INTELLECTUAL PROPERTY AND TRADITIONAL KNOWLEDGE: A PSYCHOLOGICAL APPROACH TO CONFLICTING CLAIMS OF CREATIVITY IN INTERNATIONAL LAW

By Bradford S. Simon[†]

ABSTRACT

There is mounting evidence that current intellectual property (IP) rights laws are harming those they purport to benefit by fencing off the intellectual commons to future creators, transferring wealth from poor to rich states, and denying affordable access to such critical products as life-saving drugs and seeds. Still, these laws persist and continue to expand their reach. IP laws are justified primarily by the seemingly neutral utilitarian argument that, by conferring incentives to individual inventors and creators, these laws foster individual creativity and benefit society at large. Recently, IP scholars have unveiled the individualistic romantic author conception at the heart of IP laws as part of an effort at re-balancing public and private benefits.

At the same time, groups primarily from the developing world have asserted a counter-discourse to the IP regime, framed in part from outside the IP regime and in response to the globalization of IP laws. This counter-discourse has crystallized under the rubric of traditional knowledge, or "TK." The TK proponents call into question the cultural assumptions in the IP model and its distributive effects. Their central prescriptive solution calls for a *sui generis* legal regime to protect community rights.

As yet there has been no attempt to compare the TK and IP models apart from their competing but parallel claims to rights and assertions of conflicting cultural norms. This Article assesses these competing models by enlisting a more encompassing perspective on the psychological nature of human cognition: namely creativity and bias.

I argue the TK discourse mistakenly iterates a conceptual frame that contrasts individual knowledge and consciousness of people from "com-

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† Bradford S. Simon, B.A. (Brown Univeristy), J.D. (U.C. Berkeley School of Law, Boalt Hall), M.Sc. (University College London), LL.M. (Harvard Law School), and Visiting Researcher (Harvard Law School, 2005-2006). The author would like to thank David Kennedy, Jane Fair Bestor, Michael Rothman, Arnulf Becker Lorca, Vincent Samar, Robert and Harriet Simon, Thomas Ling, and Brian Blancke for their ideas, feedback, criticism, and support.

plex" societies with group knowledge and the collective consciousness of people from "simple" societies. At the same time, current findings from social psychology and the cognitive science of creativity reveal that the individual romantic conscious actor model of creativity embedded in the IP regime is largely inadequate while the assumptions underlying the TK model are a better reflection of the nature of creativity.

Prevalent cognitive biases explain a vital aspect of how the IP model is sustained and accepted, including by those it is likely to harm. The power of these biases brings into focus the limitations of the authorship critique. Finally, I suggest that in the shorter term, "interest-based" approaches to the conflict between the treatment of TK and industrial knowledge are likely to be more fruitful than "rights"- or "power"-based approaches. In the longer term, for a truly global legal regime to foster creativity it should be based not only on diverse cultural norms, let alone simplistic and inaccurate economic incentive models of creativity, but also on scientific understandings of human creativity.

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I. THE CONTEXT: GLOBALIZATION AND THE INTELLECTUAL PROPERTY VERSUS TRADITIONAL KNOWLEDGE DEBATE

In the last ten years, legal academics have criticized the theoretical justifications for intellectual property (IP) rights.[1] Yet the IP regime grows stronger in scope, duration, and geographic reach.[2] While within the industrialized world, as Professor Lawrence Lessig describes it, the IP rights debate focuses on a "free" versus "permission" culture,[3] there is globally a

1. CHRISTOPHER MAY, THE GLOBAL POLITICAL ECONOMY OF INTELLECTUAL PROPERTY RIGHTS: THE NEW ENCLOSURES? (2000); *see also* LAWRENCE LESSIG, FREE CULTURE (2004).

2. LESSIG, *supra* note 1, at 161-62. Lessig writes:

> So copyright's duration has increased dramatically—tripled in the past thirty years. And copyright's scope has increased as well—from regulating only publishers to now regulating just about everyone. And copyright's reach has changed, as every action becomes a copy and hence presumptively regulated. . . . This regulation of the creative process, which began as a tiny regulation governing a tiny part of the market for creative work, has become the single most important regulator of creativity there is. It is a massive expansion in the scope of the government's control over innovation and creativity; it would be totally unrecognizable to those who gave birth to copyright's control.

Id.

3. *Id.* at xiv.

different critique of IP. This critique has been organized around distinctions between "industrial knowledge" largely located in developed states and "traditional knowledge" (TK) predominant in the developing states. As defined by the World Intellectual Property Organization (WIPO), TK includes indigenous knowledge, folklore, and traditional medical knowledge. According to WIPO, TK is "embedded in traditional knowledge systems, which each community has developed and maintained in its local context."[4] The emerging TK discourse is the subject of this Article.

There is mounting evidence that current IP rights laws are harming those they purport to benefit by fencing off the intellectual commons to future creators,[5] transferring wealth from poor to rich states,[6] and denying affordable access to such critical products as life-saving drugs and seeds.[7]

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4. WIPO, Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore, http://www.wipo.int/about-ip/en/studies/publications/genetic_resources.htm (last visited Nov. 2, 2005) (emphasis in original).

5. *See generally* LESSIG, *supra* note 1, at 183-99 (arguing that the current legal regime makes a wide range of creative work illegal).

6. *See, e.g.*, PETER DRAHOS & JOHN BRAITHWAITE, INFORMATION FEUDALISM 11 (2002); JAGDISH BHAGWATI, FREE TRADE TODAY 75 (2002) ("Many [economists] also consider [IP protection] to be a transfer from most of the poor countries to the rich ones . . . .").

7. *See* MICHAEL PERELMAN, STEAL THIS IDEA 138-39 (2002); *see also* ROBERT L. OSTERGARD, JR., THE DEVELOPMENT DILEMMA 145-51 (2003) (discussing the dispute between the United States and South Africa over South African legislation allowing for the abolishment of patent rights on pharmaceuticals, parallel imports, and compulsory licenses to fight the AIDS crisis). Ostergard states:

> The dispute is representative of the IPR protection issues trading states face when they are at different development levels. The dilemma the South African government faced was one of property rights versus subsistence rights. . . . At stake for US corporations was monopoly power and market share in South Africa's pharmaceutical market; at stake for South Africans was something more important: life and death.

Id. at 142. Wallach and Sforza also point to a link between ownership in plant varieties by large agribusinesses and "mono-culture agriculture." LORI WALLACH & MICHELLE SFORZA, THE WTO: FIVE YEARS OF REASONS TO RESIST CORPORATE GLOBALIZATION 49 (1999). They also note:

> The TRIPs Agreement further undermines precarious worldwide food security by exacerbating food and seed access and distribution problems. One provision requires that WTO Members protect agribusiness ownership over plant varieties, including seeds. This requirement provides dramatic new tools to consolidate the power of large seed and biotechnology manufacturers by shifting ownership and control of seed stocks away from farmers. . . . On the other hand, the TRIPs Agreement contains no protections for indigenous communities that have been planting and crossbreeding strains for centuries to

Still, states expand the reach of these laws.[8] As a means of justification, states, corporations, and others argue that by conferring incentives to individual inventors and creators, IP laws foster creativity and benefit society at large. This Article will briefly consider critiques from within the IP discourse, especially the authorship critique best exemplified by Professor James Boyle.[9] This critique reveals important logical discontinuities beneath the claims and common justifications of the IP discourse in regards to these incentive theories, and makes central the individual bias of the IP regime. The current critique, however, does not go far enough and this Article investigates the potential of TK to provide a more radical critique.

Unlike Professor Boyle and Professor Lessig, I argue that social and cognitive psychology shows the perceived authenticity of the romantic author and genius inventor to be largely invalid. At the same time, the magnetism of the romantic author and genius inventor conceptions can be explained by specific human biases that psychologists have studied in depth. These cognitive biases, especially the fundamental attribution error, make the IP discourse more compelling than it should be. Therefore, merely revealing the role of author conceptions in IP law and their historical contingency will not succeed in reforming IP.

According to the TK discourse, IP rights protect specific kinds of creativity to the exclusion of others. In particular, copyright and patent laws protect those works and innovations that have an identifiable author or inventor. These claims to rights are based on historically particular concepts of "originality" or "novelty" and "the public domain" that are not applicable to many indigenous peoples and societies, wherein creativity is

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> develop that perfectly adapted variety that a bioprospector can collect and have patented to some distant corporation.

Id.

8. In addition to increases in copyright duration, protection of anti-circumvention technologies that foreclose fair use, expansion of patents to cover software, business methods, and gene sequences, and the global spread of the IP regime, less formal trends have an important impact. *See, e.g.*, JENNIFER WASHBURN, UNIVERSITY INC. 148 (2005) (arguing that the United States Patent Office has issued increasingly broad patents). Washburn states:

> The breadth and scope of this shift in the ownership of knowledge has been truly startling. Today, companies exert monopoly control over the basic building blocks of computer code. . . ; doctors hold patents on medical procedures they once shared openly with their peers; and drug companies hold title to many of the world's most valuable medicinal plants and microorganisms, which indigenous peoples and local healers have used freely for generations.

Id.

9. *See* JAMES BOYLE, SHAMANS, SOFTWARE, AND SPLEENS (1996).

claimed to be fundamentally collective, cooperative, informal, cumulative, and often spiritual.[10] In this system, knowledge and natural resources cultivated by indigenous peoples over generations serve as free or low-cost inputs into the proprietary industrial knowledge production process.[11] This also enables multinational corporations to claim protection, such as patents on "purified" natural substances, by using expensive technology usually not available in developing states. At its extreme, this aspect of IP is viewed as permitting a new form of colonization[12] in which the dominant IP regime treats TK and associated resources as "raw" materials that have limited value in the international market until they are "cooked"—to borrow a phrase from Levi-Strauss—by capital-intensive practices. At that point, they may be protected by IP laws. They are then sold (even back to the source state) at a higher cost. The current IP regime has difficulty addressing the intellectual value of TK.[13] For each instance in which a court

10. *Compare* VANDANA SHIVA, PROTECT OR PLUNDER? 51 (2001) ("When an element from indigenous knowledge systems is transferred to western knowledge systems, it is treated as an innovation in western knowledge systems. As a corollary, the interests and rights of non-western communities find no place in western legal systems and are instead transferred to the scientific practitioners of western knowledge systems, in particular, those backed by corporate capital."), *with* Bradford S. Simon, *Global Steps to Local Empowerment in the Next Millennium: An Assessment of UNESCO's 1989 Recommendation on the Safeguarding of Traditional Culture and Folklore*, *in* SAFEGUARDING TRADITIONAL CULTURES: A GLOBAL ASSESSMENT 111, 124 (Peter Seitel ed., 2001) ("All laws embody and inculcate values; intellectual property laws are no different. It has been pointed out many times that the individualistic values embodied throughout all intellectual property laws are premised on culturally bound and historically derived concepts of 'authorship' and 'innovation.'").

11. *See* SHIVA, *supra* note 10, at 49; *see, e.g.*, Sherylle Mills, *Indigenous Music and The Law: An Analysis of National and International Legislation*, 28 YEARBOOK FOR TRADITIONAL MUSIC 587 (1996) (arguing that Western IP laws and traditional music "clash at the most fundamental level" and that norms of non-Western music production and the emergence of digital sampling allow the free appropriation of indigenous music by commercial interests).

12. *See* SHIVA, *supra* note 10, at 49 (arguing that the West has been affected by the "'Columban blunder' of the right to plunder by treating other people, their rights, and their knowledge as non-existent. Terra nullius has its contemporary equivalent in 'Bio-Nullius'—treating biodiversity knowledge as empty of prior creativity and prior rights, and hence available for 'ownership' through the claim to 'invention.'").

