetics*]. Gatherer posits that meme pools are (groups of bundles of memes) hierarchical, with low level “simple propositions,” intermediate level “complex ideas,” and the highest level of “every” existing meme. *Id.* See also DAWKINS, *SELFISH GENE*, *supra* note 15, at 196.

⁴² This explanation is similar to one given by Professor John Langrish, who argues that in order to understand memes and how they are selected, we need to categorize them (even further than we have done already). John Z. Langrish, *Different Types of Memes: Recipemes, Selectemes and Explanemes*, 3 J. MEMETICS 1, §§ 1–5 (1999), available at http://cfpm.org/jom-emit/1999/vol3/langrish_jz.html. He does this by classifying memes as “explanemes” (“competing ideas that are used in answering questions about why things work or work better”), “recipemes” (“competing ideas of how to do things”), and “selectemes” (“ideas that form the basis of selection”). *Id.* § 4. These classifications are useful for thinking about how memes work together or how they interact. (Langrish’s conception of these “memes” actually is not unmemetic, but he conceives of it as such.) A recipeme, for example, actually is not a “meme” for “how to do things” per se; it is a memeplex, which contains a variety of memes that result in a

typically “[do] not work through a decision tree.”⁴³ Indeed, particular memplexes may trigger certain responses at any given arena—and their integration into the current memetic environment will depend on a variety of factors.⁴⁴ In that sense, a given creative “thought” (more precisely, the interaction(s) of any given meme(plex) or a mutation thereof) may be a product of this “triggering” function,⁴⁵ which is contingent upon the existing meme pool and structure in the brain.⁴⁶

Because memplexes may be large and diverse, they can contain memes that are, from the host’s perspective, both “good” and “bad.” On this seemingly narrow, functionalist account of culture,⁴⁷ creativity—and therefore “creativity memes”—is often presumed to be “good”; that is, creativity produces new ideas and those new ideas enhance society. As a general matter, that seems to be true; but this

coherent *framework of memes* that form the basis for selection. Selectemes, according to Langrish, are Russian-doll-type patterns that form a whole. *Id.* I think a better way to think about this concept is in terms of a memplex—numerous memes have formed a coherent structure, which can be used as shorthand for making decisions.

⁴³ *Id.* (1999); see also Ronald Chen & Jon Hanson, *Categorically Biased: The Influence of Knowledge Structures on Law and Legal Theory*, 77 S. CAL. L. REV. 1103, 1168 (2004) (“[S]chemas generally facilitate our recall by providing us with a cognitive handle for retaining information.”).

⁴⁴ See Edward J. Wisniewski, *Conceptual Combination: Possibilities and Esthetics*, in CREATIVE THOUGHT: AN INVESTIGATION OF CONCEPTUAL STRUCTURES AND PROCESSES 51 (Thomas B. Ward, Steven M. Smith & Jyotsna Vaid, eds., 1997); see also Gabora, *Culture and Creativity*, *supra* note 29, § 9 (“The situation is reminiscent of superconductivity; lowered resistance increases correlation distance, and thus a perturbation to any one pattern can percolate through the system and affect even distantly-related patterns. It would be interesting to determine experimentally whether the ‘inductiveness’ of our memes, like other self-organizing systems, exhibits the ubiquitous inverse power law. Just as in a sand pile perched at the proverbial Tedge of chaos [sic] once in a while a collision between two grains will lead to another in just the right chain reaction to generate a large avalanche, occasionally one thought will trigger a chain reaction of others in a way that reconfigures the conceptual network.”) (citation omitted).

In describing the process of “conceptual combination,” Wisniewski states there are three levels at which this “creativity” can occur: (1) the “computational level,” which addressed why people combine certain concepts; (2) “algorithmic level,” which describes how concepts combine to produce an output; and (3) the “implementational level,” which explains “how the algorithm is realized in a physical device.” Wisniewski, *supra* note 44. These concepts correspond roughly to (1) genetic reasons and memetic “push” in one creative direction or another, (2) s-interaction, and (3) implementation.

⁴⁵ Memes may contain “emotion” components. That is, they may trigger an emotional response in the brain that benefits the meme. See, e.g., ANTONIO DAMASIO, THE FEELING OF WHAT HAPPENS: BODY AND EMOTION IN THE MAKING OF CONSCIOUSNESS 161 (1999) (“[W]hen we recall an object, we recall not just sensory characteristics of an actual object but the past reactions of the organism to that object.”); Gabora, *Culture and Creativity*, *supra* note 29, §§ 5, 9; see also Jon Hanson & Mark Yeboah, Policy Attitudes (unpublished manuscript) (on file with author) (describing how many judgments, including moral judgments, are made automatically and without reflection or contemplation).

⁴⁶ See *infra* Part I.B; DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19, at 111 (noting that “the relative success of a meme will . . . depend on the memes that are already numerous in the meme-pool”); *id.* (“[A]n important aspect of selection on any one meme will be the other memes that already happen to dominate the existing meme-pool.”).

⁴⁷ By narrow, functionalist account, I mean it seems to lack any moral component; that is, it does not reflect the complexities of culture. Goodness and badness are viewed in terms of “fitness,” rather than morals. Thus, the account of culture may be criticized as too simplistic, too functional. Of course, memetics does not discount things like morality or conscious reasoning. It just seeks to explain culture by delineating its components. Thus, a meme may be “good” for a host in one moral environment and “bad” for a host in another moral environment.

perspective is *host-centric*, whereas memetics is *meme-centric*. What is good for memes may not be good for hosts. One example of this is the case of dying for a “noble” or “special” cause. Suicide bombing is a current example of this phenomenon.⁴⁸ The meme of suicide bombing is clearly bad for the host, who dies. But the meme does not die along with the host. To the contrary, others may celebrate (or condemn) the meme, which will be further perpetuated and probably endorsed by other hosts. There is no reason to think that such a meme will die out, even though it kills its hosts (and others). Such a meme is no doubt destructive to both the host and the groups of hosts, as it facilitates more violence. Nevertheless, it continues to propagate.⁴⁹

Even when a particular meme is good for a host or group of hosts, it also may be linked to other memes that are detrimental. Creativity is such a memplex: it may replicate with success because it is both beneficial and harmful *to the host*—i.e., the beneficial meme replicates, so does the detrimental “hitchhiker meme,”⁵⁰ one to which it is attached.⁵¹ Specifically, creativity memes may be linked to eccentricism or other harmful memes: the genius painter may also have severe depression, for example.⁵² (Remember, the meme is what is replicating, so focusing on the individual is helpful only insofar as it explains the memes’ propagation.) Thus, some memes harmful to the host may “slip through” the brain’s memetic filter (i.e., the current memetic network in the brain).

⁴⁸ Another meme exhibiting these qualities is “the threat of hellfire.” DAWKINS, *SELFISH GENE*, *supra* note 15, at 197–98.

⁴⁹ One might argue that the suicide-bombing-meme is just a hitchhiker meme, which has attached itself to the beneficial meme of religion. This is a dubious claim, not only because it is unclear whether religion’s benefits exceed its costs, but also because it quibbles with how we decide whether memes are part of a memplex.

⁵⁰ Antonio Preti & Paola Miotto, *Creativity, Evolution and Mental Illness*, 1 J. MEMETICS 1, § 3 (1997), available at http://cfpm.org/jom-emit/1997/vol1/preti_a&miotto_p.html.

⁵¹ *Id.* §§ 2–4 (noting the mental illness tendencies in creative people); *id.* § 3 (stating that “group selection” in genetics “has often been thought to favour traits that are individually disadvantageous but evolve because they benefit the wider group”). Preti and Miotto clarify that it is not creativity per se that can be harmful, but the “hitchhiker alleles” that are linked to creativity. *Id.* While these alleles confer to selective advantage, they propagate because they are linked to creativity. *Id.*

⁵² See *id.* These “memes” also are likely linked to *genes*. To some degree, the memes we acquire *must be* linked to genes and polygenes, which give rise to cognitive capabilities. See Wisniewski, *supra* note 44, at 4 (“[C]reative cognition focuses mainly on . . . the generative potential that is inherent in the operating characteristics of most normal human brains.”); see also DEAN KEITH SIMONTON, *CREATIVITY IN SCIENCE: CHANCE, LOGIC, GENIUS, AND ZEITGEIST* 113–14 (2004) (observing that “creative persons often display symptoms of psychopathology,” which, in turn, “is positively associated with a relative inability to filter out extraneous information,” reducing the mind’s ability to engage in “latent inhibition”—a preconscious process of filtering out stimuli that the mind has judged irrelevant); *id.* at 123 (reviewing some of the literature showing that the more constraints imposed in a domain, the less likely the instance of mental disorder among its inhabitants). But that some creative people exhibit eccentricism (which could be simply a memplex) does not settle the question of whether mental illness, a mainly genetic issue, is linked to creativity. See R. KEITH SAWYER, *EXPLAINING CREATIVITY: THE SCIENCE OF HUMAN INNOVATION* 17, 86–87 (2006) (explaining that there is no definitive link between mental illness and creativity).

That memetic filter is part biological and part memetic.⁵³ As explained below in Part I.B, creativity is constrained by biological needs and current culture (memes). These “limiting memes” mostly exist in the creator’s brain. New memes then—even “creative” ones—must co-exist or overtake the brain’s existing meme network or memeplex. Creativity theory has discussed this concept as “coherence.”⁵⁴

Because our brains exist in various memetic states at any given time, we interpret information in a particular way. This means that *what* we encounter often times influences *how* we interpret it.⁵⁵ But that type of statement, one made in the context of creativity research, does not do justice to memetics. Instead of thinking about the problem solely in terms of how *the host* processes information, we need to remember that *memes* already exist in host brains—and that they are influencing *how* we think. In other words, the current memes in our brain may have defense mechanisms that reject memes that challenge an existing meme(plex).⁵⁶ Current mind sciences research supports such a view.⁵⁷

For example, when Galileo espoused Copernicus’ theory of heliocentricity, he was sentenced to jail, not given an award. Why? Creative memes are a challenge to existing memes. Because current memes dominate, they have staying power—indeed, they likely will have embedded in them mechanisms to defend their existence.⁵⁸ In the case of Galileo, the existing meme(s) that the sun revolved around the earth was powerfully connected to religion and anthropocentrism. When “Galileo’s meme” challenged the existing meme(plexes), they

⁵³ Dennett has described the filter in terms of biology but also noted that “the human mind is itself an artifact created when memes restructure a human brain in order to make it a better habitat for memes.” DENNETT, *DARWIN’S DANGEROUS IDEA*, *supra* note 30, at 365. The insight here, though, is that the existing memeplexes in the brain also can act as filters.

⁵⁴ See generally Paul Thagard, *Coherent and Creative Conceptual Combinations*, in *CREATIVE THOUGHT: AN INVESTIGATION OF CONCEPTUAL STRUCTURES AND PROCESSES* 129 (Thomas B. Ward, Steven M. Smith & Jyotsna Vaid, eds., 1997).

⁵⁵ Friedrich Wilkening, Gudrun Schwarzer & Annette Rummelee, *The Developmental Emergence of Multiplicative Combinations*, in *CREATIVE THOUGHT: AN INVESTIGATION OF CONCEPTUAL STRUCTURES AND PROCESSES* 113–14 (Thomas B. Ward, Steven M. Smith & Jyotsna Vaid, eds., 1997) (noting the “dependence of the processing mode on the structure of the stimulus,” and explaining how the “additive,” “multiplicative,” and “configurant” mental processes arise based on the different stimuli encountered).

⁵⁶ Preti & Miotto, *supra* note 50, § 5 (“Creativity is, after all, a challenge to an existing meme pool, since it leads to the creation of competing memes. The stigma attached to diversity may lead individuals to assume even more eccentric behavior: the definition of such behavior in terms of ‘mental illness’ may result from ‘strategies’ defensive towards existing memes.”).

⁵⁷ Chen & Hanson, *supra* note 43, at 1195–97 (explaining how and why “[w]e are motivated to protect our schemas”).

⁵⁸ Preti & Miotto, *supra* note 50, § 5 (“Creativity is, after all, a challenge to an existing meme pool, since it leads to the creation of competing memes. The stigma attached to diversity may lead individuals to assume even more eccentric behavior: the definition of such behavior in terms of ‘mental illness’ may result from ‘strategies’ defensive towards existing memes.”). Such reactions are not limited to individuals without scientific knowledge; scientists exhibit similar hostility to new theories that challenge the fundamentals of existing paradigms. See, e.g., THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* 58–59 (3d ed., 1970) (explaining the hostility and immediate backlash to the discovery of X-rays).

exerted their defense mechanisms. This example shows how creative memes may face challenges from the existing meme milieu.

“Creative thought,” then, is the interaction of the exiting memes in our brains—either individual brains, or brains working collectively⁵⁹—insofar as they evoke certain memes or activate others and are accepted or rejected based on our current memetic makeup.⁶⁰ It is the process of various memes in various states, at various levels, and at various meme stages.

B. *Memetics and Creativity*

With the basics out of the way, we can move now to how memetics fits with creativity.⁶¹ The thesis is this: creativity, in memetic terms, is the variation that memes undergo during replication and all of the processes outlined below.⁶² To some extent, individuals exert control over this process, but a portion of this process is not voluntary or conscious:⁶³ memetic variation (creativity) is a product of numerous factors—some internal to the individual, some a result of external forces.⁶⁴ Creativity is a memetic endeavor; it is the result of memes

⁵⁹ Speel, *supra* note 40, § 2 (“S-interaction processes take place in arenas at a certain point in time. An arena can be the mind of an individual, but also the minds in collective or group decision processes, that is where people debate on the adoption of methods.”). S-interaction can take place “internally”—in the mind of an individual—or “externally”—in the minds of more than one individual. *Id.*

⁶⁰ Gabora, *Culture and Creativity*, *supra* note 29, § 4 (“During creative thought, memes potentially relevant to a solution would evoke or activate one another, altering or strategically (though not necessarily consciously) manipulating them, a process that is said to involve pattern completion, constraint satisfaction, and the tweaking, blending, redescription, abstraction, and recoding of representations.”) (footnotes omitted); *see also* Wisniewski, *supra* note 44, at 52 (“In general, the creation of new concepts by combining existing ones[, either consistent or “disparate” concepts,] is a powerful and common way of expanding knowledge.”).

⁶¹ I want to be clear that this account of creativity does not purport to discount other theories of creativity, which psychologists have spent many years studying. It seeks to provide a new perspective from which to think about creativity and copyright law. For a somewhat dated but representative sampling of different theories of creative thinking, *see generally* JOHN S. DACEY, *FUNDAMENTALS OF CREATIVE THINKING* (1989).

⁶² *See infra* this subpart; *see also* SAWYER, *EXPLAINING CREATIVITY*, *supra* note 52, at 74 (“Creativity is not a special mental process, but involves everyday cognitive processes.”).

⁶³ *See, e.g.*, John Bargh & Tanya L. Chartrand, *The Unbearable Automaticity of Being*, 54 *AM. PSYCHOLOGIST* 462 (1999) (describing how the mind operates much of the time by automatic process and how the environment—including exposure to various ideas or stereotypes—can influence both conscious choices and these automated processes, which, in turn, influence perception and behavior).

⁶⁴ Professor Dennett has glossed over the implications of a (nearly) pure memetic mind:

I don’t know about you, but I’m not initially attracted by the idea of my brain as a sort of dung heap in which the larvae of other people’s ideas renew themselves[] before sending out copies of themselves in an informational Diaspora. It does seem to rob my mind of its importance as both author and critic. Who’s in charge, according to this vision—we or our memes?

There is, of course, no simple answer, and this fact is at the heart of the confusions that surround the idea of a self. Human consciousness is to a very great degree a product not just of natural selection, but of cultural evolution as well. The best way to see the contribution of memes to the creation of our minds is to follow the standard steps of evolutionary thinking closely.

DANIEL DENNETT, *CONSCIOUSNESS EXPLAINED 202–03* (1991) [hereinafter, DENNETT, *CONSCIOUSNESS EXPLAINED*]. I fear that even following these steps closely, as Professor

fighting for space in hosts' brains. We can try to sort out which memes replicate with more success using our reasoning and judgment, but often times it is difficult to separate out where reasoning gives way to psychological attraction. The claim is not that memes are completely deterministic, only partially so.

1. Constraints on Creativity

The avenues for [meme] entry and departure are modified to suit local conditions and strengthened by various artificial devices that enhance fidelity and prolixity of replication.

– Daniel Dennett⁶⁵

Creativity is a constrained process. As it occurs in process, creativity builds off existing experiences, dispositions, and, thus, memes—a phenomenon known as the “ratchet effect.”⁶⁶ Something creative may be “original,” but it also is a (series of) variation(s) of old memes. In that sense, memetics observes, like some legal scholarship has,⁶⁷ that creativity is not a wholly individual affair; it operates on a collective level,⁶⁸ as well.⁶⁹

Despite the collaborative nature of creativity, a memetic account of creation does not exclude the individual, whose creativity also is influenced by a variety of factors. These factors are frequently grouped into two categories: cultural and genetic. Although this dichotomy is analytically useful, it gives the false impression that genetic and cultural forces are wholly separate. The truth is that we do not know precisely how the two interact; but we do know that they do. As long as we are

Dennett does in his book, we still do not find an answer. The question is left open, perhaps because it strikes at the nature of free will — a subject on which Dennett has written eloquently, see, e.g., DANIEL C. DENNET, *FREEDOM EVOLVES* (2004); DANIEL C. DENNETT, *ELBOW ROOM: THE VARIETIES OF FREE WILL WORTH WANTING* (1984)—or perhaps because it was beyond the scope of the book.

⁶⁵ Daniel C. Dennett, *Memes and the Exploitation of Imagination*, in *PHILOSOPHY AFTER DARWIN: CLASSIC AND CONTEMPORARY READINGS* 189, 195 (Michael Ruse ed., 2009).

⁶⁶ See, e.g., Gabora, *Culture and Creativity*, *supra* note 29, § 5; KUHN, *supra* note 58, at 10–34 (explaining how scientific paradigms develop by building off of prior efforts of scientists and fact gatherers). Gabora also notes that this account alone is insufficient. Gabora, *Culture and Creativity*, *supra* note 29, § 9 (“The biologically-inspired model developed here supports a variant of the combination theory of creativity—that new ideas arise through combinations and transformations of old ones. The aspect of this theory that does not ring true is that it neglects the role of emotions.”) (citations omitted). Nevertheless, Gabora avoids this problem by postulating that emotions are part of the meme; they are encoded information in the meme. See *id.*

⁶⁷ See *infra* Part II.

⁶⁸ See Gabora, *Culture and Creativity*, *supra* note 29, § 1 (“Studies of creativity, on the other hand, have focused on the *individual*, obscuring the fact that creativity is a collective affair.”); see also SIMONTON, *supra* note 52, at 153 (“[The] individualistic perspective overlooks a major feature of modern scientific creativity: scientific discoveries most often emerge largely from collaborative groups, particularly in research laboratories located in either academic or industrial settings.”).

⁶⁹ A focus on collectivity does not mean a focus on a *group* of hosts. Such a view mistakes the memetic perspective, where the focus is on the *meme* and the *meme*'s “self interest.” Instead, the focus is on very similar or nearly identical memes residing in hosts' brains.

clear about this, we can employ the dichotomy for analytical purposes.

a. Cultural Constraints

First, one's experiences influence her creative brain. Creative people, for example, often tend to have what we might call destructive experiences early in life—such as losing a parent or suffering abuse.⁷⁰ Passive experience, though, is not the only lever of creativity: who your parents are⁷¹ and in what activities they encouraged you to partake also influence creativity.⁷² Creative interests develop over time, and our ability to be creative is shaped directly by our experiences.⁷³ So, when we are children, our creative abilities may not yet fully be formed. Those formative years could be an important time for memes.⁷⁴ Here, the feedback one receives from her parents (a complicated memetic feedback loop), can have important consequences for one's creativity, and the propagation of certain (combinations of) memes.⁷⁵

Also constraining our creative output is the limited knowledge we obtain in a particular domain.⁷⁶ Thus, our education can influence our

⁷⁰ See, e.g., DACEY, *supra* note 61, at 196 (stating that “[c]reative children suffer a larger number of traumatic incidents than do ordinary children,” and noting that “[t]hese . . . occurrences . . . cause grief, anger, or both, and seriously disrupt the child’s life”). Another author cautions, though, against associating creativity and “eccentricity” or “madness.” See SAWYER, *supra* note 52, at 17.

⁷¹ The genetic-biological component of who your parents are also influences creativity.

⁷² See, e.g., RICHARD S. MANSFIELD & THOMAS V. BUSSE, THE PSYCHOLOGY OF CREATIVITY AND DISCOVERY: SCIENTIST AND THEIR WORK 62–81 (1981) (detailing the child-rearing experiential influences on creativity in science, which include parental autonomy fostering, parental control, parental disciplinary techniques, parental hostility, parental warmth, quantity of parent-child interaction, parental intellectual stimulation, and emotional intensity of parental involvement, parental child-rearing values, parental interests, birth order, parental absence, social class, childhood residence (location and mobility), and religion—but noting the “paucity of consistent relationships between creativity and parental child-rearing practices”); DACEY, *supra* note 61, at 190–98 (detailing the influence of upbringing on creativity); SIMONTON, *supra* note 52, at 99–136 (detailing the characteristics of a creative scientist, including family experiences and education).

⁷³ See JONATHAN S. FEINSTEIN, THE NATURE OF CREATIVE DEVELOPMENT 464–65 (2006).

⁷⁴ It also has been argued in creative theory that creativity is a *developmental process*, with different stages occurring at different points in our lives. See *generally id.*; JEAN PIAGET, 1 POSSIBILITY AND NECESSITY: THE ROLE OF POSSIBILITY IN COGNITIVE DEVELOPMENT (Helga Feider trans., 1987) (arguing that our ability to consider possibilities develops as we age); see, e.g., GARDNER, *supra* note 12, at 83–204 (explaining the development of creativity in children and the differences between creative adults and children).

⁷⁵ See Ronald A. Beghetto & James C. Kaufman, *Toward a Broader Conception of Creativity: A Case for “mini-c” Creativity*, 1 PSYCHOL. AESTHETICS, CREATIVITY & ARTS, 73, 76–77 (2007) [hereinafter Beghetto & Kaufman, *Broader Creativity*] (articulating the “Goldilocks Principle,” which asserts that an individual’s creativity depends upon the amount, nature, and appropriateness of the feedback that person receives with respect to their creative abilities); see also Ronald A. Beghetto & James C. Kaufman, *Beyond Big and Little: The Four C Model of Creativity*, 13 REV. OF GEN. PSYCHOL., 1, 9 (2009) [hereinafter Beghetto & Kaufman, *Beyond Big and Little*] (noting, in the theme of the Goldilocks Principle, that “intrinsic” interest in creativity may be less pressing than the “external rewards” they receive from, say, their parents, “because a[] [young] individual’s interest and commitment in the particular creative endeavor (e.g., chess, science, cooking) is still emerging”).

⁷⁶ See SIMONTON, *supra* note 52, at 45 (making the assumption (for his combinatorial model) that each scientist exhibits creativity constrained by “her *sample* from the larger set of ideas” that reside in her domain).

creativity by providing a certain environment in which certain kinds of creativity can flourish or wither.⁷⁷ The creator is not a lone wolf, but a resident of a pack in a particular locale.⁷⁸

So the memes in our head—and those that came before, win or lose—undoubtedly influence the “evolution” of our creativity.⁷⁹ Based on all the factors that constitute a creative person, it is unsurprising that certain kinds of creativity are more likely than others.⁸⁰ In certain works, for example, we expect—and we see in copyright cases—that the content reflects the author’s personal experiences or knowledge.⁸¹

While the individual and group both play a role, it would be a mistake to focus on solely the individual creator or the existing memes without mentioning where those other memes have been. As a matter of memetics, existing memes did not “develop” *ab initio* in the host’s

⁷⁷ See *id.* at 99–136.

⁷⁸ See Gabora, *Culture and Creativity*, *supra* note 29, § 4; see also SIMONTON, *supra* note 52, at 35 (“Sociocultural determinism would have a hard time explaining the first factor. . . . [P]rolific output is an individual property associated with genius, not the zeitgeist. . . . The zeitgeist presumably is embedded in the scientific community that defines the important problems and the means for their solution. Yet, even here an objection emerges: how can someone be a lone wolf? That implies that creative scientists can escape the constraints of the zeitgeist, a possibility closer to the notion of genius.”). Environment also can mean more narrowly “selective environment,” which means “[t]he sum of the factors being decisive on what memes are weeded out.” Speel, *supra* note 40, § 2.

⁷⁹ See FEINSTEIN, *supra* note 73, at 463–504 (explaining how our creativity and interests “evolve” based on our preexisting interests); *id.* at 515 (noting that there are “four central factors that are crucial for an individual to build up a rich conceptual structure in an interest domain,” and “[a] fundamental factor is the nature of the interest,” and the others include the diversity of experiences, the motivation to cultivate an interest, and the individual’s ability to store the many elements he internalizes in his mind).

Gabora also argues that creativity can be explained as an evolutionary process. See, e.g., Liane Gabora, *Thought as a NonDarwinian Evolutionary Process*, 39 J. OF CREATIVE BEHAVIOR 65 (2005) [hereinafter Gabora, *NonDarwinian Process*] (describing creativity an evolutionary process using the metric of “worldview” rather than memes); Liane Gabora, *Ideas Are Not Replicators But Minds Are*, 19 BIOLOGY AND PHILOSOPHY 127, §§ 2–3 (2004); Liane Gabora, *The Beer Can Theory of Creativity*, in CREATIVE EVOLUTIONARY SYSTEMS 147, 158 (Peter J. Bentley & David W. Corne, eds., 2002) (arguing that “all sensory information gets more or less thrown into one big melting pot (or keg, you might say), that is, the conceptual network, or worldview, and novelty is generated *strategically and contextually*, by highlighting those aspects of the world view most relevant to the current situation.”); Liane Gabora, *The Cultural Evolution of Socially Situated Cognition*, 9 COGNITIVE SYSTEMS RESEARCH 104, § 6 (2008) [hereinafter Gabora, *Cultural Evolution*] (arguing that the “worldview” is the self-replicating structure in culture).

⁸⁰ While creativity is probabilistic, not all creativity is equally probable. See SIMONTON, *supra* note 52, at 100. The extent of probability depends on the constraints of the creative process in any given context. *Id.* (“[W]here artistic creators often include ideas from everyday life—especially in literature and the visual arts—scientific creators must restrict their ideational samples to a more specialized domain.”). In that sense, Simonton argues that scientific creativity is much more constrained than artistic creativity—because there are no constraints on using particular ideas—such as using the idea of a duck to solve a question of quantum mechanics—to reach a solution. *Id.* Whatever the validity of this statement, it should be obvious that both scientific and artistic creativity are constrained, even if differently.

⁸¹ See, e.g., *Penguin Books U.S.A., Inc. v. New Christian Church of Full Endeavor (NCCFE)*, No. 96-4126, 2000 WL 1028634, at *2 (S.D.N.Y. July 25, 2000); see also Hughes, *infra* note 152, at 106–19 (describing creativity as a product of personal experiences). In *NCCFE*, a psychology professor claimed that Jesus had directed him to write religious texts, which, as the court observed, were shaped by the professor’s life and experiences. See *NCCFE*, 2000 WL 1028634, at *2.

