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THE WESTERN CULTURAL MODEL OF CREATIVITY: ITS INFLUENCE ON INTELLECTUAL PROPERTY LAW

*R. Keith Sawyer**

INTRODUCTION

In this Article, I examine the *Western cultural model of creativity*, a set of ten implicit beliefs about creativity that members of Western and European cultures often hold. The Article is organized into ten Parts, each corresponding to one of these ten beliefs. In each of these Parts, I critically examine the belief by reference to scientific research on creativity—conducted primarily by psychologists, but also by historians and sociologists. This research reveals that many of the ten beliefs are false, or at least highly misleading. In each case, I draw on the research to propose an alternative view of creativity. In several cases, the scientifically grounded view of creativity is diametrically opposed to the Western cultural model.

Following each of these discussions of the research, in each of the ten sections I then discuss implications for intellectual property law. I conclude that several aspects of our current intellectual property regime are grounded in these ten beliefs. For those beliefs that are not consistent with scientific research on creativity, this is problematic, because if IP law is not aligned with the empirical processes of creativity, then it will be less effective at its goal: “To promote the Progress of Science and useful Arts.”¹ I discuss the implications and possible alternative IP regimes that would more closely align with scientific studies of creativity and innovation, thus more effectively promoting creativity and innovation.

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1 U.S. CONST. art. I, § 8, cl. 8.

When I presented this talk to the “Creativity and the Law” symposium, I asked each participant to respond by answering the following questions:

Is the current IP regime grounded in this belief? If so, how?

If scientific research shows the belief to be false, then what alternative IP regimes would better align with scientific research?

I asked the participants to write down answers to these questions during my talk, and I collected these handwritten notes afterward. The participants’ comments are reproduced and attributed below. These participants agree that much of our current intellectual property regime is grounded in these ten beliefs. I conclude by discussing possible alternative IP regimes that would more closely align with the true nature of creativity and innovation.

I. THE WESTERN CULTURAL MODEL OF CREATIVITY

Beliefs about creativity vary from country to country. Most people in the United States—and in the Western world more generally—share a set of implicit assumptions about creativity. Anthropologists refer to an integrated framework of assumptions as a *cultural model*.² A cultural model is “a cognitive schema that is intersubjectively shared by a social group.”³ The theory of cultural models is built on theories of cognitive schemas; these theories were developed by cognitive scientists in the 1970s and 1980s. A cognitive schema is an innate and learned mental structure that organizes related pieces of knowledge.⁴ Beginning in the late 1970s, cognitive anthropologists began to build on schema theory as they elaborated a cognitively grounded approach to culture, in which culture is seen as residing in part within the heads of its members. These scholars proposed that cultural models were cognitive schemas that are intersubjectively shared among members of a social group.⁵

In this Article, I identify ten features of the Western cultural model that I call *creativity beliefs*. There is some overlap across cultures, but also many differences. The Western cultural model is

2 See Naomi Quinn & Dorothy Holland, *Culture and Cognition*, in CULTURAL MODELS IN LANGUAGE AND THOUGHT 3, 4 (Dorothy Holland & Naomi Quinn eds., 1987).

3 Roy D’Andrade, *A Folk Model of the Mind*, in CULTURAL MODELS IN LANGUAGE AND THOUGHT, *supra* note 2, at 112, 112.

4 CLAUDIA STRAUSS & NAOMI QUINN, A COGNITIVE THEORY OF CULTURAL MEANING 3 (1997).

5 See ROY D’ANDRADE, THE DEVELOPMENT OF COGNITIVE ANTHROPOLOGY 250 (1995); BRADD SHORE, CULTURE IN MIND 24–57 (1996); STRAUSS & QUINN, *supra* note 4, at 49; Naomi Quinn, *Introduction to Finding Culture in Talk 1*, 3–4 (Naomi Quinn ed., 2005).

rooted in a broader set of cultural assumptions known as *individualism*.⁶ Collectivist cultures are those in which people are integrated into strong, loyal groups. These cultures value group goals and outcomes over the individual. The self is defined by reference to the group and to one's position in it; there is no firm separation between individual and group. In individualist cultures, in contrast, the ties between individuals are looser. Individualist cultures value individual needs and interests over those of the group, and they value personal outcomes and goals more than social relationships. The self is defined as an inner property of the individual without any necessary reference to the group. These are differences in degree; even individualist cultures may have some collectivist elements, and vice versa.

In experimental studies of cultural differences, many scholars have used the Individualism-Collectivism Test (I-CT) developed by Harry Triandis.⁷ The I-CT is a questionnaire administered to individuals, and it results in a single score on a linear scale; a lower number indicates a more collectivist individual.⁸ Zha used the I-CT to compare American and Chinese doctoral students, and found that Americans scored higher on individualism (25.92), and Chinese scored higher on collectivism (18.73).

In individualist cultures—like the United States—individuals emphasize how they are unique, different, and better than others. They tend to see themselves as separate from others. In such cultures, people believe that artists embody these traits to an extreme—artists are more unique, more different, and more separate than the average person. Cultures at the collectivist end of this continuum hold to a very different cultural model of creativity.⁹ In collectivist cultures people emphasize that they are ordinary, similar to, and no different from others; and rather than separateness, they emphasize their connectedness.¹⁰

6 See Uichol Kim et al., *Introduction to INDIVIDUALISM AND COLLECTIVISM* 1, 3–15 (Cross-Cultural Research & Methodology Ser. Vol. 18, Uichol Kim et al. eds., 1995); Hazel Rose Markus & Shinobu Kitayama, *Culture and the Self: Implications for Cognition, Emotion, and Motivation*, 98 PSYCHOL. REV. 224, 225 (1991).

7 See Harry C. Triandis, *Culture and Social Behavior* (1994); TRIANDIS, INDIVIDUALISM AND COLLECTIVISM app. at 206–13 (1995).

8 See Peijia Zha et al., *The Impact of Culture and Individualism—Collectivism on the Creative Potential and Achievement of American and Chinese Adults*, 18 CREATIVITY RES. J. 355, 361 (2006).

9 See R. KEITH SAWYER, EXPLAINING CREATIVITY (2d ed. forthcoming 2011) (on file with author).

10 See Alan Page Fiske et al., *The Cultural Matrix of Social Psychology*, in 2 THE HANDBOOK OF SOCIAL PSYCHOLOGY 915, 922–23 (Daniel T. Gilbert et al. eds., 4th ed. 1998); Markus & Kitayama, *supra* note 6, at 363.

I argue that many elements of our current IP regime are grounded in the Western cultural model. The ten beliefs represent shared cultural assumptions, taken for granted and often unquestioned. They are likely to have implicitly and indirectly influenced our current IP regime, probably without any conscious awareness of that influence. As such, it becomes important to ask: are these beliefs supported by scientific research? I will consider each of them in turn. Some of them are completely false; most of them are partially true, but a bit misleading. Each of them contains at least a grain of truth, which I acknowledge for each belief.

II. BELIEF ONE: THE ESSENCE OF CREATIVITY IS THE MOMENT OF INSIGHT

Creative people get their great idea in a flash of insight. After that, all they have to do is execute it. They could even delegate its execution to someone else, because execution does not require creativity.