13. Consider two examples: In Australia, the works of several Aboriginal artists were copied and incorporated into carpets without permission, either from the artists or the Aboriginal communities to which the artists belonged. The depictions themselves concerned dreamtime stories considered sacred and governed by strict customary norms of use. As the Federal Court of Australia (Northern Territory) noted in Milpurrurru v. Indofurn Party Ltd. (1994) 54 F.C.R. 240, 245, "Painting techniques, and the use of totemic and other images and symbols are in many instances, and almost invariably in the case of important creation stories, strictly controlled by Aboriginal law and custom." In

has found in favor of indigenous individuals (not groups), there are likely many more in which indigenous contributions, direct and indirect, remain unacknowledged.[14] Furthermore, even when indigenous people have prevailed in the IP regime by framing their legal claims in terms cognizable

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the case, only the individual artists could file claims as the copyright owners, despite the fact that Aboriginal norms of ownership and control were much more complex and communal. *Id.* at 273. The court pointed out that under Aboriginal law, "[i]f permission has been given by the traditional owners to a particular artist to create a picture of the dreaming, and that artwork is later inappropriately used or reproduced by a third party the artist is held responsible for the breach which has occurred, even if the artist had no control over or knowledge of what occurred." *Id.* at 246. Banduk Marika, one of the artists, testified that in the past the offender could be put to death, while presently the offender could be ostracized from the community. *Id.* The court stated that "The statutory remedies do not recognise the infringement of ownership rights of the kind which reside under Aboriginal law in the traditional owners of the dreaming stories and the imagery such as that used in the artworks of the present applicants." *Id.* at 272. Even so, this case has largely been seen as a success story in that the individual artists prevailed in their claims for monetary damages. Yet, one commentator concludes that, "[w]hilst the judgment is a precedent in the recognition of Indigenous rights within the copyright law framework, significant expressions of Indigenous cultures will not meet the requirements of copyright to benefit from these laws." TERRI JANKE, WIPO, MINDING CULTURE: CASE STUDIES ON INTELLECTUAL PROPERTY AND TRADITIONAL CULTURAL EXPRESSIONS 19 (2000-01).

While the first example involves artistic and sacred aspects of TK, the second example involves use of plant resources and associated TK as mere inputs for patent rights. In 1995 the United States Patent and Trademark Office granted a patent on medicinal properties of turmeric powder to promote wound healing. *See* DORIS E. LONG & ANTHONY D'AMATO, A COURSEBOOK IN INTERNATIONAL INTELLECTUAL PROPERTY 1056-57 (2000). The Indian Council of Scientific and Industrial Research successfully challenged the patent on the basis that it lacked novelty given that turmeric has been used by people in India for thousands of years for similar purposes. As one law Professor notes, "[t]he refusal to grant patent protection for medicinal uses of turmeric marks a rare instance where traditional knowledge of a third country has been used to prevent patent protection by foreign inventors." *Id.* at 1057. Indian scientist and environmental activist Vandana Shiva states that the reversal on the turmeric patent is "only a first step" and that "[p]atents on Neem, Amla, Jar Amla, Anar, Salai, Dudhi, Gulmendhi, Bagbherenda, Karela, Rangoon-ki-bel, Erand, Vilayetishisham, Chamkura all need to be revoked." Vandana Shiva, *The Turmeric Patent is Just the First Step in Stopping Biopiracy*, THIRD WORLD NETWORK, http://www.twnside.org.sg/title/tur-cn.htm (last visited Oct. 13, 2005).

14. Numerous other examples of alleged biopiracy include efforts by Western corporations to obtain patents relating to or otherwise commercialize traditional use of *hoodia* in Africa to decrease hunger, *plao-noi* in Thailand to treat ulcers, and *j'oublie* in Cameroon as a sweetener. *See* STEPHEN A. HANSEN & JUSTIN W. VANFLEET, TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY: A HANDBOOK ON ISSUES AND OPTIONS FOR TRADITIONAL KNOWLEDGE HOLDERS IN PROTECTING THEIR INTELLECTUAL PROPERTY AND MAINTAINING BIOLOGICAL DIVERSITY 3 (2003), *available at* http://shr.aaas.org/tek/handbook/handbook.pdf.

by it, their victory has often been Pyrrhic, with complex and specific social and historical norms of knowledge production replaced by the IP regime's notions of the "individual" as inventor or author.

Groups primarily from the developing world have asserted a counter-discourse, framed in part from outside the IP regime and in response to the globalization of IP laws. This counter-discourse has crystallized under the rubric of TK. The TK proponents call into question the cultural assumptions of the IP model and its distributive effects. Their central prescriptive solution calls for a sui generis legal regime to protect community rights. TK concerns crosscut "traditional" IP categories such as patents and copyrights because, for example, traditional medical knowledge might be conveyed through artistic means (the realm of copyrights) while containing useful and inventive information (the realm of patents), within a more transcendent spiritual context. Similarly, the distinction between "creativity" as falling under copyright and "innovation" as the domain of patent law is not reflected in the psychology of creativity or the TK discourse.

The issue has become mainstream. As economist Joseph Stiglitz comments on The World Trade Organization's Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS), "What we were not fully aware of was another danger, what has come to be termed *bio-piracy*, international companies patenting traditional medicines and foods."[15] Stiglitz continues, "[i]t is not only that they seek to make money from 'resources' and knowledge that rightfully belongs to the developing countries, but in so doing, they squelch domestic firms that have long provided the products."[16]

As yet there has been no attempt to compare the TK and IP models apart from their competing but parallel claims to rights and assertions of conflicting cultural norms. One part of my argument is that continued resort to conflicting normative rights claims based on purported cultural differences is likely to produce a resolution based on economic and political power, notwithstanding the resistance revealed in the emerging TK discourse. These norms are often constructed and deployed in stereotypical oppositions and offer no point of view from outside either of the two models. This Article attempts to assess these competing models by enlisting a perspective based on the potentially more universal components (albeit within the Western framework of empirical science) of human functioning: namely creativity and bias.

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15. JOSEPH E. STIGLITZ, GLOBALIZATION AND ITS DISCONTENTS 246 (2002) (emphasis in original).

16. *Id.*

The fields of cognitive and social psychology, as they specifically relate to creativity and bias, provide just such a perspective. Despite the dominance of the economic incentive justification for IP laws, economics has been largely silent on a theory of creativity and has been impervious to influences from the psychology of creativity.[17] Worse, economics is blind to the findings from the science of creativity discussed in Part IV. The lack of concern demonstrated by IP proponents, policymakers, and even scholars regarding the "nature" of creativity should give us pause as we expand these laws domestically and globally.

Through the lenses of discourse analysis and social and cognitive psychology, this Article explores the competing claims regarding the "nature" of creativity and innovation, which is central to the IP and TK discourses. In short, discourse analysis reveals how the debate on the international plane has crystallized in oppositional and, to a large degree, mutually reinforcing terms. These terms purport to describe the different "natures" of innovation as practiced by industrial (or post-industrial) Westerners, on the one hand, and indigenous peoples, largely in pre-industrial developing countries, on the other. These oppositions, in turn, replay and repurpose long-standing dichotomies—between the modern and the primitive—once prevalent but now largely discarded in the discipline of anthropology.

I draw from cognitive and social psychology for two purposes. First, I use insights from these branches of psychology to probe potential commonalities of human creativity and thereby reject the prevailing view that there are different "natures" of creativity articulated in the IP/TK debate. To the extent such commonalities exist, these should inform the global debate concerning any legal regime explicitly intended to foster creativity. Second, I draw on the psychology of bias to illuminate and provide a missing piece in understanding the current global expansion of the IP regime. This expansion is occurring notwithstanding theoretical criticism and empirical evidence that such strengthening and expansion of the IP regime is not providing the promised benefits, either to individual creators or to developing countries. Specific cognitive biases enable this expansion even in the face of the criticism.

This debate is currently over-reliant on narrow and even incorrect assumptions about economic incentives on the one hand and essentialist and stereotyped cultural claims on the other. This Article seeks to expand the

17. Gary B. Magee, *Rethinking Invention: Cognition and the Economics of Technological Creativity*, 57 J. ECON. BEHAVIOR & ORG. 29, 30 (2004) (arguing that economic theories "shed little light on the topics of invention, technological creativity and knowledge production").

discourse regarding both IP and TK and, in so doing, provide policy-makers with a new approach to the debate.

II. INTELLECTUAL PROPERTY JUSTIFICATIONS AND CRITICISMS

> Invention is a terra incognita of economics.[18]

> Copyright is about sustaining the conditions of creativity that enable an individual to craft out of thin air . . . an Appalachian Spring, a Sun Also Rises, a Citizen Kane.[19]

A brief consideration of the justification for intellectual property rights is necessary to set the stage. A leading casebook, *Intellectual Property in the New Technological Age*, begins by pointing out that although the concept of property "is among the oldest institutions of human civilization," the legal protection of intellectual property arose much later.[20] The key problem in treating ideas as property is that ideas, unlike land or chattel, are nonrivalrous in that one person's use of an idea does not detract from another person's use of that idea. Yet this foundational difference between chattel and intangibles has deterred neither efforts at justification nor the entrenchment of intellectual property rights, at least in the developed industrial states, such that these rights seem no different than rights in chattel.[21] Today, the main justification for recognizing rights in knowledge is one of economic utility.[22]

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18. *Id.* at 45.

19. Paul Goldstein, *Copyright*, 38 J. COPYRIGHT SOC'Y U.S.A. 109, 110 (1991).

20. ROBERT P. MERGES ET AL., INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 1 (2003). This casebook is used in this Part not only because it starkly depicts (and offers criticism of) the dominant economic incentive rationale, but also because its views as a leading casebook are the ones to which many would-be IP lawyers are exposed.

21. *See* MAY, *supra* note 1, at 52 ("Thus the possibility that it only makes sense to propose a market for knowledge if knowledge is *already* conceived of as property is hidden by the assumption that knowledge *needs* to be thought of as property to enjoy the benefits of market allocation.").

22. *See generally* William Fisher, *Theories of Intellectual Property*, *in* NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168, 168-72 (Stephen R. Munzer ed., 2001) (discussing the Lockean labor theory and various other theories of IP law). *But see* Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957 (1982) (arguing for a Hegelian "personhood" theory of and justification for IP protection).

A. Dominant Economic Justification for Intellectual Property Rights

1. Individual Incentives

Intellectual Property in the New Technological Age states: "Intellectual property in the United States is fundamentally about incentives to invent and create."[23] This is achieved through grants of monopoly rights. These rights are necessarily limited because "the economic incentive benefits of Intellectual Property Rights must be balanced against the costs of limiting the diffusion of knowledge."[24] Although neoclassical economic theory rarely treats monopolies as enhancing public welfare, this is exactly the justification for IP rights. The same casebook, referring to Article 1, section 8, clause 8 of the U.S. Constitution affirms this tenet:

> Invention and creation require the investment of resources—the time of an author or inventor, and often expenditures on facilities, prototypes, supplies, etc. In a private market economy, individuals will not invest in invention or creation unless . . . they can reasonably expect to make a profit from the endeavor. To profit from a new idea or work of authorship, the creator must be able either to sell it to others for a price or to put it to some use that provides her with a comparative advantage in a market.[25]

The notion of the creative individual, the "author," "acting in solitude to produce new knowledge . . . lies behind the justification of [IP rights] based on the author's encouragement and motivation to continue production."[26]

If authors and inventors are unable to recoup their fixed costs because they are competing with those who can "free ride" on their work and undercut them in price, "authors [and inventors] may be expected to leave the profession in droves, since they cannot make any money at it."[27] However, these rights come at a cost in that "[g]ranting authors and inventors the right to exclude others from using their ideas necessarily limits the diffusion of those ideas and so prevents many people from benefiting from them."[28] And those who do benefit from them are likely to pay more than if monopoly rights had not been granted. Thus, IP rights impose social

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23. MERGES ET AL., *supra* note 20, at 120.
24. *Id.* at 15.
25. *Id.* at 11.
26. MAY, *supra* note 1, at 50.
27. MERGES ET AL., *supra* note 20, at 14.
28. *Id.* at 15.

costs and "the intellectual property laws can be justified by the public goods argument only to the extent that they do, on balance, encourage enough creation and dissemination of new works to offset those costs."[29]

This balancing concept obscures two important elements that are a necessary part of it. First, it requires, but leaves implicit, the idea that the costs and benefits are in some manner objectively quantifiable and comparable. Second, its justification depends on IP laws striking a balance between too little and too much protection; either condition would lead to imbalance in the form of under-production of knowledge and innovations and, hence, is a net detriment to society. Importantly, this balancing point appears to exist free from both cultural norms and societal choices about the types and speed of innovation.[30]

2. Individual Incentives Written Large

The dominant IP justification, based on providing individual incentives, is applied on the state level: just as stronger rights given to an individual will foster that person's creativity, so too will a state foster its collective creativity by implementing stronger IP laws. In the same way that IP laws are seen as central to the economic engine of the United States, developing states are encouraged to adopt IP laws to encourage their innovative capacity and foster economic growth. Kamil Idris, the Director General of WIPO writes that "IP is a 'power tool' for economic development" and that "international acceptance and utilization of IP tools means that there will be more innovation and therefore more creative change and cultural and economic growth."[31] In the book *Intellectual Property and Economic Development*, Robert Sherwood presents the following "fictional" story to illustrate this common argument:

> In Lima, Peru, young Carlos (a fictional proxy for much of the developing world) earns a meager living welding replacement mufflers under trucks and cars. He thinks of a clamp for simplified muffler installation. His wife is skeptical. Should he spend his nights and weekends to design and develop the clamp? He will need help fabricating a prototype. Should he involve his

29. *Id.*

30. Mark C. Suchman, *Invention and Ritual: Notes on the Interrelation of Magic and Intellectual Property in Preliterate Societies*, 89 COLUM. L. REV. 1264, 1294 (1989) ("The legal structures [including control of innovation through monopolies on magic] that allow preliterate societies to survive *as* preliterate societies are precisely those with the least dynamic potential; more dynamic regimes are less likely to remain preliterate—and less likely to survive at all.").