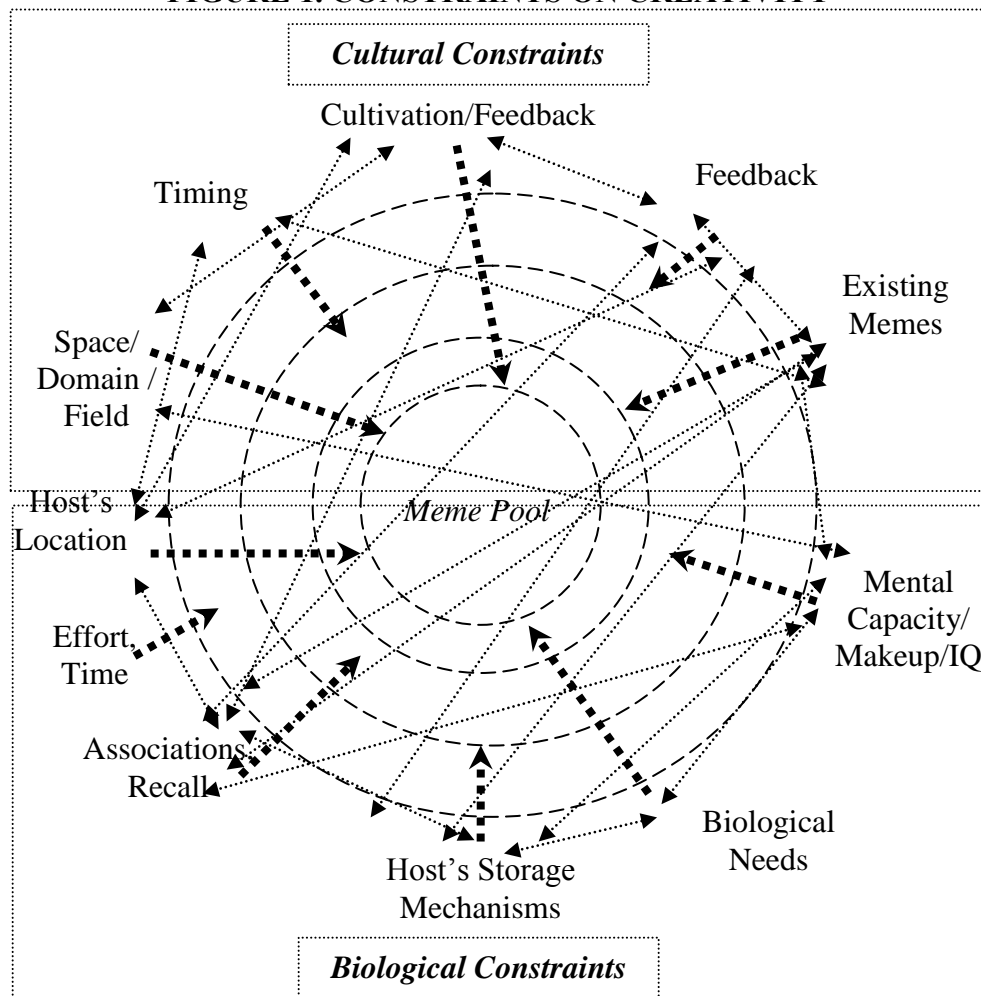
brain, nor did they exist in a vacuum as free-floating unadulterated memes. Previous hosts propagated these memes, and the memes' particular host likely influenced the memes' expressions. In other words, existing memes already have been influenced by other memes and environmental factors.

Creativity therefore depends, not only on our own experiences vis-à-vis others,⁸² but on the experiences of (and memes as implemented by) *other* individuals—those that we have met, and those who have met people we have met.⁸³ Remember, though, that it is not necessarily others' experiences that influence creativity; rather, it is the effect those experiences had on the memes their brains currently house (and implement). To put it differently, creativity is not solely based on the “inventive ideas” of the creating individual; the creator is limited by those existing memes and the variations they have undergone as they traveled through different hosts.

⁸² See *infra* note 320; FEINSTEIN, *supra* note 73 (characterizing creativity as a developmental process, which is sparked by experiences and encounters with others).

⁸³ See Gabora, *Culture and Creativity*, *supra* note 29, § 5; see also SIMONTON, *supra* note 52, at 29 (“The individual scientist necessarily works within the context of a larger community of scientists, including those scientists who contribute to the same discipline. Even the somewhat solitary Newton maintained contacts with numerous other scientists. Among the notables who participated in Newton’s disciplinary network were Johann Bernoulli, James Bradley, Abraham DeMoivre, John Flamsteed, Edmund Halley, Robert Hooke, Gottfried Wilhelm Leibniz, John Locke, John Wallis, and Christopher Wren.”) (citations omitted).

FIGURE 1. CONSTRAINTS ON CREATIVITY



This diagram shows how cultural and biological constraints limit creativity, both by depressing the meme pool, and by interacting with one another. The upper region represents the cultural constraints operating to limit creativity; the lower region represents the biological constraints.

There are further limits on individuals' creative ability. Cultural theory in copyright partly captures this limitation with the idea of "situatedness": the limitations imposed by our current occupation of a specific place, time, and culture,⁸⁴ all of which are rather unpredictable selection pressures.⁸⁵

⁸⁴ See Julie E. Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151, 1179 (2007) [hereinafter Cohen, *Creativity and Culture*].

⁸⁵ See, e.g., Agner Fog, *Cultural r/k Selection*, 1 J. MEMETICS 1, § 2 (1997), available at cfpm.org/jom-emit/1997/vol1/fog_a.html ("[F]itness is a relative concept, depending on the

Given that the meme pool contains a limited number of memes, we are constrained by “bounded rationality”: the limited time and effort one can spend on solving a problem, and, as noted above, the limited ideas, solutions, and conceptions existing already.⁸⁶ The former limitation (time) is more akin to a biological constraint (discussed below); the latter (ideas, solutions, and conceptions) is a cultural constraint, one where culture itself limits the potential of creative outputs. Additionally, the constraints on creativity interact with one another, influencing and further limiting creativity.⁸⁷

Memetics, too, posits that individuals are not omnific: their creative ability is limited by, for example, time and timing.⁸⁸ Timing, indeed, can often be critical to whether a meme replicates. Calvin explains an example of timing: “what the French call *avoir l’esprit de l’escalier* - finally thinking of a witty reply, but only after leaving the party.”⁸⁹ Because this arena occurred after the optimal moment for replication, the meme (i.e., the witty reply) may fail to replicate—or may do so at a later date with less potency; after all, people will be less likely to remember that witty reply when not used *qua* witty reply.

As Figure 1 shows, all of these constraints work in tandem. They both depress the meme pool individually and collectively. Additionally, they can work with biological constraints to further limit the size and breadth of the meme pool. These biological constraints are explored in the next subpart.

b. Biological Constraints

But memetics observes that creativity is not limited to purely cultural factors. It is also limited by our *biology*: human evolution depended upon satisfying biological needs, and a memeplex—even a creative one with benefits—that prevented us from satisfying these needs would likely have been selected against.

Thus, memetic development is biased toward human “needs”⁹⁰ or

selection mechanism and external conditions. Different selection conditions can lead the process in different directions, and an examination of the fitness determinants is necessary to predict the direction of evolutionary change.”); Langrish, *supra* note 42, § 1 (“At any stage in biological evolution, the number of possible future states is enormous. Those varieties [of life] that do survive and lead to further varieties do so partly by luck and coincidence and because of environmental changes which are also not predictable.”).

⁸⁶ See Speel, *supra* note 40, at § 3; see also DAWKINS, *SELFISH GENE*, *supra* note 15, at 197 (“Time is possibly a more important limiting factor than storage space, and it is the subject of heavy competition.”).

⁸⁷ See SIMONTON, *supra* note 52, at 167 (“[C]onstraints of logic always have to compete with other criteria that have a totally distinct origin and thus may not necessarily be compatible with logical standards.”).

⁸⁸ Timing here means the moment of s-interaction (arena), which I explain *infra* Part I.B.

⁸⁹ Calvin, *supra* note 25, § 8.

⁹⁰ See Gabora, *Culture and Creativity*, *supra* note 29, § 3 (“Since we preferentially spread ideas that satisfy needs, our needs define viable niches for memes to evolve toward.”); see Fog, *supra* note 85, § 5 (positing that memes replicate according to *r-selection* and *k-selection*, the former taking “place when a group has substantial opportunities for political and cultural expansions,” and the latter taking “place when a group has no opportunities for cultural expansion and is not

the “useful[ness]” of the meme (as implemented).⁹¹ Here it is probably most helpful to think of needs as instrumental to an organism’s survival or ability to replicate.

Even so, success is not always defined by an organism’s survival. Thus, although a meme’s “usefulness” may be a predictor of its success, memes also may spread precisely because they are *not* true or useful:

In memetic theory a successful meme is often taken to be a meme that is ‘true’ (Darwinian theories are more successful than Lamarckian theories in genetic evolution) or useful, to others with what spreads well. Needless to say that these two different criteria for success will yield very different results in memetic analysis, both for the dynamics, the mechanisms, and the selective forces involved. . . . [M]emes that spread because they are not true, or offensive for instance, [probably] spread because they evoke a reaction from people opposed to the message in the memes. These people will replicate the meme while stating it is untrue or offensive. Calling someone a ‘Nazi’ . . . on the [I]nternet will replicate that meme, but the emotional mechanisms involved will be different from when you argue that it is a shame that Princess Diana has deceased.⁹²

This observation might be the result of what I call *coupled memes*: untrue or not useful memes might be required to attach to useful ones (at least in some modified form, for example, without endorsement), to understand *why* the true or useful meme is in fact true or useful.⁹³ Also, a meme may be useful without being true, and thus replicated because it is useful in spite of its falsity.

Other biological facts limit our creativity. Biology constrains our ability or desire to link concepts.⁹⁴ The associations we do make are “objective and familiar” because they rest on “a small subset of all *possible* [mathematical] functions” that underlies the biological world.⁹⁵

threatened by aggression from other groups”); DENNETT, DARWIN’S DANGEROUS IDEA, *supra* note 31, at 365 (noting that we do not have complete choice over our *summum bonum*—our “chief good”—because “[b]iology puts some constraint on what we could value”).

⁹¹ Gabora, *Culture and Creativity*, *supra* note 29, § 3 (“The worldview [composed of memes that are organized coherently by our “cognitive machinery”] orchestrates behavior such that a meme gets implemented right when it is likely to be useful, and that increases the probability that other hosts will consider it worthy of replication.”); *id.* (“The trajectory of a stream of thought is constrained by connections between representations that are similar or spatiotemporally related . . .”).

Additionally, one reason useful memes replicated with greater fidelity is *because* they are implemented so frequently. In other words, a useful meme is one we are less likely to forget (or unconsciously mutate by imperfect implementation) because we implement it so frequently.

⁹² Speel, *supra* note 40, at § 2.

⁹³ This idea has a Millian flavor. See JOHN STUART MILL, ON LIBERTY 24 (1929) (“If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error.”).

⁹⁴ See Gabora, *Culture and Creativity*, *supra* note 29, § 9.

⁹⁵ *Id.* (“Thus all creativity is directly or indirectly derived from experience in the world, and since the mathematics underlying this world, the set of all natural functions, is a small subset of all

This also results from our genetically predisposed responses to these stimuli.⁹⁶ Creativity research has begun to examine how personality affects creativity from a biological perspective.⁹⁷ This approach proposes “a causal theory of creativity that begins with genetic determinants.”⁹⁸ Beginning with physical structures to develop mental correlates for creativity seems to me a good start to ascertaining the genetic components of creativity.

Indeed, we often categorize people according to how they react to stimuli: we describe their personalities in reference to this very reaction. Personality traits, in turn, influence creativity. Creative scientists, for example, typically tolerate more ambiguity and engage in more reflective and spontaneous thinking than noncreative scientists.⁹⁹ Intelligence, also influenced by genetics, plays a role in one’s ability to be creative. In scientific creativity, for example, studies have found that some threshold level of intelligence is necessary, though the threshold differs based upon the field.¹⁰⁰

Selection and variation of memes (explored *infra*), though, are constrained by yet another biological fact, what one might call limited cognitive resources. Our brains can shoulder only so much of a cognitive load. The higher the load, the fewer the resources we have to devote. Higher cognitive burdens can influence our thought process.¹⁰¹ At some point, our brain runs out of resources.

possible functions, the constraints that guide creation are not arbitrary but objective and familiar; for example the drum beat of a song might echo a heartbeat, when the rhythm and chord progression are reminiscent of the sound of someone sobbing we feel sad, and we hear the wrong note even if we have never heard the song before.”). Of course, part of creativity may be inverting some of these “objective” measures of creativity by, for example, playing “bright” music during a sad scene of a movie.

⁹⁶ In some meaningful sense our brains have genetic predispositions to certain stimuli; our brains are not a *tabula rasa*. See, e.g., STEVEN PINKER, *THE BLANK SLATE* 121–24 (2003); MATT RIDLEY, *THE RED QUEEN: SEX AND THE EVOLUTION OF HUMAN NATURE* 314 (2003).

⁹⁷ See Gregory J. Feist, *The Influence of Personality on Artistic and Scientific Creativity*, in *THE HANDBOOK OF CREATIVITY* 273 (Robert J. Sternberg ed., 1999).

⁹⁸ *Id.*

⁹⁹ See, e.g., MANSFIELD & BUSSE, *supra* note 72, at 52–58 (describing the characteristics of creative scientists, which include autonomy, personal flexibility and openness to experience, need for professional recognition, commitment to work, and aesthetic sensitivity); DACEY, *supra* note 61, at 16–55 (explaining the various traits the creative individual usually exhibits, which include tolerance of ambiguity, open-mindedness and flexibility in thinking, reflective and spontaneous thinking, preference for disorder, and risk taking); Mary Ann Collins & Teresa M. Amabile, *Motivation and Creativity*, in *THE HANDBOOK OF CREATIVITY* 297–308 (Robert J. Sternberg ed., 1999) (describing creativity as having both “intrinsic”—a desire to do the task for its own sake—and “extrinsic”—where the creative task is done as a means to some end (i.e., for selfish reasons)—motivational components, the former of which correlates with higher degrees of creativity, though recent research has shown that extrinsic motivations can increase creativity in some circumstances).

¹⁰⁰ See SIMONTON, *supra* note 52, at 103–04; MANSFIELD & BUSSE, *supra* note 72, at 51–52. Simonton argues that the lower IQ-threshold necessary for a creative artist is probably because “scientific creativity requires more the kind of analytical intelligence assessed in standard psychometric instruments.” SIMONTON, *supra* note 52, at 109.

¹⁰¹ See generally Fred Paas, Alexander Renkl & John Sweller, *Cognitive Load Theory and Instructional Design: Recent Developments*, 38 *EDUC. PSYCHOLOGIST* 1 (2003) (explaining that learning cannot occur under large cognitive loads that exceed working memory’s resources).

All of these points seem to be tied in one way or another to the last: biological need and disposition influence, not only *what* memes individuals select (content), but also our *ability* to select them. The human condition limits what memes we can select and how we can select them.

* * * *

We often think that we can think about or create whatever we want. That is wrong. Cultural and biological factors both cabin our selection. Our brains use automatic processes much of the time, and memes replicate this way much of the time. Additionally, the meme pool is not unlimited; there exist only a certain number of memes at any given time in any given place. There is also a relationship between biological and cultural constraints: cultural influences frequently have genetic correlates, and genetic dispositions can wax or wane with the cultural environment. So, for example, our experiences shape our memes, but what kind of experiences we have will depend on our personality traits, which, in turn, are shaped by our genes and experience. Moreover, our brains are disposed to “select” memes that are advantageous to their replicative success, but what those advantages are or how they play out will be closely tied to current cultural milieu. In other words, cultural and biological constraints are both separate and difficult to separate. Regardless of the weight we want to ascribe to genes or memes, however, it is evident that both work to limit what we can create and how we can create it. Now that we have laid out some of these limits, we can discuss how the process of cultural combination may work.

2. The Processes of Cultural Production and Creativity

a. Implementation, Transmission, and Interaction

It should be clear by now that creativity is limited by certain constraints. Constraints on creativity, though, do not explain how the creative process works. This is where memetics steps in and provides insight by focusing on memes: *memes* are the units of culture that evolve and replicate;¹⁰² individuals are hosts that memes use to replicate themselves. Emphasizing the meme, not the individual, is where the memetic account of creativity provides its insights.

To replicate, memes must be expressed in some form. Moving from replication to expression, though, requires several intermediate steps. First, a meme must be *processed* by the host brain, during which

¹⁰² See Gabora, *Culture and Creativity*, *supra* note 29, § 1. As noted above, what constitutes a meme is a debated topic.

time it *interacts* with other memes. Then, once a meme has replicated (in the same or altered form), it may be *implemented* by the host, who could act on the meme. Finally, once a host implements the meme, thereby expressing its content, the meme can be *transmitted* to another host, where the process begins again. We will refer to each of these—processing, interaction, implementation, and transmission—as *stages* of memetic replication. As discussed in Appendix A, memes also take on different *states* during various stages. A meme state is a name for the way a brain treats a bit of information during any stage.

Before a meme is expressed, it must be *processed* by the brain. Processing need not occur in conscious thought. Indeed, because the brain works automatically so much of the time, much of this processing will be done unconsciously. During this processing stage—and during the other stages to a lesser extent—memes begin to interact with one another. Because that process requires human brains, which are inherently short on space, a Darwinian struggle ensues, where memes interact, or compete, for space in the brain. Thus, although memes are replicators, they can also be interactors:¹⁰³

The name they are given depends on the process they are in at a particular moment in time. So the concepts of replication and s-interaction are definitions of process. Memes are the basic structural entities. When they are replicated or stored they are replicators. When they are in s-interaction, the same structural entity, or a translated form of it, is an interactor.¹⁰⁴

Through this process called “s-interaction” (depicted in Figure 2)—which occurs at various points in time (arenas) and during various stages of brain function (for example, conscious, unconscious)—memes are selected and varied given the constraints previously discussed.¹⁰⁵ Figure 2 depicts spatially how s-interaction might occur. It is important to note that this type of interaction, the kind that produces new “culture,” is not Marxist or Hegelian—as there is no dialectical struggle.¹⁰⁶ Memes’ fight to replicate, not to synthesize, themselves is what results in creativity.

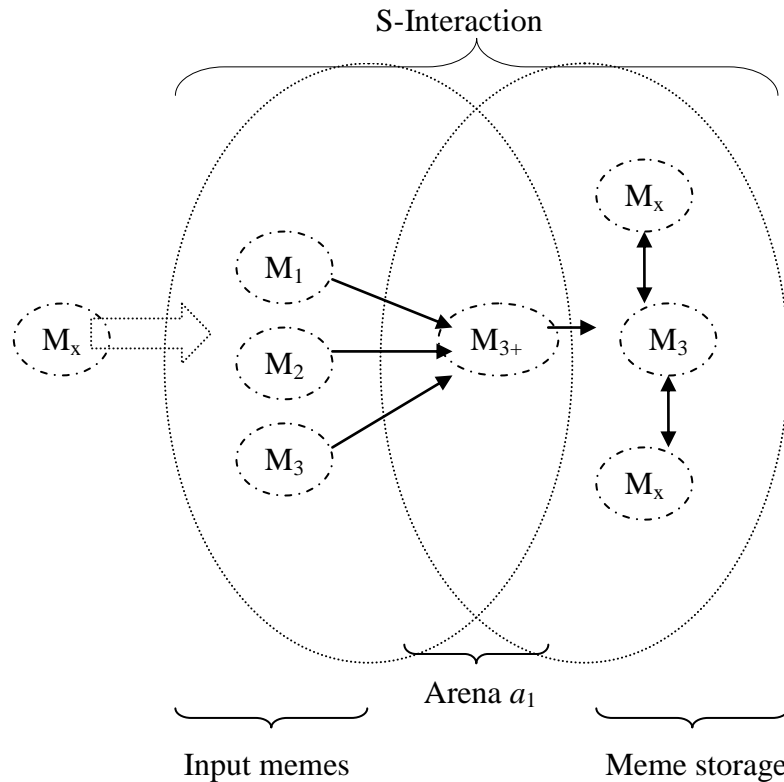
¹⁰³ See Speel, *supra* note 40, § 2.

¹⁰⁴ *Id.*

¹⁰⁵ See *id.* (describing that memes that are selected and “retained” (put into the brain’s memory) may fall into four categories).

¹⁰⁶ Gatherer, *Macromemetics*, *supra* note 41, § 3 (“Nurture, ie. [sic] transmitted information, was generally regarded as being independent of external forces, a pure product of human superstition and/or rationality, or alternatively subject to dialectics of a Hegelian or Marxist variety. Memetics, by positing a strictly Darwinian process for nurture, thus questions the division between environment and biology, since both are evolving under the same dynamic.”). Gatherer has since backed off some of his claims of memetics, both in terms of definition and what it can teach us about culture. See Gatherer, *Thought Contagion*, *supra* note 24, at § 1.

FIGURE 2. S-INTERACTION IN THE BRAIN

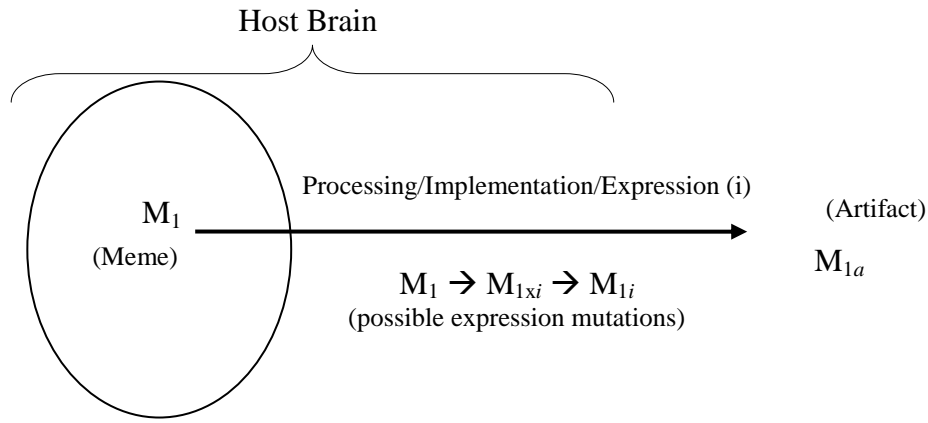


S-Interaction is the process by which memes are “selected” by the mind, though there is not one “place” at which the mind selects the memes, as the brain does not have one “selection zone.” S-Interaction entails several components. First, memes (M_x) enter the mind in some fashion. Selection pressures in the mind—including other memes—force the selection or rejection of certain memes at a various point (a_1), which likely includes variations (v) as a result of selective pressures. The brain then “stores” the selected meme in some capacity, though the meme still may interact with other stored memes.

A meme becomes “public”—viewable to others who can copy it—once it has been processed and *expressed*. A meme is expressed by a process called implementation: the individual engages in *behavior* as a result of the meme. During this process, a meme may undergo (small, large, or intermediate amounts of) variation.¹⁰⁷ Figure 3 shows how a meme is implemented.

¹⁰⁷ Gabora, *Culture and Creativity*, *supra* note 29, § 2 (“Implementation transforms a meme, incorporating syntactic features characteristic of the channel through which it is conveyed. Thus, for example, a dance step looks different with each individual who performs it.”) (footnote omitted).

FIGURE 3. IMPLEMENTATION



When a meme (M_1) moves from a host brain into an artifact, it undergoes the process of implementation (i). During this movement, the meme can undergo variation (M_1, M_{1xi}, M_{1i}), both within the brain and as its implemented. The implementation ultimately results in a physical artifact or behavior (M_{1a}) that can be imitated.

Implementation can also be part of the *transmission* process. The only way for a meme to copy itself in another brain is to be implemented. It is during and after this implementation process that the meme transmits itself to another host. Transmission, though, introduces another opportunity for variation.¹⁰⁸ Because memes (usually) are transmitted through expression, rather than encoded instruction,¹⁰⁹ an individual meme may be instantiated in the “receiver-host” brain with a different code of instructions than the “provider-host.”¹¹⁰ For example, you may have seen pizza made in a wood-burning oven but encoded only that the pizza should be cooked in an oven—and then cooked the pizza in a coal-powered oven, which constitutes a *variation* of the

¹⁰⁸ Creativity research has acknowledged as much, though not in memetic terms. See Beghetto & Kaufman, *Broader Creativity*, *supra* note 75, at 73 (“[P]eople filter and interpret information through the lens of their existing conceptions, personal histories, and past experiences.”).

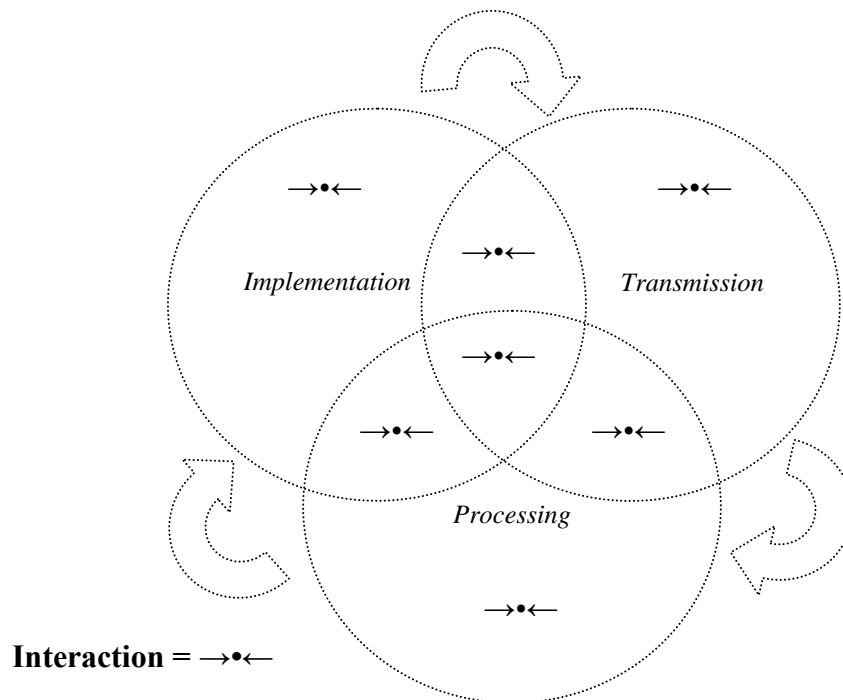
¹⁰⁹ Even if a meme is transmitted by instructions (copy-the-instructions), it is still subject to variation.

¹¹⁰ Compare Gabora, *Culture and Creativity*, *supra* note 29, § 3 (“But unlike genes, memes do not come prepackaged with instructions for their reproduction. They rely on the pattern-evolving machinery of their hosts’ brains to create, select, and replicate them.”), with BLACKMORE, *supra* note 18, at 214–18 (noting that memetic replication takes place by a “copy-the-product” process, rather than one where the individual “copies the instructions”). See Steven Jan, *Replicating Sonorities: Towards a Memetics of Music*, 4 J. MEMETICS 1, § 7 (2000), available at cfpm.org/jom-emit/2000/vol4/jan_s.html (“This account hopefully makes clear that, whereas the gene is propagated non-phenotypically (ultimately genes, not bodies and other gene products, reproduce themselves), the meme, of necessity, must be propagated phenotypically.”).

original meme.¹¹¹

We just noted that memes undergo variation during implementation and transmission. Some of this variation is “conscious”; some is not. We also should note that during each of these processes the memes begin to interact. They fight for space in individuals’ brains. In many cases, processing, implementation, and transmission overlap to a considerable degree. Figure 4 depicts spatially how each stage can overlap with the others.

FIGURE 4. OVERLAPPING STAGES OF MEME



This diagram shows how memes overlap during different points in their development. Although we can, for ease, think of a linear process through which memes progress, that notion is not entirely accurate. Memes may inhabit one or more meme stages at any given time. During all stages, memes may be interacting with other memes, and undergoing variation.

My model of cultural production and creativity posits that s-interaction occurs at many different places, including during the processing, transmission, and implementation stages. In that sense, it aligns with other accounts, such as the one J.P. Guilford proposed: information is filtered out by the brain at various stages, sometimes

¹¹¹ The process of encoding a meme necessarily will involve the memes interaction with other memes. This is part of s-selection at a particular arena. That part of the discussion, however, is omitted for simplicity.

unconsciously.¹¹² The memetic model differs, however, in that it assumes that information processes are dependent upon the current memetic makeup of the brain,¹¹³ the competition for space, and memes' desire to replicate themselves.

b. Creativity in Function

The very simplistic and very basic outline presented here is not meant to be authoritative—nor is it meant to be entirely accurate, and it need not be.¹¹⁴ Much of memetics hinges on developing a convincing mental model, and no one has yet determined exactly how the mind works, let alone how memes (if they exist) work.¹¹⁵ All that needs to hold true are the basic ideas of memetic selection and variation; the precise ways in which memes operate within the brain do not bear on this Article's final analysis, though that inquiry will have a significant impact for memetics.

One model¹¹⁶ of memory storage and retrieval—the Sparse, Distributed, Memory (“SDM”) model—proves useful in illustrating some concepts of how creativity works on a memetic level. SDM conceives of the mind as storing memes on a hard disk—with memes distributed in different spaces on the disk, and one meme stored in numerous spaces on the disk.¹¹⁷ In this model, memory is dispersed in

¹¹² See DACEY *supra* note 61, at 111–12; see also Chen & Hanson, *supra* note 43, at 1164–75 n.301 (explaining how various schemas (mental knowledge structures) can be applied unconsciously and how the application of a schema can filter out information and even lead to particular conclusions).

¹¹³ Chen and Hanson have described how different knowledge structures currently inhabiting our brain can affect our decisions without our knowledge. See generally Chen & Hanson, *supra* note 43.

¹¹⁴ Indeed, no neuroscience literature is cited here.