Over the centuries, philosophers have developed two competing theories about the creative process. *Idealist theorists* argue that after a creator has a creative idea, the creative work is done. It does not matter whether the idea is ever executed in physical form, or whether anyone else ever sees it. This idea is often called the “Croce-Collingwood” theory, after two philosophers who promoted it in the twentieth century.¹¹

Action theorists, in contrast, argue that the execution of the creative work is essential to the creative process. Action theorists point out that in real life, creative ideas often happen while one is working with materials. Once the creator begins to execute the idea, it often does not work out as expected, and it becomes necessary to modify the original idea. As a result, it is quite common for the final product to be very different from the original idea.

Many of the creativity beliefs associated with the Western cultural model are more consistent with the idealist theory than the action theory. We tend to think that ideas emerge spontaneously, fully formed, from the unconscious mind of the creator (Belief Two). But creativity research has found that the idealist theory is false; only an action theory can explain creativity.¹² Creativity takes place over time, and most of the creativity occurs while doing the work. The medium

11 See R. Keith Sawyer, *Improvisation and the Creative Process: Dewey, Collingwood, and the Aesthetics of Spontaneity*, 58 J. AESTHETICS & ART CRITICISM 149, 151–53 (2000).

12 See R. KEITH SAWYER, EXPLAINING CREATIVITY 58 (2006); R. KEITH SAWYER, GROUP GENIUS (2007) [hereinafter SAWYER, GROUP].

is an essential part of the creative process, and creators often get ideas while working with their materials.

Psychological research has concluded that creativity tends to occur in a sequence of eight stages:¹³

Find and formulate the problem. The first step is to identify a good problem and to formulate the problem in such a way that it will be more likely to lead to a creative solution.

Acquire knowledge relevant to the problem. Creativity is always based on mastery, practice, and expertise.

Gather a broad range of potentially related information. Creativity often results from alert awareness to unexpected and apparently unrelated information in the environment.

Take time off for incubation. Once you have acquired the relevant knowledge and some amount of apparently unrelated information, the unconscious mind will process and associate that information in unpredictable and surprising ways.

Generate a large variety of ideas. Unconscious incubation supports the generation of potential solutions to the problem, but conscious attention to the problem can also result in potential solutions.

Combine ideas in unexpected ways. Many creative ideas result from a combination of existing mental concepts or ideas.

Select the best ideas, applying relevant criteria. The creative process typically results in a large number of potential solutions. Most of them will turn out not to be effective solutions; successful creators must be good at selecting which ideas to pursue further.

Externalize the idea using materials and representations. Creativity is not just having an idea; creative ideas emerge, develop, and transform as they are expressed in the world.

The consensus resulting from cognitive psychology is that creativity is not a single, unitary mental process.¹⁴ Instead, creativity results from many different mental processes, each associated with one of the eight stages. Rather than coming in a single moment of insight, creativity involves a lot of hard work over an extended period of time. While doing the work, the creator experiences frequent but small mini-insights. Unlike the mysterious insight of our Western cultural model, these mini-insights are usually easy to explain in terms of the hard conscious work that immediately preceded them. Scientists still do not fully understand exactly what goes on in the mind, but experiments have demonstrated that insights are based in previous exper-

13 See SAWYER, *supra* note 9.

14 See Twila Z. Tardif & Robert J. Sternberg, *What Do We Know About Creativity?*, in THE NATURE OF CREATIVITY 429, 429–33 (Robert J. Sternberg ed., 1988).

iences, they build on acquired knowledge and memory, and they result from combinations of existing mental material.

Grain of Truth

Creative people often report having a sudden flash of insight, an “Aha” experience.

However, the moment of insight is overrated; it is only one small component of a complex creative process. The typical creator experiences many small mini-insights every day, and these mini-insights can be traced back to the material they were consciously working on. We only think we see dramatic leaps of insight because we are not able to observe the many small, incremental steps that preceded it. Creative activities require problem solving and decision making throughout the process, and each one of these decision points involves a small amount of creative inspiration; when these mini-insights are viewed in the context of the ongoing creative work, they no longer seem so mysterious. Creativity researchers today agree that “creativity takes time . . . the creative process is not generally considered to be something that occurs in an instant with a single flash of insight, even though insights may occur.”¹⁵

The mythical view of a moment of insight overly simplifies the complexity and hard work of most creativity. Instead of a single glorious moment, creators experience small insights throughout a day’s work, with each small insight followed by a period of evaluation and externalization; these mini-insights only gradually accumulate to result in a finished work, as a result of a process of hard work and intellectual labor of the creator.

Participant Responses

Mark McKenna: “Yes, in IP the date of invention is the date of conception, not of execution.”

Gregory Mandel: “In patent law the priority law associates creativity with the moment of conception.”¹⁶ This is a difficult problem to resolve.”

Jeannie Fromer: “The Supreme Court, in patent law, in the *Pfaff* case, emphasizes conception over reduction to practice. It ought to emphasize them both, as well as the other creativity stages.”

¹⁵ *Id.* at 430.

¹⁶ *See* 35 U.S.C. § 102(g)(2) (2006).

Rebecca Tushnet: "In joint authorship, ownership is given to the genius behind the idea, not to the people who execute it. Cases that demonstrate this concern the movies *Titanic* and *Malcolm X*."

Summary

IP law is based on Belief One, that creativity is associated with a single moment in time—the "idealist theory." If creativity unfolds more in line with an action theory—with externalization and execution being key to the process—the implications for IP law are profound, but complex. If the date of invention is not the date of conception, but is some later stage of the process, then at what later point in time should patent protection be granted?

III. BELIEF TWO: CREATIVE IDEAS EMERGE MYSTERIOUSLY FROM THE UNCONSCIOUS

Creative people have radical new ideas that come out of nowhere and that cannot be explained by their prior experience.

The conscious mind plays an important role in the creative process. Of the above eight stages, stages one, two, and three are predominantly conscious and directed. Even stage four, incubation, only occurs in the context of ongoing conscious work—there is only a benefit from incubation if one has worked hard on a problem beforehand, and then continues to work hard on it afterwards.

In the Western cultural model, creativity is associated with stages five and six, generating ideas and combining ideas (Beliefs One and Two). But extensive studies of the creative process have revealed that much of creativity occurs in stage seven, selecting ideas, and stage eight, externalizing ideas. These are not just simple "implementation" activities; they actively contribute to creativity.

The final stage of *externalization* is mostly conscious and directed; it is where the creator takes the raw insight and molds it into a complete product. Most creative insights are not fully formed; the creator has to use his or her immense domain knowledge—in particular, how to work using the materials and techniques of the domain—to convert the idea into a finished work. Monet had the idea to paint a haystack in a field at different times of the day and the year; but his idea could not become a reality unless he also had the painting skills to mix the right colors, to hold and to move the brush to make the right strokes, and to compose the overall image to get the desired effect. A person might have a new idea about how to design a computer word proces-

sor, but that idea would be lost to history if the person did not know how to write computer programs.

Many people hold to the idealist theory, and think that the final stage of externalization is not really “creative” per se; it is no more than a straightforward execution of the idea. Having the idea is the creative part of the process; making the idea a reality might involve skill, craftsmanship, and dedication—but not creativity. However, researchers have discovered a lot of creativity during this final stage.¹⁷ Frequent and continuous externalization is at the core of *design thinking*.¹⁸ Externalizing an idea often results in other ideas and follow-on ideas. And the most creative people do not wait until their idea is fully formed before they start externalizing it; in the early stages of the process, when the idea may be just an intuition or a bare outline, they start putting it out in the world. Externalizing is essential to the problem finding process that is used by the most successful creators.