31. KAMIL IDRIS, INTELLECTUAL PROPERTY: A POWER TOOL FOR ECONOMIC GROWTH 4 (2002).

> friend the metal worker? He needs money for metal and tools. Should he use the money saved under the mattress? . . . The answer to each question is strongly biased toward the negative by weak intellectual property protection. . . . In this story, lack of confidence that his idea can be protected would in all probability lead Carlos to a negative decision at each of these decision points.[32]

And indeed this story has a ring of plausibility to it. Just as stronger IP rights can foster creativity in one individual by shifting categories from "individual" to "state," it is easy to suppose stronger IP laws favoring individual rights can also foster the economic growth of developing states where such states are conceived merely as an aggregation of individuals, each given an incentive to innovate.[33]

B. Empirical Challenges

1. Individual Incentives?

Given the dominance of the economic rationale for copyright and patent laws, it is important to briefly review empirical findings on the efficacy of patent and copyright laws in fostering creativity and spurring economic development. What is surprising, given the plausibility of the economic incentive model and the zealousness with which it is promoted (by corporations, developed states, the World Bank, and WIPO), is how little support for its claims exists.[34]

A 1958 study by the Senate's Subcommittee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary concluded that:

> [N]o economist, on the basis of present knowledge, could possibly state with certainty that the patent system, as it now operates, confers a net benefit or a net loss upon society. . . .
>
> . . . .

32. ROBERT SHERWOOD, INTELLECTUAL PROPERTY AND DEVELOPMENT 197 (1990).

33. Interestingly, early economic development models revealed little about the potential role of IP rights in economic development. Neoclassical models of economic growth such as the Solow model treat innovation as exogenous and "free." *See, e.g.*, JAMES M. CYPHER & JAMES L. DIETZ, THE PROCESS OF ECONOMIC DEVELOPMENT 231 (2d ed. 2004).

34. *See* Suchman, *supra* note 30, at 1290 ("Although legal economists have devoted a great deal of attention to the evaluation of Western intellectual property law, their efforts often end with bland assertions that the current regime has both costs and benefits, and that the balance between the two remains an open question.").

> . . . If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one.[35]

Twenty-eight years later, Professor George Priest, in a review of the economics of intellectual property law, wrote that "the ratio of empirical demonstration to assumption in this literature must be very close to zero. . . ."[36] Priest concludes that economists cannot answer the fundamental question of whether "the patent system or other forms of protection of intellectual property enhances or diminishes social welfare" and, hence, "economists can tell lawyers ultimately very little about how to enforce or interpret the law of intellectual property."[37]

A 1991 study on the effect of patents on pharmaceutical development concluded that a patent system "is not a prerequisite for inventions" and no statistically significant relationship was found to support "[t]he hypothesis that the number of inventions would increase along with worldwide increase in patent systems . . . either in the United States or the world at large."[38] Importantly, the key area requiring strong IP protection, given the high research and development costs, is the pharmaceutical industry. The case for copyrights is no better. In 1970, prior to joining the Supreme Court, Stephen Breyer argued that the need for copyright for books was minimized because of the threat of retaliation and lead-time advantages.[39]

Professor Peter Drahos and Professor John Braithwaite argue that "[t]here are few if any domains of human creativity where intellectual

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35. STAFF OF THE SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE S. COMM. ON THE JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 79-80 (Comm. Print 1958).

36. George L. Priest, *What Economists Can Tell Lawyers About Intellectual Property: Comment on Cheung*, 8 RES. IN L. & ECON. 19, 19 (1986).

37. *Id.* at 21. Priest also states:

> [A]n economist can tell a lawyer whether a particular rule will lead to more or less inventive activity, but this analysis does not provide a basis for a conclusion by the lawyer as to whether the new level of inventive activity at the new level of costs enhances or diminishes social welfare. . . . In the economics profession, not to mention the public, there is much less consensus about the welfare implications of inventive activity than there is about the welfare implications of criminal activity or pollution.

Id. at 22.

38. Pablo Challu et al., *The Consequences of Pharmaceutical Product Patenting*, 15 WORLD COMPETITION 65, 115 (1991).

39. Stephen Breyer, *The Uneasy Case for Copyright: A Study in Copyright of Books, Photocopies and Computer Programs*, 84 HARV. L. REV. 281, 299-302 (1970).

property rights are the main reason for inventiveness."[40] The authors describe how the late eighteenth and early nineteenth centuries provided significant advances in music, literature, science, chemistry, and philosophy—despite the lack of copyright law in central Europe.[41] Instead, the authors assert that the key to the creativity at that and at other times was the flourishing cultures and institutions of scholarship.[42] Similarly, the technological preeminence of the United States in the twentieth century was not the result of its IP laws—after all, they note, the "United States was . . . one of the latest starters of the capitalist democracies in expanding the scope of intellectual property"[43]—but rather the result of its preeminent universities and the diversity of their students.[44] They write, "Our claim is simply that the two most important institutional supports of innovation—universities and intellectual property—are only parts of the story of a culture of innovation. And that universities are the more important part of those two."[45] This claim finds support in the fact that two of the three most consequential scientific innovations since the First World War were products of public investment in universities: the internet and biotechnology; the third, nuclear energy, was the fruit of the Manhattan Project which drew minds from universities and other countries.[46] In sum, they write:

> In the vast sweep of the history of human creativity the impact of intellectual property rights has been negligible because for most of that history those rights have not existed and, where they have, for the most part they have been poorly designed and even more poorly enforced. It is only with TRIPS that states have begun to systematically criminalize the infringement of intellectual property.[47]

2. Economic Development?

Evidence of the role of IP in fostering a state's economic growth is at best ambivalent, and at worst negative with regard to the least-developed

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40. DRAHOS & BRAITHWAITE, *supra* note 6, at 210.
41. *Id.*
42. *Id.* at 211.
43. *Id.* at 211-12.
44. *Id.*
45. *Id.* at 212; *cf.* WASHBURN, *supra* note 8 (arguing that during the last twenty years corporations have gained unprecedented influence on the research conducted at universities while not delivering on their promises of increased revenue for universities).
46. *Id.* at 212-13.
47. *Id.* at 211.

states. If anything, stronger and more pervasive IP laws are likely to entrench the status quo between wealthy and poor states. A World Bank paper states, "Limited evidence exists regarding the usefulness of the patent system in promoting the creation of new knowledge and information in developing countries."[48] The empirical research is inconclusive at best.[49] The results of the studies on the relationship between the "strength" of a state's IP regime and its GDP are mixed, and comparisons are difficult to make given dissimilar measures of IP "strength," as well as the use of different states and time periods.

In 1990, Rapp and Rozek conducted one of the first studies on the relation between patent law and economic growth.[50] They found a positive correlation between IP law strength and GDP.[51] However, Ginarte and Parke examined the patent laws of several states from 1960 to 1990 and found no statistically significant correlation between patent strength and growth.[52] This study was extended by economist Keith Maskus to seventy-two states.[53] Maskus found no relationship between IP strength and GDP.[54] Robert Ostergard used a rating system for patent, copyright, and trademark laws for seventy-six states in 1988, 1991, and 1994.[55] Importantly, unlike prior studies that did not consider enforcement, his scale incorporated laws and enforcement scores. Ostergard's analysis revealed that, for one of the years in his study, IP variables have a negligible relationship to GDP in developed states, but a *negative* and statistically significant correlation between patent strength and GDP in the least-developed states. Summing up the situation, Ostergard points out that prior empirical work has found at most only a marginal correlation between IP

48. Carlos A. Primo Brago et al., *Intellectual Property Rights and Economic Development* 28 (World Bank Discussion Paper No. 412, 2000).

49. OSTERGARD, *supra* note 7, at 34, 59 (arguing that developing nations adopt stronger intellectual property rights protection in response to international pressures and that stronger intellectual property rights only marginally promote economic growth).

50. Richard T. Rapp & Richard P. Rozek, *Benefits and Costs of Intellectual Property Protection in Developing Countries*, 24 J. OF WORLD TRADE, 75, 79 (Oct. 1990) ("By a well-known statistical process known as regression analysis, we have found that the level of economic development correlates closely with the level of patent protection.").

51. *Id.*

52. Juan C. Ginarte & Walter G. Park, *Determinants of Patent Rights: A Cross-National Study*, 26 RES. POL'Y 283 (1997).

53. KEITH MASKUS, INTELLECTUAL PROPERTY RIGHTS IN THE GLOBAL ECONOMY 5 (2000).

54. *Id.*

55. OSTERGARD, *supra* note 7, at 59.

rights and economic growth generally.[56] Additionally, using a more comprehensive measure that incorporates enforcement, and analyzing developing and developed states separately, there are "negligible effects and quite possibly negative effects"[57] from IP protection in developing states.

The above review is not intended to be exhaustive. It should, however, instill skepticism regarding the function of the dominant IP model, whether applied to the individual or to the state. Even if economists found consistent correlations between "strength" of IP laws and GDP, it would not follow that strong IP laws necessarily result in increased GDP through heightened creativity.[58] It is more plausible that strong IP laws reflect the prevalence of powerful corporations in states with high GDP, a point discussed in detail below.

C. Theoretical Challenges: Indeterminacy and Authorship

In addition to the dearth of empirical—and even the existence of negative—evidence justifying the strong claim of IP proponents, scholars have leveled criticism at the theoretical justifications of intellectual property.[59] These theoretical critiques vary, but the most salient for this article is that of James Boyle, who brings into focus the individual bias of patent and copyright laws by using a semiotic or literary critique.[60] This Section ex-

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56. *Id.*

57. *Id.*

58. See DRAHOS & BRAITHWAITE, *supra* note 6, at 211, which states:

> [W]e should be suspicious of incentive views of creativity. Seeing creativity as a supply-side problem that can best be met by meeting individual demand curves for intellectual property rights is an impoverished account, to say the least, of what motivates people to create. It is unlikely, for example, that those driven to write for a living will become more motivated by the extension of the copyright term from 50 years to 70 years after the death of the author, even if publishers seeking to protect monopolies in lucrative works invoke the authors' creative interests in their lobbying campaigns to get such extensions.

59. *See* Fisher, *supra* note 22, at 181 ("Even if we were able to surmount this enormous hurdle [of knowing whether stimulating innovation is worth its costs]—and concluded that society would be better off, on balance, by supplying authors and inventors some sort of special reward—major sources of uncertainty would remain. . . . Most [scholars] have given up the game, despairing of acquiring the kinds of information on would need").

60. Boyle is one of several to write about the romantic authorship conception at the heart of IP laws. *See also* MARTHA WOODMANSEE, *On the Author Effect: Recovering Collectivity*, *in* THE CONSTRUCTION OF AUTHORSHIP: TEXTUAL APPROPRIATION IN LAW AND LITERATURE 15, 28 (Martha Woodmansee & Peter Jazsi eds., 1994) (arguing that

amines Boyle's "romantic author" critique of IP, in which he argues that historically contingent conceptions of the romantic author appear to resolve fundamental ambiguities underpinning economic justifications of IP laws. Boyle focuses on the ideological importance of the romantic author. It is from this foundation that my argument delves deeper in subsequent Sections by asking *why* the central conceptions of IP law appear so "authentic," despite the theoretical indeterminacy and empirical doubts of IP's efficacy in accomplishing its putative goals.