¹¹⁵ Robert Aunger has undertaken this task most recently. See ROBERT AUNGER, *THE ELECTRIC MEME: A NEW THEORY OF HOW WE THINK* 178-231 (2002). While Aunger's model is substantially developed, it does mirror in many ways the basic model described in this subpart. Aunger's approach has been heavily criticized. See, e.g., William Benzon, *Colorless Green Homunculi*, 2 HUMAN NATURE REV. 454–62 (2002) (reviewing ROBERT AUNGER, *THE ELECTRIC MEME: A NEW THEORY OF HOW WE THINK* 178-231 (2002), available at <http://human-nature.com/nibbs/02/benzon.html>).

¹¹⁶ It is important to emphasize that whether this model is correct is immaterial to the discussion presented in this Article. The idea here is to illustrate how memes might go about mutating. Whether this view is correct does not change the phenomenon, only its explanation.

¹¹⁷ See Gabora, *Culture and Creativity*, *supra* note 29, § 4 (describing the model as presented by Roland Karlsson, *European Research Consortium for Informatics and Mathematics at SICS*, Technical Report R95-10 (2001) (on file with author)). The computer memory model is a popular one. See, e.g., BALKIN, *supra* note 8; SHIMON EDELMAN, *COMPUTING THE MIND: HOW THE MIND REALLY WORKS* (2008). This is probably due, in part, because the computer provides such a solid analogy to the brain. See Daniel Dennett, *In Darwin's Wake, Where am I?*, 75 PROCEEDING AND ADDRESSES, AM. PHIL. ASS'N 2, 21–23 (2000) [hereinafter Dennett, *In Darwin's Wake*] (describing how the computer model has proven useful in describing brain function and the resistance to conceptualizing brains as *exactly* like computers). Others, most notably John Searle, have rejected strict analogies that regard the brain merely as a computer. See JOHN R. SEARLE, *MINDS, BRAINS AND SCIENCE* 28-41 (1997) (dubbing this view “strong artificial intelligence” or “strong AI” and rejecting it for a variety of reasons, including that computers operate only syntactically, that syntax is not sufficient for semantics, and that brains, which produce minds, operate semantically).

and retrieved from many locations.¹¹⁸ Various memes are retrieved from places and averaged “feature-by-feature” in an iterative process that works to cancel out the memes that do not match up to retrieval requests.¹¹⁹ In other words, the meme retrieved is not *exactly* the meme that was stored, but is a collection of memes highly resembling that meme. Gabora states that “[o]ne does not retrieve an item from memory so much as *reconstruct* it.”¹²⁰ “Thus, an item in memory is never re-experienced in exactly the form it was first experienced.”¹²¹

This model helps to illustrate that creativity is the process by which memes undergo variation—either through stochastic¹²² (chance-based) mutation or systematic recombination.¹²³ Indeed, much of the creative process is not conscious, and occurs during a “gestational” or “incubation” period where the creator sets the “problem” aside.¹²⁴ During this period, external and internal stimuli may interact and combine by a process called “spreading activation,” which facilitates new memetic combinations or variations.¹²⁵ How long this process takes is essentially “pure luck.”¹²⁶ But, the process probably operates

¹¹⁸ See Gabora, *Culture and Creativity*, *supra* note 29, § 4; see Gabora, *NonDarwinian Process*, *supra* note 79, at 6–7; Gabora, *Cultural Evolution*, *supra* note 79 (explaining that “socially situated human memory is sparse, distributed, and content-addressable. Thus, elements of culture are not stored in memory as discrete chunks but overlap and as such are woven into a flexible, integrated model of how different aspects of the world relate to one another, and how to make ones’ way in it: a worldview.”) (citations omitted).

¹¹⁹ Gabora, *Culture and Creativity*, *supra* note 29, § 4; see also DACEY, *supra* note 61, at 115 (“There are three phases in the act of remembering things: (1) encoding the information into manageable ‘chunks,’ (2) storing it, and (3) retrieving the information when wanted.”) (citation omitted). There also must be a part of information retrieval that recalls *unwanted* or *irrelevant* information.

¹²⁰ Gabora, *NonDarwinian Process*, *supra* note 79 (citation omitted).

¹²¹ *Id.*

¹²² See SIMONTON, *supra* note 52, at 41 (“[T]he process is stochastic if it is ‘characterized by conjecture; conjectural,’ ‘involving or containing a random variable or variables,’ or ‘involving chance or probability.’ The last part of the definition connects the adjective to the noun *chance*. The latter word can be used to indicate ‘an accidental or unpredictable event,’ ‘a favorable set of circumstances; an opportunity,’ ‘a risk or hazard; a gamble.’” (citations omitted)); *id.* (“[T]o claim that scientific creativity is stochastic is to assert that it entails much more predictive uncertainty than would be expected from (1) a forthright, rational process; (2) a genius with some mysterious insight into the truth; or (3) a deterministic zeitgeist providing an inevitable sociocultural product.”).

¹²³ See generally *id.*

¹²⁴ See, e.g., *id.* at 145–46; MANSFIELD & BUSSE, *supra* note 72, at 97; see also Jung, *supra* note 9, at 5 (“Production by a process of purely conscious calculation seems never to occur.”). This is often the portion of creativity that is cast as mystical.

¹²⁵ SIMONTON, *supra* note 52, at 146. Mansfield and Busse do not attribute the creativity that results from this phenomenon as necessarily deriving from unconscious process. MANSFIELD & BUSSE, *supra* note 72, at 96–97. Instead, they hypothesize that

breaking away from a problem allows a scientist to reapproach a problem with thoughts less dominated by the unproductive constraints which have hindered restructuring in the first place; it also allows [the creator] to think[] in an undirected fashion so that he is open to facilitating associations from random thoughts.

Id. at 97. They do, however, acknowledge that “[c]hance often plays a key role in the changing of constraints.” *Id.*

¹²⁶ SIMONTON, *supra* note 52, at 147 (“This interpretation of the insight process implies that the length of the incubation period will be determined largely by pure ‘luck.’ . . . Sometimes the precipitating input will arrive within hours, and other times it may take weeks, even years—without the scientist being able to either control or anticipate the course of events. Archimedes

on a Darwinian basis, with the mind subjecting memes to random combinations and variations until it obtains one that is useful.¹²⁷ There is a trial-and-error process that occurs via s-interaction and even during the recall of various associations. There are also, however, moments of “instantaneous insight”,¹²⁸ but these are actually the result of a trial-and-error process that went through only a few iterations, and occur more frequently than one might suppose.¹²⁹ The primary focus is on the meme, and its efforts to replicate. To be sure, the brain plays a large role in the meme’s replication, but the replicator is the meme, not the brain per se.

c. Basic Illustration

To illustrate how this account of creativity works, imagine you just “got” a great idea for a pizza restaurant where customers cook their own pizza.¹³⁰ How did you “get” this idea? That single idea did not come from “nothing,” so to speak—it was the result of a creative (memetic) process. For simplicity, let us assume that there were two memes working here: the idea of making pizza, and the idea of a restaurant

certainly had no a priori reason to believe taking a bath would lead to the solution of his problem. Moreover, should the scientist attempt to take deliberate conscious control over the incubation process, the consequence would most likely be a restriction in the necessary openness to ‘irrelevant’ influences, thereby undermining the effectiveness of the search for a solution.”); *but see* MANSFIELD & BUSSE, *supra* note 72, at 97 (positing that chance does not always operate independently of the scientist’s behavior, and stating that “[t]he scientist who persistently attacks the problem from a variety of directions is likely to do something by chance that leads to the solution of the problem; and the scientist who has had extensive training and experience with a problem is highly sensitive to chance associations and facts that, though apparently unrelated to the problem, are in reality clues to its solution”).

¹²⁷ See SIMONTON, *supra* note 52, at 150 (“This fact is best illustrated by the programs that operate according to evolutionary principles. Biological evolution takes place by the generation of random variations—genetic recombination and mutation—and the subsequent selection of the variations that are most adaptive. By the same token, computer programs can incorporate a random procedure to generate combinatorial variations that can be tested for fitness against some criterion. In both cases, the surviving combinations are recycled through variation-selection process until fitness is maximized.”) (citation omitted).

¹²⁸ DACEY, *supra* note 61, at 92 (describing Wolfgang Kohler’s contributions to Gestalt theory).

¹²⁹ SAWYER, *supra* note 52, at 67–68, 74 (“Creativity does not occur in a magical moment of insight; rather, creative products result from long periods of hard work that involve many small mini-insights, and these mini-insights are organized and combined by the conscious mind of the creator.”).

¹³⁰ This example is drawn from an episode of *Seinfeld* entitled, *Male Unbonding*. In it, Kramer proposes this same idea to Jerry and George. The dialogue is too perfect not to quote in full:

KRAMER: Oh, hey guys. Man, I’m telling you. This pizza idea, is really going to happen.

GEORGE: This is the thing where you go and you have to make your own pizza?

KRAMER: Yeah, we give you the dough, you smash it, you pound it, you fling it in the air; and then you get to put your sauce and you get to sprinkle your cheese, and they - you slide it into the oven.

GEORGE: You know, you have to know how to do that. You can't have people shoving their arms into a six-hundred degree oven.

KRAMER: It’s all supervised.

GEORGE: Oh, well.

Seinfeld: Male Unbonding (broadcast June 14, 1990), available at <http://www.seinfeldscripts.com/MaleUnbonding.html> (last visited Feb. 2, 2011).

where you prepare your own food.¹³¹

We already have made our first observation—there are two “implemented memes” (we will call them the “pizza-meme” and the “self-cook-meme”). Focusing on the pizza-meme,¹³² it becomes apparent that your having that meme depends upon that meme’s previous expression. In other words, someone else—either to whom you were exposed or to whose implemented meme you were exposed—had a pizza-meme and expressed it by making the pizza. Put another way, the meme (the raw instructions) for making a pizza were actually acted out (the phenotype/behavior), creating a pizza (the artifact).

Thus, we already have seen our first glimpse of creativity, which has taken place via the *implementation* of the meme by the person making the pizza—the method of making the pizza (think: oven gas oven versus wood-burning oven) and the type of pizza (think: New York Style versus Chicago Style) have been expressed (i.e., implemented) differently according to the individual implementing them.

There are, of course, other memes working here. There are other memes connected to the pizza-meme. One such meme might be “wear oven mitts.” That is not a pizza-meme, but it is “linked” to the pizza meme, and, therefore, the “oven mitt” meme is selected even though the primary selection was for pizza, not oven mitts. Put another way, the oven-mitt meme was free-riding off of the pizza-meme.

Now, you may be thinking, why pizza? Pizza-making was not your only option here. In the first instance, food—as a genre of memes—needn’t be your concern at all. In the previous subparts we saw that biological needs, cultural constraints, and bounded rationality shape memetic evolution. Here, the biological “need” for food (or money as an instrumental tool for some biological need) may have influenced the selection of the more general “food meme.” S-interaction filtered out other non-food memes.

Additionally, this meme was selected based on your current environment. Since you live in Chicago, the pizza-meme already was a prominent one in your memetic space—and so it was more readily available to be replicated. Additionally, you may have gone out to eat at more pizza restaurants than burrito shops, and so you associated pizza with restaurants more readily than burritos, for example. Or perhaps you “got” this idea while visiting a pizza restaurant. Finally, your time to create this idea was limited, not only by the cognitive energy you could spend, but also the cognitive constraints you face. You are a busy person whose brain space is devoted to other memes, as well. The pizza

¹³¹ There are other memes involved in this “idea,” but the example simplifies things to make a point.

¹³² Another individual may have expressed the self-cook meme by owning a restaurant where individuals partially “build their own dish” (e.g., Flattop).

meme had to attach itself to the brain within the brain's low-vacancy environment.

Here we reach how the pizza-meme and self-cook-meme combined. All of the previous processes described apply not only to the pizza-meme, but also to the self-cook meme. Now, both of those memes entered your mind and in some way interacted, either during the initial storage, while they were stored, or during recall (or some combination of the three). These two memes, as we have seen, were not original to you—and in some sense you didn't have control over their selection. Others who you saw making pizzas or making their own food at a restaurant also were not the first to propagate that meme—and it likely resulted from a variation of a meme they had acquired from someone else.¹³³

Whatever the origin, the pizza-meme and self-cook-meme replicated in your brain (i.e., were selected) because of their appeal to, and the selection pressures imposed by, your brain. Their interaction may have been even less a result of your actions since they could have combined during the recall of a totally different meme, activating these two, which happened to be stored near each other.¹³⁴ Remember, the SDM model articulates a hard-disk model of memory, where memories are broken into small bits of information and stored in various locations. Tapping into one memory (inadvertently) may tap into others as well. Through this process, the pizza-meme and the self-cook meme were selected and combined to form a variation of the two memes: a new memplex.

* * * *

I have just offered a simplistic and incomplete memetic account of the creativity. In part, I used creativity research—which is not memetically focused—to explore this process. Much of creativity research has focused on the individual's development and experience, exploring how individuals choose their interests and cultivate them, or the typical background and personality traits of creative people. Memetics supplements this research. It asserts that our mind is comprised of memes—many of these memes are interdependent. Our creative process is driven to some degree by the memes that best dominate our brains, by our genes, and by our environment. In the next

¹³³ Beyond relatedness, another reason for the combination of these two memes is the action of *another* meme. A meme that tells the brain to maximize the host's money would favor a pizza-meme, while a meme in a lactose intolerant person would disfavor this meme. The money-making meme might, for example, induce the brain to feel certain emotions (e.g., sensations or thoughts about having money) to encourage it to adopt the pizza-meme. By contrast, the lactose-intolerant meme might have a defense, such as reminding the host of the bodily discomfort the host experiences after ingesting lactose (and pizza).

¹³⁴ See Gabora, *Culture and Creativity*, *supra* note 29, § 5. Gabora's description of Kanerva's SDM model of memory illustrates this point. *Supra* Part I.B.2.b.

Part, we will explore how this memetic account of creativity compares with creativity scholarship in copyright law.

II. CONCEPTIONS OF CREATIVITY AND CREATION IN COPYRIGHT

In copyright law, descriptive accounts of creativity are important because the U.S. copyright system is calibrated to maximize incentives for the author motivated by economic means.¹³⁵ But other motivations to create also exist, and the Constitution does not exclude them *per se*: just what kinds of incentives creators respond to is a gap left to be filled by the legislature. This Part describes how copyright scholars have in some way addressed creativity.

A. *The Economic Rationale for Copyright and Creation*

Traditional accounts of copyright law begin by noting that it is aimed at the public benefit.¹³⁶ Copyright, on this view, incentivizes individuals to create works. Economic theory holds that the best way to do this is with economic incentives: providing creators with limited rights that enable them to recoup creation costs.¹³⁷ Economists, therefore, view creators as motivated primarily by money; people are more likely to create when they can monetize their creation.

The economic model's shortcomings lie in the creative process.¹³⁸ Recall that, under a memetic theory, memes reproduce for their own sake—they do not care about money or fame or anything else. They care about making more of themselves. They *are* the creative process, which is constrained by a variety of factors. Nothing about the creative process indicates that money is actually what drives creativity *in toto*. Sure, money can be an external or cultural (perhaps, if viewed instrumentally, even a biological) constraint. It can influence what memes and how many are produced; but many other constraints exist as well. In other words, money can motivate people to produce more creative works (or to spend more time creating things), but so can many other factors. And, importantly, the process of creation has less to do with money than economic theory suggests.

¹³⁵ See U.S. CONST. art. I, § 8.

¹³⁶ See generally JAMES BOYLE, *THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND* (2008); NEIL NETANEL, *COPYRIGHT'S PARADOX* (2008); WILLIAM FISHER III, *PROMISES TO KEEP: TECHNOLOGY, LAW, & THE FUTURE OF ENTERTAINMENT* (2004); LARRY LESSIG, *FREE CULTURE: THE NATURE AND FUTURE OF CREATIVITY* (2004).

¹³⁷ See generally WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* (2003).

¹³⁸ The theories discussed below may overstate the economic theory's motivational reach. As we will see, many of these accounts find the economic rationale lacking because it does not account for the creative process or motivation. I will concede the former, but as to motivation, I think we need to be more careful. It is not essential to the economic theory that people create things *for* money, just that people will be *more likely to spend their time creating* things if they can (potentially) profit from it. Perhaps the economist might quip, "If we want more professionals, we should make less starving artists."

B. *The Drive to Create*

Scholars have attacked a purely economic theory of creativity on precisely these grounds. Most of these accounts focus the economic model's failure to account for nonmonetary motivations to create. While not all of these scholars have focused their attention on creativity per se, they all have touched on the issue of creativity. What links this scholarship is an emphasis on a creative desire—the drive that individuals feel to create.

1. Mystical Creation: Religious and Secular Accounts

Among those accounts critical of the economic theory is the mystical account of creativity.¹³⁹ This theory focuses on motivation—it asks from where the drive to create emanates. The purpose of this theory is threefold. First, it attempts to show that creative motivation is not solely monetary. Rather—and this is the second purpose—it is spiritual and unknowable. Finally, and related, it is meant to illustrate that the creative process is complex, a fact for which copyright law should account.

Professor Roberta Kwall is a prominent proponent of the mystical account of creativity. She argues from two different places—the Book of Genesis and philosophy—to reach one conclusion: creators have a special bond with their work. This involves one crucial argument. The creative process can be motivated, not by money, but by God or some secular or spiritual equivalent. Whether the motive is religious or “secularly spiritual,” something external and unknowable motivates the individual to create.¹⁴⁰

Kwall argues that the creation narratives or “origin myths”¹⁴¹ of the Jewish and Christian traditions illustrate how religion can motivate creation.¹⁴² One narrative¹⁴³ can be referred to as the “mirroring

¹³⁹ Throughout this article, I will refer to these accounts of creation as both mystical and mythical. The word “mystical” captures the way in which these accounts describe the creative process: “spiritually allegorical or symbolic; transcending human understanding.” THE NEW OXFORD AMERICAN DICTIONARY 1124 (2d ed. 2005). The word “mythical” captures the idea of the myth or story that explains creativity: “a traditional story, esp. one concerning the early history of a people or explaining some natural or social phenomenon, and typically involving supernatural beings or events.” *Id.* The accounts of creation discussed in Part II.B.1 blend elements of both of these words: they explain the creative process by reference to stories or phenomena that are beyond human understanding.

¹⁴⁰ See Kwall, *Inspiration and Innovation*, *supra* note 4.

¹⁴¹ “An ‘origin myth’ or an ‘origin story’ is a narrative that explains how a culture came into being.” Jessica Silbey, *The Mythical Beginnings of Intellectual Property*, 15 GEO. MASON L. REV. 319, 320 (2008); see also EDITH HAMILTON, MYTHOLOGY: TIMELESS TALES OF GODS AND HEROES 19 (1942) (“According to the most modern idea, a real myth has nothing to do with religion. It is an explanation of something in nature; how, for instance, any and everything in the universe came into existence: men, animals, this or that tree or flower, the sun, the moon, the stars, storms, eruptions, earthquakes, all that is and all that happens.”).

¹⁴² Kwall, *Inspiration and Innovation*, *supra* note 4, at 1951–62.

¹⁴³ There are, of course, other (religious) creation narratives pre-dating the rise of monotheism. See, e.g., KAREN ARMSTRONG, A HISTORY OF GOD: THE 4000-YEAR QUEST OF JUDAISM, CHRISTIANITY AND ISLAM 6–9, 28–29, 35–36 (1994) (detailing the creation myths of the

argument”: God created man in His image, and thus “man’s capacity for artistic creation mirrors or imitates God’s creative capacity.”¹⁴⁴ In this light, the creator has a “parental connection to his work.”¹⁴⁵

The second narrative can be referred to as the “command argument.” This story of creation posits that man creates at the behest of God’s divine command.¹⁴⁶ Thus, this narrative explains our creativity in relation to a command from a mystical external force; God is responsible for our “drive” to create.¹⁴⁷ Furthermore, because the work was created at God’s direction, the human creator becomes the work’s “guardian” or steward.¹⁴⁸

In addition to these religious accounts, Kwall identifies similarly grounded descriptions of “secular” accounts of creativity. These accounts generally accord with her description of divine inspiration: an inexplicable force—one external to the creator—drives the creative processes.¹⁴⁹ Here she draws on the work of Friedrich Nietzsche, arguing that our creative desire emanates from the “artistic soul.”¹⁵⁰

Babylonians, the Aryans, and the Greeks (e.g., Plato’s Eternal Forms), which did not suppose an *ab initio* creator).

¹⁴⁴ Kwall, *Inspiration and Innovation*, *supra* note 4, at 1952. Kwall, THE SOUL OF CREATIVITY, *supra* note 9, at 13.

¹⁴⁵ Kwall, *Inspiration and Innovation*, *supra* note 4, at 1954; Kwall, THE SOUL OF CREATIVITY, *supra* note 9, at 13. For a secular (and philosophical) perspective of a similar argument, see ROBERT NOZICK, THE EXAMINED LIFE: PHILOSOPHICAL MEDITATIONS 34–54 (1989); *see also infra* Part II.B.1.

¹⁴⁶ *See* Kwall, *Inspiration and Innovation*, *supra* note 4, at 1954.

¹⁴⁷ *See id.* at 1955 (“Classical interpretations of this narrative provide support for the view that man’s creativity derives from an intrinsic drive that, although endowed by an external source, enables man to suppress his ego and focus on the emergence of his work.”).

¹⁴⁸ *Id.* at 1955–56 (“Moreover, by emphasizing a cyclical view of creativity, this narrative illuminates the creator’s role as the guardian of her work’s meaning for a defined period of time.”); *id.* at 1959–60 (explaining that stewardship “reaffirms that gifts are endowed by a Divine power, beyond that of the artist,” and this means that “the idea of possessing something originally obtained as a gift—an unearned benefit ‘bestowed upon the recipient’”); *see also* LEWIS HYDE, THE GIFT: CREATIVITY AND THE ARTIST IN THE MODERN WORLD 364 (2007) (“[T]he gifted man is not himself . . . until he has become the steward of wealth which appears from beyond his realm of influence and which, once it has come to him, he must constantly disperse. . . . [W]e are sojourners of our gifts, not their owners . . .”); Neil Netanel, *Copyright Alienability Restrictions and the Enhancement of Author Autonomy: A Normative Evaluation*, 24 RUTGERS L.J. 347, 424–30 (1993) (arguing that the Kantian perspective is consistent with the Lockean and Millian conception of stewardship as a rationale for copyright protection). Although rejected by the courts, some religious groups attempt to justify their restrictive protection of their texts using copyright based on a stewardship rationale. *See* Simon, *supra* note 4, at 374–76. One wonders whether such laws—laws that provide moral rights based on *religious* grounds—violate the First Amendment.

¹⁴⁹ Kwall, *Inspiration and Innovation*, *supra* note 4, at 1962–70. Professor Alan Durham has detailed how authors’ attempt to eliminate their own choices to elicit external and subconscious ones. *See* Durham, *supra* note 10, at 597–98 (“[Dadaist artist Jean] Arp viewed his experiments with chance as a kind of collaborative endeavor. The abandonment of conscious volition calls into play both the subconscious mind and external forces that speak through the subconscious.”) (footnotes omitted); *id.* at 597–607 (detailing other examples of artists who used techniques designed to enhance indeterminacy in their art by tapping into their subconscious or external forces, including John Cage’s seeking “an abolition of ego, which he regarded as a barrier between the self and an unmediated experience of the cosmos”).

¹⁵⁰ Kwall, *Inspiration and Innovation*, *supra* note 4, at 1962–63. Francis Crick has attempted to scientifically analyze whether the human soul exists. *See, e.g.,* FRANCIS CRICK, THE ASTONISHING HYPOTHESIS: THE SCIENTIFIC SEARCH FOR THE SOUL (1994).

She notes that authors frequently share a bond with their work, casting their relationship in parental terms.¹⁵¹

This description often leads to a personality-based theory of moral rights, which claims that the author imparts herself in her work.¹⁵² Other, more contemporary philosophers, have characterized the creative process similarly. Robert Nozick, for example, argues that the author invests herself in the work and thus imbues it with her personality, making it “hers.”¹⁵³ These authors and others follow in the tradition of Kant¹⁵⁴ and Hegel¹⁵⁵—both of whom argued that the author’s work is an investment of her personality and, thus, deserves special protection.¹⁵⁶

In both the religious and secular narratives, the creative force is not within the author’s control. It is divinely or spiritually inspired, and in some ways irreducible or inexplicable.¹⁵⁷ The creator’s work represents both an intimate expression of herself and of God. As a corollary, Kwall advocates giving creators stronger rights to allow stewardship of the works—arguing that the divinely-inspired author creates because of

¹⁵¹ *Id.* at 1963 (“The concept that an author ‘gives birth’ to her artistic creations provides the foundation for the unique bond between an author and her work, also discussed earlier in connection with the first Creation narrative.”).

¹⁵² See, e.g., JOHN HENRY MERRYMAN ET AL., *LAW, ETHICS, AND THE VISUAL ARTS* 145 (2d ed. 1987); Lawrence Adam Beyer, *Internationalism, Art, and the Suppression of Innovation: Film Colorization and the Philosophy of Moral Rights*, 82 NW. U. L. REV. 1011, 1023 (1988) (“Moral rights, which in cases of conflict would override copyright and other economic rights, are thus ordinarily described as ‘rights of personality.’”); Justin Hughes, *The Personality Interest of Artists and Inventors in Intellectual Property*, 16 CARDOZO ARTS & ENT. L.J. 81, 85–90, 106–19, 125–39, 163–79 (1998); Netanel, *supra* note 148, at 370–83 (detailing the “Continental heritage” of copyright law); but see Kim Treiger-Bar-Am, *Kant on Copyright: Rights of Transformative Authorship*, 25 CARDOZO ARTS & ENT. L.J. 1059, 1067–68, 1075–79 (2008) (arguing that Kant conceived of authors’ rights not because the author’s creation was an extension of her personality, but because Kant believed in the autonomy of the creator through self-governance).

¹⁵³ NOZICK, *supra* note 145, at 38–39 (“For the person creating, there is something more. An important part of the work of artistic creation—also of those theoretical creations where there is great leeway—is work on the creator herself. The creative work and product comes to stand, sometimes unconsciously, for herself or for a missing piece or part, or for a defective one, or for part of a better self. The work is a surrogate for the creator, an analog of her, a little voodoo doll to tinker with and transform and remake in something analogous to the way she herself, or a part, needs to be transformed, remade, or healed. The process of shaping and crafting an artistic work has, as an important part of its impulse, the reshaping and integration of parts of the self.”).

¹⁵⁴ See Netanel, *supra* note 148, at 374–77 (arguing that Kant conceived of the author’s creation as an extension of herself); see also IMMANUEL KANT, *CRITIQUE OF JUDGMENT* § 49: 175–82 (Oxford University Press, 1969) (arguing that art is something that represents either a rational concept or an empirical experience, that is more than mere imitation, and that exhibits the artist’s “mannerism,” which Kant describes as an effort to separate oneself from others, i.e., to show personality).

¹⁵⁵ See GEORGE W. HEGEL, *PHILOSOPHY OF RIGHT* 57, ¶ 44 (S.W. Dyde trans., 2001) (“A person has as his substantive end the right of putting his will into any and every thing and thereby making it his, because it has no such end in itself and derives its destiny and soul from his will. This is the absolute right of appropriation which man has over all ‘things.’ . . . Every man has the right to turn his will upon a thing or make the thing an object of his will, that is to say, to set aside the mere thing and recreate it as his own.”).

¹⁵⁶ See Netanel, *supra* note 148, at 374–78 (explaining the effect of Kant’s and Hegel’s writings on copyright law).

¹⁵⁷ Kwall, *Inspiration and Innovation*, *supra* note 4, at 1956–57 (“Although the classical Jewish tradition, as would be expected, views God as the external source of expression and creativity, the more generalized idea is that creative expression, though driven by an intrinsic mechanism, is ‘gifted’ in that it comes from a source beyond the author’s control.”).

motivations that align with protection of the work's moral character.¹⁵⁸

Kwall's account of the creative process is both similar and dissimilar to the memetic account. It is similar because it describes the creative process by reference to forces external to the creator. Under Kwall's account, divine or spiritual forces drive the creator's motivations. Under the memetic account, however, other external forces, such as upbringing, environment, education, and memes themselves, all influence and drive creativity. Thus, each posits that external forces drive the individual to create certain things, though each posits a different type of external force.

This similarity, however, also yields differences. Under Kwall's account, creativity is mystical and unknowable; it is shaped by God. Under the memetic account, creativity is biological, social, and knowable. It is a process that can be explained by replicators, the cultural milieu, and the biological composition of the individuals creating.