In many cases, novelty emerges unpredictably and unintentionally, from a process that is essentially improvisational in nature.¹⁹ Creativity researchers often refer to an improvisational and unpredictable creative process as *problem finding*—a process of work during which a problem is formulated, or a question is posed. Sometimes an “answer” is discovered without a known problem—something that just seems interesting and potentially useful, but without it being immediately obvious in what way. The problem finding process is associated with creativity in fine art painters,²⁰ with creativity in writing,²¹ and with creative scientific discovery.²²

Grain of Truth

Everyone has had an “Aha!” experience, when an idea suddenly enters the conscious mind. Many exceptional creators report that their best ideas emerge unexpectedly during incubation, in an “aha”

17 See SAWYER, *supra* note 9.

18 See *id.*

19 See SAWYER, GROUP, *supra* note 12.

20 See JACOB W. GETZELS & MIHALY CSIKSZENTMIHALYI, *THE CREATIVE VISION* (1976).

21 JOHN R. HAYES & LINDA S. FLOWER, *A COGNITIVE MODEL OF THE WRITING PROCESS IN ADULTS: FINAL REPORT* (1983), available at <http://www.eric.ed.gov/PDFS/ED240608.pdf>; R. Keith Sawyer, *The Collaborative Nature of Innovation*, 30 WASH. U. J.L. & POL'Y 293, 295 (2009).

22 See J.W. Getzels, *Creativity, Intelligence, and Problem Finding: Retrospect and Prospect*, in *FRONTIERS OF CREATIVITY RESEARCH* 88, 100–01 (Scott G. Isaksen ed., 1987); Melvin P. Shaw, *Affective Components of Scientific Creativity*, in *CREATIVITY AND AFFECT* 3 (Melvin P. Shaw & Mark A. Runco eds., 1994).

or “eureka” moment that creativity researchers call *the moment of insight*.²³

The “Aha!” experience is not mysterious, however. Research by cognitive psychologists and cognitive neuroscientists has shown that moments of insight are generally easy to understand in terms of the previous mental trajectory of the creator. Insights are combinations of bits of domain knowledge that the creator has mastered through long years of work. And new ideas are always combinations of prior experiences and learning.²⁴

By analyzing the sketches and notebooks leading up to the insight, we see that each innovation resulted from a connected, directed, and rational process.²⁵ For example, Darwin’s groundbreaking innovation—the theory of natural selection—is now known to have emerged from a multitude of smaller, incremental insights that unfolded over thirteen years.²⁶ This history is lost unless there are detailed notebooks (like those left by Charles Darwin) or video recordings (made by creativity researchers who happen to be present during the process). But in every case where researchers have access to this kind of detailed record, they can trace the final product from a complex series of small mini-insights that are closely tied to the work of the moment.

Participant Responses

Jessica Silbey: “IP law doesn’t assume this. It instead assumes that regular work over time is required.”

Chris Buccafusco: “There is considerable recognition of drawing on others in explicitly conscious ways. Yet there is a specific doctrine in copyright about unconscious copying.”²⁷

Gregory Mandel: “Patent law rejects this; the second sentence of the nonobviousness requirement.”²⁸

23 Howard E. Gruber, *Insight and Affect in the History of Science*, in *THE NATURE OF INSIGHT* 397, 406–07 (Robert J. Sternberg & Janet E. Davidson eds., 1995).

24 See SAWYER, *supra* note 9.

25 See ROBERT W. WEISBERG, *CREATIVITY: BEYOND THE MYTH OF GENIUS* 241–64 (1993); ROBERT WEISBERG, *CREATIVITY: GENIUS AND OTHER MYTHS* 1–14 (1986).

26 See HOWARD E. GRUBER & PAUL H. BARRETT, *DARWIN ON MAN* 76–90 (1974); SAWYER, GROUP, *supra* note 12.

27 See *Bright Tunes Music Corp. v. Harrisongs Music, Ltd.*, 420 F. Supp. 177, 181 (S.D.N.Y. 1976) (finding George Harrison liable for copyright infringement based on his “subconscious” copying of Ronald Mack’s “He’s So Fine”).

28 35 U.S.C. § 103(a) (2006) (“Patentability shall not be negated by the manner in which the invention was made.”).

Summary

Patent law is consistent with the science regarding Belief Two: creativity is largely conscious and involves work over time.

IV. BELIEF THREE: REJECTING CONVENTION RESULTS IN GREATER CREATIVITY

Creative people blindly ignore convention; convention is the enemy of creativity, it blocks the pure inspiration welling up from the creative spirit.

Variation

Children are more creative than adults; schools emphasize the conventions of the past, and thus squash creativity.

In the Western cultural model, a great creative insight represents a complete break with the past, and it is more likely to occur when the creator rejects convention. But creativity research has not supported this belief; there is now a consensus among scholars that creativity must be explained by reference to previous experience and acquired knowledge.²⁹ Becoming more expert, and acquiring more knowledge, prepares a person for more and better insights, rather than interfering with them.

Like so many of our contemporary creativity beliefs, this third belief only emerged in the nineteenth century, along with Romanticism. The idea that the artist creates a novel and original work that breaks with convention is only a few hundred years old. Before the Renaissance, creativity was associated with the ability to imitate established masters, and to accurately represent nature.³⁰ Although some people, including da Vinci and Vasari, argued that *genio* should not just be imitative, but should also incorporate originality, this argument did not become widely accepted until the late Renaissance.³¹

The conception of the artist as internally driven by vision, inspiration, or imagination assumes that the creator doesn't know who will ultimately consume his creation, and furthermore assumes that it is not important for the creator to be aware of the ultimate audience. This historical situation was a result of the demise of patronage and

²⁹ See SAWYER, *supra* note 9.

³⁰ See ROBERT PAUL WEINER, CREATIVITY AND BEYOND 4–30 (2000); George Becker, *The Association of Creativity and Psychopathology: Its Cultural-Historical Origins*, CREATIVITY RES. J., 2000–2001, at 45, 46.

³¹ See WILHELM LANGE-EICHBAUM, THE PROBLEM OF GENIUS (Eden Paul & Cedar Paul trans., Kegan Paul, Trench, Trubner & Co. 1931) (1928).

the rise of mass audiences—prior to that time, the artist was always working for a client (whether royalty, the church, or a rich merchant) with the goal of satisfying that client's demands.³² Albrecht Dürer (1471–1528) produced the first works designed and published by the artist, not commissioned by a patron, and he was one of the first to sign his works.³³

Reality

Formal training and conscious deliberation are essential to creativity, as Louis Pasteur famously said, “Chance favors the prepared mind.”³⁴ Sparks of insight always follow long periods of hard work when people are immersed in convention. Children often generate charming novelty, but until they master the language and conventions of a domain, they are not capable of true creativity.

Grain of Truth

Most great innovations involve breaking at least one rule. But scores of other rules stay the same; the trick is knowing all of the rules and then knowing exactly which ones to break. Knowing which rules to break requires an extremely high level of expertise that only comes after years of mastering a domain.

Participant Responses

Jeannie Fromer: “Copyright law rejects this by setting the bar to copyrightability and originality very low. It sets it higher in patent law with the requirement of nonobviousness.”

Mark McKenna: “In patent law, the nonobviousness requirement seems to equate to rejecting convention. However, IP law pays a lot of attention to prior art (i.e. ‘conventions’). This is less so with originality in copyright.”

Rebecca Tushnet: “Patent law anticipates prior art in its obviousness standard.”

Gregory Mandel: “In copyright law, the creativity threshold is very low (due to the assumption that it is difficult to judge creativity).”