1. Indeterminacy

Boyle describes the indeterminacy of the dominant economic approach to justifying intellectual property law. He states:

> A person reading the confident-sounding statements of legal scholars about the superior efficiency of the patent regime over the copyright regime . . . would be surprised to find that economists cannot even agree over the absolutely basic question of whether, in the absence of commodification, there will be underinvestment or overinvestment in the production of information.[61]

Boyle points out two key problems: (1) the contradictory roles that information plays in economic analysis, "as both perfect and imperfect, property rights in information as both necessary incentive and dubious transaction cost," and (2) "the conflict between the assumptions of microeconomic analysis and actual social behavior."[62] In short, this economic approach to IP "is a theory so indeterminate that it frequently functions as a Rorschach blot for dominant social beliefs and the prejudices of the ana-

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even as creative production becomes more corporate and collective, the Romantic author conception is utilized "all the more insistently").

> A radical critique of some bedrock notions implicit in intellectual property—most notably, the concept of "the author" herself—has grown up in recent years, fueled by a general deconstructive trend in literary criticism. . . . [These ideas] suggest that the concept of authorship is so malleable, contingent, and "socially constructed" that we should be wary about identifying a creative work too closely with a particular author, let alone her personality. In this view, all creations are largely a product of communal forces. Dividing the stream of intellectual discourse into discrete units—each owned by and closely associated with a particular author—is therefore a logically incoherent exercise subject more to the political force of asserted authors' groups than to recognition of inherent claims of "personhood."

MERGES ET AL., *supra* note 20, at 11.

61. BOYLE, *supra* note 9, at 41.

62. *Id.* at 44-45.

lyst"; it also "tends structurally to undervalue issues of power and inequality."[63]

Boyle elucidates how most issues in information economics can be seen as either public goods problems or as potential monopolies. From a public goods perspective, commodification in the form of monopolistic IP rights is an effective tonic to the underproduction of knowledge. From the latter perspective, monopolies restrict the distribution of knowledge. Boyle's argument is that we rely on romantic conceptions of authorship (and inventorship), as reflected in legal concepts of "originality" and "novelty," to "conceal these tensions, *aporias*, and empirically unverifiable assumptions."[64] This romanticized conception of the author biases analysis "toward the incentives-commodity vision of information."[65]

2. The Mediating Role of Authorship

At the heart of the dominant IP theory is the concept of an individual acting on economic incentives to produce "new" knowledge. Several scholars have written about the romantic individualistic conception of the author at the heart of copyright, and instead of recounting all of them, this Article will focus on Boyle's assessment of the function of this conception within the dominant incentive model of the IP regime.[66] Boyle argues that the romantic author-centered regime structures legal and economic analysis, "providing the vital initial choices that give the analysis its subsequent appearance of determinacy and 'commonsense' plausibility."[67] As political economist Christopher May notes, the story, or "origin myth," of intellectual property law is that the "emergence [of intellectual property laws] was a response to the needs of individuals wishing to allocate resources among themselves."[68] Boyle focuses on the centrality of the authorship conception in copyright law, but since patents must be filed by a legally constituted individual, a similar norm is applicable in patent law.[69]

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63. *Id.* at 45.

64. *Id.* at 42.

65. *Id.*

66. *See supra* note 60.

67. BOYLE, *supra* note 9, at 58-59.

68. Christopher May, *Fishing with Dynamite: Knowledge Commons in the Global Political Economy* (2001) (unpublished manuscript), *available at* http://www.isanet.org/archive/may.html (presented at the International Studies Association Annual Conference at Chicago in 2001).

69. 35 U.S.C. § 111 (2005); *see, e.g.*, BOYLE, *supra* note 9, at 206 ("Both areas [of copyright and patent law] apply a notion of 'originality' that suppresses the importance of the culture, the language, and the scientific community. . . . In each case, it is the

Yet, Boyle's view is historically contingent.[70] For instance, "[m]edieval church writers actively disapproved of the elements of originality and creativeness which we think of as an essential component of authorship."[71] Boyle, drawing on Professor Martha Woodmansee's findings that the concept of the romantic author replaced the craft-inspired model of writing in the eighteenth century, argues that IP proponents use this recent conception to justify property rights in intellectual products while maintaining belief in the free flow of information and incentives on which liberal social theory depends. The romantic author conception does this through the idea/expression distinction in copyright law.[72] He concludes that, starting from the romantic conception of authorship, the idea/expression division seems to resolve several problems: (1) it provides a conceptual basis for limited property rights that appears to be based on something real; (2) it provides a moral and philosophical justification for fencing the commons, which gives the author property rights in something new created from "originality of spirit"—and not merely recombining preexisting elements; (3) it purports to limit the potential reach of a labor theory of property—by basing property rights on the originality of spirit instead of Lockean notions of labor; and (4) it conceals the tension between public and private by separating a written work into two concepts—idea and expression, in which the author assigns the idea to the public, while privatizing the expression.[73]

Equally important, Boyle shows how this romantic vision of authorship falls *within* economic theory itself. He writes, "the language of economic analysis provides no neat solutions to the problems of information regulation—precisely because economic analysis is marked by the same *aporias* as the rest of public discourse," namely of indeterminacy and contradiction.[74] Indeed, "it is the romantic vision of authorship that frequently structures . . . economic analysis—providing vital initial choices that give the analysis its subsequent appearance of determinacy and 'commonsense' plausibility."[75] The author concept appears to work as a basis for the IP system, but only because it defines contradictions central to microeconomics—between information as freely and universally available, and infor-

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manifestation of the appropriate kind of genius that receives protection, while the remainder is given to the public realm.").

70. BOYLE, *supra* note 9, at 53.

71. *Id.*

72. *Id.* at 53-54.

73. *Id.* at 56-58.

74. *Id.* at 58 (emphasis added).

75. *Id.* at 58-59.

mation as a good that will be under-produced in a market without incentives—out of existence by relying on the concept of "original authorship" to mediate between what is public domain and freely available and what is protected by private rights. Thus, resorting to a concept of "originality" only ostensibly resolves one set of contradictions. Although this concept appears to reflect commonsense views of creativity, it does not actually address the contradiction in economic theory any more than it tells us how much "originality" should be required for optimizing incentives.

3. Authorship Effects

Boyle reveals how this author-centered approach can result in bias against "sources" which become "commons" for which no reward is available—such that the undervaluing of sources will create a public goods problem. Boyle summarizes his argument:

> It is possible to portray the fixation on originality and the neglect of sources and audience as a technical error made by the rational guardians of the legal system or as a deep plot by the multinationals. Instead, my argument has been that we need to see the romantic vision of authorship as the solution to a series of ideological problems. . . . If one is critical of a system built on its presuppositions, one must begin by understanding both its authentic appeal and the deep conceptual itches it manages to scratch.[76]

Boyle is correct to point to the deep appeal of IP laws with their embedded conception of individual authorship and inventorship.

For Boyle, this focus on the romantic author and the concomitant blindness to sources in IP law could have devastating consequences for both developed and developing states. With respect to TK, the treatment of TK as a free "source" within the IP regime could lead to the destruction of biodiversity and diverse cultures, even when economic analysis reveals that this is an undesirable result.[77] Boyle states that, within developed states, "the blindness of an author-centered regime" to freely available sources may tilt the IP regime toward expansion and in this expansion,

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76. *Id.* at 60.

77. *Id.* at 128 (describing the situation in Madagascar where the rosy periwinkle, used by indigenous people to treat diabetes, has been used as the basis of a drug to treat cancer and Hodgkin's disease, earning the multinational pharmaceutical company around $100 million per year). Meanwhile, much of the state's forests have been destroyed to feed the population. Boyle writes, "Precisely because they can find no place in a legal regime constructed around a vision of individual, transformative, original genius, the indigenous peoples are driven to deforestation or slash and burn farming." *Id.*

"deny future creators—novelists, scientists, programmers—the raw material they need to make new products [by treating them as private property]."[78]

Yet, despite his critique, Boyle accepts the "authenticity" of individual authors and like Lessig, another prominent IP critic, retains the fundamentals of the IP structure by emphasizing: *individual* creativity, the significance of *extrinsic* rewards, the concept of a *marketplace of ideas*, and the need for an allocation between public and private to be (re)balanced.[79] Accordingly, Boyle's self-described project is not to dismantle the author concept, because in his view "it has a clear element of existential truth—our experience of authors, inventors, and artists who do transform their fields and our world, together with the belief (one I hold deeply myself) that the ability to remake the conditions of the individual life and collective existence is to be cherished and rewarded."[80] Rather, he suggests that this author-centered approach results in a bias against "sources" which become "commons" for which no "reward" is available—such that their undervaluing will create a public goods problem. For Boyle, because TK often has no "romantic author" or "genius inventor" in the form central to patent and copyright laws, it becomes simply a public domain "source" for IP. Like Lessig, Boyle calls for a rebalancing of the IP laws toward the public, as well as recognition of new rights for TK holders.[81]

D. Conclusion

This Article draws on Boyle's assessment of the lynchpin role of the romantic author but pushes beyond it by asking *why* the central conceptions of IP law appear so "authentic," despite the theoretical indeterminacy, as well as the empirical doubts of IP's efficacy in accomplishing its putative goals.[82] The answer to this question lays the foundation necessary

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78. *Id.* at 130.

79. *Compare id.* at 163-65 ("I *do* think there is something noble in originality in general and authorship in particular. . . . The tendency of the current system to undervalue the importance of the public domain can deprive the truly creative among us of the raw material necessary to create their next transformative artifacts."), *with* LESSIG, *supra* note 1, at 286 ("Building a public domain is the first step to showing people how important that domain is to creativity and innovation. . . . Its aim is not to defeat the rights of authors, but to make it easier for authors and creators to exercise their rights more flexibly and cheaply.").

80. BOYLE, *supra* note 9, at 60.

81. *Id.* at 168 ("We need to show much greater concern for the public domain, both as a resource for future creators and as the raw material for the marketplace of ideas.").

82. Part of the intuitive feel of the IP regime relates to its balancing schema which is, as mentioned above, central to IP and utilitarian thinking in general. *See* Mark Johnson, *Law Incarnate*, 67 BROOK. L. REV. 949, 950 (2002) (arguing that our

to understanding the global diffusion of the IP regime. The TK discourse, especially its communal claims to creativity, should lead those of us in the West to question the universal applicability and "authenticity" of the romantic author. First, we need to go beneath the ideology and assess the accuracy of the individual author/inventor conception. Second, to the extent that conception is incorrect, we must understand the cognitive basis for its attraction and strength. Whatever the conception's historical or political roots may be, effective transformation depends on understanding the conception's pull on individual minds today.

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conceptualization and reasoning are shaped by our bodily interaction with the physical environment such that our thought is both "constrained by the logic of our bodily experience and at the same time dependent on various structures of imagination . . . [which are] shaped by the nature of our bodies, our brains, and the patterns of our interactions with our environment"). Although our bodily experience of balance becomes intuitive and "natural" once we reach a certain age, Boyle's argument suggests that at least in practice there is strong reason to suspect that the IP schema is neither intuitive nor natural. Still, he holds out hope for a rebalancing. The balancing schema of IP reduces a range of social effects to figurative "weights" that then seem plausible to compare or "balance." Like a scale, the schema balances two sides of "private" and "public" knowledge. Boyle, no less than other critics of IP such as Lessig and May, ultimately remains within this balancing frame. Such critics argue, however, that the balance keeps shifting and has shifted too far toward the private to the exclusion of the public. This is also the lens through which Boyle assesses TK, which acts as a "public" input in the IP regime. However, there are biases and blind spots in this balancing schema. As Mark Johnson notes, the notion of equality and balance necessary for utilitarian or other consequentialist reasoning "assumes that human beings, their actions, and their interests can be given numerical values, that the moral value of each action can be quantitatively assigned, and that the effects of actions can be precisely calculated." MARK JOHNSON, THE BODY IN THE MIND: THE BODILY BASIS OF MEANING, IMAGINATION, AND REASON 95 (1992). A bodily bias for "balance" is likely to make such translations seem more direct and correct than they are likely to be. The IP justification, by enlisting our bodily balancing schema, encourages us to perceive this balance as plausible by taking for granted that we can measure in some unproblematic way, in the words of patent scholar Robert Merges, "the social benefit of providing economic incentives for creation and the social costs of limiting the diffusion of knowledge" in the first place. MERGES ET AL., *supra* note 20, at 17. Consider also all that is in fact taken for granted: What kinds of creations and innovations provide "social benefit" and to whom? What costs are imposed, and to whom? How should we assess a particular benefit to a particular constituency against a particular cost to another constituency? These are the kinds of questions largely absent from the IP debate.