Here the difference lies in the method of deducing how creativity works. Kwall's account is phenomenological—it bases its conclusions on the self-reports of authors' feelings.¹⁵⁹ While phenomenological accounts of creation are important, they do not fully answer questions about how or why people create.¹⁶⁰ Professor Daniel Dennett aptly notes what the proponents of these accounts seem to fear:

A last hope for the Darwin-dreaders is simply to deny that what happens to memes when they enter a mind could ever, ever be explained in 'reductionistic,' mechanistic terms. One way would be to espouse outright Cartesian dualism: the mind just can't be the brain, but, rather, some *other* place, in which great and mysterious alchemical processes occur, transforming the raw materials they are fed—the cultural items we are calling memes—into new items that transcend their sources in ways that are simply beyond the ken of

¹⁵⁸ *Id.* at 1970–75.

¹⁵⁹ *Id.* at 1964 (stating that “creators attest to the ‘gestational period’ underscoring creativity—that timeframe in which the creative juices flow internally, almost imperceptibly”); *id.* at 1966 (quoting Thomas Wolfe's observation on his own creative process: “‘It was something that took hold of me and possessed me, and before I was done with it—that is, before I finally emerged with the first completed part—it seemed to me that it had done for me.’”). Creativity research also describes the gestational period as critical to creativity. *See supra* Part I.B. These statements support a memetic account of creativity, where memes “possess” the brain and push it in one direction or another. The selection process the brain invokes is part of the creative process where memplexes are selected, and variation and mutation occurs without the host consciously engaged in the process. *See supra* Part I.

¹⁶⁰ It is on this basis that psychology research has begun studying “implicit associations.” *See, e.g.,* Mahzarin R. Banaji, Aiden P. Gregg & Beate Seibt, *Easier Done Than Undone: Asymmetry in the Malleability of Implicit Preferences*, 90 J. PERSONALITY & SOCIAL PSYCH. 1 (2006) (“Social psychologists have long noted that self-reported measures of attitude, though useful and convenient tools, are vulnerable to several validity-impairing biases, such as self-presentation, self-deception, and self-ignorance.”) (citations omitted).

science.¹⁶¹

Inspirational theories attempt to explain away the mysteries of the mind by claiming there is no way to discover them; they are simply too intrinsic, too special.¹⁶²

Now, there is nothing wrong with relying on first-hand reports. Indeed, such dependence is understandable; without many other techniques to investigating the mind, the author herself seems the most obvious place to look. It also is desirable in some respects: individual feelings of connections to their work may have merit and relevance—both to answering questions about creativity and crafting nuanced laws.

Nevertheless, failing to attempt a systematic assessment of the creative process risks missing an answer, or part of an answer. Postulates of external, supernatural forces do not shed light on the creative process or creative motivation.¹⁶³ This kind of answer eschews the difficult question by suggesting that it is unanswerable. Because these forces are themselves unknowable or ineffable, there is no way to study them systematically.

Thus, the mystical explanation suggests that all there is to know is what the author tells us, and so the author's *beliefs* justify the hypothesis. But phenomenology has limitations; namely, it cannot verify or falsify the content of an individual's feeling.¹⁶⁴ As Dennett

¹⁶¹ DENNETT, *DARWIN'S DANGEROUS IDEA*, *supra* note 30, at 368. Perhaps another problem is that the necessary scientific paradigms have yet to develop. See KUHN, *SCIENTIFIC REVOLUTIONS*, *supra* note 58, at 37. As Thomas Kuhn noted, "A paradigm can . . . even insulate the community from those socially important problems that are not reducible to the puzzle form[] because they cannot be stated in terms of the conceptual and instrumental tools the paradigm supplies." *Id.* at 37. The sentiment is such in some creativity research. See, e.g., Feist, *supra* note 95, at 273 (noting that opponents of personality creativity research object "that creativity by definition is mysterious and beyond the pale of empirical scrutiny," and acknowledging that this "may be true concerning the process of creativity").

¹⁶² See Dennett, *In Darwin's Wake*, *supra* note 117, at 23–24 (explaining that "[t]he themes all converge when the topic is creativity and authorship, where the urge is to hunt for an 'essence' of creativity, an 'intrinsic' source of meaning and purpose, a locus of responsibility somehow insulated from the causal fabric in which it is embedded, so that within its boundaries it can generate from its *own* genius, its *irreducible* genius, the meaningful words and deeds that distinguish us so sharply from mere mechanisms"); see also JOHN SEARLE, *MINDS, BRAINS AND SCIENCE* 10 (1997) (noting that the Cartesian tradition of dualism seems to exist to this day and that people are reluctant to treat the mind as an object of scientific study, instead leaving it to be "the property of religion").

¹⁶³ Bear in mind that mere *feelings* are usually necessary, but by themselves are never sufficient, to craft a legal rule. We must support our feelings with both facts and logic to recognize rights based upon them. I may *feel* that I am the reincarnate of a fox, and thus demand special rights for foxes, but we would not think that the law should grant foxes special rights because of my feeling. In other words, my feeling, alone, does not provide society with any reason for creating a special right for foxes. So too may it be for authors. An author may think that his work is so original and novel that it is solely hers, and that no one may use any portion of it without permission. But she would be mistaken. We could point out to her that some of her work *is* original, but that her feelings do not correspond to reality. This fact—about to what extent the author's product is "new"—may rule out grounds for thinking we should create certain rights based on her feelings alone.

¹⁶⁴ DENNETT, *CONSCIOUSNESS EXPLAINED*, *supra* note 64, at 66–98. Professor John Searle does not dispute this fact, but does dispute Dennett's description of consciousness. For a stirring and acerbic exchange between the two, see JOHN R. SEARLE, *THE MYSTERY OF CONSCIOUSNESS* 97–

says: “Because [individuals] are sincere (apparently) [about what they believe is happening in their minds], we grant that that must be what it is like to them, but then it follows that what it is like to them is at best an uncertain guide to what is going on in them.”¹⁶⁵ Creativity research, too, has exploded this myth: the stamp of the author, inasmuch as it is unique to her, falls to the overwhelming imprints of the culture and time that her work reflects.¹⁶⁶ Thus, while a phenomenological description of creativity is helpful, saying that a supernatural force or entity drives creativity does not explain the creative mental process.

Memetics, on the other hand, tends to focus on the observable development of culture, and the possibility of reducing its smallest parts to replicable units. Memetics tries to explain what it sees by reference to observable phenomena; it does not rely solely on the reports of people who have no access to the inner-workings of their minds. Looking to authors’ claims about their creations is only a part of the process. The other parts entail examining the actual constituents of culture (the memes) and the environment in which it exists (biology, culture, and physical environment). Using these tools, we can assess how the environment, culture, and biology affect creators and, in essence, the way their minds work. If this approach yields us answers, we will not have to avoid difficult questions, and we may be better equipped to answer them.

Aside from a refusal to rely totally on phenomenology, memetics and mystical accounts differ in the movement of creativity. Whereas Kwall seems to describe God as *directing* or in some sense *guiding* creative activities, memetics does the opposite: it posits that nothing “directs” the ultimate shape of culture (and thus creation), except the environment in which the creation occurs. There is no being or spirit guiding our creative process; only senseless, mindless, self-replicating robots: memes.

2. Collaboration and the Creative Process

Creativity has also been discussed in the context of collaborative creation. Collaborative creation, as I use the term here, refers to individuals who engage collectively in the creation of various cultural

131 (1997). Searle accuses Dennett of denying consciousness—which he takes to be obviously false—while Dennett accuses Searle of merely philosophizing about (instead of studying scientifically) consciousness.

¹⁶⁵ DENNETT, CONSCIOUSNESS EXPLAINED, *supra* note 64, at 94. Dennett here is speaking of subjective reports of consciousness, such as when a person says what they think their conscious states consist in. But I construe the phrase more broadly just to show that, while someone says something is happening within them (for example, “I know that God is telling me to create”) that is not evidence of the thing happening; it is merely evidence of what a person *thinks is happening*, or what *seems to her* to be happening. To carry my example to its conclusion, the aforementioned phrase does not show that God is actually telling the reporting person to create. At best, it is evidence that the person *thinks*, or it *seems to her*, that God is telling them to create.

¹⁶⁶ See SAWYER, *supra* note 52, at 20; see also *id.* at 190 (explaining “outsider art” as a product of “field and domain”).

products. As the Internet has grown, collaborative efforts became more common and, as a result, scholars have begun to concentrate their efforts on the Internet-inspired creativity.¹⁶⁷ Yochai Benkler, for example, has explored what he called “commons-based peer production” (“CBPP”): the collaborative efforts of multiple people (i.e., not firms) to create various informational products.¹⁶⁸ Examples of CBPP include ventures like open source software, SETI@home,¹⁶⁹ and Slashdot.¹⁷⁰ Although not focused on creativity per se, Benkler’s work on describing the various circumstances under which CBPP arises does touch on the notion of creativity. What people desire, in Benkler’s view, is to enhance their autonomy—and they will take advantage of technologies or opportunities that enable them to do so. Thus, the freedom provided by the Internet is just such a technological opportunity; it enables people to become autonomy-enhancing agents, letting them engage with information, culture, and others much more freely than before. Thus, CBPP opens up a new category of nonmonetary, collaborative creativity. Underlying this creativity is some idea of the innate drive to create, which Benkler uses the idea of autonomy to explain.

The concept of collaborative creation is not limited to what might be called cultural goods. In other areas, such as technology (functional devices), people are innovating collaboratively and in large numbers. Eric von Hippel has discussed at length the phenomenon of user innovation,¹⁷¹ and William Fisher has pointed out that, although involving “functional” products, user innovation is very similar to the creativity involved in the collaborative modification of cultural goods.¹⁷² Like large media conglomerates,¹⁷³ manufacturers seek to produce goods that appeal to the broadest audience.¹⁷⁴

¹⁶⁷ See, e.g., YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006); ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* (2005) (describing the phenomenon of user-generated, democratized innovation where users, rather than manufacturers innovate, though they do so to reap the benefits, often economic, of that innovation); see generally ERIC VON HIPPEL, *THE SOURCES OF INNOVATION* (1988) (describing how users often innovate both process- and product-based technologies or technological improvements to existing technologies, and how that user innovation spreads among other users and manufacturers); Yochai Benkler, *Coase’s Penguin, or, Linux and The Nature of the Firm*, 112 *YALE L.J.* 369 (2002) (describing and seeking to explain the development of collaborative projects without relying on either markets or managerial hierarchy).

¹⁶⁸ See BENKLER, *supra* note 167, at 60.

¹⁶⁹ SETI@home is a program that individuals install on their computer. The program runs when the user is not occupying it. SETI@home uses each computer—and there are millions of SETI@home computers—to scan space for signs of life.

¹⁷⁰ Slashdot is an online publication that users “create.” Various users submit and edit postings, which are then distributed in the form of a blog (or newsletter), where users can comment further on each post.

¹⁷¹ See generally VON HIPPEL, *DEMOCRATIZING INNOVATION*, *supra* note 167.

¹⁷² Fisher, *supra* note 4, at 1431–35.

¹⁷³ See BENKLER, *supra* note 167, at 205 (stating that “advertiser-supported media need to achieve the largest audience possible, not the most engaged or satisfied audience possible”).

¹⁷⁴ VON HIPPEL, *DEMOCRATIZING INNOVATION*, *supra* note 167, at 5 (“Mass manufacturers tend to follow a strategy of developing products that are designed to meet the needs of a large market

Although the lack of market satisfaction (“heterogeneity of demand”¹⁷⁵ not satisfied) drives them to become innovators,¹⁷⁶ von Hippel has noted that this explanation is not totally satisfactory: if all users wanted were new products at a cost, they could, instead of creating, merely hire custom manufacturers.¹⁷⁷ Instead, users seek out new ways of solving problems they have, at least in part, because they enjoy doing so.¹⁷⁸ Although other considerations also factor into the decision—for example, being in a business on the cutting edge of a field,¹⁷⁹ or general maximization of product value/use—personal satisfaction, through learning, enjoyment, or both, certainly play a role.¹⁸⁰ Speaking more generally, people find rewards in the process of innovating, not necessarily (though sometimes) in the product they produce.

By memetic standards, collaborative creation is a fine example of how cultural or biological constraints can shape creativity. The creative drive people feel to participate may result in part from memes’ desire to replicate themselves. In a community—whether it is techies or mechanics or engineers—the meme valuing self-creation propagates quite well.

With that meme pushing part of their behavior, they innovate within the constraints of their existing problem-domain. In other words, innovations are undirected in some sense, as they depend upon whatever task presents itself at that point in time in that particular culture. Although user-innovation is typically teleological, most “artistic” creative collaborations are not. They depend even more heavily on the cultural milieu in which individuals find themselves.

Memetics also adds to the collaborative account, providing an explanatory mechanism for collaborative behavior. Memes with more hosts in which to replicate can be contagious. As memes urging participation grow and replicate, they reinforce themselves, causing more collaborative participation. A particular domain conducive to replication and participation can amplify memes’ effects—something the Internet has made a reality for many domains.

segment well enough to induce purchase from and capture significant profits from a large number of customers. When users’ needs are heterogeneous, this strategy of ‘a few sizes fit all’ will leave many users somewhat dissatisfied with the commercial products on offer and probably will leave some users seriously dissatisfied.”)

¹⁷⁵ *Id.* at 39 (“[H]eterogeneity of need is high when many standard products are necessary to satisfy the needs of *i* individuals and low when the needs can be satisfied by a few standard products.”).

¹⁷⁶ *See id.* at 33–34.

¹⁷⁷ *See id.* at 6.

¹⁷⁸ *See id.* Diane Zimmerman dubs this kind of motivation—as the motivation Kwall describes—as “internal motivation.” Zimmerman, *supra* note 5, at 46.

¹⁷⁹ VON HIPPEL, DEMOCRATIZING INNOVATION, *supra* note 167, at 22–23. In other words, creativity is constrained by who the person is and where they are in cultural time. *See* Cohen, *Creativity and Culture*, *supra* note 84, at 1179.

¹⁸⁰ VON HIPPEL, DEMOCRATIZING INNOVATION, *supra* note 167, at 60–61; Fisher, *supra* note 4, at 1432 (“[T]he [true] goal . . . of many modifications of cultural goods[] is to play.”).

C. The Creative Process: Copying and Iteration

Suppose one were to make a copy of The Maids of Honor (Las Meninas); if it were I, the moment would come when I would say to myself: suppose I moved this figure a little to the right or a little to the left? At that point I would try it without giving a thought to Velázquez. Almost certainly, I would be tempted to modify the light or to arrange it differently in view of the changed position of the figure. Gradually I would create a painting of The Maids of Honor sure to horrify the specialist in the copying old masters. It would not be The Maids of Honor he saw when he looked at Velázquez's picture; it would be my Maids of Honor.

– Jaime Sabartés¹⁸¹

While the scholarship just discussed focuses on the individual or group creator as originator, other theories focus on the creative process. Both of these accounts, however, share two common features: nonmonetary motivations for creation and the emphasis on creative process over product. This subpart examines how both copying and iteration are part of creativity. In both cases, proponents argue that these activities are part of the creative process that copyright law often fails to recognize.

1. Copying as Creative Process

Creativity is a process. The creative person does not “invent” ideas—they “arrive” in the brain through processes, whatever form those ideas take. Copyright law, however, is focused on incentives, not process. Scholars have lamented this failure.¹⁸² Professor Olumfunmilayo Arewa, for example, has argued that copyright law fails to account for the copying inherent in the creative process.¹⁸³ Much of the creative process entails borrowing from many different ideas and expressions, and copyright law focuses only on the copyrighted product

¹⁸¹ JAIME SABARTÉS, *PICASSO'S VARIATIONS ON VELAZQUEZ'S PAINTING "THE MAIDS OF HONOR" AND OTHER RECENT WORKS* (H. N. Abrams, 1959).

¹⁸² See, e.g., Olumfunmilayo B. Arewa, *The Freedom to Copy: Copyright, Creation, and Context*, 41 U.C. DAVIS L. REV. 477, 488 (2007); Peter Jaszi, *On the Author Effect: Contemporary Copyright and Collective Creativity*, 10 CARDOZO ARTS & ENT. L.J. 293, 304 (1992) [hereinafter Jaszi, *Author Effect*]; Martha Woodmansee, *On Author Effect: Recovering Collectivity*, 10 CARDOZO ARTS & ENT. L.J. 279 (1992) (detailing the collective nature of Samuel Johnson's work and the romanticization of his status as a solitary author by James Boswell, and also explaining how the dialogue with the text can create collaborative authorship); see generally Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship,"* 1991 DUKE L.J. 455 (1992) (arguing that the concept of “authorship” in copyright is a social construction that has been revised, suppressed, and is constantly in flux).

¹⁸³ Arewa, *supra* note 182, at 488.

at issue in any particular dispute.¹⁸⁴ The law also seems to ignore the problem: rather than craft nuanced rights, copyright law uses the concept of a Romantic author¹⁸⁵ because it simplifies the analysis.¹⁸⁶ Arewa argues that creativity requires a contextual analysis, which, she claims, implies that courts should “broaden their gaze,” and look beyond the concept of the “true (i.e., autonomous)” author.¹⁸⁷

Arewa’s argument aligns with memetics. When viewed as a giant cluster of interworking, self-replicating units, culture becomes rife with repetition. To replicate (to survive), memes must make *copies* of themselves. On the simplest level, we make copies of memes when we do a variety of activities, such as shaking hands, greeting someone hello, or even sending a thank-you note. On the more complex level, creative works are often the product of millions of memes copied, varied, and co-adapted. Creating a painting of a cat, for example, one would copy various memes entailing cats—such as previous paintings, photographs, movies, shows, or encounters with cats. Also relevant would be the time at, and circumstances under which, they would experience these memes, and how those memes had mutated before. The product—a painting of a cat—would be the result of *copying* many other memes, which had been copied and varied by many other individuals.

2. Creation as Iteration

Arewa is not alone in her attack on copyright’s singular version of the author. Professor Peter Jaszi and others have made similar arguments about the necessity of borrowing and copying to create new and valuable cultural work.¹⁸⁸ His emphasis, though, is slightly different: following the concept of iterative creativity to its logical origin, Jaszi notes that each creative iteration has at least one “author.”

¹⁸⁴ *Id.* at 505 (“At least some of the problems associated with copyright with respect to the production of cultural texts arise from the inability of current copyright frameworks to represent and accommodate borrowing and other uses of existing material.”).

¹⁸⁵ See Durham, *supra* note 10, at 614-15 (stating that, where as in the era of patronage, writers played the role of “craftsmen,” during the eighteenth and nineteenth centuries the writer was understood as expressing her own “inner vision” or “original genius,” which made her a “creator”); Versteeg, *supra* note 10, at 1360 (“[H]istory implies that courts in the eighteenth and nineteenth centuries developed the view that authors were special intellects whose minds generated works that reflected their personalities.”).

¹⁸⁶ See Arewa, *supra* note 182, at 509–10 (“Instead of recognizing and confronting the complexity of collaborativity, copyright theory typically uses narratives of authorship based upon Romantic author, natural rights, or moral rights theories of authorship to simplify characterizations of acts of creation, and to enable such acts to be viewed as autonomous in nature.”).

¹⁸⁷ *Id.* at 491–92.

¹⁸⁸ See Jaszi, *Author Effect*, *supra* note 182, at 304 (“Romantic ‘authorship’ blinds decision-makers to the advantages of non-conforming cultural production. Copyright law, with its emphasis on rewarding and safeguarding ‘originality,’ has lost sight of the cultural value of what might be called ‘serial collaborations’—works resulting from successive elaborations of an idea or text by a series of creative workers, occurring perhaps over years or decades.”); see also sources cited *supra* note 182.

He suggests that copyright law neglects this fact; it fails to recognize cultural products that develop over many years and involve “a series of creative workers.”¹⁸⁹ He explains several copyright doctrines to illustrate this point. First, he cites the originality standard, which focuses on only the “author” as an individual, as such an example. Joint authorship, too, frames the legal inquiry in individualist terms: “only identified or identifiable individuals can receive legal recognition for their contribution to a ‘joint work’”;¹⁹⁰ “the duration of protection for a ‘joint work’ is measured in terms of the longest-surviving of its several ‘authors’”;¹⁹¹ and each author can exploit and use the work as if it is her own.¹⁹² Because of this focus on the individual, Jaszi suggests, like Arewa, that the law ought to relax its reliance on the concept of the Romantic author.¹⁹³

Like Arewa’s criticism of the Romantic author concept, Jaszi’s critique is consonant with memetics. As memes copy themselves using brains, they undergo subtle or great variations. As artists, novelists, musicians, or even software engineers create something new, they are using the memes that have undergone variation by a previous host. What constitutes an author under the memetic account complex? Not only are previous authors involved, but also their cultural, biological, and environmental constraints. With such a complex web, memetics counsels against the Romantic version of the author.

3. Creativity as Self-Expression

Scholarship on copyright creativity, users, remixing, and fan fiction has highlighted the idea of creation as motivated by self-expression.¹⁹⁴ These descriptions explain how these works are created—remixing different songs requires several steps, and fan fiction

¹⁸⁹ Jaszi, *Author Effect*, *supra* note 182, at 304.

¹⁹⁰ *Id.* at 315.

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.* at 319.

¹⁹⁴ See Cohen, *Creativity and Culture*, *supra* note 84, at 1179; Julie Cohen, *The Place of the User in Copyright Law*, 74 *FORDHAM L. REV.* 370, 371 (2006) (arguing that the user of copyrighted works “appropriates preexisting cultural goods as an inevitable part of the process of self-development” and “engages in creative play, with which ‘copying’ . . . is inextricably linked”); Fisher, *User Innovation*, *supra* note 4, at 1468–71; Wendy Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 *YALE L.J.* 1533 (1993) (taking the view that self-expression is a fundamental component of creativity and noting that public rights to use certain aspects of copyrighted works are grounded in this principle); Joseph Liu, *Copyright Law’s Theory of the Consumer*, 44 *B.C. L. REV.* 397, 411–20 (2003) (describing the view of the consumer of a copyrighted work as engaging in communication or self-expression); Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 *YALE L.J.* 535, 568–74 (2004) (explaining that “[c]opyrighted works often serve as the self-expression of someone other than the author,” and explaining the variety of situations in which people make copies of copyrighted works—including films, music, poems, plays, and translations—as an act of self-expression); Tushnet, *Economies of Desire*, *supra* note 4 at 546; see generally LAWRENCE LESSIG, *REMIX: MAKING ART & COMMERCE THRIVE IN A HYBRID ECONOMY* (2009); KEMBREW MCLEOD ET AL., *CREATIVE LICENSE: THE LAW AND CULTURE OF DIGITAL SAMPLING* (2011).

obviously requires a familiarity with the story about which the fans write. In some sense, they are an extension of the collaborative and copying theories discussed above; individuals are building upon previous works and making new ones.

But after a little digging—once you get past this similarity and the technical creative process—a fundamental concern of these scholars reveals itself: self-expression and the *ability* to express oneself without (concern for) violating copyright. Insofar as these descriptions concern creativity, they are concerned not with the copyright owner and why she creates, but with her (i.e., the user's) interests in self-expression (sometimes self-expression of the “creator,” other times of the user). They align with the autonomy-enhancing account put forth by those like Benkler.¹⁹⁵ For Professor Rebecca Tushnet, “remix matters [because] it allows people to adopt, modify, reject, question, and otherwise react to [the] lessons” that pop culture offers.¹⁹⁶ Thinking is not always enough; sometimes we have to speak to know what we think.¹⁹⁷

These scholars postulate a motivational rationale (self-expression) and explain how the creative processes in these realms work. But their focus is not on reshaping the incentive structure of copyright; it is about users' interests and how those interests should shape copyright owners' rights. Still, the concern is creativity—and the creativity of users ultimately concerns the creativity of those creating copyrightable works. Many users become creators, and, indeed, all creators are users. Although some of the concerns—such as those for fan fiction—are based more on the right of only the user, in many cases self-expression touches on creators' interests as well.

By focusing on self-expression, we can see how users and creators both engage with memes. Memetics posits that people use memes to do all kinds of things. Engaging with the world often requires using pre-existing memes, some of which are copyrighted. Given the limited cultural environment in which people can exist, their supply of memes will be limited. Thus, the memetic account teaches us that, to live in the world, we must use memes. In this sense, the memetic account finds common ground with scholars who note the importance of self-expression in creativity.

¹⁹⁵ See discussion *supra* Part II.B.2.

¹⁹⁶ Rebecca Tushnet, *Hybrid Vigor: Mashups, Cyborgs, and Other Necessary Mothers*, 6 *VIS: J.L. & POL'Y FOR INFO. SOC'Y* 1, 2 (2010).

¹⁹⁷ See *id.* at 11-12 (“Making a creative work, especially a creative work that comments on an artifact that other people will know and have opinions about, gives people their own answers to [the] question [of ‘who do you think you are?’], and empowers them to keep talking.”). Indeed, it may be that self-expression—the ability to speak or create, both internally and externally—is a feature of, or predicate condition necessary for, consciousness. See DENNETT, *CONSCIOUSNESS EXPLAINED*, *supra* note 64, at 195–97, 245–47.

D. Cultural Theory and Creativity

In Parts II.B and II.C, we examined scholarship that took issue with some of the shortcomings of copyright law's conception of creativity. Some took issue with doctrines in copyright, others challenged specific legal constructs, such as the Romantic author. Building on some of these ideas, Professor Julie Cohen has challenged copyright's conception of creativity (as either utilitarian or Lockean) using cultural theory.¹⁹⁸ Cultural theory has important things to say about the creative process, many of which align with memetics. Indeed, the memetic account of creativity might be adding (unwanted) flesh to Cohen's account by attempting to re-describe in a reductionist way ethnographic accounts of creativity.¹⁹⁹

When it comes down to it, Cohen's account of creativity is about two issues. First, it recognizes the limitations of rights-based and economic theories. And, second, it re-conceptualizes the creative process to reflect the realities of the creator as an individual submerged in a sea of culture.²⁰⁰ At bottom, cultural theory "seeks to understand how existing knowledge systems have evolved, and how they are encoded and enforced."²⁰¹ This differs from approaches that seek to understand creativity and copyright from abstract perspectives, which detrimentally omit facts about how people actually use and interact with culture.²⁰² Cultural theory wants to reshape creativity as an "emergent property of social and cultural systems."²⁰³

Cohen describes cultural theory as containing two unified strands. The first focuses on the individual and pans out, looking to how individuals create and where and what they create. The second starts with society and asks in what context individuals create and what pressure may push them to create. The strands are unified by examining how they mingle, stitch together, and fray—emphasizing the unpredictability of creativity.²⁰⁴

Cohen stresses the limited ability of creators to create: their "situatedness."²⁰⁵ Constraints on creativity flow not just from their time

¹⁹⁸ Cohen, *Creativity and Culture*, *supra* note 84, at 1179.

¹⁹⁹ Cohen laments the rights-based and economic approaches as disregarding valuable, "ethnographically empirical" methods of investigating creativity. *Id.* at 1156 ("They prize empiricism above logical derivation from so-called first principles, and the forms of empiricism that are prized most highly tend to be ethnographic rather than quantitative."); *id.* at 1157–58 (arguing that quasi-scientific theories, like memetics, "are attractive to many scholars because they offer the perceived certainty of scientific law, and therefore enable discussion of cultural complexity and path-dependence in terms that avoid engaging with questions of meaning").

²⁰⁰ *Id.* at 1153–54.

²⁰¹ *Id.* at 1165.

²⁰² *Id.* at 1175 ("The abstractions-based model of cultural production tends to marginalize more concrete questions about how people use culture and produce knowledge, about the conditions that lead to creative experimentation, and about the conditions that predispose audiences to welcome such experimentation.").

²⁰³ *Id.* at 1177.

²⁰⁴ *Id.* at 1177–78.

²⁰⁵ *Id.* at 1178.

and place, but the limited semantic environment they live in.²⁰⁶ Individuals must “work[] through” culture, using their bodies as well as texts, to become inspired or creative—they cannot simply create.²⁰⁷ In other words, creativity is a process that requires engagement, sometimes physical, with the ideas in addition to the works. The culture with which individuals engage is not one containing fixed meanings, but “evolving and contested meaning[s].”²⁰⁸ Social institutions, groups, and human behavior (within and outside of groups and institutions) also constrain and shape creativity, promoting (and validating) certain kinds of creativity at different times.²⁰⁹ The final part of the creativity map Cohen draws is found in the concepts of “creative play” and the “play of culture.” The former refers to the freedom to embrace uncertainty within a particular area. The latter is a term Cohen coined to reflect how chance encounters with culture can “yield[] unexpected [creative] fruit.”²¹⁰

Cohen’s account is insightful. Much like memetics’ conception of environmental, cultural, and biological limitations, cultural theory helps us situate the creative individual and see the limitations it faces. We can recognize both the individual’s capacity to create and its concomitant inability to do so in unlimited ways. Cohen also appropriately directs our attention to social institutions that can shape individual creative development. Like memetics, cultural theory is concerned with the situation in which people create, and how it influences them to create exactly what they do.