32 See TIMOTHY CLARK, *THE THEORY OF INSPIRATION* 11 (1997)

33 See WEINER, *supra* note 30, at 63.

34 See Kevin Dunbar, *How Scientists Build Models InVivo Science as a Window on the Scientific Mind*, in *MODEL-BASED REASONING IN SCIENTIFIC DISCOVERY* 85, 90 (Lorenzo Magnani et al. eds., 1999); Colleen M. Seifert et al., *Demystification of Cognitive Insight: Opportunistic Assimilation and the Prepared-Mind Perspective*, in *THE NATURE OF INSIGHT*, *supra* note 23, at 65.

Summary

In patent law, the creativity threshold is fairly high due to the nonobviousness requirement. This necessitates reference to prior art, suggesting that convention always plays a central role in invention.

In copyright law, because the bar to copyrightability is so low, it is not necessary for the creator to reject convention to gain copyright.

So with both patent and copyright, the current regime is consistent with the science regarding Belief Three: creativity does not involve a rejection of convention.

V. BELIEF FOUR: CREATIVE CONTRIBUTIONS ARE MORE LIKELY TO COME FROM AN OUTSIDER THAN AN EXPERT

Sometimes the most creative people know the least about the domain. The leading people in any field are so bound up in the old way of doing things that they never have the great new ideas. It takes someone from the outside to see things in a new way; it's not important for that outsider to first learn those old ways of doing things.

Reality

Creative people are rarely outsiders. The most creative ideas come from people who are deeply familiar with a domain and immersed in it. It takes years of study and work in a domain before you can be creative.

Based on extensive studies of the biographies of exceptional creators throughout history, creativity researchers have discovered that it takes approximately ten years of study in a domain before a person makes their first major creative contribution.³⁵ This *ten-year rule* was first discovered in 1899, when *Psychological Review* published a study showing it takes ten years to become an expert telegrapher.³⁶ In 1973, cognitive psychologists Herbert Simon and William Chase estimated that international-level chess players required at least ten years of study.³⁷ Gardner demonstrated that creative individuals, in a wide variety of domains, tend to come up with major breakthroughs after ten years of deep involvement in the domain.³⁸ The ten-year delay is

35 See HOWARD E. GARDNER, *FRAMES OF MIND* 83–84 (1993).

36 See William Lowe Bryan & Noble Harter, *Studies on the Telegraphic Language: The Acquisition of a Hierarchy of Habits*, 6 *PSYCHOL. R.* 345, 349–75 (1899).

37 See William G. Chase & Herbert A. Simon, *Skill in Chess*, 4 *COGNITIVE PSYCHOL.* 55, 56 (1973).

38 See GARDNER, *supra* note 35, at 17–42.

evidence of the importance of learning the domain—the language and conventions of a creative discipline.

Studies of expertise by Ericsson and others have found that performance at the top world-class level is only possible after a person has invested 10,000 hours of *deliberate practice* in a domain.³⁹ This number has been demonstrated to hold in domains as varied as chess, medicine, programming, physics, dance, and music. At five days a week, with four hours a day of deliberate practice, the 10,000 hour mark is reached in exactly ten years.

Grain of Truth

The exceptional creators who make radical contributions that advance a field have often had experience and training in a different area, before they began to study that new area. Major contributions come from people who can bring in a different conceptual framework and integrate it with their deep expertise. Cross fertilization and distant combinations are often the source of surprising creative insights.

Participant Responses

Mark McKenna: “IP largely rejects this, in that patent law focuses on people having ordinary skill in the art (PHOSITA).”

Jessica Silbey: “IP confirms the opposite, and benefits insiders rather than outsiders.”

Rebecca Tushnet: “Possibly the idea submission law in California.⁴⁰ This makes it possible for outsiders to claim rights in ideas that are later implemented successfully by TV or movie studios. The result is that the initial idea is overvalued.”

Gregory Mandel: “IP doesn’t make an assumption either way.”

Summary

IP law benefits those having knowledge in prior art, who are insiders rather than outsiders. With regard to Belief Four, IP law is consistent with science: creators are almost always knowledgeable insiders.

39 See K. Anders Ericsson et al., *The Role of Deliberate Practice in the Acquisition of Expert Performance*, 100 PSYCHOL. REV. 363, 394–400 (1993); K. Anders Ericsson, *The Influence of Experience and Deliberate Practice on the Development of Superior Expert Performance*, in THE CAMBRIDGE HANDBOOK OF EXPERTISE AND EXPERT PERFORMANCE 683, 691–92 (K. Anders Ericsson et al. eds., 2006).

40 See CAL. CIV. CODE § 980 (West 2006).

VI. BELIEF FIVE: PEOPLE ARE MORE CREATIVE WHEN
THEY ARE ALONE

People are more creative when they are alone.

Reality

Ideas often emerge in conversation, or as a result of conversations the creator has had previously. Groups play a central role in creativity, more so today than at any other time in history.⁴¹ Creative people are deeply connected to the field of other experts and professionals.

The last thirty years have seen a huge growth in research on organizational innovation,⁴² but only in the 1990s did this research focus closely on groups. This recent shift is critical, because most business innovations originate in groups.⁴³

Wuchty, Jones, and Uzzi analyzed huge databases—of 19.9 million scientific papers over fifty years, and 2.1 million patents—and found that the amount and degree of collaboration have increased dramatically over the decades.⁴⁴ First, the databases allowed them to determine which papers, and which patents, had one author, two authors, or more. Two or more authors means that the creation was collaboratively generated. In science, the average team size (number of coauthors) doubled over forty-five years from 1.9 to 3.5 authors per paper.⁴⁵ Science has become a lot more complex, and requires a lot more funding, and that might account for the larger team size. But the databases also had data about the social sciences and the arts and humanities; social science research has not increased in scale and cost the same way particle physics and medicine have. Even in the social sciences, collaboration has become a lot more important. In 1955, only 17.5% of social science papers had two or more authors; in 2000, 51.5% of those papers did. And although papers in the arts and humanities still are mostly sole authored (over ninety percent), the

41 See SAWYER, GROUP, *supra* note 12.

42 See, e.g., INNOVATION (Kjell Grønhaug & Geir Kaufmann eds., 1988); INNOVATION AND CREATIVITY AT WORK (Michael A. West & James L. Farr eds., 1990); NIGEL KING & NEIL ANDERSON, INNOVATION AND CHANGE IN ORGANIZATIONS (1995).

43 SAWYER, GROUP, *supra* note 12; Karin B. Evans & Henry P. Sims, Jr., *Mining for Innovation: The Conceptual Underpinnings, History and Diffusion of Self-Directed Work Teams*, in CREATING TOMORROW'S ORGANIZATIONS 269 (Cary L. Cooper & Susan E. Jackson eds., 1997).

44 See Stefan Wuchty et al., *The Increasing Dominance of Teams in Production of Knowledge*, 316 SCIENCE 1036, 1036 (2007).