III. THE EMERGING TRADITIONAL KNOWLEDGE DISCOURSE

> Terra nullius has its contemporary equivalent in "Bio-Nullius"—treating biodiversity knowledge as empty of prior creativity and prior rights, and hence available for 'ownership' through the claim to "invention."[83]

The emerging TK discourse provides an external critique of the IP regime. Beginning in the late 1980s, scholars broadened their focus from "folklore" to a concept of "traditional knowledge." The international human rights discourse also evolved to include the creativity of indigenous peoples. This development coincided with increasing international concern for the environment and biodiversity, sustainable development, and cultural survival. Yet concurrently, multinational pharmaceutical, chemical, and other companies increased their efforts to gain IP through exploration primarily in biodiversity-rich but economically-poor states.[84]

This Part describes the relevant issues raised by the TK discourse and explores some problematic aspects of the current form the discourse has taken. Unfortunately, the discourse has been constructed in stereotypical opposition to the IP discourse. For example, the discourse contrasts "modern," Western individual creativity and "primitive," indigenous collective creativity—reproducing a longstanding Western schema with origins in early social science and colonialism. Moreover, certain aspects of the TK discourse appear overly romantic and idealistic. That being said, other aspects of the TK discourse more closely relate to understandings of creativity that have emerged from social and cognitive science.

A. The Call for TK Rights

The issues surrounding the TK discourse are complex and contested. Industrialized states and biodiversity-rich states do not agree on what must be protected, how it should be protected, or who should benefit. The definitions of most terms in the debate are disputed, including the terms "TK," "folklore," and "indigenous."[85] The debate over the protection of TK

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83. SHIVA, *supra* note 10, at 49.

84. Matthias Leistner, *Analysis of Different Areas of Indigenous Resources*, *in* INDIGENOUS HERITAGE AND INTELLECTUAL PROPERTY 49, 49-50 (Silke von Lewinski ed., 2004).

85. *See, e.g.*, WIPO, Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore, http://www.wipo.int/about-ip/en/studies/publications/genetic_resources.htm (last visited Nov. 2, 2005) (stating that "there is to date no universally recognized definitions [sic] for traditional knowledge as such"); Peter-Tobias Stoll &

raises issues of global information flows and control over biogenetic resources and associated knowledge; the debate takes on urgency when it is thought that at current rates ninety percent of the world's languages, and the associated TK, will disappear over the next one hundred years.[86] There are real dollars at stake as well. Scholars estimate that nine out of ten prescription drugs are based on natural sources and that the total market value of plant-based medicines sold in OECD states was $43 billion dollars in 1985 alone.[87]

Early TK proponents focused on preserving artistic aspects of cultural heritage as well as preventing deculturizing uses of and protecting the copyright and neighboring rights in expressions of folklore. In the 1960s, several African states recognized expressions of folklore within their copyright laws. This development represented one of the earliest formal legal efforts to regulate the use of "folklore" as distinct from tangible cultural heritage. Thereafter, the 1976 Tunis Model Law on Copyright in Developing Countries defined "folklore" as:

> all literary, artistic and scientific works created on national territory by authors presumed to be nationals of such countries or by ethnic communities, passed from generation to generation and constituting one of the basic elements of the traditional cultural heritage.[88]

Unlike the copyright law of the United States, the Tunis Model Law included a paid public domain system and did not require fixation in a tangible form (for example, it protected orally transmitted works).[89]

In the forty years that followed, TK proponents shifted focus from folklore to broader conceptions of TK. This new concern reflected such developments as increased bioprospecting by multinational corporations, the growing importance of IP laws internationally (primarily via TRIPS), and a renewed interest in environmental sustainability (as evidenced by the U.N. Convention on Biodiversity) and the rights of indigenous peoples. The focus of the TK discourse thus shifted away from folklore to-

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Anja von Hahn, *Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law*, *in* INDIGENOUS HERITAGE AND INTELLECTUAL PROPERTY 5, 8-17 (Silke von Lewinski ed., 2004).

86. *See* Simon, *supra* note 10, at 112.

87. *See* IDRIS, *supra* note 31, at 244.

88. TUNIS MODEL LAW ON COPYRIGHT FOR DEVELOPING COUNTRIES § 18 (adopted by the Committee of Governmental Experts convened by the Tunisian Government in Tunis from February 23 to March 2, 1976, with the assistance of WIPO and United Nations Educational, Scientific, and Cultural Organization (UNESCO)).

89. *Id.* § 17.

ward commercial aspects of traditional knowledge, access to and control of biogenetic resources, necessity for prior informed consent, and fair compensation. Similarly, the legal focus shifted away from copyright and more toward patent, trade secret, human rights, and environmental laws.

In the last decade, the international community has become increasingly engaged in the TK debate. In 1996, Boyle wrote regarding the lack of engagement with TK concerns that "if things are changing, they are changing too slowly."[90] But in 2003, anthropologist Michael Brown commented that the response to threats to native heritage has been strong and indigenous people have asserted their absolute rights over all aspects of their cultural heritage.[91] Indeed, TK has been taken up in numerous national and international venues,[92] as well as by indigenous peoples, nongovernmental organizations (NGOs), and academics. Increasingly, these organizations tend to frame the TK discourse from a perspective of rights—both individual and collective rights, and in particular human rights.[93]

Rights entail exclusion when one person's rights are asserted against another's, which in turn fosters absolutism. This is readily apparent not only in the claims of supporters of the IP regime,[94] but increasingly hold-

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90. BOYLE, *supra* note 9, at 127.

91. MICHAEL BROWN, WHO OWNS NATIVE CULTURE? 209 (2003).

92. These venues include WIPO, UNESCO, and the WTO.

93. This treatment of intellectual property rights, with its individualist ideology, as human rights, and the the extension of this concept to the corporation may appear to be a natural extension of the modern personification of the corporation in law. In fact it represents the result of a concerted effort by corporations. *See* JOEL BAKAN, THE CORPORATION: THE PATHOLOGICAL PURSUIT OF PROFIT AND POWER 15-18 (2004). Bakan describes how the shift in treating the corporation itself as a real "person" subject to First and Fourteenth Amendment rights originally intended for living people was the result of lobbying efforts by corporations, which also coincided with public relations efforts to portray the corporation as a family. Bakan writes:

> By the end of the nineteenth century, through a bizarre legal alchemy, courts had fully transformed the corporation into a "person," with its own identity, separate from the flesh-and-blood people who were its owners and managers and empowered, like a real person, to conduct business in its own name, acquire assets, employ workers, pay taxes, and go to court to assert its rights and defend its actions. The corporate person had taken the place, at least in law, of the real people who owned corporations.

Id. at 16.

94. *See, e.g.*, Kristin Dawkins, *Intellectual Property Rights and the Privatization of Life*, 4 FOREIGN POL'Y IN FOCUS, Jan. 1999, at 1-2. Dawkins relates the following story:

> In April 1997, the U.S. State Department sent a letter to the Royal Thai Government (RTG) regarding draft Thai legislation allowing Thai

ers of and advocates for TK as well.[95] Notwithstanding the political merits of framing TK in terms of human rights, one of the potential costs of this approach is that it risks validating the claims of IP rights holders—mainly corporations.

Article 27.2 of the Universal Declaration of Human Rights and Article 15.1(c) of the International Covenant of Economic, Social and Cultural Rights both ground IP in a human rights framework and provide for "the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."[96] Megan M. Carpenter's recent article exemplifies the dominant rights approach to TK.[97] Carpenter notes that IP is under "intense debate in the emerging discourse surrounding intellectual property and human rights"[98] and that "[c]opyright laws, in their current formulation, are inadequate to protect the fruits of human creativity of indigenous peoples."[99] Her diagnosis is that "[a]uthorship in the context of copyright laws has its grounding in Romantic Individualism, which can run directly contrary to authorship as it is conceived of by indigenous peoples."[100] The solution for Carpenter is clear:

> Copyright laws can, and must, be expanded in three ways so as to protect and maintain vitality of the artistic and literary works of indigenous cultures: incorporating collective and communal

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> healers to register traditional medicines, thus keeping them within the public domain. The letter advised the RTG that "Washington believes that such a registration system could constitute a possible violation of TRIPs and hamper medical research into these compounds." The State Department requested official responses to 11 questions, beginning with: "What is the relationship of the proposal to the granting of patent protection in Thailand?" and ending with: "Does the RTG envision a contractual system to handle relationships between Thai healers and foreign researchers in the future?"

Id. at 2.

95. *See* BROWN, *supra* note 91 (referring to these strong claims as seeking "total heritage protection").

96. Universal Declaration of Human Rights, G.A. Res. 217(III)(A), at art. 27, U.N. Doc. A/810 (Dec. 10, 1948); United Nations, International Covenant on Economic, Social and Cultural Rights, G.A. Res. 2200A (XXI), at art. 15, U.N. GAOR, 21st Session, Supp. No. 16, U.N. Doc. A/6316 (Dec. 16, 1966) (entered into force on Jan. 3, 1976).

97. Megan M. Carpenter, *Intellectual Property Law and Indigenous Peoples: Adapting Copyright Law to the Needs of a Global Community*, 7 YALE HUM. RTS. & DEV. L.J. 51 (2004).

98. *Id.* at 51.

99. *Id.* at 54.

100. *Id.* at 58.

> authorship; expanding originality requirements to reflect collective and communal authorship; and applying limits on the duration of protection in a broader community context.[101]

Carpenter justifies these changes by arguing that "all peoples should benefit" from IP laws.[102]

Although this assertion of rights is appealing, the basis for this assertion deserves careful scrutiny. A solution that relies on a banal assertion of "rights," while perhaps politically useful, can no more provide a principled answer to the nature and scope of TK claims than it can define an optimal level of IP protection. Granting rights to a person or group necessarily entails costs in the form of restrictions on others.

Championing human rights in the context of TK rights for indigenous peoples is ultimately problematic. The Universal Declaration of Human Rights does not distinguish between industrial and indigenous creativity, but refers to "*the* author" (perhaps reflecting the Western individual author-centered bias).[103] Thus, assuming any conflict between the rights claims, appeals to human rights by developing states for the recognition of TK are likely to lend further credence to strong rights claims by Western interests. For instance, claims by developing states for TK rights are likely to run counter to developing states' human rights claims for access to AIDS retroviral drugs free from IP constraints. After all, it is difficult to argue that the public domain of knowledge needs to be expanded by limiting IP rights, while arguing conversely that TK rights should be recognized and commoditized collectively within a bounded local or indigenous group, which necessarily effects a contraction of the public domain. This political battle could be won, but not without costs, including a lessened ability (both morally and pragmatically) for developing states to claim exceptions from or changes to TRIPS in the areas of pharmaceuticals.[104]

The dominance of the rights discourse and its tendency to mask distributive consequences while reproducing them on a different level is well

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101. *Id.* at 54.

102. *Id.* at 53.

103. Universal Declaration of Human Rights, *supra* note 96, art. 27.2 (emphasis added).

104. The Bellagio Declaration attempts to walk this line by seeking expansion of the public domain and rights for TK holders. *See* BOYLE, *supra* note 9, at 192; *see also* WTO, Ministerial Declaration of 14 November 2001, WT/MIN(01)/DEC/1, 41 I.L.M. 746, *available at* http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm (regarding the ongoing debate about the relationship between TRIPs and pharmaceuticals).

noted by anthropologist Marilyn Strathern.[105] In discussing the efforts of NGOs to differentiate among governments, multinationals, and indigenous peoples, she notes, "If claiming access to knowledge leads to functional social differentiation, its utility turns out, like any other resource, to be distributed among people in uneven quantities."[106] While the IP discourse has largely ignored this distributive question, one of the powers of the TK discourse has been its foregrounding of the assumptions and distributive effects of the IP regime. Carpenter also addresses this point when advocating for community authorship and ownership of TK but also for limits on the duration of such rights.[107]

B. The Nature of TK

The failure of the IP laws to fairly address TK is largely attributed to the different "nature" of TK. Not surprisingly, the proposed solutions, in the form of rights (whether referred to as *sui generis* or as modifications of IP laws to remove cultural bias), also rely on stated distinctions in the nature of knowledge and creativity. The depiction of TK as a mode of knowledge has largely been constructed through oppositions (this Section describes these oppositions, while the following Section critiques them). The central opposition in the IP/TK debate depicts industrial knowledge as individual in nature and TK as collective in nature. TK proponents have enlisted additional dichotomies: industrial knowledge is represented as being created "from thin air" while TK is connected to prior generations and cumulative; IP protects products while TK protects process; industrial knowledge is formal while TK is informal; and industrial knowledge is competitive while TK is cooperative.[108] As discussed in Section III.C below, the risk with such unrealistic (or romantic) views of creativity is that the legal prescriptions for TK may not satisfy the desired ends.