Unlike cultural theory, however, memetics is reductionist. By explaining the components of culture, memetics seeks to understand how it works. Cohen seems to reject reductionist theories because they seem so precise and because culture seems so messy. (Some of these objections are dealt with in Appendix A). Memetics suggests that while Cohen’s observations are correct, her anti-reductionist assumption is not. Memetic theory seeks to reduce culture to units that we can describe and (hopefully) study. Nevertheless, it incorporates many of Cohen’s observations as valuable parts of the theory.

* * * *

The views of the scholars just presented essentially is this: copyright should account for the creative process when granting rights. That does not mean that all scholars agree about what counts as a “creative process.” It does mean, however, that scholars are in favor of

²⁰⁶ *Id.* at 1179–80.

²⁰⁷ *Id.* at 1180–81.

²⁰⁸ *Id.* at 1184.

²⁰⁹ *Id.* at 1185–89.

²¹⁰ *Id.* at 1191.

taking the creative process into account—whether to recalibrate rights, defenses, or incentives.

Memetic theory adds to and differs from these sub-accounts of creativity, which explain creativity's drive, its process, or simply its component parts (as complex interactions of culture and self). Memetic theory says that the process of creation is a product of interacting memes and memplexes during brain function. Memes do not categorize creation as collaborative or mystical, per se—these processes are results of the brain dealing with self-propagating cultural units. The next Part explains how memetics influences our conception of copyright.

III. IMPLICATIONS

In the life of the mind as in life elsewhere, there is a tendency toward the reproduction of kind. Every judgment has a generative power. It begets in its own image. Every precedent . . . has a "directive force for future cases of the same or similar nature."

– Benjamin N. Cardozo²¹¹

The law is no stranger to replication and variation. Legal doctrines and precedents replicate and change all the time. Still, with some exceptions, we have avoided exclusively discussing copyright law. Instead, this Article has focused on creativity and culture, explaining it in memetic terms. The avoidance was intentional. Before we could discuss the implications of memetics, we needed to understand the theory itself. Indeed, Parts I and II laid the groundwork for such a discussion. With a theory of culture and creativity now in place, we can examine the implications it has for copyright law. This Part addresses that topic, exploring how memetics affects our understanding of the originality standard, the right to create derivative works, fair use, and moral rights. Before discussing these topics, though, it helps to make some initial observations about memetics and copyright law.

A. Initial Observations

Although this Article focuses solely on how a memetic account of creativity affects copyright law, several important observations should be made before proceeding. The first concerns the nature of memes given their life cycle. Because memes replicate *to replicate*, their existence is both dependent and detached. That is, they need human brains (that is how they replicate)²¹² but they do not “care” about human

²¹¹ BENJAMIN N. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 21–22 (1921) (quoting Redlich, *The Case Method in American Law Schools*, 8 *CARNEGIE FOUNDATION BULLETIN* 37 (1914)).

²¹² Indeed, if a particular brain function is impaired or disabled, the memes utilizing that part of the brain will no longer propagate. Take, for example, agnosia, which “denotes an inability to

brains (they replicate for their own sake). Likewise, we facilitate replication, but memes are not “ours” in same way as genes—they are replicators, and we are the vehicles for replication (as are cultural artifacts). Our propensity to produce them is a function of their desire to replicate, even if we want to think of memes’ implementation as our own expression. Justice Holmes, analyzing the concept of liability, relevantly noted: “The customs, beliefs, or needs of a primitive time establish a rule or a formula. In the course of centuries the custom, belief, or necessity disappears but the rule remains. The reason which gave rise to the rule has been forgotten”²¹³ Often (legal) rules propagate, not because they are good or rationale rules, but because they are rules—authoritative declarations we accept. In this way, rules are a type of meme(plex): the best ones survive because they are good replicators, not necessarily because we want them to or because they are the “best” rules.

Even though memes are self-interested replicators, it would be a mistake to say that the replicator-model makes our existence totally detached.²¹⁴ We are, after all, humans with feelings, emotions, and lives, and the fact that we are the product of genes and memes does not change that reality. But that truism helps highlight an important difference between genes and memes—and illustrates why, despite the real feelings we have, memetics is important.

Memes are part of us; but genes *are* us. That is, expression of our genotype results in our vehicle—in the most elemental and literal way, we are the embodiment of our genes. Memes are different. Expression of our memes produces an external cultural product—one that is not, strictly speaking, a part of us: we can discard, reject, or forget memes in a way we cannot with our genes.²¹⁵ Thus, while there may be a relationship between that product and our body,²¹⁶ it is certainly not as

conjure up from memory the sort of knowledge that is pertinent to a given object as the object is being perceived.” DAMASIO, *supra* note 45, at 161–62. A person afflicted with auditory agnosia would not be able to recognize what we typically would consider a normal voice. Such a condition would certainly spell the end of the memes of answering a phone or entering a house and saying, “Hello, it’s *me*.”

²¹³ HOLMES, *supra* note 14, at 35.

²¹⁴ Dennett puts nicely the issue of *what* we are, given our mechanistic minds and their Darwinian lineage:

In place of this dimly imagined chasm with “Darwinian phenomena” on one side and “non-Darwinian phenomena” on the other side, we need to learn to see the space between bee and Bach as populated with all manner of mixed cases, differing from their nearest neighbors in barely perceptible ways, replacing the chasm with a traversable gradient of non-minds, protominds, hemi-demi-semi minds, magpie minds, copycat minds, aping minds, clever-pastiche minds, “path-finding” minds, “ground-breaking” minds, and eventually, genius minds.

Dennett, *In Darwin’s Wake*, *supra* note 162, at 25.

²¹⁵ People, of course, try to dismantle their bodies using plastic surgery to conform to a different vision of themselves. People may also undergo gene therapy to treat illnesses. It would be imprudent to conclude from this that we can change our entire genetic makeup in the same way we can change our thoughts, or the artifacts we produce.

²¹⁶ I have noted already that memes may comprise our current mental makeup. But that mental makeup—our feelings, our thoughts, desires, and so forth can be *changed*. We can still discard,

important as the one between our genes and our body.²¹⁷ Indeed, some of the memes we possess are determined by our genes.²¹⁸ It therefore would be a mistake to say that, because memes replicate for themselves, we have no control over culture; much like it would be a mistake to say that genes replicate for themselves and, thus, we have no control over our bodies.²¹⁹ Thus, discarding all of our current conceptions of creativity (and copyright) because of memes would be foolish in the same way it would be foolish to claim morality did not exist once Darwin published *The Origin of Species*.²²⁰

Additionally, memetics is a value-neutral theory in the sense that the “best” or “worst” memes—in ethical terms—are not defined by how successfully they replicate. By that account, viral memes—memes for cults and religions—would be among the “best.” It also wouldn’t make sense temporally, as memes’ success tends to change over time. Segregation, for example, was a very popular meme in the United States in the first half of the 20th century. That does not mean segregation is a better meme than integration.

Although memetics does not per se damage our current conceptions, memetics does have some conceptual implications for thinking about culture and, in turn, the mind. If culture works by replicating itself using human brains, then we must approach questions about culture with this understanding in mind. In a similar way that genetics influences how we think about morality and philosophical issues, memetics influences how we think about creativity and copyright. We obviously have some type of autonomous functioning, but that functioning is affected to some degree—precisely what degree can be debated—by the push and pull of memes and genes. While some disciplines, such as sociobiology, focus only on genes, here we focus only on memes;²²¹ we do so not because memes are the only replicators

accept, create, etc., new memes in a way that our genes do not permit.

²¹⁷ Dawkins has argued that genes produced an “extended phenotype,” which is essentially the actions produced by our genes. See generally DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19. These actions, Dawkins argues, are part of our phenotype because they influence the survival of our genes. *Id.* In this sense, we might conceive of an extended memotype—where cultural artifacts are an extension of the meme. I think, though, that that would be a mistake. Memes, unlike genes, are not stable entities existing forever and always in the body of a person. To the extent that the memotype analogy works, it does so because the expression of a meme obviously impacts whether that meme survives—in some cases, it may also affect the survival of the person instantiating it.

²¹⁸ For example, processes like puberty are genetically determined. This process of course disposes us to have memes about sex.

²¹⁹ See, e.g., DAWKINS, THE SELFISH GENE, *supra* note 15, at 332.

²²⁰ CHARLES DARWIN, THE ORIGIN OF SPECIES (Gillian Beer, ed., 1998) (1859); see DENNETT, DARWIN’S DANGEROUS IDEA, *supra* note 30, at 61–68 (describing early reactions to Darwin’s hypothesis); JAMES WATSON, DNA: THE SECRET OF LIFE 16–28 (2003) (describing how Darwin’s hypothesis spawned the eugenics movement, spearheaded by Francis Galton and Charles Davenport and studied by others such as Richard Dugdale and Henry Goddard, the latter of whom introduced the first IQ tests in the U.S.); see also David A. Simon, *On Eugenics*, 14 APORIA: BYU UNDERGRAD. J. PHIL. 2 (2004).

²²¹ The focus on memes here does not negate the large debate about the extent to which genes affect our decisions and culture. For purposes of analysis, we ignore that debate here.

our bodies possess or the only drivers of thought and behavior—that is simply not true. We do so here because the real issue is what this perspective can teach us about how we view culture. Focusing only on memes, while remembering that our genes play a role, can help us grasp these lessons.

Other scholars already have broken ground to make way for this claim, as we saw in Part II. In the context of copyright law, scholars have demonstrated that our culture is not solely the product of Romantic authors, and that many of our conceptual notions about creativity and genius are recent phenomena²²²—and are just inaccurate myths.²²³ Of course, the individual mind—and the collective minds, as well as the attendant characteristics of the persons whose minds we are talking about—influence what gets produced; but at bottom, *what* is produced (or replicated, if you prefer) are memes, and memes replicate for their own sake. Their mutations, as developed through each brain or brains in which they replicate, are variations on the replicating memes.

How then, should we proceed with our analysis? There are three paths we could take. First, we could disregard the memetic process altogether and analyze copyright law as if memes did not exist. This would be problematic because it would refuse to recognize fundamental attributes of the creative process. This, in turn, could hinder our attempt to calibrate copyright law to the creative process. Second, we might want to trace exactly meme theory; i.e., structure copyright law to reflect the replication process. This approach, however, may not account for some of the interests we want to protect. It may focus too intensely on memes rather than on the individuals producing them. In this way, we may neglect important interests, values, or ethics we want to retain. Finally, to avoid the problems of the first two approaches, we could recognize meme theory, but then use it to further the goals we think are valuable. We could, in other words, structure copyright law in a way that both reflects meme theory and furthers our own goals. It is this last approach I try to follow in the subparts below.

In trying to undertake this task, I have limited space. For that reason, I assume, narrowly, that copyright should encourage the creation of works. On this view of copyright, more creative works are better than fewer creative works. Thus, we should try to encourage the creation of more works with high variation by paying attention to the creative process as discussed in Parts I and II.

²²² See discussion *supra* Part I.B; see generally THE CONSTRUCTION OF AUTHORSHIP (Martha Woodmansee & Peter Jaszi eds., 1994); Martha Woodmansee, *On Author Effect: Recovering Collectivity*, 10 CARDOZO ARTS & ENT. L.J. 279 (1992).

²²³ See, e.g., SAWYER, *supra* note 52, at 18–27 (describing nine myths of creativity, including the notion of the solitary author-genius).

B. Originality

The cult of originality . . . [has] reinforced ideas of individual ownership of artistic productions Are there influences at work that will in time abate feelings of proprietorship and thus modify conceptions of copyright . . . ? Probably so.

– Benjamin Kaplan²²⁴

If memes replicate on their own, when, if ever, might they constitute “original works of authorship”?²²⁵ Typically, copyright law requires only a modicum of creativity—many miniscule variations will suffice.²²⁶ Originality does not even require that the *content* of the work be original. In *Feist Publications v. Rural Telephone Service Co.*, for example, the Supreme Court held that “[o]riginality requires only that the author make the selection or arrangement independently (*i.e.*, without copying that selection or arrangement from another work), and that it display some minimal level of creativity.”²²⁷ With such a low standard, the court noted that “the vast majority of compilations will pass this test.”²²⁸

Given our discussion so far, it may be tempting to conclude that, because memes replicate “for their own sake,” no work could be original. That conclusion would result only if we took the path cautioned against in the previous subpart: tracing too closely memetic theory. By focusing closely on memes, we lose sight of the conscious individuals that they inhabit. The concept of originality does not die simply because creativity is a function of memetic mutation, variation, and lineage. Some individual, or group(s) of individuals, still responsible (in some way) for variations on the original meme that is transmitted to her. Thus, the memetic perspective does not destroy copyright’s originality requirement.²²⁹ It does, however, raise a question about the efficacy and appropriateness of the current conception of originality: does the current originality standard accurately reflect the memetic process?

The answer to that question is both “yes” and “no.” Under *Feist*,

²²⁴ BENJAMIN KAPLAN ET AL., AN UNHURRIED VIEW OF COPYRIGHT 117 (Iris C. Geik et al. eds., 2005). Kaplan describes this focus as emanating from a shift from a preference for imitation, and the value therein. *Id.* at 24. Other societies, such as China, have at one time or another valued imitation over originality. *See, e.g.*, YEE CHIANG, CHINESE CALLIGRAPHY: AN INTRODUCTION TO ITS AESTHETIC AND TECHNIQUE 200 (1973) (“[T]he imitation and copying of good calligraphy constitutes a very important part of the training of a calligrapher, and the acquisition of good examples to copy is imperative.”).

²²⁵ *See* 17 U.S.C. § 102(a) (2006) (“Copyright protection subsists . . . in original works of authorship . . .”).

²²⁶ *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 346 (1991) (“[O]riginality requires independent creation plus a modicum of creativity”); *id.* at 358 (“[T]he originality requirement is not particularly stringent.”).

²²⁷ *Id.* at 358.

²²⁸ *Id.*

²²⁹ *See generally* 17 U.S.C. § 102 (establishing the originality requirement of copyright law).

small and trivial variations on memes—for example, a picture of a famous temple taken by a tourist—would constitute sufficient originality for copyright protection.²³⁰ Under the Second Circuit’s public-domain-specific formulation in *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*,²³¹ almost any memetic implementation would suffice for copyright protection (provided it was fixed in a tangible medium),²³² though that protection may be “thin.”²³³ Generally speaking, there is nothing inherently contradictory about this account and the memetic perspective: we can explain the current originality standard in terms of memes. But the current standard does not comport with a memetic account of creation. Thus, for several reasons explained below, the current standard is undesirable and should be changed.

Nearly all scholars agree that copyright law should protect creative products. The question has always been how. Some scholars want to reward copyright as a matter of desert—natural rights.²³⁴ Others want a more instrumentalist approach, which rewards creative products only insofar as doing so promotes the creation of more creative products. Although memetics is not prescriptive, it does seem to suggest that a Lockean approach is misguided under the current standard of originality.

The natural rights theory of copyright presumes that the creator of work has done something, expended some labor, so as to make it hers.²³⁵ But memetics teaches that creativity is a product of memetic mutation, variation, and combination. Because of the low standard of originality, a natural rights regime grants copyright protection to works

²³⁰ *Feist*, 499 U.S. at 346 (“[O]riginality requires independent creation plus a modicum of creativity”); *id.* at 358 (“[T]he originality requirement is not particularly stringent.”). To avoid any infringement claims, let us assume the temple is publicly viewable. See 17 U.S.C. § 120(a) (2006) (exempting photographs of architectural works that are located in publicly viewable areas from infringement).

²³¹ *Alfred Bell & Co. v. Catalda Fine Arts*, 191 F.2d 99, 102-05 (2d Cir. 1951) (deciding the originality, and thus copyrightability, of mezzotint engravings of paintings that were in the public domain).

²³² *Id.* at 103 (“All that is needed to satisfy both the Constitution and the statute is that the ‘author’ contributed something more than a ‘merely trivial’ variation, something recognizably ‘his own.’”).

²³³ See, e.g., *L. Batlin & Son, Inc. v. Snyder*, 536 F.2d 486, 489 (2d Cir. 1976) (holding plastic toy “Uncle Sam” bank did not infringe a similar toy because both were based off of a public domain bank, that the plaintiff’s bank did not differ greatly from the public domain bank and, that where it did so, it was mostly for functional purposes). Although the court held that “the work [must] ‘contain some substantial, not merely trivial originality,’” that statement should be viewed in the context of the dispute in the case, which involved a public domain work. *Id.* at 490 (quoting *Chamberlin v. Uris Sales Corp.*, 150 F.2d 512, 513 (2d Cir. 1945)) (“But as this court said many years ago, ‘(w)hile a copy of something in the public domain will not, if it be merely a copy, support a copyright, a distinguishable variation will’” (quoting *Gerlach-Barklow Co. v. Morris & Bendien, Inc.*, 23 F.2d 159, 161 (2d Cir. 1927))). *Batlin* also has been criticized for attempting to describe originality in terms of authorial creation without copying, the latter of which could be driving the court’s opinion. Compare *Batlin*, 536 F.2d at 490 (“Originality means that the work owes its creation to the author and this in turn means that the work must not consist of actual copying.”) with Durham, *supra* note 10.

²³⁴ See discussion *supra* Part II.B.1.

²³⁵ See Simon, *The Use of Copyright Law by Religious Organizations*, *supra* note 4, at 382–90.

that have variations that occur naturally during the replication process (i.e., implementation, transmission, interaction, and processing). In other words, *Feist's* originality standard increases friction by granting strong protections to numerous individuals whose “creativity” is merely a reflection of standard replication error. Standard replication error refers to the run-of-the-mill mutations or variations memes undergo simply from being replicated. For example, when one individual tries to copy a drawing of another individual, certain copying errors are likely to result. Under current standards, these variations would be sufficient to give the artist copyright protection.²³⁶

From copyright's point of view, such a standard is undesirable because it clusters protections around minimal and inevitable variations in memes. By “inevitable” I am not referring to the specific content of any variation in a copyrighted work. Instead, I mean to indicate a level of variation that can be expected. Imagine, as was the case in *Clean Flicks of Colorado, LLC v. Soderbergh*, that an interest group thought *Violent Movie* contained “profane” language.²³⁷ We can expect—as did the group in *Clean Flicks*—that these groups would make minimal variations to *Violent Movie* by editing them for language and content.

By contrast, a standard that provides protections for only substantial variations—even under a natural rights theory—is likely to produce more creative works. Why? Because it simultaneously protects the efforts of those hosts trying to mutate memes and liberates from protection variations that occur naturally. Thus, creators can more freely use memes that mutate on their own to consciously create more variable works. Put simply, the greater the memetic variation, the more likely it should be considered a candidate for copyright protection.

This allows inevitable and trivial variations to occur without hindering the ability of other individuals to consciously combine and vary memes. Imagine, for example, you are the tourist that photographed the temple mentioned above. Let us assume that this qualifies as sufficiently variable to merit protection. Some works that altered only small parts of this work, or copied it exactly, would not qualify for protection. A work that reprinted the photograph on a t-shirt, for example, would not constitute a sufficient variation. Other works, however, that incorporated the original painting, or introduced other variation could qualify it for copyright protection. Imagine, for example, that the picture was warped and transformed into a different

²³⁶ See *Alfred Bell*, 191 F.2d at 104 n.22 (explaining that no two mezzotint engraving could be the same). But from the memetic standpoint, these errors are just part of the copying process. Thus, they should not be considered creative enough to garner copyright protection. Additionally, certain memes may be at greater risk for such error, so we should think about how to separate mere replication error from variation imposed by the creator.

²³⁷ See, e.g., *Clean Flicks of Colo., L.L.C. v. Soderbergh*, 433 F. Supp. 2d 1236, 1238 (D. Colo. 2006) (where copyright owners alleged infringement by company that sold copies of its works that were edited to omit violent or vulgar content). While we do not know precisely which words each group will identify, we can say that this kind of variation is inevitable.

image, or simply placed in the middle of a federal jail cell and photographed. Perhaps these uses would constitute sufficient creativity to merit independent protection. These examples are meant simply to test our imagination. This Article, however, does not suggest what this new standard would look like, but other scholars have begun to describe such a heightened originality standard.²³⁸

In the same vein, granting copyright protection to almost every cultural product rewards the wrong aspect of memetic variation: the memes, not the individual. A low originality threshold enhances the replicative success of memes with trivial variations, which may stifle further cultural creation. It enhances the production of these memes by rewarding them with copyright protection: some trivial memes or memplexes, for example, may replicate with great success and, along the way, undergo trivial variation. Nevertheless, these variations would make the memes (as implemented) candidates for copyright protection, which then limits the amount of trivial memes²³⁹ others can use without infringing or invoking fair use. In such a case, instead of trying to pinpoint the host's creative contribution, our copyright protection system would be rewarding the meme's power of replication. Changing such a system to prevent individuals from monetizing low-variation memes would not destroy these low-variation memes; it would, instead, simply preclude them from receiving copyright protection. That proscription would decrease memetic friction by reducing congestion around low-variation works. Low-variation memes would continue to replicate as a matter of course; excluding them from protection allows large memetic variation to occur at lower cost.

This high standard of originality should focus on the author's "conscious effort,"²⁴⁰ as did the court in *L. Batlin & Son, Inc. v. Snyder*.²⁴¹ There the court stated that "[a] considerably higher degree of skill is required, true artistic skill, to make the reproduction

²³⁸ See, e.g., Joseph Scott Miller, *Hoisting Originality*, 31 CARDOZO L. REV. 451, 463-85 (2009) (using the nonobviousness requirement of patent law to argue for a higher standard of originality in copyright); Gideon Parchomovsky & Alex Stein, *Originality*, 95 VA. L. REV. 1505 (2009); see also Kwall, *Inspiration and Innovation*, supra note 4, at 1995-2012 (arguing for moral rights applied to "narrow categories of works" based on a new form of heightened creativity); Roberta Rosenthal Kwall, *Hoisting Originality: A Response*, 20 DEPAUL J. ART, TECH. & INTELL. PROP. L. 1, 1-2 (2010) (criticizing Miller's approach, explaining that her previous work sought "to devise an appropriate and viable standard for moral rights in the context of the current copyright law," and noting that while her previous work did not comment on whether a new copyright regime should incorporate a heightened form of originality, she would be open to this revision). Cf. Lydia Pallas Loren, *The Pope's Copyright? Aligning Incentives with Reality by Using Creative Motivation to Shape Copyright Protection*, 69 LA. L. REV. 1 (2008) (arguing that the author's creative motivation should determine the scope of rights that copyright grants her). Miller, however, advocates keeping moral rights for works exhibiting low creativity. Miller, supra, at 494 ("[A]tribution and integrity rights are better directed to protecting authors whose works fall below an appropriately more demanding statutory originality standard for copyright protection.") (emphasis added). This Article rejects such an approach for the reasons explained herein.

²³⁹ Here, I refer to memes that vary trivially from the already trivial memes.

²⁴⁰ Cf. Durham, supra note 10, at 631-42.

²⁴¹ See *L. Batlin & Son, Inc. v. Snyder*, 536 F.2d 486, 491 (2d Cir. 1976).

copyrightable.”²⁴² Even though it made this statement in the context of reproductions of a work in the public domain, it applies aptly to original works of authorship. A mere “modicum of creativity” is not enough; a degree of skill and choice must be involved.

Although creativity is not a wholly conscious process,²⁴³ it is a “directed” one in the sense that individuals can decide to use or vary particular memes. An approach focused on conscious direction will combat the tendency of our brains to *merely* replicate memes with no or insubstantial variations. It will encourage individuals to make large variations to memes, rather than let these memes replicate on their own. This standard is a reflection of the creative process—of how memes replicate. To create more works, the originality standard accounts for this process.

Such a standard would not be impossible to implement. Indeed, some courts have taken a process-oriented approach in the context of “pictorial, graphic, and sculptural works.”²⁴⁴ Copyright extends to these works but not as to “their mechanical or utilitarian aspects.”²⁴⁵ Thus, the designs of “useful articles”²⁴⁶ receive protection “if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”²⁴⁷

To resolve disputes over when and what artistic features can be identified separately and exist independent of a design, courts typically use a test of “conceptual separability.”²⁴⁸ In some cases—like *Pivot Point International, Inc. v. Charlene Products, Inc.*—the test is process-oriented.²⁴⁹ The issue in *Pivot Point* was whether copyright protection extended to a mannequin.²⁵⁰ As part of this inquiry, the court had to ask whether the facial features of a mannequin head could be separated conceptually from the head, a useful article.²⁵¹ To resolve the issue, the court defined conceptual separability by reference to conscious choices of the mannequin’s designer: whether something is conceptually

²⁴² *See id.*

²⁴³ *See* discussion *supra* Part II.

²⁴⁴ *See* 17 U.S.C. § 113 (2006) (identifying the “scope of exclusive rights pictorial, graphic, and sculptural works” under federal law).

²⁴⁵ *See id.* § 101 (excluding “mechanical or utilitarian aspects” of “pictorial, graphic, and sculptural works”).

²⁴⁶ *See id.* § 113; *id.* § 101 (“A ‘useful article’ is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information. An article that is normally a part of a useful article is considered a ‘useful article.’”).

²⁴⁷ *Id.* § 101.

²⁴⁸ *See* 1-2 NIMMER ON COPYRIGHT § 2.08[B][3] (2011) (“But is conceptual separability without physical separability sufficient to accord copyright? There is disagreement in the circuit courts on this issue. The *Esquire* court denied that conceptual separability alone is sufficient, while the *Kieselstein-Cord* court rested its holding of copyrightability precisely on the ground of conceptual separability.”) (footnotes omitted).

²⁴⁹ *Pivot Point Int’l, Inc. v. Charlene Prod., Inc.*, 372 F.3d 913, 930-31 (7th Cir. 2004).

²⁵⁰ *Id.* at 918 (“The central issue in this case is whether the Mara mannequin is subject to copyright protection.”).

²⁵¹ *Id.* at 921–32.

separate “is necessarily informed by ‘whether the design elements can be identified as reflecting the designer’s artistic judgment exercised independently of functional influences.’”²⁵² The focus here is on conscious direction. The court wants to know *why* the creator used features “X,” “Y,” or “Z.” Was it because the article’s design necessitated it, or was it because it was an “artistic choice”? We might adopt a similar kind of standard under a heightened originality standard. This would preclude protection from works with little or no “artistic choices.”

This kind of conscious, process-oriented approach does not discount *unconscious* processes—quite the opposite. Such a view recognizes that creative works entail many unconscious acts and that not all creativity need be consciously contemplated. The primary purpose of focusing on conscious effort is to promote the variation of memes, not to punish creative products for which the author cannot provide a rationale.

There may be disputes over unconscious *copying*, but those will occupy the realm of infringement, not copyrightability. Unconscious copying may reflect a meme’s desire to replicate, and so treating unconscious copying as infringement in some cases—as the law currently does²⁵³—would be appropriate. Encouraging conscious effort in this case would promote fewer infringing works. It also would use the knowledge of memetics to craft a standard that better encouraged creative output. Rewarding conscious effort reduces the risk that copyright rewards mere replication that does not need incentive to occur. In this sense, the memetic account aligns with the observations of many scholars that creativity is both a process and a product: the memetic account of creativity argues for a new *standard* for evaluating a *product* by focusing on *process*. Although this Article has just argued for a heightened originality standard as applied to the work, it made this argument by focusing on the creative process.

²⁵² *Id.* at 931 (quoting *Brandir Int’l, Inc. v. Cascade Pac. Lumber Co.*, 834 F.3d 1142, 1145 (2d Cir. 1987)).

²⁵³ *E.g.*, *Bright Tunes Music Corp. v. Harrisongs Music, Ltd.*, 420 F. Supp. 177, 180–81 (S.D.N.Y. 1976) (holding subconscious copying sufficient to constitute copying under the Copyright Act), *aff’d* 772 F. 2d 988, 999 (1983).

C. Derivative Rights

In addition to memetics' implications for originality, it has implications for derivative rights, one of the five "exclusive rights" given to copyright owners (reproduction, preparation of derivative works, distribution, display, and performance).²⁵⁴ Together, these rights are quite powerful, as they give the copyright owner control over where the work goes, to whom it goes, when it goes, and how many times it goes. In this subpart, I focus on the right of authors to "prepare derivative works based upon the copyrighted work."²⁵⁵ A derivative work is one based upon one or more preexisting works.²⁵⁶

Presently, the litmus test for a derivative work is the same as that for originality: any modicum of creative effort constitutes an original contribution to an existing work²⁵⁷— and the creator receives protection when the copyright owner authorizes the creation of the derivative work.²⁵⁸ Indeed, the Seventh Circuit recognized as recently as 2009 that the originality standard and the derivative works standard are essentially the same, and that "the key inquiry is whether there is sufficient nontrivial expressive variation in the derivative work to make it distinguishable from the underlying work in some meaningful way."²⁵⁹

²⁵⁴ 17 U.S.C. § 106(1)–(6) (2006).