45 See *id.*

trend over the last fifty years has also been toward more collaboration.⁴⁶

The historical data show that collaboration is becoming more widespread. In addition, research shows that this increased collaboration has also increased creativity. Wuchty used the same databases to examine whether or not the collaborative products were better.⁴⁷ The databases allowed them to determine the impact and influence of each paper and patent, because those databases keep track of how many times the paper or patent was cited by a later publication. More citations means a more influential paper, and more citations have been shown to correlate with research quality. Over the fifty-year period they studied, teams generated more highly cited work in every research area, and in every time period.⁴⁸

Nemeth and Goncalo confirmed this finding: as the number of authors increases, the number of citations increases, too. And they showed an additional fascinating pattern: when the authors were from different universities, the number of citations increases even more. Distant collaboration enhanced creativity more than local collaboration, probably because it brings together multiple perspectives; researchers in the same university department will be more similar to each other and will share more implicit understandings.⁴⁹

Teams generate better scientific research, and more important inventions, than solitary individuals. And Wuchty discovered that the creative advantage for teams has increased over the last fifty years. Although teams generated more highly cited work back in 1955, by 2000 the advantage of teams over sole individuals had become even greater. In 1955, team-authored papers received 1.7 times as many citations as sole authored papers; in 2000, they received 2.1 times as many.⁵⁰

Grain of Truth

Exceptional creators spend time alone, but they also spend lots of time talking to other people. It seems that the alternation between social and solitary time enhances creativity.

46 See *id.*

47 See *id.*

48 See *id.*

49 See Charlan Jeanne Nemeth & Jack A. Goncalo, *Influence and Persuasion in Small Groups*, in *PERSUASION* 171, 171–90 (Timothy C. Brock & Melanie C. Green eds., 2d ed. 2005).

50 See Wuchty et al., *supra* note 44, at 1037.

Grain of Truth

Many groups are ineffective, and result in lowered creativity.⁵¹ Too many groups fall into *groupthink*, a state of lazy, shared consensus where no one wants to rock the boat.⁵²

Participant Responses

Jeannie Fromer: "Joint inventorship doctrine tends to reward few collaborators over many."

Mark McKenna: "Patent law is very individualistic, and so is copyright law, because of these romantic views of authorship."

Rebecca Tushnet: "Joint authorship law fails to recognize the importance of the editor, as in recent revelations about how Pound edited Eliot and how Lish edited Carver."⁵³

Chris Buccafusco: "Copyright law explicitly recognizes collaboration and makes little distinction between individual and solo efforts."

Gregory Mandel: "Patent and copyright law are both based on the iconic, individual inventor. Copyright is particularly biased against joint authors.⁵⁴ Both joint inventor law and joint author law 'appear to actually dissuade certain potential co-inventors and co-authors from collaborative endeavors.'⁵⁵

Summary

Although joint inventor law and joint author law allow for collaboration, the consensus of the participants is that IP law is largely based in individualistic assumptions. And the role of editors and other intermediaries, who play their role during the externalization and execution stages, is not recognized by IP law; only collaboration at the ideation stage is recognized.

51 See Charlan Jeanne Nemeth & Brendan Nemeth-Brown, *Better than Individuals? The Potential Benefits of Dissent and Diversity for Group Creativity*, in GROUP CREATIVITY 63, 63–64 (Paul B. Paulus & Bernard A. Nijstad eds., 2003); Donald W. Taylor et al., *Does Group Participation When Using Brainstorming Facilitate or Inhibit Creative Thinking?*, 3 ADMIN. SCI. Q. 23, 43 (1958); see also PATRICK LENCIONI, THE FIVE DYSFUNCTIONS OF A TEAM (2002) (discussing different theories of teamwork).

52 IRVING L. JANIS, VICTIMS OF GROUPTHINK 8–13 (1972).

53 See R. Keith Sawyer, *Writing as a Collaborative Act*, in THE PSYCHOLOGY OF CREATIVE WRITING 166, 166 (Scott Barry Kaufman & James C. Kaufman eds., 2009).

54 See Gregory N. Mandel, *Left-Brain Versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283 *passim* (2010).

55 *Id.* at 287.

This may be one reason for Rebecca Tushnet's suggestion⁵⁶ that the people who most benefit from IP law are the intermediaries (record producers, book publishers, agents, etc.), who depend on (and insist on) various contractual arrangements with the rightsholder to benefit from their editorial and execution efforts.

VII. BELIEF SIX: CREATIVE IDEAS ARE AHEAD OF THEIR TIME

Creative people are far ahead of their time, and their brilliance is not acknowledged during their lifetime. They are only recognized after death, when everyone else moves along to catch up with their vision.

This belief appears to be supported by widely told stories: that Mendel's nineteenth-century work cross-breeding peas was not recognized as essential to modern genetics until fifty years later; or that the impressionists were considered such horrible artists that their works were never displayed in the French academy.

Reality

Almost all of these examples, when examined more closely, end up failing to support the "unrecognized genius" view. Mendel's work, for example, was not rejected as inappropriate by his peers, and it was not rediscovered fifty years later; the Mendel story is a historically inaccurate myth.⁵⁷ An examination of what really happened shows that Mendel was working on a completely different problem—a now discredited theory that new species result from hybridization—and he and his colleagues agreed that his work had failed to prove the theory. Although Mendel deserves credit for being one of the first to observe the ratios that helped later scientists discover genes and inheritance, many of the ideas now associated with Mendel were already widely accepted before he published his now famous paper. Contrary to the myth, his findings were not ignored and not misunderstood; he reported them at two scientific conferences, and they were well received, although they were not considered to be very radical. Mendel was not a "Mendelian" in the modern usage of the term, and he did not realize the significance of the ratios to evolutionary theory. But today's scientists attribute ideas to his 1865 papers that Mendel did not actually have, and that he was incapable of having given the state of science at that time.

⁵⁶ See *infra* p. 122.

⁵⁷ See AUGUSTINE BRANNIGAN, *THE SOCIAL BASIS OF SCIENTIFIC DISCOVERIES* 89–119 (1981); JOHN WALLER, *EINSTEIN'S LUCK* 132–58 (2002).

Quantitative measures across large numbers of artists and scientists reveal that it is rare for unrecognized creators to be reevaluated as brilliant after their deaths. Scientific and artistic reputation remains remarkably stable over time, even across centuries.⁵⁸ For any scientist, the number of citations to their publications stays the same from year to year (with correlations in the upper .90s); this consistency of reputation is found across generations as well. In psychology, no one who was out of favor in 1903 was in favor in 1970, and no one in favor in 1903 had been rejected by 1970.⁵⁹ Reputation in the arts and humanities is also very consistent over time.⁶⁰

Grain of Truth

Radical, breakthrough ideas are often resisted initially, because they threaten established interests and disrupt existing institutions and relationships. It takes a confident, strong-willed individual to overcome these forms of resistance.

Participant Responses

Jeannie Fromer: "Copyright and patent duration start immediately and the latter doesn't last long enough if ideas are ahead of their time."

Jessica Silbey: "IP duration rules assume that the value of IP grows over time; if it is recognized later, the rights should endure."

Rebecca Tushnet: "This is the foundation of copyright law's non-discrimination principle."⁶¹

Chris Buccafusco: "Copyright law protects people's work long after their deaths, in part perhaps because they may not get full value during life."

Summary

The participants have a nuanced view of Belief Six. Copyright protection extends long after death, so it seems to be aligned with Belief Six and inconsistent with science. Patent protection does not extend as long, but it does extend long enough if the idea is recog-

58 See DEAN KEITH SIMONTON, *GENIUS, CREATIVITY, AND LEADERSHIP* 19 (1984); Ray Over, *The Durability of Scientific Reputation*, 18 J. HIST. BEHAV. SCI. 53, 57-60 (1982).

59 See Over, *supra* note 58, at 60.

60 See Paul R. Farnsworth, *The Social Psychology of Music* (2d ed. 1969); SIMONTON, *supra* note 58, at 19; Karl Erik Rosengren, *Time and Literary Fame*, 14 *POETICS* 157 (1985).