1. TK is Described as Collective and Cooperative

If, as Boyle argues, conceptions of Western IP focus on the author, TK is usually described as being owned communally. Thus, the most common difference asserted between traditional knowledge and the sorts of knowledge characteristic of industrial and post-industrial societies pits collective

105. *See, e.g.*, MARILYN STRATHERN, PROPERTY, SUBSTANCE AND EFFECT (1999).

106. *Id.* at 199.

107. *See* Carpenter, *supra* note 97, at 71-72.

108. *See, e.g.*, SHIVA, *supra* note 10, at 21-39. The debate may also include more fundamental oppositions, such as local knowledge versus global knowledge, formalism versus flexibility, or individualism versus altruism.

creation and ownership against individual creation and ownership.[109] For example, the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples calls for the development, in cooperation with indigenous peoples, of "an additional cultural and intellectual property rights regime incorporating . . . collective (as well as individual) ownership and origin."[110] Similarly, the U.N.'s Principles and Guidelines for the Protections of the Heritage of Indigenous People states:

> The heritage of indigenous peoples has a collective character and is comprised of all objects, sites and knowledge including languages, the nature or use of which has been transmitted from generation to generation, and which is regarded as pertaining to a particular people or its territory of traditional natural use.[111]

Also, a report prepared for WIPO on attempts to protect folklore at the international level describes the problem of the protection of folklore as being derived from the "impersonal, continuous and slow process of creative activity exercised in a given community."[112] Finally, the U.N. Convention on Biological Diversity strongly supports TK protection and also characterizes TK as collective.[113]

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109. *See, e.g.*, IDRIS, *supra* note 31, at 243 (putting forth the typical statement that "TK, as representative of cultural values, is generally held collectively").

110. The Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples, at § 2.5, U.N. Doc. E/CN.4/Sub.2/AC.4/1993/CRP.5 (July 26, 1993), *available at* http://aotearoa.wellington.net.nz/imp/mata.htm [hereinafter Mataatua Declaration]. The Mataatua Declaration was the result of a meeting of more than 150 delegates from fourteen states, including indigenous representatives from Japan (Ainu), Australia, the Cook Islands, Fiji, India, Panama, Peru, the Philippines, Surinam, the United States, and New Zealand (Aotearoa).

111. U.N. Econ. & Soc. Council, Comm'n on Human Rights, Sub-Comm. on the Promotion & Prot. of Human Rights, *Report of the Seminar on the Draft Principles and Guidelines for the Protections of the Heritage of Indigenous People*, Annex I, ¶ 12, U.N. Doc. E/CN.4/Sub.2/2000/26 (June 19, 2000), *available at* http://www.unhchr.ch/Huridocda/Huridoca.nsf/TestFrame/42263fd3915c047ec1256929004f1ffc?Opendocument.

112. WIPO, *The Protection of Expressions of Folklore: The Attempts at International Level*, 56/57 INTELL. PROP. IN ASIA AND THE PAC., Jan.-June 1998, *available at* http://itt.nissat.tripod.com/itt9903/folklore.htm.

113. *See* Convention on Biological Diversity (CBD), Article 8(j): Traditional Knowledge, Innovations and Practices, http://www.biodiv.org/programmes/socio-eco/traditional/default.asp (last visited Nov. 2, 2005). Article 8(j) applies to "knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity . . . ." *Id.* The CBD website goes further to state that TK "tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices . . . ." *Id.*

Consistent with the view that TK is communally owned, advocates for the protection of rights in TK ownership worry about the risk of individuals claiming rights in the form of IP rights. Martin Khor, an economist and Director of the Third World Network, writes that companies or institutions exploiting TK in local communities "transform[] the rights of the communities (in most cases located in developing countries) into the private and monopoly rights of these institutions (in most cases located in developed countries)."[114] Such image comports with that put forward by the Indian scientist and environmentalist Vandana Shiva, who claims that India's biodiversity "has always been a local community-owned and utilized resource for indigenous communities."[115]

Related to its characterization as being collectively produced and thus communally owned, TK production is presented as a cooperative, as opposed to competitive, endeavor. For example, Idris points out that "[w]hile modern arts and sciences often place individual accomplishment over community development, TK systems celebrate the community's cooperative effort."[116] Similarly, Shiva writes that knowledge "is based on exchange within a community" whereas the patent regime allows knowledge to be treated as a form of capital to be used for competitive advantage.[117] The Mataatua Declaration calls for national and international agencies to "[d]evelop in full co-operation with indigenous peoples an additional cultural and intellectual property rights regime incorporating . . . [a] cooperative rather than competitive framework."[118]

2. TK is Described as Informal

Just as TK is often characterized as "collective" and "cooperative," it is also commonly oversimplified as being "informal." The WIPO website refers to the relationship between intellectual property on the one hand and genetic resources, TK, and folklore on the other hand, stating that "there is already some overlap between the intellectual property system and more 'informal' means of protection in these areas."[119] In a similar vein, Idris points to the oral transmission of TK and notes that it "remains largely un-

114. MARTIN KHOR, INTELLECTUAL PROPERTY, BIODIVERSITY AND SUSTAINABLE DEVELOPMENT 14 (2002).

115. SHIVA, *supra* note 10, at 46.

116. IDRIS, *supra* note 31, at 242.

117. SHIVA, *supra* note 10, at 21.

118. Mataatua Declaration, *supra* note 110, § 2.5.

119. WIPO, Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore, http://www.wipo.int/about-ip/en/studies/publications/genetic_resources.htm (last visited Nov. 2, 2005).

documented."[120] Idris says this conflicts with the Western belief that "[u]nless information is developed under aseptic clinical conditions by scientific methods, it is sometimes viewed as 'inferior.'"[121] Shiva goes even further by arguing that "[i]ndigenous knowledge systems are by and large ecological, while the dominant model of scientific knowledge, characterized by reductionism and fragmentation, is not equipped to take the complexity of interrelations in nature fully into account."[122]

Indeed, existing IP laws work to the detriment of this informal aspect of knowledge characteristic of TK, if informal is equated with unwritten.[123] Hence requirements of "fixation" and complicated laboratory procedures are inimical to social practices of creativity that rely on oral transmission. Similarly, patent laws such as those in the U.S. that do not recognize prior art from outside the state as novelty-defeating unless it is in written form enable the granting of patents on inventions that are in fact not new.[124] Accordingly, more and more, efforts are being made to document TK, both for preservation of TK and to defeat patent claims.[125] However, sometimes references to informality insinuate imprecision or unarticulated norms; such characterizations are largely inaccurate, as the *Milpurrurru* case illustrates.[126]

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120. IDRIS, *supra* note 31, at 243.

121. *Id.* at 254.

122. SHIVA, *supra* note 10, at 22.

123. *See* JACK GOODY, THE DOMESTICATION OF THE SAVAGE MIND 1 (1977). Goody writes:

> [T]he problem [of the study of the way in which modes of thought have changed over time and space] has been complicated both by the categories and by the framework that have been used. The trouble with the categories is that they are rooted in a we/they division which is both binary and ethnocentric, each of these features being limiting in their own way. Sometimes we are still employing the simplistic categories of our folk taxonomy; where these have been abandoned, we substitute some polysyllabic synonym. We speak in terms of primitive and advanced, almost as if human minds themselves differed in their structure like machines of an earlier and later design.

Id.

124. *See* 35 U.S.C. § 102 (2005).

125. *See* SILKE VON LEWINSKI, *Final Considerations*, *in* INDIGENOUS HERITAGE AND INTELLECTUAL PROPERTY 379, 393-94 (2004) (describing the costs and benefits of TK database projects).

126. *See* Milpurrurru v. Indofurn Party Ltd. (1994) 54 F.C.R. 240, 245.

3. TK is Described as Cumulative and Process-Focused

TK is also conceived of as being incremental and cumulative. This conception approximates Western psychological understandings of innovation and creativity.[127] Accordingly "what can sometimes be perceived as an isolated piece of literature (a poem, for example) or an isolated invention (the use of a plant resource to heal wounds, for instance), is actually an element that integrates a vast and mostly coherent complex of beliefs and knowledge . . . ."[128] The Third World Network states that in contrast to the "one-shot concept of innovation which typifies industrial innovations," the "knowledge of indigenous people and local communities is continuous as it modifies, adapts and builds upon the existing knowledge."[129] The American Association for the Advancement of Science published a so-called handbook on TK that stresses both the communal and incremental aspects of TK.[130] Shiva describes as "myth" the concept of creativity and inventiveness at the heart of patent law because it "is based on an artificial construction of knowledge and innovation—that of knowledge being isolated in time and space, without being connected to the social fabric and contributions from the past."[131] In opposition to this myth, Shiva posits that "[k]nowledge, however, by its very nature is a collective, cumulative enterprise."[132] As a WIPO report states, the copyright law does not always protect folklore itself because the "continuous and slow process of creative activity exercised in a given community by consecutive imitation" means that there is often no "author" as defined in copyright law.[133] Perhaps even more broadly, given different cultural conceptions of time (for example, Hopi time as circular rather than linear), it is unclear how the linear duration of copyright and patent regimes might be modified to reflect these different conceptions.

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127. *See infra* Part VI.

128. IDRIS, *supra* note 31, at 243.

129. Third World Network, *Model Laws for the Protection of Biodiversity Knowledge in Developing Countries*, *in* GOOD PRACTICES AND INNOVATIVE EXPERIENCES IN THE SOUTH: SOCIAL POLICIES, INDIGENOUS KNOWLEDGE AND APPROPRIATE TECHNOLOGY: VOLUME 2 38 (Martin Kohr & Kim Li Lin eds., 2002).

130. Stephen Hansen & Justin VanFleet, *supra* note 14, at 3 (describing TK as "the information that people in a given community, based on experience and adaptation to a local culture and environment, have developed over time, and continue to develop").

131. SHIVA, *supra* note 10, at 21.

132. *Id.*

133. WIPO Standing Comm. on Copyright and Related Rights, *Short Description of Possible Subjects for Future Review by the Standing Committee* 9, SCCR/8/2 (Aug. 28, 2002), *available at* http://www.wipo.int/documents/en/meetings/2002/sccr/doc/sccr_8_2.doc.

Consider the following example of twin (*ere ibeji*) carvings as illustrative of the continuous and process-focused nature of creativity in one society, and the difficulties thus posed in terms of protecting such creativity through copyright law.[134] The Yoruba have one of the world's highest twinning rates and they attach special significance to twins. If twins are treated properly they can bring rewards to their family. As twins are thought to share one soul, if one twin dies there is fear the other twin will follow his or her sibling. The family with a deceased twin traditionally purchases a wooden figure from a carver who sculpts the figure more or less how he pleases. This figure undergoes ceremonies with a priestess after which it is delivered to the family, who ritually feeds it and adorns it with clothing and jewelry of spiritual significance. Over time, the dressing, feeding, and cleaning alter the original sculpture. A cumulative process such as this, in which a work is transformed over time, can raise significant questions about the "nature" of the work being protected, as well as the identity or identities of the "author."[135]

The above examples perhaps align with Western conceptions of artistic creativity reflected in the copyright laws, but more recently indigenous groups and developing states have focused on the attempts by corporations to obtain patents on claimed inventions that incorporate indigenous knowledge. On the one hand, a scientist in a modern laboratory facility may be able to develop a purified form or extraction of a plant used by people in one or more indigenous groups and obtain a patent on it in a relatively short period of time. On the other hand, members of indigenous communities purposefully cultivate and guide plant development over successive generations in a process of slow and cumulative change. In the latter instance, patent rights are unlikely to be available for a number of reasons, not least because of the gradual changes and the involvement of different people over multiple generations.[136]

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134. Brad Simon, *The Envisioning of Envisioning Africa*, 16 J. OF MUSEUM ANTHROPOLOGY 55 (1992).