²⁵⁵ *Id.* § 106(2).

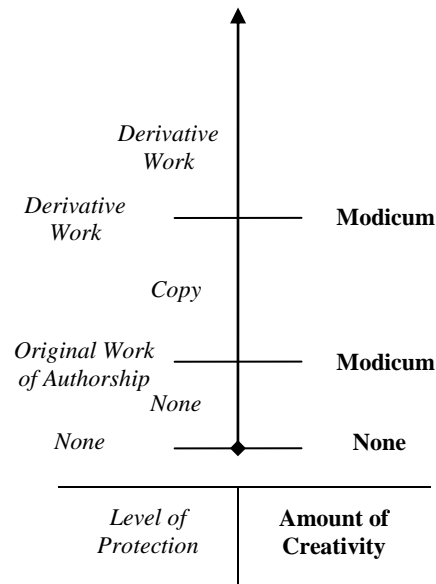
²⁵⁶ *Id.* § 101

²⁵⁷ See 1-3 NIMMER ON COPYRIGHT §§ 3.01, 3.03[A] (2011); see also 17 U.S.C. § 106(a)–(b).

²⁵⁸ See, e.g., *Shrock v. Learning Curve Int'l, Inc.*, 586 F.3d 513, 522–23 (7th Cir. 2009). To obtain copyright protection, the author of a derivative work does not, however, need permission to copyright the work once she has authorization to create it. *Id.* at 523.

²⁵⁹ *Id.* at 520.

**FIGURE 5. CURRENT STANDARDS FOR ORIGINALITY
& DERIVATIVE WORKS**



We saw in Part III.B that, under a memetic account of creativity, it may make sense to change the originality standard because standard mutation and recombination will occur naturally (i.e., without copyright's incentive structure and by virtue of ordinary brain function). The same goes for derivative works. The standard for derivative works will thus reflect the current and new standard of originality: to constitute a derivative work, the cultural product can exhibit any originality that makes the work not merely a copy; i.e., it could be something more than a "slavish copy"²⁶⁰; it could contain "some minimal level of creativity";²⁶¹ or it could be a "distinguishable variation."²⁶² The amount of variation, however, would be limited to everything less than that required for the new originality standard. In other words, the derivative right encompasses every variation that is not a copy and fails to meet the new originality standard.

This allows for trivial variations—those variations that are likely to occur naturally or with minimal memetic recombination or mutation—to fall within the derivative right of the copyright owner. Where, however, the work satisfies the new originality standard, it

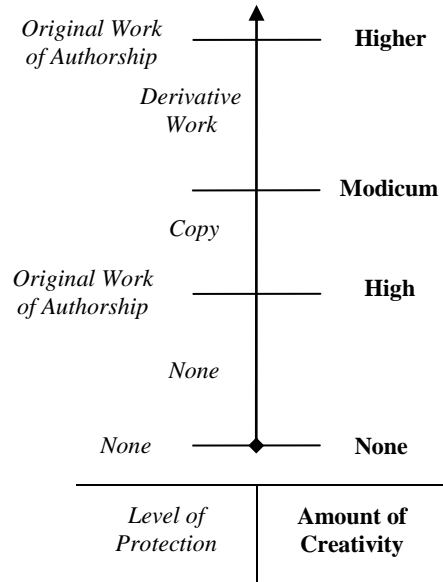
²⁶⁰ See *Bridgeman Art Library, Ltd. v. Corel Corp.*, 36 F. Supp. 2d 191, 197 (S.D.N.Y. 1999) (stating that "slavish copying, although doubtless requiring technical skill and effort, does not qualify [as original]"); *Shrock*, 586 F.3d at 522; see also *Mershwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.*, 528 F.3d 1258, 1267 n.9 (10th Cir. 2008).

²⁶¹ *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 358 (1991).

²⁶² *Alfred Bell & Co. v. Catalda Fine Arts*, 191 F.2d 99, 102 (2d Cir. 1951).

should be entitled to *separate* protection; that is, it should constitute an independently copyrightable work.²⁶³ This obviously conflicts directly with the current law, which provides copyright protection only to those aspects of the derivative work that are original to it and can be parsed from the underlying work.²⁶⁴

FIGURE 6. NEW MEMETIC STANDARDS FOR ORIGINALITY & DERIVATIVE WORKS



This new standard, depicted in Figure 6, refocuses creation incentives for derivative works by limiting the reach of the derivative right.²⁶⁵ Trivial variations of memes will fall within the bailiwick of the derivative right, allowing the copyright owner to recoup the costs of her creation, which, under the heightened originality standard, probably will take significant creative work. Additionally, the new derivative right will encourage the nontrivial variation of existing memes, even those

²⁶³ It is possible that the public might find reasonable a separate right based on the amount of creativity used to create the new work, even if it uses parts of the original. See Rebecca Tushnet, *Naming Rights: Attribution and Law*, 2007 UTAH L. REV. 781, 796 (2007) (explaining that Vladimir Nabokov based *Lolita* on a short story published in Germany and that, in the context of attribution and integrity rights, “[m]any people think that Nabokov created a work of genius, and this excuses much”).

²⁶⁴ See 17 U.S.C. § 103(a)-(b) (2006).

²⁶⁵ Others have discussed limiting or eliminating the derivative right. E.g., Glynn S. Lunney, Jr., *Reexamining Copyright’s Incentives-Access Paradigm*, 49 VAND. L. REV. 483, 628–52 (1996) (limiting the derivative right to cover particular circumstances); Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197, 1205 (1996). Trivial variations, I have argued, will occur naturally and without any significant recombinatorial effort. Those variations should be encompassed in the derivative right.

contained in copyrighted works. Significant variations to copyrighted works will entitle their host(s) to the same protections as an original copyright owner. This facilitates memetic replication, implementation, and variation of memes that the current copyright system stifled because of its strict conception of derivative rights. Authors also still have the first-mover advantage: they can reap the benefits of reaching the market first, and, the more “creative” their work, the greater the qualitative lead-time (i.e., until competitor with a comparable product enters the market).²⁶⁶ Although we stated that the derivative-work standard should be the “same” as the originality standard, we have not discussed exactly what that would look like. And we will not do that now.

Before leaving this subpart, though, we need to say a few words about what implications will result from reducing the derivative right. Just to summarize, the new derivative right standard allows for the use of other memes so long as the variation is significant enough. As a result, a few problems arise.

1. The Problem of Confusion

This new derivative right may increase public confusion as to the authorship of a work. This could occur because derivative rights reach only non-substantial variations, which allow even works that vary substantially to contain elements of the so-called “original” author’s work. Imagine, for example, that someone writes a “sequel” to *Catcher in the Rye*, but tells the story from the perspective of Holden Caulfield sixty years after the publication of Salinger’s original work.²⁶⁷

Normally, such a work would be enjoined as an infringing derivative work,²⁶⁸ so the issue of authorial identification would not arise. Under a memetic regime, however, the outcome might be different. At first we might be skeptical that the public would be confused about who authored the work; that information is easily obtained by looking at the cover of the jacket. But the new standard changes things: if any sufficiently original sequel is now legal, we can imagine a world where countless individuals write sequels to various well-known works. In our J.D. Salinger example, we could assume that 100 different and sufficiently original “sequels” spring up. When this happens, people may be confused about who authored the “sequel”; namely, they would wonder whether J.D. Salinger created it. In other words, the public may have a hard time identifying which books are those of the original author.

In this scenario, it may make sense to have some form of

²⁶⁶ See e.g., John Sheppard Wiley, Jr., *Copyright at the School of Patent*, 58 U. CHI. L. REV. 119, 150 (1991).

²⁶⁷ See *Salinger v. Colting*, 641 F. Supp. 2d 250 (S.D.N.Y. 2009), *vacated*, 607 F.3d 68 (2d Cir. 2010).

²⁶⁸ See *id.*

attribution right that requires a clear disclaimer or prevents the use of the author's name on the book. Currently, copyright law does not require attribution except in cases of "work[s] of visual art,"²⁶⁹ which refers to paintings, drawings, prints, sculptures, or photographs . . . that exist in limited numbers.²⁷⁰ Other means of avoiding confusion, such as trademark law, provide only limited help. For an author's name to acquire trademark status, she must use it as part of a series of written works and show that the "name serves more than as a designation of the writer, that is, . . . it . . . functions as a mark."²⁷¹

These shortcomings illustrate why a new disclaimer may be necessary in copyright. The disclaimer is not designed to protect any "moral rights" the author may assert, nor is it designed to prevent "consumer confusion" in the classic trademark sense. The justification for an attribution right in cases like those mentioned above is instrumental: ensuring the public has accurate information about the book is only a means to maintaining author incentives (i.e., to protecting the author's economic incentive to create, or reap what she has sown, if you prefer that rendering). These two interests—author attribution and incentives—happen to coincide. Thus, we may need to create an instrumental attribution right for authors on which derivative works are based.

2. The Problem of Adaptation

Another problem may occur when books are "made" or "adapted" into movies. Assuming the adaptation—the movie—qualifies for protection as an original work under the memetic standard, authors would claim that their work had been appropriated without compensation.²⁷²

One, perhaps unsatisfactory, response is not to refute the taking but rather to emphasize the gains to the public. That is, more creative works may result if people (or movie studio executives) know that movies can be made about a book without worrying about dealing with the author. Put in economic terms, it reduces transaction costs; it also reduces *perceived and anticipated* transaction costs. Indeed, it might produce a wider variety of movies based on the same subject.²⁷³ The market will reward various movies: those studios or individuals that produce the best-selling movies will be compensated the most. We

²⁶⁹ 17 U.S.C. § 106A(a)(1) (providing the right to claim authorship of a work and prevent use of name on a work author did not create).

²⁷⁰ *Id.* § 101 (defining "work of visual art").

²⁷¹ *In re First Draft Inc.*, 76 U.S.P.Q.2d 1183, 1190 (T.T.A.B. 2005) (denying trademark in author's pseudonym "Fern Michaels" for a "series of fictional books").

²⁷² We are assuming also that the author cannot assert a claim under the old derivative right. We are just addressing the kinds of frustrations and arguments the author might raise.

²⁷³ If we pay credence to autonomy and self-expression theories, this can be only a good thing. People will have more opportunity and ability to enhance their autonomy and self-expression.

could even adopt the attribution scheme described for books. Such a model would encourage more risk-taking and, thus, more diversity in creative products.

Still, this seems unfair to the author in many cases. We often think of movie studios as reaping the benefits of the author (of a book or script) without expending any creative effort. That, of course, is not entirely true. Directors, actors, and stagehands all provide some form of creative input, and do so at a cost—and these costs also inflate the need for copyright protections. One may think that these creative efforts justify excluding the author of the adapted book from the movie's profits. Reward those who make the creative movie and leave the author with her book and her book alone, they say. Pure attribution here is enough.

But still the idea of economic unfairness persists. It appears that at least *some* of the author's creative work is being used, and so she should be compensated. In other words, I doubt many people would support a pure attribution system. The intuitive unfairness—using the book and its expressions to make a movie—seems too powerful to accept. So, I will propose two alternatives.

One alternative would give the author the “precedent right of first refusal” as to any movie based on her book; she would not, however, have any additional rights. This precedent right would allow the author to prevent from being made any movie based on her book,²⁷⁴ unless and until she authorizes it. In this way it is different from a mere right of first refusal, which extinguishes when the rights-holder declines to exercise it after it has ripened.²⁷⁵ Nevertheless, the author who authorized publication of a movie would give up more than the rights to make *the authorized movie*. Once the first movie is produced, the book is fair game: anyone can make subsequent movie versions of the book, including sequels (though we could implement the same rule for sequels), without compensating the author.²⁷⁶ Under this scheme, the author would be compensated fairly and we could still encourage diversity in expression.

Still, we face a J.D. Salinger Problem: the author retains complete control over whether a movie is made. Such control may raise transaction costs to unbearably high levels because some authors, while amenable to having one movie made, would be reluctant to allow that when others would be sure to follow. Authors also could prevent the production of the adaptation in the first place.

These problems require a second proposal. In the second scheme,

²⁷⁴ Although here I describe specifically a system that could apply to books and movies, it also could be extended to other types of works.

²⁷⁵ On the right of first refusal, see generally 77 AM. JUR. 2D VENDOR AND PURCHASER § 34 *Preemptive Right; Right of First Refusal* (2011).

²⁷⁶ We also could mandate a minimum period of time—perhaps six months—during which the first movie could air without any competition.

the author would have no control over who produces movie adaptations, what form these adaptations take, or when the adaptations occur; the author simply receives compensation in the form of a mechanical or negotiated license.²⁷⁷ This scheme could work in two ways. First, it could operate under a modified form of the “right of first refusal” system just described. Here the author would receive mechanical royalties from variously priced licenses, with the first movie being a negotiated license,²⁷⁸ and the others being mechanical. (There are endless varieties of licensing structures we could use, so I will not go further into that here.) The other option would be to open the book to adaptations by any movie producer—with no kind of refusal right. In this case, the author would receive royalties from all (or some) of the adaptations.

Doubtless there are many other schemes or methods of crafting rights or payment. This discussion is not meant to identify the “right” one. Its purpose is to show that these methods exist—and that a reduction in the scope of the derivative right does not mean a concomitant eradication of authorial compensation. The current conception of derivative rights is wrongly crafted: compensating authors fairly does not require a broad and potentially harmful derivative right. This subpart has shown that, under a limited memetic derivative right, we can both compensate the author and increase the probability that others will produce further creative works.

D. *Fair Use*

It is natural to wonder, given the changes to standards for originality and derivative works, about the scope of fair use. Congress codified this judge-made limitation on copyrights in 1976,²⁷⁹ providing four factors for courts use to determine whether use is fair:

- (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
- (4) the effect of the use upon the potential market for or value of the

²⁷⁷ Professor William Fisher has articulated an approach that shares elements with this one insofar as they both are designed to allow more access and creativity. FISHER, *supra* note 136, at 199–258 (articulating a scheme under which the government would pay artists based on fees generated through taxes and other revenue streams).

²⁷⁸ Instead of giving the author complete control, we could require that both parties negotiate in good faith and, if they cannot form a contract, agree to arbitrate their dispute.

²⁷⁹ Copyright Act of 1976, 17 U.S.C. § 101 *et seq.* (2006); *see also* David A. Simon, *Teaching Without Infringement: A New Model for Educational Fair Use*, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 453, 461 (2010) [hereinafter Simon, *Teaching Without Infringement*].

copyrighted work.²⁸⁰

The Copyright Act also noted that fair use includes uses “for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research.”²⁸¹ Requiring a case-by-case analysis,²⁸² fair use is an “equitable rule of reason.”²⁸³

Fair use, the Supreme Court has stated, “permits [and requires] courts to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster.”²⁸⁴ In some cases, then, applying copyright strictly can stifle creativity. In such cases, fair use kicks in, allowing creativity to grow.

A higher originality standard may alleviate the need to apply fair use as broadly as when *Feist* governs. But a different scope for fair use does not mean no fair use at all. The goal to ensure creative memetic combination remains—to provide latitude to those who are trying to combine memes. Fair use is still needed, then, for at least two reasons.

First, there may be cases where copies are used for socially valuable purposes and, therefore, should be treated as fair. An example is educational uses of copyrighted materials. Schools and professors often need to make copies of book chapters or article sections.²⁸⁵ Without fair use, doing so would ordinarily be infringement. Other examples might include scholarly research or personal use of copyrighted materials.²⁸⁶

²⁸⁰ 17 U.S.C. § 107 (2006).

²⁸¹ *Id.*

²⁸² *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577 (1994) (“The task is not to be simplified with bright-line rules, for the statute, like the doctrine it recognizes, calls for case-by-case analysis.”).

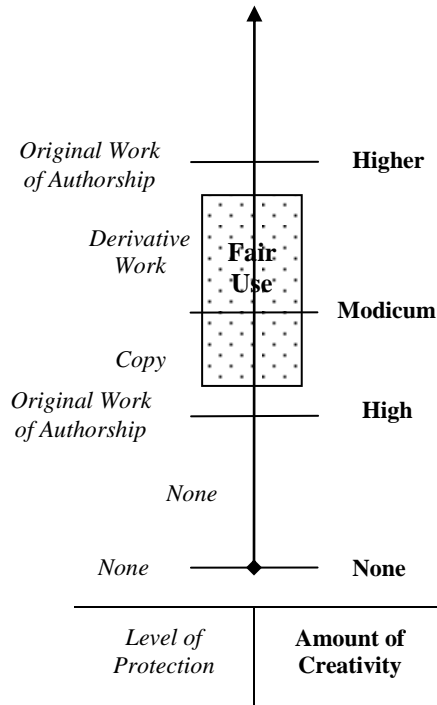
²⁸³ *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 448 (1984).

²⁸⁴ *Stewart v. Abend*, 495 U.S. 207, 236 (1990) (quoting *Iowa State Univ. Research Found. v. Am. Broad. Cos.*, 621 F.2d 57, 60 (2d Cir. 1980)).

²⁸⁵ See generally Simon, *Teaching Without Infringement*, *supra* note 279 (proposing a new model for evaluating educational fair use).

²⁸⁶ See, e.g., Jessica Litman, *Lawful Personal Use*, 85 TEX. L. REV. 1871, 1872 (2007) (describing the shrinking zone of lawful personal use and the expansion of copyright protection).

FIGURE 7. FAIR USE & THE NEW MEMETIC STANDARDS FOR ORIGINALITY & DERIVATIVE WORKS



Second, some creative works may use “copies” or “derivative works” and not sufficiently transform them to qualify as independent copyrightable derivative works; nonetheless, these works may use the copies or derivative works in a way that, although technically infringing, we excuse, either because the use is creative “enough” or because the use is *de minimis*.²⁸⁷ An example of the former is remix (although some courts have held the opposite).²⁸⁸ It is not clear whether remixing merits independent copyright protection (it may), but in many

²⁸⁷ See *Sony Corp.*, 464 U.S. at 450-51 (noting that “the prohibition of . . . noncommercial uses [that have no demonstrable effect on the potential market for, or the value of, the copyrighted work] would merely inhibit access to ideas without any countervailing benefit,” and stating that “[h]ere again, is the partial marriage between the doctrine of fair use and the legal maxim *de minimis non curat lex*” (quoting ALAN LATMAN, FAIR USE OF COPYRIGHTED WORKS (1958), reprinted in SENATE JUDICIARY COMMITTEE, COPYRIGHT LAW REVISION, STUDIES PREPARED FOR THE SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS, STUDY NO. 14, 86TH CONG. 30 (Comm. Print 1960))); but see *Bridgeport Music, Inc. v. Dimension Films*, 410 F.3d 792, 800–02 (6th Cir. 2005) (holding that one must “[g]et a license or do not sample” sound recordings, and stating that the *de minimis* doctrine does not apply to “sampling” sound recordings because of statutory language, and because “even when a small part of a sound recording is sampled, the part taken is something of value”) (footnote omitted).

²⁸⁸ See, e.g., *Bridgeport Music*, 410 F.3d 792.

cases the uses may qualify as fair. Where, for example, an individual remixes large parts of two or three albums to create a new one,²⁸⁹ the work is not sufficiently original to be a “new derivative work.” Nevertheless, keeping avenues for creative expression open to remixers seems to cut in favor of finding these uses fair ones.

Fair use also may be appropriate where an entity uses a copyrighted work in or as part of a larger work, but the larger work is not sufficiently creative to qualify as an independently copyrightable derivative work. In such cases, fair use applies because of *de minimis* harm. This occurs when, for example, a movie displays a piece of art in the background for a short period of time, as in *Amsinck v. Columbia Pictures Industries, Inc.*²⁹⁰ and *Jackson v. Warner Brothers, Inc.*²⁹¹ In *Amsinck*, the defendant produced a movie containing a scene in which the plaintiff’s copyrighted work—Baby Bears Musical Mobile—was displayed.²⁹² In analyzing fair use, the court noted that the use of the artwork was *de minimis* because it had little potential market impact on the defendant’s work.²⁹³ Like *Amsinck*, *Jackson* concerned a movie scene where the plaintiff’s painting was displayed on a wall in the background.²⁹⁴ The court, relying on the principle of *de minimis non curat lex*, stated that “Defendant’s display of Plaintiff’s art work for less than a total of 60 seconds supports Defendant’s assertion of the fair use defense.”²⁹⁵

Cases like *Jackson* and others illustrate that fair use matters. And, for purposes of this Article, they show that it matters even in light of heightened standards of originality and an independently copyrightable derivative work. Figure 7 shows how fair use interacts with these new standards. Although the new standards may allow for greater memetic variation and combination, there are still cluster points—places where variation is inhibited because it includes using prior works. In such cases, fair use can help facilitate variation and the creation of new works. Fair use secures spaces in which people can create or use copyrighted works in socially valuable, creative ways without infringing others, even when their works do not qualify as independently copyrightable derivative works.

E. Moral Rights

U.S. law has its own moral rights provision,²⁹⁶ which, as noted in Part III.C.2, applies to only a small class of works. The U.S. moral

²⁸⁹ See, e.g., Danger Mouse, *The Grey Album* (2004).

²⁹⁰ *Amsinck v. Columbia Pictures Indus., Inc.*, 862 F. Supp. 1044 (S.D.N.Y. 1994).

²⁹¹ *Jackson v. Warner Bros., Inc.*, 993 F. Supp. 585, 586–87 (E.D. Mich. 1997).

²⁹² *Amsinck*, 862 F. Supp. at 1045–46.

²⁹³ *Id.* at 1049.

²⁹⁴ *Jackson*, 993 F. Supp. at 586–87.

²⁹⁵ *Id.* at 590.

²⁹⁶ 17 U.S.C. § 106A (2006).

rights law is also more limited than those of other countries such as France,²⁹⁷ Germany,²⁹⁸ Spain,²⁹⁹ and the United Kingdom.³⁰⁰ Nevertheless, moral advocates in the United States have been arguing to expand the current moral rights law.³⁰¹

Advocates justify moral rights on the ground that the author invests a work with her personality—part of her human essence.³⁰² This investment of personality typically means that moral rights are justified philosophically on the concept of dignity.³⁰³ Moral rights posits that dignity interests demand us to treat individuals' works as extensions of the author. Thus, under this view, we should allow an author to control various uses of her work that may harm her dignity. That is, in fact, the reason moral rights provide the author with special rights: the work is part of the author, and so it should be guarded as if it were, in some strong sense, the author.³⁰⁴

Although I argue (below) that the memetic perspective disfavors moral rights, there may still be room for the concept. So let's assume for the moment that such special protection is deserved memetically on grounds of extreme variation. If we do that, we still have to address whether and how a dignity-based right meshes with memetics.

To do this, let us assume coherence of dignity philosophical basis for moral rights.³⁰⁵ Under the memetic view, it does not appear we could honor authorial dignity in the way moral rights demands. Our

²⁹⁷ Loi 92-597 du 1 juillet 1992 de la Propriété Intellectuelle, [Law 92-597 of July 1, 1992 of Intellectual Property], JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE [J.O.] [OFFICIAL GAZETTE OF FRANCE], July 3, 1992, p. 8801 [hereinafter FCIP] Chapter I, Art. L121-1 (right of the author's "name, . . . authorship, and . . . work"), Art. L121-2–L121-3 (the right of publication), Art. L121-4 (right to withdraw and republish work), Art. L121-5 (rights in audiovisual works), Art. L121-6 (rights of co-authors in audiovisual works), Art. L121-7 (certain limitations on rights to software), Art. L121-8 (right to form and publish collections of articles or speeches), Art. L121-9 (impact of marriage on moral rights).

²⁹⁸ Gesetz über Urheberrecht und verwandte Schutzrechte [Urheberrechtsgesetz] [UrhG] [Copyright Act], Sept. 9, 1965, BGBl. I at c. 4, § 2, Arts. 12–14 (Ger.) [hereinafter UrhG], available [at http://www.gesetze-im-internet.de/urhg/BJNR012730965.html#BJNR012730965BJNG000701377](http://www.gesetze-im-internet.de/urhg/BJNR012730965.html#BJNR012730965BJNG000701377) (stating the right to decide where and when to publish or describe content of a work, to designate authorship of a work, and to prohibit distortions or mutilations of a work).

²⁹⁹ Intellectual Property Law arts. 14–16 (B.O.E. 1987, 22) (Spain) (stating, among others, the right to divulge the work, in what form to do so, and with what name to affix; the right to demand the respect and integrity of the work; and the right to prevent any deformation, modification, or alteration of a work that would be prejudicial to the author's reputation).

³⁰⁰ The United Kingdom has a several forms of moral rights. See Copyright, Designs and Patents Act, 1988, c. 48, §§ 77–89 (Eng.) (detailing moral rights to be identified as author or director: to object to "derogatory treatment" of a work, to prevent false attribution, and to privacy in photographs and films).

³⁰¹ See generally KWALL, THE SOUL OF CREATIVITY, *supra* note 9.

³⁰² In the United States, however, moral rights exist in very limited form for certain types of paintings, drawings, prints, sculptures, and photographs. See 17 U.S.C. § 106A (2006) (stating rights of attribution and integrity for authors of "works of visual art"); *id.* § 101 (defining what constitutes a visual work of art).

³⁰³ See *supra* Part I.B.

³⁰⁴ See *supra* Part I.B.

³⁰⁵ In a future work I argue that dignity is not a concept that has a well-developed philosophical foundation.

decision to provide certain authors with moral rights is ultimately arbitrary: we pick the “last” mutation to partition rights. Such an arbitrariness seems to conflict directly with treating the author and her work with dignity. Put another way, if only the last mutation counts, then we will simply be assigning moral rights by picking an arbitrary point on the spectrum of mutations. But moral rights demands that we allocate rights based on dignity. From this perspective it seems difficult to reconcile providing rights based on a dignity interest because rights are afforded arbitrarily along a spectrum of mutations, all of which constitute investments of authors’ personality.³⁰⁶

Thus, the philosophical foundations of moral rights may not be amenable to a memetic account of creativity. There is, however, another reason memetics may cast doubt on the desirability of moral rights. Underpinning at least some moral rights theory is the idea that an external or driving force is responsible for creation—and this mystical force somehow makes the author’s creation unique to her.

The memetic account of creativity, though, takes a different perspective. It explains the process by which people create in terms of memetic interaction. Without the mystical element, we can view the creative imprint of the author as variations that occur in memes. Creativity is the product of memetic variation: mutations that occur during transmission, processing, interaction, and implementation. Memes, recall, reflect the variations of other individuals.

To some extent the creator is at the mercy of her memes and her body: those that capture her brain with powerful replicative measures will determine what (i.e., artifacts and behavior) the creator produces. This potency will derive from previous mutations the memes underwent in their previous hosts, and our own biological and memetic inclinations, including our ability to select certain memes. Many memplexes in our brain strongly influence—and some may determine³⁰⁷—what we will produce, with many erecting defenses to memes that challenge those already existing ones. Our brain, too, is geared toward biologically-related meme replication.

When viewed in this light, we have two constraints that at first seem to undermine moral rights’ emphasis on the individual. First, memes replicate for themselves, and the cultural products produced are merely an extension of those memes. In this way, our creative process may be less a part of memes than the memes’ replication process, which

³⁰⁶ One may counter that the last mutation is the only *meaningful* one. The reason being that the last mutation was the most significant. This argument, however, does not resolve the problem of arbitrariness, it just justifies it based on *quality*. That simply sidesteps the question and bases moral rights on a different criteria—specifically, moral rights now require both personality investment *and quality*. I address this argument below.

³⁰⁷ “Determine” means something like “high probability.” So a meme that determines that you will replicate a “sunglasses memplex” in a very sunny environment means that you are extremely likely to replicate it.

happens to use our brains. Under this account, the process is explainable; memes chart the various courses where our creative products can go.

Second, certain memes require particular experiences or interaction with other memes. And these interactions often entail memes that have been varied and transmitted by other brains. Thus, the memetic perspective supports the view that cultural creation is an unwillingly collaborative process. Memes work by replicating, and numerous memes are constantly replicating and undergoing change—not as a result of just one creator, but as a result of memes interacting and replicating through many different individuals. The creator is not alone or in total control over the creative process or product. Many external (but not supernatural) forces—often times in the form of memes—influence our creative development and eventual creative products. These can come in the form of experiences, biological predilections, and various memes.