61 See *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (illustrating the principle).

nized fairly quickly, as scientific studies suggest is the case. Thus patent law is more consistent with the science regarding Belief Six than is copyright law.

VIII. BELIEF SEVEN: CREATIVITY IS A PERSONALITY TRAIT

Creativity is a general personality trait, like IQ. More creative people are more creative at everything that they do. People who do not have much of this personality trait have very little hope of being creative.

Variation

Creativity is genetic, and some people are born with more of it.

Reality

Research has proven that creativity is not hereditary. One of the best ways to evaluate heritability is through twin studies. Twin studies are conducted with equal numbers of both monozygotic and dizygotic twins. Monozygotic twins, also called “identical twins”—about one third of all twins—are genetically identical, while dizygotic twins, also called “fraternal twins”—about two-thirds of all twins—are no more alike genetically than brothers and sisters born at different times. Both types of twins are presumably subject to the same environmental influences during their developmental years, because both pairs of twins are born at the same time and raised into the same family. On many traits, one would expect both types of twins to be more similar than two random people, because of the environmental influences of being raised in the same family. But the critical factor in determining heritability is that traits that are genetic should show higher inter-twin correlations for monozygotic than for dizygotic twins. If both types of twins are equally similar on a trait, it is generally thought not to be heritable and thus not genetic.

Barron administered a range of tests associated with creativity to just over 100 pairs of twins.⁶² Two groups of adolescent twins were used: one group of Italian twins from Rome and Florence, and the other a group of American twins studied at the Institute of Personality Assessment and Research (IPAR) at the University of California, Berkeley. Of the five traits measured that were hypothesized to be connected to creativity, only two of them showed evidence of heritabil-

⁶² See Frank Barron, *Twin Resemblances in Creative Thinking and Aesthetic Judgment*, in *ARTISTS IN THE MAKING* 173, 175 (Frank Barron ed., 1972).

ity: adaptive flexibility and aesthetic judgment of visual displays.⁶³ However, on the two traits thought to be most closely connected to creativity—ideational fluency (divergent thinking) and originality—there was no evidence of heritability.

Other twin studies have also found no evidence that creativity is heritable. Vandenberg found no evidence of heritability in divergent thinking scores.⁶⁴ Nichols conducted a metaanalysis of the twin literature, and averaged all of the correlations; he found that the DT scores of monozygotic twins were correlated at .11 more than those of dizygotic twins, which was not statistically significant—and this was the smallest difference of all measures studied, smaller than general intelligence, memory, verbal fluency, and many other measures.⁶⁵ In perhaps the most comprehensive study, Reznikoff, Domino, Bridges, and Honeyman studied 117 pairs of monozygotic and dizygotic twins found through the Connecticut Twin Registry, which maintains a list of all multiple births in Connecticut since 1897.⁶⁶ They administered a battery of eleven tests of creativity, including the RAT and five of Guilford's trait measures. They could not find any convincing evidence of a genetic component to creativity; of all eleven tests, only on the RAT were monozygotic twins more similar than the dizygotic twins. However, they found that twins overall had more similar scores on all of the measures than random pairs from the general population. Because there was no significant difference between the two types of twins, the best explanation is that twin similarity results from their similar environment.⁶⁷

Creative people are not creative in a general, universal way; they are creative in a specific sphere of activity, a particular domain.⁶⁸ There is substantial evidence that large portions of creative ability are *domain specific*.⁶⁹ There may be some bit of real world creativity that

63 See *id.* at 176–77.

64 PROGRESS IN HUMAN BEHAVIOR GENETICS (Steven G. Vandenberg ed., 1968).

65 See Robert C. Nichols, *Heredity and Environment: Major Findings from Twin Studies of Ability, Personality and Interests*, 29 HOMO 158 (1976).

66 See Marvin Reznikoff et al., *Creative Abilities in Identical and Fraternal Twins*, 3 BEHAV. GENETICS 365, 367–68 (1973).

67 See *id.* at 376.

68 See DAVID HENRY FELDMAN, *BEYOND UNIVERSALS IN COGNITIVE DEVELOPMENT* (1980); VERA JOHN-STEINER, *NOTEBOOKS OF THE MIND* (1985); Mihaly Csikszentmihalyi, *The Flow Experience and Its Significance for Human Psychology*, in OPTIMAL EXPERIENCE 15, 34–35 (Mihaly Csikszentmihalyi & Isabella Selega Csikszentmihalyi eds., 1988); D.H. Feldman, *Universal to Unique*, in ESSAYS IN CREATIVITY 45 (Stanley Rosner & Lawrence Edwin Abt eds., 1974).

69 See Gregory J. Feist, *Domain-Specific Creativity in the Physical Sciences*, in CREATIVITY ACROSS DOMAINS 123, 134 (James C. Kaufman & John Baer eds., 2005); Lawrence

could be predicted by a hypothesized construct of general creativity, but that bit is much smaller than the domain specific component.

Real world creativity does not seem to be the result of any one personality trait; exceptional creators seem to combine many different traits and abilities, in a complex mix. Amabile emphasized three broad personality factors: intrinsic task motivation, domain relevant skills, and creativity relevant processes.⁷⁰ The first, task motivation, is based on her research on intrinsic motivation.⁷¹ The second captures the domain specific elements of creativity, and the third represents the domain general elements.⁷² Sternberg and Lubart's *investment model* identified six broad personality factors: intelligence, knowledge, cognitive style, motivation, personality, and environmental context.⁷³ Creative people are happy and productive, and tend to be quite successful—nothing like our myth of the tortured lone genius.

Creativity seems not to be a stable personality trait, but rather to be a situationally specific strategy.

Grain of Truth

There are certain dispositions that lead a person to be more likely to be original and appropriate than others. But these dispositions can be learned; they are not fixed personality traits, like IQ or extraversion.

Participant Responses

Mark McKenna: "The IP regime implicitly assumes that creativity can be encouraged, because the foundational intention of IP law is to foster greater creativity by providing incentives. This implies that people can develop creativity with effort."

Jessica Silbey: "IP purports to value individuality and the belief that 'anyone can be an inventor.'"

Rebecca Tushnet: "This is part of the mythical romantic authorship that distracts attention from the role of the publisher and the

A. Hirschfeld & Susan A. Gelman, *Toward a Topography of Mind: An Introduction to Domain Specificity*, in *Mapping the Mind* 3, 3–28 (Lawrence A. Hirschfeld & Susan A. Gelman eds., 1994).

⁷⁰ See TERESA M. AMABILE, *THE SOCIAL PSYCHOLOGY OF CREATIVITY* 67–68 (1983); Teresa M. Amabile, *A Model of Creativity and Innovation in Organizations*, 10 *RES. ORGANIZATIONAL BEHAV.* 123, 130 (Barry M. Staw & L.L. Cummings eds., 1988).

⁷¹ See AMABILE, *supra* note 70, at 91–98; Amabile, *supra* note 70, at 132–34.

⁷² See AMABILE, *supra* note 70, at 77–90; Amabile, *supra* note 70, at 131.

⁷³ See Robert J. Sternberg & Todd I. Lubart, *Investing in Creativity*, 51 *AM. PSYCHOL.* 677, 684 (1996).

intermediaries (like editors) who are in fact copyright's greatest beneficiaries, precisely because individuals don't need copyright's incentives as much. So we get artists testifying in Congress about term extension, even though they have no idea what they're talking about and we should be listening to economists."

Gregory Mandel: "IP law removes the product from the person, to some extent."