135. Broad claims of community ownership are no more appropriate, in this cultural context, than assertions of "romantic authorship" for the carver under copyright law. Applying copyright norms to these figures requires identifying the work, at a given point in time, as a static product associated with a given author; and, in so doing, stripping these works of their highly specific cultural meanings.

136. *See* Hansen & VanFleet, *supra* note 14, at 12-13 (arguing that patents would most likely not be available in such a situation of cumulative change and multi-generational participation).

C. Destructive Dichotomies

Broad claims of the oppositional differences described in Section III.B above should be assessed with suspicion. Associating modern society with individualism and traditional society with collectivism replays the schema common in early anthropology and recalls to mind Durkheim's focus on the collective representations of "primitive" societies.[137] As discussed below, opposing the "natures" of moderns and primitives has been rejected in current anthropology. Although some scholars claim that these classifications persist in vestigial form to the extent anthropological explanations view the focus on individual consciousness as specific to Western society and often ignore individual rationality and consciousness in the study of non-Western groups.[138]

This debate about modes of knowledge was, in the past, constituted by anthropologists in dichotomous terms. Jack Goody, in summarizing the literature, cites the following oppositions:

primitive	advanced
savage	domesticated
traditional	modern
'cold'	'hot'
(closed)	(open)
(developing)	(developed)
(pre-logical)	(logical)
mythopoeic	logico-empirical[139]

137. *See, e.g.*, EMILE DURKHEIM, THE ELEMENTARY FORMS OF RELIGIOUS LIFE 217-18 (Karen E. Fields trans., Free Press, 1995) (1912) ("Every emotion expressed resonates without interference in consciousnesses that are wide open to external impressions, each one echoing the others.").

138. *See* NIGEL RAPPORT & JOANNNA OVERING, SOCIAL AND CULTURAL ANTHROPOLOGY 185 (2000) (claiming that this methodological approach leads anthropologists to treat their subjects as having less personal complexity than we attribute to ourselves).

139. GOODY, *supra* note 123, at 146-47.

In 1977, Goody wrote that these oppositions, while reflecting some differences in cognitive styles noted by anthropologists, namely in abstract science and history as against more concrete forms of knowledge and mythical thought, ultimately limit our understanding of these differences and their changes over time and space, particularly in terms of systems of writing versus oral tradition.[140] Rather than assert binary oppositions to understand differences in cognitive styles, Goody argues that attention should be paid to the "role of changes in the means and mode of communication" with emphasis on historical, sociological, and "psycho-biological" factors.[141]

The destructive nature of these dichotomies in terms of promoting the TK discourse can be seen in the conception of TK as cooperative versus IP as competitive, as introduced in Section III.B.2 above. While competition remains a central value in the West, this gloss reproduces the old social science view that non-Western societies form an organic whole, in which there is a *conscience collective*. This characterization fails to capture the nuances and complexities of the reality in both developed and developing countries. After all, there is also likely to be a large amount of cooperation in the major loci of innovation in the West, the corporation.

Opposing individual to communal and competitive to cooperative makes too broad a sweep, even if there is value in the concept of communal ownership. For example, the Australian case *Milpurrurru v. Indofurn Party Ltd.* illustrates why the individual/collective dichotomy is unlikely to provide helpful prescriptive guidance in protecting and encouraging TK.[142] In this case, where the works of several Aboriginal artists depicting sacred dreamtime designs were incorporated into carpet designs without the artists' permission, the court made it patently clear that the artists were embedded in a socio-cultural context that gave them explicit rights and duties. The judge noted that "the skill of each of the artists is recognised

140. *Id.* at 149.

141. *Id.* at 162. For a fascinating recent ethnographic example, see PATRICIA MARKS GREENFIELD, WEAVING GENERATIONS TOGETHER: EVOLVING CREATIVITY IN THE MAYA OF THE CHIAPAS 149 (2004) (concluding that variability in weaving patterns in a small Mayan village has changed dramatically since the author's fieldwork began in the 1960s). At that time, Marks Greenfield found that creativity was exclusively a matter of community identity and tradition. By the 1990s, however, due in part to the rise of commerce and money, the proliferation of an "infinite array" of textile patterns led her to conclude, "What Western scholars call creativity—individual uniqueness—has arrived . . ." and that "[w]hat had been assumed to be a universal definition of creativity was proving, in the Zinacantec visual realm, to be historically contingent." *Id.*

142. (1994) 54 F.C.R. 240, 245 (describing the culturally specific allocation of rights to create paintings depicting the dreamtime); *see supra* note 13 for description.

[sic] nationally and internationally as exceptional."[143] At the same time the "rights" of the artists are subject to highly specific cultural constraints and expectations. The judge wrote:

> Painting techniques, and the use of totemic and other images and symbols are in many instances, and almost invariably in the case of important creation stories, strictly controlled by Aboriginal law and custom . . . . The right to create paintings and other artworks depicting creation and dreaming stories, and to use pre-existing designs and well recognised totems of the clan, resides in the traditional owners (or custodians) of the stories or images. Usually that right will not be with only one person, but with a group of people who together have the authority to determine whether the story and images may be used in an artwork, by whom the artwork may be created, to whom it may be published, and the terms, if any, on which the artwork may be reproduced.[144]

The judge further noted that even Aboriginal law limits the reproduction of artwork within the local community, with factors affecting such limitations including "the clans concerned and the significance of the imagery and dreaming which is reflected in the particular artwork."[145]

Opposing Western individualism to indigenous collectivity is a poor reflection of more nuanced social reality; and relying on this distinction is likely to lead to equally poor international legal regimes. Creativity is a social process with individual participants, and is conceived and structured differently in diverse societies. *Milpurrurru* illustrates that within Aboriginal social norms, individuals were granted rights, along with responsibilities, to produce works containing sacred symbols. These individuals were situated within a complex and larger social context, in which other members of the community had rights (traditionally) to punish infractions of highly particular customary norms. The next Part looks at findings in Western science, namely social and cognitive psychology, to dispel the myth that creativity, even in the West, is about romantic authors or genius inventors, notwithstanding our belief, and even felt experience that this is so.

D. Conclusion

In summary, the "nature" of traditional knowledge as asserted by many TK proponents has largely been constructed in overly oppositional

143. *Milpurrurru*, 54 F.C.R. at 243.
144. *Id.* at 245-46.
145. *Id.* at 247.

terms. Such characterizations will likely fail to map onto the lived practices of diverse peoples. The cultural particulars relating to creativity and innovation are likely to be quite diverse and worthy of study in themselves, rather than assumed out of existence through false dichotomies. This variability is evidenced by the social practices illustrated in the Australian carpet case, the Yoruba twin carving tradition, and a range of culturally variable practices around cultivation and medical use of plants.

Moreover, the assertions of differences between TK and industrial knowledge replay a longstanding debate within the social sciences on the understanding of contrasting modes of thought. In the past this debate has largely been constituted in dichotomous terms that today's anthropologists have strongly rejected. Goody's warning in 1977 remains relevant as the current TK debate moves from political project to prescriptive law: "the polemic that is generated by treating theory as a matter of binary opposition does not always provide the best atmosphere for intellectual advance; unsatisfactory solutions are often provoked by unsatisfactory formulations . . . ."[146]

Yet proponents seeking to protect TK have largely accepted that the IP regime accurately matches the sort of knowledge production practices of the industrial West and sought to justify new protection for TK on the basis of collective, cooperative, informal, and process-focused kinds of knowledge production practices. To the extent that the "informal" characterization of TK reflects a fundamental difference arising from its oral nature, a key challenge remains to articulate a legal regime that preserves this informality rather than channels it into written forms. The drive to formality has already informed the efforts to document TK to defeat patents and is likely to continue as TK is taken up in international legal forums. As the TK discourse gains momentum, more consideration should be given to its potential downsides. The above assessment suggests that both the IP and the TK discourse enlist and reify unrealistic conceptions of creativity and replicate longstanding oppositions, which are often harmful to indigenous peoples. To the extent this is being done, institutions that become locked in oppositional discourse are not going to be the most effective agents for change. The next Part attempts to use insights from the psychology of creativity as a lens through which to view and critique IP and TK.

146. Goody, *supra* note 123, at 161.

IV. A SCIENTIFIC CONCEPTION OF CREATIVITY

> Although we may have the feeling that we do our cognitive work in isolation, we do our most important intellectual work as connected members of cultural networks. This gives our minds a corporate dimension that has been largely ignored until recently.[147]

This Part attempts to inform the TK and IP discussion with teachings from the science of creativity, which underpins innovation. Law Professor John Hanson and attorney David Yosifon write that "to best promote human understanding and well-being, legal theories must be anchored in a reality-based understanding of human thinking and behavior."[148] Although one cannot expect any particular understanding of human nature to dictate what laws should be, our laws should be formulated in light of our best understanding.[149] A desire to understand the biological and psychological nature of human creativity should be at the heart of our intellectual property laws, since these laws are, after all, defined to foster "creations of the mind."[150] In this Part, I make no distinction between "artistic" and "inventive" creativity, or between the domain of copyright and patent, because I have not found such a distinction made in the psychological literature, and because the psychological findings I discuss here relate to both. As discussed below, the absence of understanding of human creativity evidenced in the public discussions of IP and the blindness of the dominant economic rationale to these findings is startling and unjustifiable.

In the last two decades, creativity has been a subject of increasing focus within psychology.[151] However, economics has been all but silent on a

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147. MERLIN DONALD, A MIND SO RARE: THE EVOLUTION OF HUMAN CONSCIOUSNESS 298 (2002).

148. Jon Hanson & David Yosifon, *The Situation: An Introduction to the Situational Character, Critical Realism, Power Economics, and Deep Capture*, 152 U. PA. L. REV. 129, 183 (2003).

149. *See, e.g.*, STEVEN PINKER, THE BLANK SLATE 173 (2002) ("For efforts at social change to be effective, they must identify the cognitive and moral resources that make some kinds of change possible. And for the efforts to be humane, they must acknowledge the universal pleasures and pains that make some kinds of change desirable.").

150. WIPO, About Intellectual Property, http://www.wipo.int/about-ip/en (last visited Nov. 3, 2005).

151. TERESA M. AMABILE, CREATIVITY IN CONTEXT: UPDATE TO THE SOCIAL PSYCHOLOGY OF CREATIVITY 16 (1996) (stating that in 1983 there were only two researchers who had produced a significant amount of work on the social psychology of creativity, but since then many more researchers have focused on this issue); *see also* Robert J. Sternberg & Todd I. Lubart, *The Concept of Creativity: Prospects and*

theory of creativity and seemingly impervious to the influences of the psychology of creativity. As economist Gary Magee notes, economic theories "shed little light on the topics of invention, technological creativity and knowledge production."[152] As another economist describes the situation:

> "New ideas" are simply taken to be an exogenously determined function of "research effort" in the spirit of a humdrum conventional relationship between inputs and outputs. Essentially, this approach represents a theory of knowledge production that tries to do an end run around describing the creative act that produces new ideas.[153]

This blind spot in a social science based on the exchange of goods in the market by wealth-maximizing individuals is, not surprisingly, ostensibly made irrelevant in the IP model by granting "romantic authors" and "genius inventors" rights they can exchange on the free market. The lack of engagement by IP proponents, policymakers, and even scholars with the "nature" of creativity should give us pause as we expand these laws nationally and internationally.

A. Social Creativity

The literature on the psychology of creativity is copious.[154] It reveals that the classic economic incentive model and notions of romantic authors and genius inventors are, at best, impoverished simulacra of humanity and, at worst, fundamentally incorrect. More remarkably, the conception of creativity as framed in the TK discourse is revealed to be a more accurate characterization of human creativity.

An article entitled "Creative Cognition" framed the inquiry this way:

> A question that naturally arises in considering human accomplishment is the extent to which it springs from the singular efforts of a few individuals whose minds work in special and mysterious ways versus the more distributed efforts of the vast bulk of humanity whose minds all work in roughly the same, plainly

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Paradigms, *in* HANDBOOK OF CREATIVITY 3 (Robert Sternberg ed., 1999) (describing creativity as a neglected research topic).

152. *See* Magee, *supra* note 17, at 2.

153. *Id.* (quoting M.L. Weitzman, *Hybridizing Growth Theory*, 85 AM. ECON. REV. 207, 209 (1996)).