What, then, about the “creator”? Although the memetic account of creativity does downplay the role of the individual, it does not assert the creator lacks *any* place in creativity or copyright law. As noted in Part III.A, we have some control over our memes. And, we also saw in Part I that even memetic creativity, to some degree, reflects the characteristics of the host, including her realized genetic dispositions and current memetic makeup.³⁰⁸ So, it would be too strong to characterize the cultural product expressed by the memes in host’s (*h*) head as detached from human experience altogether. Memes, after all, *are* the human experience. Indeed, the recommended increase in originality proposed in Part III.B is a response to the control we do have over our memes. We want to encourage people to make conscious choices to vary memes, rather than cluster protections around naturally occurring mutations.

As stated previously, under the memetic account of creativity, a “stamp” is essentially the “last” mutation(s) the meme underwent before being expressed in a tangible medium. Those mutations, in turn, result from the memetic processes already described (for example, selection and transmission). But now that we have moved away from the dignity-based conception of moral rights, one may be tempted to say: “Yes, but that last mutation is what is important. *That* was the author’s mutation, and therefore that mutation is *hers*.” That much is true. And by giving up dignity, we can start to separate the significance of a particular mutation—a task that requires a substantive assessment of the work’s creativity. Once we start assessing value, we will begin parceling moral

³⁰⁸ The degree to which the host’s “characteristics” are a product of her memes and genes, and the degree to which this matters from a creativity standpoint, are separate questions not dealt with here.

rights based on this value.³⁰⁹

Ignoring dignity concerns,³¹⁰ there is nothing inherently wrong with this formulation. The task under this view is to decide precisely how much of the previous mutation should be attributed to the final author's mutation. This presents a difficulty, but not necessarily an insurmountable one. Indeed, it is akin to the value-added problem identified in applying Locke's labor theory to copyright.³¹¹ Presumably, if the last mutation is the only one we can track—and if it is significant enough—we can assume that the individual should be *treated* as responsible for it.³¹² Indeed, this is a sensible approach to originality—but the question here is why it should justify moral rights. If significant variation, not dignity interests, justifies copyright protection, then what justifies moral rights? What do moral rights add that a heightened originality requirement leaves out?

The answer seems to require two steps. First, moral rights would have to be based on the idea that artists who are exceptionally creative—and thus produce works with large memetic variation—need stronger incentives of the kind advocated by moral rights, in order to be so exceptionally creative. Second, the benefits of granting moral rights would have to outweigh their costs and enhanced protections. Both are empirical questions to which this Article does not offer an empirical answer.

Even without empirical evidence, though, I am skeptical of the former claim for two reasons. First, the anecdotal cases of authors who desire absolute rights still create in the absence of moral rights. J.D. Salinger is a prime example of such behavior. The eccentric author created *Catcher in the Rye* without the expectation of moral rights. Sure, he guards his work with moral-rights like tenacity, but he does not have, and did not anticipate receiving, moral rights in the work. Religiously-motivated authors also attempt to defend their works as if they have moral rights—and yet these works were created in the absence of moral rights.³¹³ Given the initial creation of the works, then, it is not clear that moral rights would spur more *initial* creativity. It is a separate question whether, after creating one work, author incentives would benefit from stricter derivative rights.³¹⁴

In addition to this anecdotal evidence, there is another reason why I am skeptical of crafting copyright incentives based solely on reported

³⁰⁹ Kwall has endorsed such an approach. KWALL, *SOUL OF CREATIVITY*, *supra* note 9, at 80–85 (explaining different conceptions of originality and proposing a heightened standard for moral rights protection).

³¹⁰ Maybe this presents a philosophical problem for moral rights, maybe not. In any case, the philosophical problem is not the one I focus on here.

³¹¹ See Simon, *The Use of Copyright Law by Religious Organizations*, *supra* note 4, at 381–87.

³¹² Whether the individual is *actually* responsible for the last mutation is a different matter, while an open question, I do not address.

³¹³ See generally Simon, *The Use of Copyright Law by Religious Organizations*, *supra* note 4.

³¹⁴ I am skeptical of this argument for similar reasons.

authorial desire: if an author's feelings about her work shape our laws about how people can use them, then in many cases *no one could use the work in any way*. It is, essentially, a *reducto ad absurdum*: if we accept that authors' reported desires should govern our incentives, then we must yield to those incentives even when they are clearly harmful, as when an author demands complete control over her work.

We could, of course, agree that we would not take the "high end" of authorial control, instead opting for some compromise—but then why are we looking to reported authorial desire? This seems to suggest we should try to agree on principles that actually maximize both creation and use; we should not limit our focus to just reported authorial motivation. There is still a pull here—a nagging sense that we should care about what the author thinks. Maybe we should, but any serious consideration of the author's motivations will eventually yield to the absurdity of letting authors control any and every use. We are left, then, with an inquiry into the scope and nature of rights. That question cannot be answered by deferring only to the author's views about what rights she should have.

* * * *

This Part argued that, based on the memetic account of creativity, we need to rethink the structure of our copyright law. The current standard for originality, for example, is much too low. A higher standard of originality would ensure that significant memetic variation would be entitled to protection, thereby further encouraging and enabling hosts to use and modify more memes. The net effect of this change would be more creativity. This Part also contended that current derivative rights restrict creativity by providing protection to memes that undergo significant variation, which inhibits creative development by discouraging use without permission. Thus, to increase creativity, a restricted derivative right was proposed that encompassed only trivial and inevitable memetic variations. The last subpart then argued that moral rights emphasized too strongly the roles of the individual and the mystical creativity underlying the basis for moral rights. In sum, this Part argued that a memetic account of creativity has significant implications for copyright law's theory and doctrine.

CONCLUSION

Creation incentives come in different forms, though U.S. copyright law is geared toward providing monetary incentives to create. Scholars have argued that this focus on economic incentives does not adequately capture all incentives to create. Much of the discussion of creation incentives, expectedly, focuses on the nature of creativity. This Article reviewed the work of several scholars who have discussed creativity—

some in the context of copyright law. It divided these scholars into several sections for organizational purposes. The first group took issue with the creative “drive” or “force.” Scholars discussing this issue focused on a variety of potential motivations, such as the divine and autonomy-enhancement. The second group examined the creative process in functional terms. These scholars focused on how creation entails both copying and iteration. The third group took issue with copyright’s utilitarian and property scholarship. It argued that culture was a messy affair, and that the rights-based conceptions of copyright are overly simplistic, failing to take into account many of the cultural realities of creation.

Although these views provide valuable insights, this Article proposed a conception of creativity based on memetics, which is both complementary and distinct. Memetic theory posits that culture replicates and evolves in units called memes, which are roughly analogous to genes. Building on observations in creativity research, the memetic account of creativity developed a model explaining how the creative process might work. This view argued that memes—units of culture—interact with one another to compete for space in hosts’ brains, and that the (unconscious or conscious) transmission, expression, and implementation of these memes caused variations that gave rise to new, “creative” forms of expression.

Memetics helps us understand both the existing scholarship and the creative process by positing an identifiable process by which creativity works: memes replicate to make more copies of themselves—i.e., to replicate. Human brains are the hosts for these memes. The Article showed that the memetic account of creativity had significant implications for the memetic account of creativity. Focusing on originality, derivative rights, fair use, and moral rights, we made several observations.

As to originality, memetics shows that the current copyrightability—a standard that trivial variations satisfy—should be discarded. Most of these variations are simple and anticipated mutations that occur through the meme’s replication process. Protecting such trivial variation impedes the replication of numerous memes, which might otherwise be useful for creating a new work. For that reason, this Article argued that the originality standard should be heightened, but left for further study the question of the standard’s new height.

Derivative works were then examined and found to be too restrictive. Instead of allowing nearly every use containing the original work to constitute a derivative work, a less stringent model was suggested. Because trivial and inconsequential variations are inevitable during replication, it was suggested that the author retain rights over those variations. As to significant variations, however, this Article

proposed that the creator would acquire a wholly separate copyright.

We also reexamined fair use. Here we saw that fair use still served at least two valuable purposes with new originality and derivative work standards. First, fair use was still needed to account for cases of socially valuable copying. Second, fair use provided breathing space for creativity that produces “derivative” works that are valuable, but are not creative enough to merit independent copyright protect.

Finally, under the memetic account of creativity, we say that moral rights needed to be adjusted. Given memetic theory, a dignity-based conception of moral rights seems unjustified. Moral rights, however, still found traction based on the same theory as originality: as an instrumental mechanism to produce more creative works.

All of these implications were drawn from memetic theory. This theory offers a chance to view copyright law outside the traditional scope of individual or group creators. Memetics does not fully do away with these categories, but places them in the background. Appearing in the foreground is the meme, which causes us to reevaluate our current conception of copyrights and creativity.

APPENDIX A: OBJECTIONS TO MEMETICS

Here I choose to deal with what I perceive are the four most salient arguments against memetics. The first concerns the meme as a unit of information. This argument focuses on the disagreement among theorists as to what constitutes a meme. The second argument attacks the gene analogy on which memetics relies. This argument claims that memes cannot be like genes because they do not have the requisite heritability characteristics for Darwinian selection. Yet a third argument centers on memetics’ theoretical component, claiming that memetics is not superior to any other theory. Under this view, memetics is no better an explanation than one where culture replicates by gremlins pulling levers in your brain. The final argument is similar to the one just mentioned because it attacks the validity of memetics. It questions how useful memetics can be for thinking about copyright law when we do not have evidence that it is true. This subpart addresses each of these arguments—definitional, Lamarckian, mysticism, and validity objections—in *seriatim*.

A. Definitional Objections

Among those disagreements that have not subsided is one about the definitional constituents and size of a meme.³¹⁵ No strong consensus exists as to the requisite size of a meme. Despite

³¹⁵ See, e.g., Bruce Edmonds, *The Revealed Poverty of the Gene-Meme Analogy—Why Memetics Per Se Has Failed to Produce Substantive Results*, 9 J. OF MEMETICS 1 (2005), available at cfpm.org/jom-emit/2005/vol9/edmonds_b.html.

disagreement about the relative size of a meme, all (theorists) agree that memes are units of information analogous to genes; they are replicators, whatever form they may take.³¹⁶ It is a mistake to assume that, to qualify as a meme, a unit of information necessarily and always must be one size or another. Like genes, we should think of a meme as a “unit [of information] . . . small enough to last for a large number of generations and to be distributed around in the form of many copies.”³¹⁷ Of course, “[t]his is not a rigid all-or-nothing definition, but a kind of fading-out definition, like the definition of ‘big’ or ‘old,’”³¹⁸ or defining the (non-existent) point at which one species evolves into another.³¹⁹ In any case, it is a misstep to conclude that a disagreement about what size unit to study means the unit is not there at all.

Indeed, memetics is not the only discipline suffering from a problem of definition. Creativity research also has questioned what it means to be creative, and, as a result, has wondered whether it is best to focus on the creative product or the creative process.³²⁰ It is interesting

³¹⁶ There are various schools of thought on what constitutes a meme. See Cotter, *Memes and Copyright*, *supra* note 8, at 340–42 (discussing various definitional characteristics of the meme). Cotter details these views nicely, but here is a sampling. Some view memes as the mental phenomena, the structure of those phenomena, and the behavior or artifacts they produce. See, e.g., BLACKMORE, *supra* note 18, at 66; DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19, at 109 (“A meme should be regarded as a unit of information residing in a brain,” and possessing “a definite structure, realized in whatever physical medium the brain uses for storing information.”); DENNETT, DARWIN’S DANGEROUS IDEA, *supra* note 30, at 347–48 (stating that memes are ideas whose “existence depends on a physical embodiment in some medium”). Others argue that memes are mental representations of ideas, and not behaviors or artifacts. See, e.g., KATE DISTIN, THE SELFISH MEME: A CRITICAL REASSESSMENT (2005). Others argue that artifacts alone are memes. See, e.g., Gatherer, *Thought Contagion*, *supra* note 24. I take a view that partially aligns with Dawkins, who notes that “the meme . . . is actually realized physically . . . as a structure in the nervous system of individual men [and women] the world over.” DAWKINS, SELFISH GENE, *supra* note 15, at 192. My view differs from his, though, and to some degree accords with that of Robert Aunger, in that I do not take memes to exist in behaviors or artifacts. See AUNGER, *supra* note 115, at 159–77. Beyond this, and perhaps my skepticism of Aunger’s hypothesis that memes exist not as physical matter *per se* but as states of neurons, see *id.* at 193–200, I dare not say more.

³¹⁷ DAWKINS, SELFISH GENE, *supra* note 15, at 32.

³¹⁸ *Id.*

³¹⁹ RICHARD DAWKINS, THE ANCESTOR’S TALE: A PILGRIMAGE TO THE DAWN OF EVOLUTION 311 (2004).

³²⁰ See Beghetto & Kaufman, *Beyond Big and Little*, *supra* note 75, at 6–7 (adding a fourth “c” to their model of creativity (the Four C Model) and arguing that this framework better accounts for the various stages and levels of the creative process); Beghetto & Kaufman, *Broader Creativity*, *supra* note 75, at 74–75 (discussing the concepts of “Big-C” and “little-c” creativity as “focus[ing] on externally judged creative products,” noting the lack of emphasis on “the . . . personal experience of creativity,” and proposing a new concept—“mini-c”—to explore it); DACEY, *supra* note 61, at 152 (“You might think that judging actual creative products would be much easier than judging potential[] because the product is available to the judge. However, history is replete with misjudgments of the merits of products.”); MANSFIELD & BUSSE, *supra* note 72, at 5–65 (describing different approaches to the study of creativity including surveying and studying individual characteristics and traits, as well as creative products, and noting that “there remains a problem of operationally defining and measuring real-life creativity,” which could be solved by the “seldom . . . used” approach of having “experts rate [individuals’ collective] products for creativity”); SIMONTON, *supra* note 52, at 14–16 (outlining the author’s approach to studying creativity using “creative products”); *id.* at 99 (noting that psychology of science traditionally focuses on “conduct[ing] laboratory experiments on problem solving to tease out the logic of discovery,” or “subject[ing] active scientists to psychometric assessment

to note that, for the most part, copyright law and scholars have chosen to focus on a creative product and keep the definition of copyrightability simple.³²¹

Two other definitional objections come from Derek Gatherer.³²² First, he argues that memes, as generally described, relate to information residing in the brain; i.e., separate from their meme products.³²³ Yet, only the *products* of memes (behaviors and artifacts) are observable.³²⁴ This leaves memetics devoid of any known measurable metric to study memes like genes.³²⁵ In other words, he says, we can determine beliefs only through behavior; it is impossible to study a “belief” in the abstract or as a “unit.”³²⁶ But creativity research is also so constrained in terms of mental processes³²⁷—and so was genetics research before James Watson and Francis Crick discovered the structure of DNA. At that point, scientists were studying genetics (for example, Gregor Mendel) without knowing how inheritance worked on the *genetic* level—and, even once Watson and Crick discovered the structure of DNA, it took time to understand how it

techniques to discern the personal attributes associated with scientific creativity and genius”).

³²¹ See, e.g., *Feist Publ'ns, Inc. v. Rural Tel. Serv.*, 499 U.S. 340, 353–60 (1991) (explaining, in determining whether a phonebook was eligible for protection, that copyright law does not concern itself with the “sweat of the [author’s] brow” but instead with the originality of the work); *Coquico, Inc. v. Rodriguez-Miranda*, 562 F.3d 62, 67 (1st Cir. 2009) (explaining that determining infringement requires the court to determine whether one work is “substantially similar” to another work, as the author’s cognitive efforts are not directly relevant); *JCW Investments, Inc. v. Novelty, Inc.*, 482 F.3d 910 (7th Cir. 2007); *Alfred Bell & Co. v. Catalda Fine Arts*, 191 F.2d 99, 105 (2d Cir. 1951) (“But even if their substantial departures from the paintings were inadvertent, the copyrights would be valid. A copyist’s bad eyesight or defective musculature, or a shock caused by a clap of thunder, may yield sufficiently distinguishable variations.”); see also Liu, *supra* note 194; Parchomovsky and Stein, *supra* note 238, at 1521 (describing how copyright law’s protections and defenses should be adjusted to correspond to the level of “originality” exhibited by a particular work); but see discussion *supra* Part I.B. Interestingly, Professor Joseph Liu argues that we should recognize creative self-expression in certain kinds of consumptive behaviors, claiming consumers engage in “mini-authorship” whereas authors engage in “macro-authorship.” Liu, *supra* note 194, at 416. This type of argument mimics the emphasis of creativity research on partitioning the “creativity” of any given work into different categories. Compare *id.*, with sources cited *supra* note 320.

³²² But see Gatherer, *Thought Contagion*, *supra* note 24, § 2.

³²³ *Id.*

³²⁴ *Id.*

³²⁵ *Id.*

³²⁶ *Id.* § 3 (arguing one cannot include beliefs in our definition of memes “since a) they cannot be transmitted. . . . [as a] [b]elief is not itself information, but an attitude towards information. . . . [and since] b) the only empirical evidence we have of [a] belief is through behaviour”). I am not sure that this argument is convincing for another reason. Why would it be impossible to study belief as a unit or physical phenomenon in the brain? Neuroscientists do this kind of work all the time. Indeed, some are doing it right now with respect to beliefs. See, e.g., Andrew Caplin et al., *Measuring Beliefs and Rewards: A Neuroeconomic Approach*, 125 Q. J. ECON. 923 (2008) (stating that results indicate the traditional neuroscience hypothesis about dopamine as a neurological predictor of beliefs is correct and asserting that beliefs can therefore be observable); Vinod Goel & Raymond J. Dolan, *Explaining Modulation of Reasoning by Belief*, 87 COGNITION B11 (2003) (using fMRI techniques to determine the role of belief in making determinations about the validity of judgments); Rebecca Saxe, *Why and How to Study a Theory of Mind with fMRI*, 1079 BRAIN RES. 57 (2006) (explaining the difficulty in studying a theory of the mind, noting problems associated with studying neural correlates of beliefs, and proposing methods to assist in this task with functional magnetic resonance imaging (fMRI)).

³²⁷ Creativity research can study behavior and cultural products, but so too can memes.

functioned.³²⁸

The second major problem Gatherer identifies is that “memes” typically mean both beliefs *and* information.³²⁹ Gatherer argues that this is problematic because “memetics cannot be used to study how beliefs spread: an individual may have a set of beliefs, but these cannot be memes”³³⁰ Gatherer claims first that beliefs are mere *attitudes towards* information and, therefore, do not constitute information. If attitudes are not information *per se*, Gatherer says, they are not memes.

Gatherer is incorrect that beliefs cannot act as memes. He says that beliefs’ status as “attitudes toward information” disqualifies them from being memes. But why? Parents often pass down their *beliefs*—in religion or politics, etc.—to their children. Although their children need not accept those beliefs, the *rejection* of a belief-meme does not destroy the meme concept; it bolsters it. Imagine, for example, Parent (P) is Muslim and raises Child (C), exposing her to the beliefs of Islam. The “meme” of “belief in Islam” surely is transmitted to C: P’s attitude toward Islam—that it is the true religion—certainly is a meme, even though it may be “attached to” another meme (for example, the tenets of Islam). Thus, while belief in Islam is not information about Islam *per se* (i.e., it does not necessarily describe Islam), it surely must entail such a meme. Furthermore beliefs can be treated as expressly as information in certain cases, as, for example, when people consider or reason about their own beliefs. In such a case, beliefs *are* the information, even though they at other times attitudes *about* beliefs.

Thus, instead of viewing the concept of information and belief as always separated, we may view them together as a memplex (both being memes, and individuals being free to reject one or both). A helpful way of understanding how memes can operate both as beliefs and information is to conceptualize them as Hans-Cees Speel does, on different levels.³³¹ According to Speel, memes that are selected and “retained” (put into the brain’s memory) may fall into one of four “levels of retention”: “1. to have knowledge of a meme; 2. to judge a meme to be relevant for a discussion; 3. to endorse a meme; and 4. to translate a meme into action.”³³²

Thus, one way to think about how memes can include both information and intentional mental states is to categorize them into various “states”: a time during which a meme is defined by how the brain interacts with it any given moment. Just as you can take an action

³²⁸ MATT RIDLEY, FRANCIS CRICK: DISCOVERER OF THE GENETIC CODE 77–113 (2006) (detailing the numerous people involved in discovering the translation and copying process of DNA); see also SIMONTON, *supra* note 52, at 14–15 (studying creativity by focusing on the product).

³²⁹ Gatherer, *Thought Contagion*, *supra* note 24, § 3.

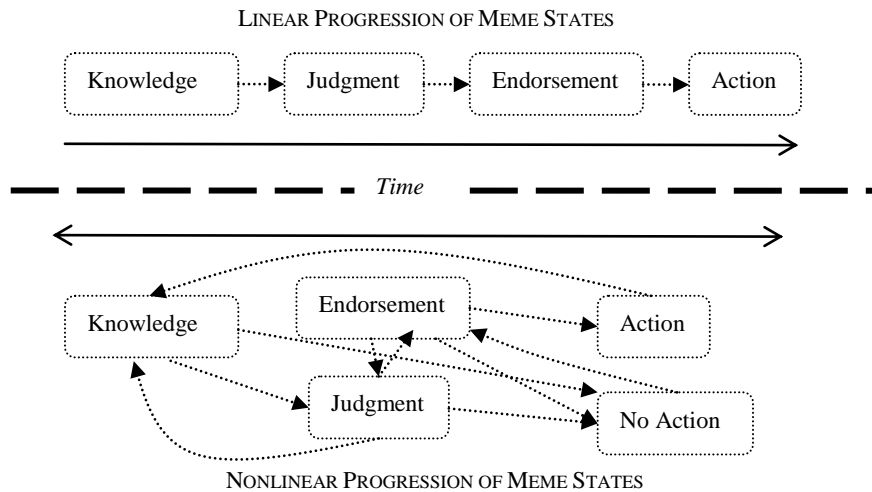
³³⁰ *Id.*

³³¹ Hans-Cees Speel, *supra* note 40, § 2.

³³² *Id.*

without thinking about whether it is right or wrong, replicators can implement themselves without your knowledge. Other times, however, you may consciously have knowledge of an idea or a bit of information. With that knowledge, a meme may sit idle, or you may *judge* it, to be relevant or good or bad or whatever. One route is to *endorse* the meme—to accept it and retain it. Of course, any of these processes is capable of happening consciously or unconsciously. The conceptual framework is designed to allow one to think of memes as including more than *mere* information, but also beliefs or attitudes toward information—conscious or unconscious.

FIGURE 8. LINEAR AND NONLINEAR DEPICTION OF MEME STATES



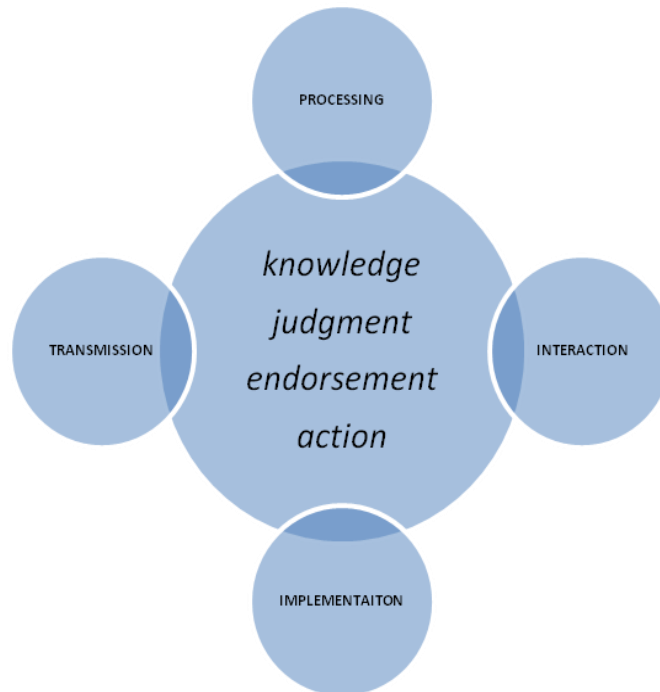
Belief memes, then, can be categorized. They may, for example, act as memes that have been endorsed—the meme says, “believe *x*,” and you endorse it by *believing x*. Or they may be categorized as memes that are being judged. When, for example, we evaluate a belief we hold, we are assessing the value and validity of the belief. Still the categories may overlap. If, for instance, you believe that alligators should be slaughtered because they are inferior to humans *and* you actually slaughter them, you have both endorsed a meme and acted upon it. In sum, belief memes are just like other memes; the category in which they fall is dependent upon the brain in which they reside and the time at which they are categorized.³³³

As Figure 8 demonstrates, meme states can occur in a variety of

³³³ See *supra* Part II.C for further discussion.

ways. Sometimes meme states may progress “linearly” in time, moving from knowledge to judgment to endorsement to action. But other times memes may “jump” from one state to another. A person may, for example, endorse a belief without judging it. Additionally, a person may hold knowledge of a particular meme and choose not to endorse it or act upon it. Current psychological research provides some support for a nonlinear model of meme-states. Many times we make judgments without knowledge of our reasons for doing so, or even knowledge of the particular bias that led us to that particular judgment. Likewise, we can often act or fail to act prior to making a judgment about a particular meme.

FIGURE 9. MEME STATES & STAGES

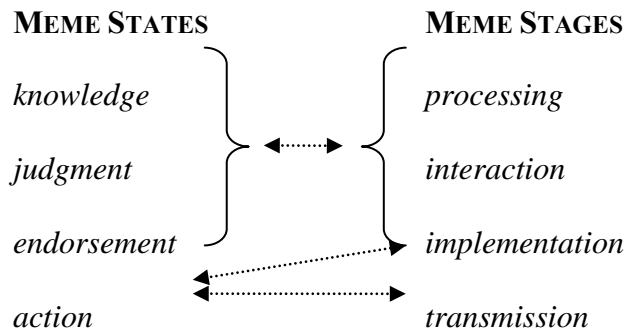


This figure represents various states and stages of memes. The large circle in the middle represents the various states a meme can take. The smaller circles represent the stages of memetic development. At each stage, the meme may take one state or another.

Figures 9 and 10 demonstrate how meme states interact with meme stages. In other words, during transmission, processing,

implementation, and interaction, memes are constantly in different stages of development. When you transmit a meme by, for example, shaking someone's hand, you may do so consciously or unconsciously. In either situation, your brain may have knowledge of the meme, or it may simply act on the meme, transmitting it to someone else.

FIGURE 10. SPECIFIC INTERACTION OF MEMES STATES & STAGES



Memes can occur in various states depending on the stage at which we view them. A meme in the state of knowledge, judgment, or endorsement, for example, can remain in that state during any meme stage. The meme state of action, on the other hand, can occur only during implementation and transmission. The arrows symbolize the ability of memes to assume states at various stages.

B. Lamarckian Objections

Memetics faces non-definitional objections as well. One of the most common of these is that memetics is a Lamarckian, not a Darwinian, process. Lamarckian evolution refers to the theory founded by French biologist Jean-Baptiste Lamarck. Lamarck posited that animals not only inherit traits from their parents, but that they can inherit traits their parents *acquired* during their lifetime.³³⁴ So, for example, Lamarck thought that a blacksmith who tirelessly works his anvil and strengthens his right arm would be able to “pass down” that arm strength to his offspring. A more common example offered by biology texts is the giraffe’s neck. Lamarck postulated that giraffes had grown long necks by straining repeatedly to reach out and eat leaves, “stretching” their necks by sheer will. Lamarck believed that giraffes who stretched their necks passed these elongated necks to their offspring.

³³⁴ See generally ALPHEUS SPRING PACKARD, LAMARCK, THE FOUNDER EVOLUTION: HIS LIFE AND WORK 357-71 (1901).

Darwin's diversion from Lamarck's theory is what set evolutionary biology on the right track: acquired traits cannot be inherited; only those traits that the individual possesses *ab ovo* are those that its offspring inherits. The environment then produces competition among individuals with variable traits, which causes a trend or "evolution" in an organism's development.

The genius of Darwin's theory was that it explained why and how physical variation occurred: useful genes, which were inherited, were selected for by allowing those possessing them to survive in greater numbers than those without them. Physical "adaptations" were derived from this "natural selection." The fact that his theory prohibited inheritance of acquired characteristics was a function of how selection worked—and how genes work—by replicating as discrete units.³³⁵

When a human gene is passed from parent to offspring, it is done so by sexual reproduction (or, in asexual organisms, by processes like binary fission (i.e., cell division)). There is no opportunity for the gene to be passed to non-offspring—to other adults. Thus, if an individual's genes code her to be tall, she cannot pass along the tall genes to another adult—only to her offspring via sexual reproduction.