Summary

IP law seems consistent with the science on Belief Seven; anyone can be creative, and creativity can be encouraged with incentives (such as property rights protection). However, IP law seems to focus on a romantic myth of authorship (Tushnet) that results in a neglect of the many intermediaries who participate in the execution of an idea—an implicit assumption that these intermediaries are not creative.

IX. BELIEF EIGHT: CREATIVITY IS BASED IN THE RIGHT BRAIN

Creativity is in the right brain, and creative people display a "right brained" pattern of behavior and thought.

General Variation

Creative brains have identifiable biological differences from uncreative brains.

Reality

The most creative people use their entire brains in concert. This has been demonstrated repeatedly, originally in split-brain studies in the 1960s and 1970s, and today with brain imaging technologies like functional magnetic resonance imaging (fMRI). Training in a creative domain tends to increase the bilateralization of brain activity.

Participant Responses

Only one participant responded to Belief Eight: Gregory Mandel. Mandel has argued that joint creator law evolved from "commonly held stereotypes about left-brain scientists versus right-brain artists engaging in fundamentally distinct creative processes."⁷⁴ Inventive creativity, associated with patent law, is thought to be a more linear

⁷⁴ Mandel, *supra* note 54, at 283–84.

and analytic process; artistic creativity, associated with copyright law, is thought to be more intuitive, holistic, and personal. Mandel too notes that “[m]odern research shows these creativity stereotypes are false.”⁷⁵ He writes:

[S]ignificant components of the divergence between patent and copyright doctrine result from socially romanticized, simplified, and largely inaccurate stereotypes about differences between the creative processes of artists versus inventors. Whether lawmakers articulate it or not, they (like most of society) view artistic and inventive creativity as arising from fundamentally different cognitive processes, and this perception has influenced the law.⁷⁶

To support his claim, Mandel explores the differences between joint author law and joint inventor law, and argues that these differences emerged as a result of these stereotypical biases about the creative processes “believed to produce technological innovation versus artistic expression.”⁷⁷

Summary

IP law does not associate creativity with the right brain exclusively, but Mandel suggests that it implicitly associates artistic creativity with stereotypically right brain personalities, and technological creativity with stereotypically left brain personalities. Yet the science suggests that the creative process in science, engineering, and art are quite similar; the mental processes and structures involved are essentially the same, and the personalities of creators in these areas are not dramatically different.⁷⁸ This supports a change in IP law to more closely align patent and copyright law.

X. BELIEF NINE: CREATIVITY AND MENTAL ILLNESS ARE CONNECTED

Creative people are more likely to be mentally ill.

Reality

There is no solid evidence that mental illness is more common among creative people than the general population. The consensus among creativity researchers is that those few studies that initially seemed to find a connection are methodologically flawed, and don't

⁷⁵ *Id.* at 284.

⁷⁶ *See id.* at 286.

⁷⁷ *Id.* at 287.

⁷⁸ *See* SAWYER, *supra* note 9.

prove that there's an association between creativity and clinical levels of mental illness.

Grain of Truth

In a few creative domains—primarily fiction writing and fine art painting—there's partial evidence that more creative people score slightly more towards the clinical end of the spectrum than less creative people, although they don't meet diagnostic criteria for full-blown mental illness.

Participant Responses

Only one participant responded to Belief Nine, Chris Buccafusco, who noted that copyright law assumes that people are rational risk calculators, in that it assumes that providing people with the incentive of rights protection will motivate them to create more.

XI. BELIEF TEN: CREATIVITY IS A HEALING, LIFE-AFFIRMING ACTIVITY

Creative activities are the fullest realization of human experience. They express the inner being of the person, and result in great personal fulfillment. Creative activities contribute to psychological health; this is why art therapy and music therapy are effective.

This belief is supported by the research. In opposition to Belief Nine, there is a preponderance of evidence that creative people are more healthy than average—beginning with the humanistic psychologists of the 1950s, the personality studies of the 1960s at Berkeley's IPAR, and continuing with contemporary studies by of flow and intrinsic motivation.⁷⁹

However, it seems that this belief is more closely associated with individualist cultures (such as the United States and many European countries) rather than collectivist cultures. Ethnographic studies have found that creative activities in collectivist cultures are less oriented towards individual self-actualization and self-expression. Thus, one might be less likely to find Belief Ten in the cultural models of creativity in collectivist cultures.

Participant Responses

Jeannie Fromer: "IP laws are about 'promot[ing] the Progress of Science and useful Arts.'"⁸⁰

⁷⁹ See *id.*

⁸⁰ U.S. CONST. art. I, § 8, cl. 8.

Rebecca Tushnet: "Part of the historical rationale for copyright's dual term/termination of transfer provisions was/is that authors are bad businesspeople and need protection from publishers."

Mark McKenna: "IP's individualism is probably related to this."

Gregory Mandel: "IP law tends to emphasize the social consequences rather than the individual benefits."

Summary

The participants had an interesting mix of responses to Belief Ten. I think of this as the "New Age" belief about creativity, and I did not expect it to have any IP ramifications. Following Mandel, IP law tends to emphasize the social consequences; it purports to (as Fromer quotes) "promote the Progress of Science and useful Arts,"⁸¹ rather than purporting to further individual fulfillment. Nonetheless, Belief Ten seems to have influenced IP law in subtle ways; as Tushnet notes, Belief Ten could be partially responsible for the assumption that authors are bad businesspeople (Mandel's interpretation of Belief Eight, the right brain belief, is also consistent with this interpretation: if artists are right brained people then they would likely be bad at left brain activities like negotiating contracts). And overall, Belief Ten is closely aligned with the individualism of Western culture.

XII. SUMMARY

Despite its central objective of promoting creativity, intellectual property law remains moored in archaic stereotypes of authors and inventors, and has changed little in response to modern research on how best to promote creativity.⁸²

I begin my conclusion by considering the possibility that the individualist Western cultural model might in fact be associated with greater creativity. It has often been claimed that Asian cultures, which generally fall at the collectivist end of the cultural spectrum, are less creative.⁸³ There is some quantitative evidence that collectivist cultures are less creative than individualist cultures; Shane compared the per-capita number of patents across the world, and found a higher patent rate in more individualistic countries.⁸⁴

81 *Id.*

82 See Mandel, *supra* note 54, at 287.

83 See, e.g., NG AIK KWANG, WHY ASIANS ARE LESS CREATIVE THAN WESTERNERS (2001).

84 Scott Shane, *Cultural Influences on National Rates of Innovation*, 8 J. BUS. VENTURING 59, 67-70 (1993); Scott A. Shane, *The Effect of Cultural Differences in Perceptions of*

These arguments are consistent with defenders of the current IP regime, who argue that granting property rights to creators provides them with a necessary incentive; that without property rights protection, the per capita rate of invention and creativity would decline.

However, our review of the ten beliefs has shown, first, that the IP regime is largely consistent with, if not historically based on, the Western cultural model; and second, that the Western cultural model conflicts with a scientific explanation of creativity and innovation. Ergo, the current IP regime conflicts with the empirically observed nature of creativity and innovation. This raises the possibility that an alternate IP regime could result in increased creativity and innovation.

A. Beyond the Individualism of the Western Cultural Model

The Western cultural model emphasizes invention, novelty, rejection of tradition, self-actualization, and a celebration of individual accomplishment. According to Rudowicz, these are foreign to Chinese ideals of respect for the past and maintaining harmony with nature.⁸⁵ In the Chinese language, there is no word that easily translates as “creativity.” Throughout Chinese philosophy, creativity was viewed as an inspired imitation of nature⁸⁶—quite similar to Renaissance European conceptions of genius as imitating nature.⁸⁷ Individuals are not responsible for invention, because they are simply following nature and discovering truth. As with European art prior to the Renaissance, most Chinese classics are not signed, and many works were collaboratively generated.⁸⁸ Even when a single creator could be identified, this was generally avoided.

In collectivist cultures, tradition is not considered to be opposed to creativity; creativity is thought to take place within a network of customs, beliefs, and societal structures. Chinese researchers and educators link creativity to ethical and moral standards⁸⁹ in a way that has no parallel in Western conceptions of creativity. When Chinese students and educators were interviewed about creativity,⁹⁰ Elisabeth Rudowicz and Anna N.N. Hui found that Hong Kong students’ conceptions overlap with Western conceptions, but there are some differ-

Transaction Costs on National Differences in the Preference for Licensing, 32 MGMT. INT’L REV. 295 (1992).

85 See Elisabeth Rudowicz, *Creativity Among Chinese People: Beyond Western Perspective*, in CREATIVITY 55, 59 (Sing Lau et al. eds., 2004).

86 See *id.* at 60.

87 See SAWYER, *supra* note 9.

88 See Rudowicz, *supra* note 85, at 61.

89 See *id.* at 61–62.

90 See *id.* at 64–65.

ences: Chinese conceptions include “contributes to society’s progress,” “inspires people,” and “is appreciated by others.”⁹¹ When Hong Kong Chinese are asked to nominate the most creative people, their list is dominated by business people and politicians; artists, writers, and composers rarely appear on the lists;⁹² when Americans are asked the same question, they typically nominate people in the arts or media.

Korean conceptions of creativity have some overlap with Western conceptions⁹³: when asked about creativity, people in both cultures emphasize perseverance, independence and deviance, and cognition and motivation. However, Koreans see the creator as a loner, and this is considered undesirable because of the high value placed on social responsibility in Korean culture.

Niu and Sternberg reviewed a range of studies of the cultural models of creativity in Asian countries (including China, Korea, Japan, and India) and the United States. Indian scientists describe the creative personality as curious, self-motivated, risk-taking, and open-minded.⁹⁴ They believe they are less creative than Western scientists due to the Indian cultural values of obedience and social etiquette.⁹⁵

Western societies place more value on intrinsic motivation, and Asian societies place more value on extrinsic motivation—particularly, the desire to please their parents.⁹⁶ Asians societies also place a high value on “face” and managing one’s social image; Western research on motivation would generally place these concerns in the “extrinsic motivation” category, and in the Western cultural model, these concerns are thought to interfere with the individual’s pure expression and thus to block creativity.

The Western cultural model of creativity is deeply connected to the individualism of most Western cultures. And it finds its purest expression in the United States, perhaps the most individualist of the world’s cultures. In the United States, people tend to believe that cre-

91 See *id.* at 65 (quoting Elizabeth Rudowicz & Anna Hui, *The Creative Personality: Hong Kong Perspective*, 12 J. SOC. BEHAV. & PERSONALITY 139, 147 (1997)).

92 See *id.* at 69.

93 Woong Lim & Jonathan A. Plucker, *Creativity Through a Lens of Social Responsibility: Implicit Theories of Creativity with Korean Samples*, 35 J. CREATIVE BEHAV. 115, 127 (2001).

94 Weihua Niu & Robert Sternberg, *Contemporary Studies on the Concept of Creativity: The East and the West*, 36 J. CREATIVE BEHAV. 269, 274–75 (2002).

95 R.L. Kapur et al., *Creativity in Indian Science*, 9 PSYCHOL. & DEVELOPING SOC’YS 161, 161 (1997); Niu & Sternberg, *supra* note 94, at 275.

96 See NG, *supra* note 83, at 113.

ativity is the expression of a unique individual; that there are individual differences in talent that are probably innate; that a created work is invested with the unique emotional and personal experience of the creator. And above all, this cultural model values innovation and breaking conventions. As a result, creators in Western cultures are likely to emphasize these aspects of their works—exaggerating the novel features of their work and talking about how they struggled with the limitations of the conventions of their domain. In part because they are expected to, creators talk about what they are trying to communicate with their work, and what personal experience led them to create this particular work. The IP regime of copyright requires that a new work be original or else the artist is said to be plagiarizing or is required to pay royalties. Our system of copyright is another societal and cultural force causing artists to exaggerate the novelty of their work.

In collectivist cultures, conceptions of creativity are radically different. In these cultures, it is important for the work *not* to be different. In large part, that is because individuals in collectivist cultures emphasize that they are ordinary, similar to, and no different from others. And in small-scale cultures, artworks are supposed to be the same so that they will be ritually effective. As a result, creators tend to emphasize exactly the opposite qualities of their work; they deny that the work contains any innovation, and they claim that it accurately represents tradition, even when Western outsiders perceive a uniquely creative talent.

B. Participants

Mike Madison: IP law assumes individualism. The focus in IP is on “the author” and “the inventor” as the source of creativity and innovation, and as the initial owners of IP interests. Rather than a cultural model of creativity, this may instead be reflective of liberal political theory generally, with its focus on the autonomous individual.

Solutions: (1) Greater room for models of collaboration without adverse IP consequences: safe harbors for partnership, joint venturing, joint authorship, group activity in that risk of appropriation by one person. (2) Greater room for doctrines of fair use in copyright, experimental use in patent law.

Roberta Kwall: U.S. IP law doesn’t take into account moral rights,⁹⁷ whereas many other countries do. Moral rights is a cousin of

97 See ROBERTA ROSENTHAL KWALL, *THE SOUL OF CREATIVITY* 37 (2010).

copyright law: it protects attribution and integrity interests. (These moral rights, however, are also closely aligned to individualist cultural beliefs more generally, and thus are fairly easy to align with the Western cultural model of creativity.)

C. Ideation Versus Execution

Patent law is focused on ideation. Would it be possible to modify patent law so that only expressions of ideas were protected? That would be a much more restrictive regime, with radically fewer protections than at present. The solution is probably not to make patent law look like copyright law; with a patent, there is something more general that is protectable, that can be manifest in many different forms and expressions.

Copyright law seems less focused on ideation, because it protects the final work, which can only be generated as a result of the full Eight-stage process of creativity.

D. Collaboration

Joint inventor and joint author law are explicitly designed to accommodate collaboration. However, these laws do not accommodate the role of intermediaries (editors, agents, workers). This is likely to be related to the cultural belief that creativity is associated with ideation rather than execution. These intermediary roles take place after ideation (in a stereotypically linear model) and during stage eight, externalization. Creative domains have developed a variety of contract mechanisms to handle this; for example, on a Hollywood movie script—on which ten or more writers may contribute to the script—each writer is contracted and grants his or her IP rights to the one studio that produces the movie.

CONCLUSION

In this Article, I have reviewed ten beliefs of the Western cultural model of creativity, examined to what extent each belief is supported by scientific research, and examined to what extent IP law is based on each belief. I enlisted the participants as coauthors, by asking them to respond to each of the ten beliefs by identifying connections with the current IP regime.

This analysis demonstrates: First, many of the ten beliefs of the Western cultural model are not supported by scientific research. Second, they are culturally unique, in that they are not held in non-individualist cultures, and they are historically unique, in that they

emerged in Western cultures only in recent centuries. Third, some elements of IP law are based on some beliefs that are not supported by research. This suggests that there may be an opportunity to enhance the overall creativity of society, by modifying IP law to better align with the empirically observed nature of creativity and innovation.