But memes are different: they do not replicate via sexual reproduction; they replicate by imitation: people "observe" a meme with one of their senses and then replicate it by imitating what they have observed. A singer does not have to have sex with the audience to pass along a catchy tune; the singer merely has to perform it. The meme replicates and is transferred without regard to our genetic transmission (though the success of some memes may depend on our genetic makeup).

Does the mere fact that genetic replication differs from memetic replication render a theory involving *selection*—not necessarily *pure* Darwinian selection—inapplicable? Not necessarily. As Blackmore has pointed out, the idea of Lamarckian evolution is inapplicable to organisms with no clear germ line,³³⁶ i.e., it does not apply to unicellular organisms, which are the most abundant organisms on the planet.³³⁷ The memetic selection occurs at the level of memes, not genes, and so the analogy is not exact. The question of whether memes are Lamarckian, then, "is best not asked."³³⁸

³³⁵ See PETER GLUCKMAN ET AL., PRINCIPLES OF EVOLUTIONARY MEDICINE 10–11 (2009) (explaining that Gregor Mendel, whose work Darwin did not know, described how characteristics could be inherited in discrete entities in terms of dominant and recessive alleles); R.A. Fisher, *The Genetical Theory of Natural Selection*, in MARK RIDLEY, EVOLUTION 20, 20–29 (1997) (showing that characteristics were a result of particulate inheritance and not, as Darwin had surmised, blended inheritance).

³³⁶ A "germ line" is the "cell lineage" of a multicellular organism from which reproductive cells derive. ANTHONY J.F. GRIFFITHS ET AL., INTRODUCTION TO GENETIC ANALYSIS 787 (9th ed. 2008).

³³⁷ BLACKMORE, *supra* note 18, at 60.

³³⁸ *Id.* at 32.

But even if the analogy needed to be exact, memetics may still avoid Lamarckian objection. It may be that memes replicate in a similar fashion to genes, just on a neural substrate.³³⁹ In other words, it is possible that the transmission process does consist of particular neurons or neural patterns. Nevertheless, the memetic transmission process is carried out with less fidelity than the genetic one. So, the singer still must perform her song and have it become represented in the neural substrate of her audience, but the success of the memes in the song (or the song as a memplex) may not replicate with exact fidelity. In Appendix B, I give this issue more treatment and show that, at least in music, some memes do replicate with fidelity. For now, though, it is sufficient to note that variations in memes are likely to be higher than in genes.

In any case, even if there is some causational arrow from phenotype to memotype, memetic theory still allows for explanation about how variation in memes occurs and thus how our culture evolves, though the implications will not strictly be based on the meme's analogy to the gene.

C. *Mysticism Objections*

It might be claimed at this point that memetics really is not an achievement over mysticism or any other theory. The mere fact that memetics seeks to describe mental processes does not mean that the description is correct, or even plausible. In the case of an implausible explanation, we are tempted to say the explanation is worthless.

Memetics, though, does not seek to give just any kind of description. Indeed, there are two primary reasons why the memetic description is superior to just any theory of creativity that seeks to describe creative processes. First, the theory is based on some objective indicia. Cultural artifacts frequently replicate from person to person, and sometimes they vary when they do. This happens by imitation: one person imitates the other. Memetic theory seeks to explain this by postulating a mental unit of information that is merely a reduction of the imitation concept. We imitate concepts and actions, and we do that through neurobiological processes in our brains. So, it seems natural to look for the smallest unit of that process, much like was done with genes.

Second, and related to the first reason, is plausibility. Memetics as a theory gains strength from its attempt to “match up” with phenomena

³³⁹ See AUNGER, *supra* note 115, at 193–211 (proposing an inheritance theory of memetics); *but see* DAWKINS, THE EXTENDED PHENOTYPE, *supra* note 19, at 112 (“[T]here may be ‘Lamarckian’ causal arrows leading from phenotype to replicator, as well as the other way around. These differences may prove sufficient to render the analogy with genetic natural selection worthless or even positively misleading.”).

occurring in the brain.³⁴⁰ It is quite a different thing to describe a theory without concern for such facts, observable effects, or phenomena. You could, for example, describe a theory culture and mind where millions of gremlins were pulling levers in your head, each lever deciding what kind of culture you accept or reject. But that theory is plainly implausible (or, if you prefer, simply false). There is no evidence suggesting such gremlins exist, or that even if they did, they could pull levers. There is evidence, however, of many of the things I describe in this Article. There is evidence, for example, that our brains have a genetically determined component. There is also evidence that our brains function neurobiologically—that is, according to biological processes in the brain. There is also evidence that much of culture passes by imitation. The gap I seek to fill is the mental one: how culture has been passed, in terms of mental states or processes, from one person to another, and how culture changes along the way. Memetics does this in a plausible way.

Contrast this with a purely phenomenological theory—one which relies on and accepts at face value the reports of individuals attempting to describe mental processes—and the differences are clear. On the phenomenological perspective, our inquiry ends once the author reports what she thinks is occurring in her brain. Under a memetic theory, we do not merely accept beliefs as evidence for psychological processes, though they can be helpful;³⁴¹ we must look to the brain, behavior, and culture itself.

D. Further Concerns: Validity and Implications for Copyright

So far I have addressed some common objections memetic theory is likely to face. Although it's impossible to address them all, there is one more concern to discuss before moving on: the validity of memetic theory. This Article does not deal expressly with the validity of the memetic theory; the paper is not about “proving” this theory³⁴²—no one paper can accomplish that. I do not purport to provide empirical studies or possible experiments that could do so, as some have suggested is

³⁴⁰ Although I call the phenomena objective, they could also be classified as *ontologically* subjective—meaning their existence depends upon being experienced by some individual. See SEARLE, *supra* note 23, at 8 (describing the difference between epistemic subjectivity and objectivity, and ontological subjectivity and objectivity). So here I take “objective phenomena” to mean those we can physically verify.

³⁴¹ DENNETT, CONSCIOUSNESS EXPLAINED, *supra* note 64, at 66–83. Dennett argues that to understand consciousness, we can use these reports by transcribing and interpreting them, the same way one interprets a work of fiction. *Id.* at 72–83.

³⁴² In science, you do not prove a theory is right—you *fail* to prove it wrong; i.e., no other theory has proven to better fit the evidence. See KARL POPPER, THE LOGIC OF SCIENTIFIC DISCOVERY 278–79 (1959) (discussing the principle of falsifiability). Among candidate hypotheses, science accepts the one which evidence most supports. In turn, other candidate hypotheses are rejected, not because the others have been proven right *per se*, but because they have been shown to better fit the evidence. The real issue, then, is whether another candidate theory can better explain cultural creation better than memetics.

necessary for memetics to survive.³⁴³ This Article focuses on what memetics (if true) can teach us about copyright law—and, even if memetics turns out to be unfalsifiable, how memetics can alter our perception of, and approach to, copyright law. Finally, remember that, even if memetics is scientifically un-provable, it is still just as viable as a mystical-style explanation of creativity—indeed, it provides a better explanation because it seeks to explain the process of creativity, rather than just say “something” is happening without explaining it. Thus, it may still be able to provide some insight into copyright law.

It is important to clarify what I have and have not said. First, there is nothing detrimental about admitting that a theory might not be *provable right now*. That is intellectually honest. Insofar as the theory cannot yet be confirmed by science, it suffers from no greater defect than the other accounts of creativity described in this Article. On the mystical account, for example, some unexplainable force accounts for the creative drive. Such a theory prevents any empirical studies because it couches creativity in terms that preclude knowledge or discovery.

Memetic theory, on the other hand, is a description of an actual process that might be taking place. Because it explains cultural development in terms of replicators, it is theoretically possible to design experiments to test the hypothesis. This makes memetics open to falsification, as any good theory should be. So if this is the complaint—that the memetic theory of creativity *could* be wrong (while the mystical or other accounts are just plain unverifiable)—then I don’t take it as a serious failing, only a natural consequence of developing a testable theory.

Why, then, might such a theory be important if we cannot yet prove it? Why should we remodel our copyright law system based on it? Maybe we do not make a full overhaul just yet—in the same way we should not necessarily change our copyright system based on non- or un-provable accounts of creation. There is not that much hard evidence to support either at this point. Nevertheless, we still accept arguments about other theories of creation and creativity; we often think them valid reasons for changing copyright law. I submit that at least some are not necessarily valid reasons because of the nature of their descriptions of causal processes, which theories like the mystical account reduce to supernatural forces. I submit that the verdict is still out, and that, if we choose to make policy choices on mystical notions or unprovable hypotheses, we ought to consider other nonmystical and potentially (un)provable explanations, as well.

³⁴³ Bruce Edmonds, *Three Challenges for the Survival of Memetics*, in *PHILOSOPHY AFTER DARWIN: CLASSIC AND CONTEMPORARY READINGS* 198, 199–202 (Michael Ruse ed., 2009) (arguing that memetics can survive only if (1) a conclusive case study is done, (2) one explains when memetics applies, and (3) there is a simulation model of memetic process). Even though I do not purport to do any of these in a scientific way, I note that Gil-White, *see infra* app. B, has attempted (1), and that I am arguing for (2) by claiming memetics applies in creativity.

It also seems that, while memetics could be a factually inaccurate description, strictly speaking, it may not be too far off the mark. Cultural evolution and creativity may be *something like* memetics. At this point, there is anecdotal evidence for the memetic phenomenon, and it seems to fit cultural development quite well. Certainly, such a theory can press us to reevaluate our current notions of how creativity works and what we value about the creative process.

This is where the current theories of creativity in copyright expressly diverge from the one I present here: the previously discussed accounts of creation often focus on authors' nonmonetary motivations to create. The job of the law, on this view, is to recognize these motivations. We can accomplish this, on these views, by crafting rights that protect the nonmonetary interests or motivations of the author.

In this respect, memetics shares common ground with these other accounts of creation: it takes into account nonmonetary motivations for creation (though memetics also considers monetary motivations). But the memetic account does not conceptualize these nonmonetary motivations in precisely the same way, and it certainly does not conceptualize the legal corollaries as do moral rights advocates, as explained in Part II.B.

For purposes of this subpart, though, it helps to understand the conceptual differences between the memetic and other accounts. While current accounts of creativity shift the focus from money to mind, memetics shifts the focus from mind to memes. One of the ways memetics does this is by helping us see that author (and the group) is not the only "actor." It forces us to acknowledge that culture exerts force over humans. While this view certainly recognizes that the author-brain plays a role, it also does something that other theories have not: emphasize the *culturally*-driven part of creation, the part that, while involving the individual, does not emanate from, and is not directed by, solely the genius of her conscious effort alone.

It seems confusing to say that memes—these so-called replicators—could "drive" or "push" cultural development. After all, we—humans as conscious, moral agents—ultimately decide what to replicate. To help us think about the replicator concept in relation to things we do, an analogy might be helpful. Let us look at the domestication of plants. Prior to domestication, then-wild plants replicated with much less success. And while there is no question we altered the genome of certain plants to benefit ourselves, the plant, in some sense, *used us*. To replicate itself, the plant's genes took advantage of our biological needs. See how the viewing window has moved from a picture of *only us using plants* to *plants using us and us using plants*. In the same way, memes use our brains to replicate themselves, and we use them because of this—sometimes not because they have any beneficial effect.

We can see this process currently operating with various drugs like cocaine: its effects on the human brain are largely negative, but humans nonetheless cultivate cocaine-bearing plants (for example, coca plants) in vast quantities. Surely this is a bad thing for us (leading to brain disorders, drug addiction, gangs, etc.) and a good thing for the plant's genes (yielding massive replication). Professor Dan Sperber has given other examples of this phenomenon, including the cultivation of cereals, the domestication of dogs, and the addictive properties of cannabis.³⁴⁴

Like plants, memes can push or pull our behavior in certain directions. Some memes pull us toward certain kinds of creative endeavors, others push us toward drinking beer. This is more than just the claim that we are influenced by our environment; it is the claim that our environment, *in some sense*, directs our creative development. I do want to be clear, however, that I am not advocating a deterministic view of cultural development or creativity. Such a view leaves no room for observations about the world in which we live. Indeed, such a view would be contrary to the Darwinian notion of evolution. Evolution has no determined direction, and neither does cultural development. Of course we can influence where our culture goes, but we do not have complete control, and we never will.

Still, one might urge, "culture is different." What differentiates cultural products—such as paintings or books—is that we have control of them.³⁴⁵ John Searle, for example, argues that memes and genes are not analogous because "[t]he spread of ideas and theories by 'imitation' is typically a conscious process directed toward a goal."³⁴⁶ Put another way, "[t]he main problem with the evolutionary metaphor is that [it] implies the variation stage is random and unguided by the conscious mind," even though "creativity researchers think the incubation stage of creativity is guided in some way"³⁴⁷

This kind of objection is misplaced for several reasons. First, in some sense, as explained in the following subpart, our cultural creations are constrained by certain biological and cultural factors, which predispose us to create in certain ways. Would one claim, for example, that "we" have control over whether a particular type of pipe gets made to smoke marijuana. To a degree, we control whether we make the pipe, but is that not a function of marijuana using our brains to facilitate our smoking it, our addiction, and its growth? Of course, we have choice in the matter, but the choice is not all our own.

In many cases, our choices have natural-selection correlates: they

³⁴⁴ Dan Sperber, *Seedless Grapes: Nature and Culture*, in CREATIONS OF THE MIND 124, 132–36 (Eric Margolis & Stephen Laurence eds., 2007).

³⁴⁵ See SEARLE, THE MYSTERY OF CONSCIOUSNESS, *supra* note 164, at 105.

³⁴⁶ *Id.*

³⁴⁷ SAWYER, *supra* note 52, at 94; *but see id.* at 95 ("But because the nature of the incubation state is not well understood, some creativity researchers continue to argue for creativity as evolution.").

are the product of biological needs.³⁴⁸ What kinds of coats, for example, might memes produce in the arctic? (Notice how we would *necessarily* create coats.) Surely they would be thick (or at least warm), they would have more tightly sealed sleeves, and they probably would sacrifice comfort for utility. To the extent the purely aesthetic components—like designs and embroidery on the coats—are directed, it is hard to say how. Indeed, this Article helps to illustrate that much of the creative process (in the arts) is not particularly goal-oriented. Additionally, the mere fact that we *can* direct or shape our culture says little, since we can do that (and have done that) with our genes.

Even accepting the choice as solely ours, though, we confront a more serious problem; namely, it is not clear that culture (or the creative process) has any “goal” whatsoever. Although we may shape culture (memes) using our conscious minds—and have goals in particular cases—we do not have a particular or even general “goal” for our culture, for our memes. Even in particular cases, artists often do not consciously have goals in mind. Indeed, that is what the narrative descriptions, if we accept them on any level, show.

The problem becomes more evident the farther away from the individual we move. Imagine looking at the entirety of cultural products from the past 100 years. Further imagine you can plot each product on a chart or graph, grouping similar products (like pots or pipes) together. Presumably you would see many patterns emerge, with certain elements fading and others increasing. From this bird’s-eye perspective, the memes replication becomes easier to see. You see, for example, that certain architecture and features of buildings became more numerous at one time and slowly mutated to become a different, popular form.

Given this pattern, would we be able to detect or even attempt to describe the teleology of culture without invoking the replicator? That seems incredibly difficult. Where, for example, is culture headed in the next 100 years? Supposing we have incomplete information about the environment and genetic makeup of each individual, it is difficult, perhaps impossible, to predict what culture and cultural products will look like 100 years from now. Indeed, if we rewound the tape of cultural evolution, we would see different cultural trends.³⁴⁹ Searle’s argument, though, claims that we, as conscious agents, can direct this process. But if we do not know how we are directing it, we should start to wonder how much direction we are providing in the first instance. At

³⁴⁸ See *supra* Part I.B.

³⁴⁹ Cf. STEPHEN JAY GOULD, *WONDERFUL LIFE: THE BURGESS SHALE AND THE NATURE OF HISTORY* 48 (1990). How creativity arose—in accordance with Gould’s punctuated equilibrium theory of life or incrementally—is still debated among creativity researchers. See SAWYER, *supra* note 52, at 89–90 (explaining that there are those who support a theory of “creativity explosion” and those, most archeologists, who support a theory of “gradual and progressive” creativity evolution in the arts).

the very least, the idea of memetics becomes a way of explaining this cultural progression.

The idea of memetics, then, is to provide an explanation of large scale social changes.³⁵⁰ The idea is not hard to accept when applied generally; but a humanistic objection emerges when you focus on people because it appears to be stripping the individual of her conscious-moral-agent status. But *seeming* too implausible—partly because culture looks so messy—cannot be a serious objection. Many times, for example, it may *seem* that, if we have a reason to ϕ , *that reason* is why we ϕ . But our explanations for ϕ -ing often are *not* the reason for ϕ -ing.³⁵¹ Other memes are at work, and they are pushing us in various directions, even if it appears that we think they are not. Of course, if memetics explains “the prevalence of certain patterns of behavior in certain environments,” it also will reflect generally the specific patterns of specific people. But, because scientific explanations work *across populations*, they invariably will not apply in every and all cases.

In this way, memetics is like Darwin’s theory of natural selection, which cannot specifically explain all animal behavior at all times—it just explains trends. When a dog is frightened by a mouse or when an ant decides to forgo a tasty morsel of food, does Darwin’s theory always and in every instances provide a clean answer? No. The point is not that Darwinian Theory can explain any and every event; it is that it can explain the aggregate events. Memetics, too, provides a similar way of thinking about behavior. We may not be able to identify why an artist used red triangles instead of blue triangles in *every case*, but we can explain why that artist was *more likely* to use red triangles than blue ones.

Some may criticize what follows as too memetic, discounting too much the role of the individual. But it does no such thing. The individual’s importance in conceptions of creation is by and large the *only* one out there. All common accounts of creativity focus on the individual—sometimes on groups of individuals. The point is not to say the individual agent has no role; it is to motivate the reevaluation of that role, and to see that the memes may play a role in cultural development and creativity.

APPENDIX B: MEMETICS & MUSIC

[P]sychologists and anthropologists have done very little to advance something they are eminently qualified to do: analyze the natural

³⁵⁰ Cf. David Hull, *Altruism in Science: A Sociobiological Model of Cooperative Behavior Among Scientists*, in *PHILOSOPHY AFTER DARWIN: CLASSIC AND CONTEMPORARY READINGS 202*, 212–13 (Michael Ruse ed., 2009).

³⁵¹ See, e.g., Hanson & Yeboah, *supra* note 45; Jon Hanson & David Yosifon, *The Situational Character: A Critical Realist Perspective on the Human Animal*, 93 *GEO. L.J.* 1 (2004).

histories of particular memes in different domains, and the proximate cognitive biases responsible for such processes.

– Francisco Gil-White³⁵²

Perhaps distracted by constant theorizing, memetics has been bereft of systematic empirical analysis. Look through the literature and you will struggle to find any studies purporting to track memes through a particular cultural epoch, be it in music or in art. Here and there, some have made valiant attempts. Because this is an article and not a book, space is limited. For that reason, it does not behoove us to visit any of these attempts in great detail. It does, however, make sense to explore a recent project that applies memetics to a cultural phenomenon.

One such attempt has been made by Dr. Steven Jan, a professor of musicology³⁵³ at the University of Huddersfield, located in the United Kingdom. In 2007, Jan accepted Gil-White's challenge and systematically applied the concept of memetics to music.³⁵⁴ In his quest to make sense of music and memetics, Jan's discussion becomes overly technical, and occasionally his application loses its hook. For the purposes of this Article, though, Jan's book suffices: it shows that memetics can be used to systematically examine a cultural field.

Before jumping headlong into the meat of his book, it pays to examine his general argument. This should not be difficult because it is the argument I have made for the past ninety-one pages: culture replicates and varies, and each variation constitutes a new piece of culture. Jan argues that a "cumulative selection model" accounts for the "evolution" of music. In this model, memes undergo variations that are simple relative to the "original" meme. Because each change is simple and cumulative, the probability of making groundbreaking works increases. That does not mean it is high—indeed, precise creations, "such as Beethoven's 'Eroica' Symphony," would be very unlikely to have been created in any other place.³⁵⁵ But it does mean that under certain conditions, similar kinds of works would have arisen, and those would have been the result of both memetic pressures and the genetic gifts of the composer.³⁵⁶

With that out of the way, let us take a quick look, using Jan as a lens, at some of the core components that I proposed undergird memetic theory.

³⁵² Francisco J. Gil-White, *Let the Meme be (a Meme): Insisting too much on the Genetic Analogy will Turn it into a Straightjacket*, in *CULTURE, NATURE, MEMES* 185, 190 (Thorsten Botz-Bornstein ed., 2008).

³⁵³ Specifically, he studies music's structural and compositional components.

³⁵⁴ See STEVEN JAN, *THE MEMETICS OF MUSIC* 295 (2007).

³⁵⁵ *Id.* at 179.

³⁵⁶ *Id.*

A. Structure

Musical memes, according to Jan, consist of a variety of components, including a pitch pattern, “rhythm, texture, timbre and even dynamics.”³⁵⁷ Musical memes may exist as combinations of these or stand in isolation as pure “rhythmic memes,” as is the case in west African drumming.³⁵⁸ Jan provides an example in the text of two selections of African Northern Ewe Music, where a pattern emerges in both consisting of “castanet, rattle, tambourine I and small drum parts,” which “acts as a foil for the more rhythmically complex playing of the bell I, tambourine II and big drum parts.”³⁵⁹ Musical memes also interact—as in this example—to form memeplexes: strata of melodies comprising harmonies; rhythms that give rise to counterpoint.³⁶⁰

Jan’s ontology of musical memes becomes very complex at this point, venturing into a symbology that, I confess, does not shed much light on musical memes to the nonmusicologist. It seems sufficient to note that Jan has developed a method for identifying the structure of various memes.

B. Processing, Transmission, Implementation, & Replication

Previously, I explained that memes undergo a variety of stages. One of these stages I called processing: the time in which the brain receives the memes and subjects it to interaction, perhaps replicating it, storing it, or discarding it. Jan proposes something similar happens with music—he calls this *segmentation*. By segmentation he means the process by which our brains break down music into pieces and compute it.³⁶¹ Jan also seems to accept some kind of hierarchy, like the memes-operating-on-levels concept that I proposed.³⁶² He claims that only those memes that we adopt—consciously or unconsciously, allowing them to live in our brains—are those we can use. Additionally, Jan argues that memes often arise poietically (i.e., from the bottom up and without conscious direction).³⁶³ Top-down replication—which does not typically drive the memetic process—also can occur, though with less frequency.³⁶⁴ Sometimes this means that memes undergo “hybridizing

³⁵⁷ *Id.* at 40–41.

³⁵⁸ *Id.* at 42–43.

³⁵⁹ *Id.* at 43–44.

³⁶⁰ *Id.* at 56.

³⁶¹ *Id.* at 63 (“Segmentation is the process whereby the memetic structure of music—the organization of the sound stream into a series of discrete replicated particles—is perceived by the listener as a result of the effect of various articulations between particles.”).

³⁶² *Id.* at 181 (describing how musical memes are privileged based on replication-rates and that “background-,” “middleground-,” and “foreground-” level patterns in structural memes may acquire differing levels of “importance,” or replicating power, fecundity).

³⁶³ *See id.* at 182 (“The argument advanced here . . . regards *Ursatz* [the fundamental structure of a musical pattern] . . . as an artifact of a bottom-up generative-conglomerational grammar—a foreground in/up process of *Inkomponierung* . . .”); *see also id.* at 113 fig.4.1 (demonstrating “Memetic Transmission and Mutation and the Semiological Tripartition”); *id.* at 158.

³⁶⁴ *Id.* at 183 (noting that top-down processing can occur where memes have “sufficient cultural

interaction,” where various memes fuse with one another to create a new meme.³⁶⁵ In other words, musical memes constantly interact and form relationships with one another without our conscious direction.³⁶⁶ From this “poietic level” the brain draws, bottom up, to implement memes.³⁶⁷ Finally, implementation itself can cause variation “because memes almost always form part of larger complexes” into which they must fit.³⁶⁸ Jan has developed a table that purports to track the replication patterns of various musical memes.³⁶⁹ The table predicts the probability of a particular meme replicating based on “numerical quantification of the meme’s perceptual-cognitive salience”:³⁷⁰ the higher the predicted value, the higher the perceptual-cognitive salience and, thus, the greater the probability of replication.³⁷¹

C. Mutation

One aspect of memetics, of course, is that mutations occur. I hypothesized that mutations can be either nonconscious or conscious, and that many mutations occur simply because perfect fidelity is nearly impossible. Jan’s hypothesis for music is not that much different. As previously mentioned, Jan argues that mutation is likely a result of a bottom-up process, which means that memes largely drive replication and replication error. Focusing on mutation, Jan argues that it can occur in four basic ways: one element of a musical meme can be changed (modification); an element is removed and a new element added to create a juxtaposition (subtraction); an extra element is added to make “formerly adjacent elements of the meme . . . discontinuous” (addition); and a process of subtraction and addition, which results in a type of modification.³⁷² He illustrates how each of these phenomena operate by providing examples of musical stanzas where each occurs.³⁷³ These specific examples of mutation also represent subtypes of hybridization—sometimes particulate elements of memes “cross-over,” just as they do in genetic meiosis.³⁷⁴

D. Constraints

As I discussed, there are a variety of biological and cultural

prominence,” but claiming the primary driver of replication is through the bottom-up process).

³⁶⁵ *Id.* at 180–81.

³⁶⁶ *Id.* at 158 (describing the bottom-up, poietic approach, where “[c]omposers have copied in their brains an array of feature memes which associate in a variety of ways and thereby repeatedly reconstitute a set of schema memes”).

³⁶⁷ *Id.* at 114.

³⁶⁸ *Id.*

³⁶⁹ *Id.* at 130–33 tbl.4.1 (demonstrating “Implication-Realization Functions of I-RP Values”).

³⁷⁰ *Id.* at 133.

³⁷¹ *Id.* at 135.

³⁷² *Id.* at 116–17.

³⁷³ *Id.* at 118–21.

³⁷⁴ *Id.* at 122.

constraints on memetic replication. Unsurprisingly, Jan argues that similar constraints exist for music. He claims that two kinds of laws govern memes: the “physical-acoustic” and the “psychological.”³⁷⁵ The former refer to the actual capacity for sound given our physical universe—only certain sounds can be produced and heard by humans. The latter refers to the way in which our brain processes and desires certain musical qualities, often opting for parsimony over complexity, for example.³⁷⁶ Both of these constraints can be thought of as biological—they operate at or limit the level of what human brains can comprehend. This is analogous to the analysis in Part I of how biological factors can drive memetic replication.

Jan also mentions that musical memes can be constrained by the “environment” in which a meme finds itself—that is to say, the current memetic makeup in which the meme is trying to replicate.³⁷⁷ Thus, predominant memes would tend to replicate whereas “newer” memes would be drowned out by the noise.³⁷⁸ Jan attempts to track certain mutations throughout a variety of musical memes by providing examples of stanzas where he identifies the evolutionary development of memes.³⁷⁹ This analysis is also similar to the discussion in Part I, where I argue that the current memetic environment also plays a role in shaping which memes replicate or die.

E. Musical Memes

Memetics and music seem, at least on some level, to have a history. Indeed, evidence of musical memes may come from the musical analysis known as *ars combinatorial*: the concept that “late-eighteenth century [music] may be clearly segmented into a series of discrete units.”³⁸⁰ For one reason or another, this period of music was very easily classified by its components. Memetics expands the concept of *ars combinatoria* to all domains of music. It views “each step of the harmonic-rhythmic progression as a ‘slot’ into which a melodic figure can be placed, either by the choice of the composer, or as in the dice games [set up in parlors in the late 18th century], by random selection, paraphrase can be taken as a kind of combinatorial play.”³⁸¹

Most recently, this model has been applied to create “Experiments

³⁷⁵ *Id.* at 141.

³⁷⁶ *Id.* at 141–42.

³⁷⁷ *Id.* at 142–43.

³⁷⁸ *Id.* at 143 (“The principal reason why certain phenomena – some harmonic progressions, for instance – are ‘prohibited’ by theory is because those memes expressing them are not widely propagated in the meme pool and therefore have insufficient cultural force to legitimize the progressions they instantiate. Such an explanation would seem to transcend more traditional interpretations predicated on such subjective notions as compositional utility and ‘sounding good.’”).

³⁷⁹ *Id.* at 144–63.

³⁸⁰ *Id.* at 189.

³⁸¹ *Id.* (citation omitted).

in Music Intelligence,” which uses computers to analyze and construct musical style.³⁸² The software identifies musical styles of various composers, replicates them, and recombines them with other styles. Although this project doesn’t identify any mental structure *per se*, it does support the idea that various musical units are replicating, and are doing so in structural ways—ways that hint at some probabilistic method of replication.

³⁸² *Id.* at 191.