154. *See, e.g.*, HANDBOOK OF CREATIVITY (Robert Sternberg ed., 1999); TERESA M. AMABILE, *supra* note 151; GILLES FAUCONNIER & MARK TURNER, THE WAY WE THINK: CONCEPTUAL BLENDING AND THE MIND'S HIDDEN COMPLEXITIES (2003).

> generative ways. Is cumulative progress the province of a small set of geniuses or should the glory be spread more broadly?[155]

Although the IP regime, intent on fitting reality into its models, has resolved this question in favor of the singular efforts of individuals, the trajectory in the science of creativity, intent on fitting its models to reality, has shifted toward a distributed model of creativity. Unlike the commonly held view that "creativity is limited to a certain class of gifted or specially talented people" inscrutable to outside understanding, the psychology of creativity emphasizes that the "creative capacity is an essential property of normative human cognition and that the relevant processes are open to investigation."[156]

The key global finding of these investigations is that creativity is much more affected by social factors and unconscious processes than is reflected in the IP laws. This "fundamental attribution error," and its implications for the IP regime, are taken up in detail in Part VI below.

1. Social Factors

The study of the psychology of creativity has yielded strong evidence that broad social or systemic factors are crucial to creativity. According to several psychologists, these extra-individual aspects of creativity may even be a necessary aspect of the definition of creativity. Accordingly, a systems approach to creativity recognizes that while originality and divergence of thought may be desirable as personal traits, without public recognition they do not constitute creativity. As psychologist Mihaly Csikszentmihalyi writes regarding creativity tests:

> The underlying assumption is that an objective quality called "creativity" is revealed by the products, and that judges and raters can recognize it. But we know that expert judges do not possess an external, objective standard by which to evaluate "creative" responses. Their judgments rely on past experience, training, cultural biases, current trends, personal values, and idiosyncratic preferences. Thus, whether an idea or product is creative or not does not depend on its own qualities, but on the effect it is able to produce in others who are exposed to it. Therefore it follows that what we call creativity is a phenomenon that is con-

155. Thomas B. Ward et al., *Creative Cognition*, *in* HANDBOOK OF CREATIVITY 3, 189 (Robert Sternberg ed., 1999) ("We do not pretend to have the answer to this question in its grandest sense, but we do have the perspective that the capacity for creative thought is the rule rather than the exception in human cognitive functioning.").

156. *Id.* at 190.

> structed through an *interaction between producer and audience*.[157]

This belief that "creativity is not the product of single individuals, but of social systems making judgments about individuals' products"[158] holds that creativity can be located only where the cultural domain, the social field and the individual meet.[159] New variations depend on the domain because "it is impossible to introduce a variation without reference to an existing pattern."[160] In this model, the domain transmits information to the individual who produces a novel variant, which must then be selected by the social field for inclusion into the domain.[161] For a change to be deemed creative, it must alter the way people think, feel or act—and this "presupposes a community of people who share ways of thinking and acting."[162]

Although some individuals are more likely than others to make changes—either because of their personal qualities or because of better access to the domain—given social configurations of inclusion and exclusion, most novel ideas will evaporate, as they will not be adopted "unless they are sanctioned by some group entitled to make decisions as to what should or should not be included in the domain."[163] Csikszenthmihalyi calls such groups "gatekeepers."[164] Their role is rarely questioned, no doubt because we intuitively think of creativity as a fundamentally individual trait. Yet, as Csikszenthmihalyi points out, "[i]n physics, the opinion of a very small number of leading university Professors was enough to certify that Einstein's ideas were creative."[165] This example suggests that some groups or institutions may be able to "develop protective boundaries around their knowledge."[166]

The focus on the domain and the field, as well as the individual, leads to a host of provocative questions and hypotheses. Some examples of how culture is expected to increase the incidence of creativity in this systems perspective include written mechanisms of information storage, ease of accessibility of information, diffusion of information, degree of differen-

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157. Mihaly Csikszentmihalyi, *Implications of a Systems Perspective for the Study of Creativity*, *in* HANDBOOK OF CREATIVITY 313, 314 (Robert Sternberg ed., 1999).
158. *Id.* at 315.
159. *Id.* at 314-315.
160. *Id.* at 314.
161. *Id.* at 315.
162. *Id.* at 316.
163. *Id.* at 315.
164. *Id.*
165. *Id.*
166. *Id.* at 317.

tiation within the culture, and the openness of the culture to other cultures.[167] The social context could also be expected to influence the incidence and nature of creativity such that value placed on innovation, type of economic structure, increased external threats and internal strife, and increased social mobility are all expected to affect innovation within a society.[168] The point here is not to assess these claims or to apply them to the literature on the cultural differences in creativity, which is a separate but important topic.[169] Rather, notwithstanding the individual differences in creative capacity, "in the last analysis, it is the community and not the individual who makes creativity manifest."[170] It is not, however, the community as an undifferentiated mass with a collective consciousness.

The psychologist Merlin Donald, in tracing the hypothetical evolution of human culture and cognition from mimetic to mythic and then to theoretic stages,[171] writes:

> Collectivity has thus become the essence of human reality. Although we may have the feeling that we do our cognitive work in isolation, we do our most important intellectual work as connected members of cultural networks. This gives our minds a corporate dimension that has been largely ignored until recently. The word "corporate" usually refers to institutional entities, such as banks and governments. This is not so anomalous a label as it might seem because corporations are unified in a cognitive sense, just like the body of living organisms. But unlike organisms, which are locked in on themselves, corporations can distribute their intellectual work over many minds and employ various external symbolic devices, such as writing systems and computers, to facilitate this distribution process. They can develop corporate perceptions, ideas, agendas, and even personalities. Individual minds are thus integrated into a corporate cognitive

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167. *Id.* at 317-18.

168. *Id.* at 319-23.

169. *See* Todd I. Lubart, *Creativity Across Cultures*, *in* HANDBOOK OF CREATIVITY 339 (Robert Sternberg ed., 1999) (stating that analysis of creativity in diverse cultures shows that creativity is context dependent in that culture is implicated in defining the nature of creativity and the creative process (for example, product focused in the West versus process focused in the East), channeling creativity, and both facilitating and inhibiting the overall level of creativity); *see also*, Dharm P.S. Bhawuk, *Culture's Influence on Creativity: The Case of Indian Spirituality*, 27 INT.'L J. OF INTERCULTURAL. REL. 1 (2003) (arguing that culture, *Zeitgeist*, and genius have reciprocal relationships in shaping creativity and exploring this framework to creativity in modern Indian spirituality).

170. Csikszentmihalyi, *supra* note 157, at 333.

171. DONALD, *supra* note 147, at 259-300.

> process, in which single individuals rarely play an indispensable role.[172]

We are nonetheless often blinded to the socially distributed, and to a large extent collective (although not in the Durkheimean sense of a single shared *conscience collective*), nature of our cognition. It is yet another example of the fundamental attribution error taken up in Part VI. As Donald describes this broader situation:

> It is fairly easy to visualize the distributed work of great numbers of laborers, such as those who built the pyramids, invaded Gaul, or built thousands of Model T Fords. But it is difficult to imagine how that same metaphor applies to mental work. Nevertheless, the invisible mental labors of generations of scholars and composers, stock exchanges, research institutes, software sweatshops, and bureaucracies are also distributed, just like those of an assembly line. Distributed cognitive systems employ thousands of human beings for various collective agendas. Workers in such systems are, in their collective and professional identities, nodes in a distributed network . . . . The best an individual can hope for is a small degree of uniqueness, perhaps by becoming the conduit of new collisions of ideas or conjoining vectors on thoughts that have never before been brought together.[173]

With this more enlightened analytical framework for understanding creativity, the treatment of the works in *Milpurrurru*[174] under copyright law can now be re-assessed. Not only did the applicable copyright law fail to cognize the relevant cultural dimensions of the harm caused by the imposition of Western conceptions of originality, art and property, but it also seems descriptively false, in light of what Western science teaches about the nature of creativity. However else we may judge the art and cultural practices of Aboriginal people, the above case suggests we need to at least consider viewing the legal norms of the Aboriginal people as more cognitively correct than those norms commonly found in the West to the extent that the former explicitly make salient broader social factors of creativity. This is neither to accept the prescriptions of Aboriginal customary law (which required death for those who violated the cultural restrictions) nor to romanticize it, but only to point out its recognition of the embeddedness of individual creativity within a broader social context—no less true for Aboriginals than for modern (or post-modern) Westerners.

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172. *Id.* at 298.
173. *Id.* at 299.
174. *See supra* note 13.

2. Perverse Incentives

Harvard Business School Professor Teresa M. Amabile has spent years conducting experiments on the social psychology of creativity, a field she helped create.[175] She has focused much of her work on motivation, which was first investigated in relation to creativity in the 1960s.[176] This research suggests that creativity is fostered by a person's involvement with the task and hindered by an over-concern with the ego.[177] As she describes it, "The identification of two types of motivation—one conducive to creativity and one harmful—was a breakthrough in research on the forces driving creativity."[178] However, this research lay dormant while investigators focused on personality characteristics thought to be central to creativity.[179] In the 1980s, Amabile proposed a hypothesis of creativity, which posits that the "intrinsically motivated state is conducive to creativity, whereas the extrinsically motivated state is detrimental."[180] Intrinsic motivation is defined as the desire to engage in an activity primarily for its own sake whereas extrinsic motivation focuses on meeting a goal external to the work itself, "such as attaining an expected reward."[181] Assessing the incorporation of this theory by other creativity researchers, Amabile and Collins write "most current theories that have considered the role of motivation in creativity agree that intrinsic motivation is beneficial to creativity."[182]

Interestingly, several experiments have shown that certain kinds of extrinsic motivation are *detrimental* to creativity. One experiment showed that competing for prizes for the maker of the "best" products undermined creativity.[183] Another study found that people who produced collages under expectation of expert evaluation were "significantly less creative than those who did not expect their work to be evaluated."[184] In another experiment, poems were judged to be less creative when the writers focused on extrinsic reasons for writing than when they did not focus on extrinsic

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175. AMABILE, *supra* note 151, at xi.

176. Mary Ann Collins & Teresa M. Amabile, *Motivation and Creativity*, *in* HANDBOOK OF CREATIVITY 297, 299 (Robert Sternberg ed., 1999).

177. *Id.* at 298-99.

178. *Id.* at 299.

179. *Id.*

180. *Id.* (quoting TERESA M. AMABILE, THE SOCIAL PSYCHOLOGY OF CREATIVITY 91 (1983)).

181. *Id.* at 299-300.

182. *Id.* at 300.

183. *Id.* at 302.

184. *Id.*

motivation.[185] The aforementioned studies may be challenged and their application to patent law questioned, but those concerned with human creativity, including IP advocates, cannot in good faith ignore the possibility that patents, designed as extrinsic motivators, might actually inhibit individual creativity.

Although some studies have demonstrated the positive effects of extrinsic motivation, such studies usually used specific instructions on *how* to be creative.[186] The "Intrinsic Motivation Hypothesis," which is now known, after years of studies confirming it, as the "Intrinsic Motivation Principle" states:

> Intrinsic motivation is conducive to creativity; controlling extrinsic motivation is detrimental to creativity, but informational or enabling extrinsic motivation can be conducive, particularly if initial levels of intrinsic motivation are high.[187]

Amabile and Collins advise that "[t]he most straightforward way to preserve intrinsic motivation and enhance creativity is to reduce the emphasis on such extrinsic constraints in the social environment."[188] Further, Amabile suggests that "high levels of intrinsic motivation are particularly important when the emphasis is on novelty" and that extrinsic concerns are likely to be especially detrimental in that context.[189]

This central insight gleaned from myriad experiments merits repeating: While intrinsic motivation fosters creativity, extrinsic motivations (e.g., rewards) inhibit individual creativity. It may appear that this finding challenges the very underpinning of the IP regime, which as Merges notes "is fundamentally about incentives to invent and create."[190] If extrinsic rewards are a hindrance to individual creativity (all of these studies focus on individual subjects), then the idea that the IP regime is to be judged based on a balancing of the social benefits of economic incentives for *increased* creativity with the social costs of limiting the spread of creativity embeds a false premise that increased economic incentives foster creativity. This premise may be only partially false, however, as these studies, focused on individual creativity, do not directly apply to corporate forms of creativity, and it may be the case that the IP regime's monopoly rights impede indi-

185. *Id.* at 303.
186. *Id.* at 303-04.
187. *Id.* at 304. (quoting TERESA M. AMABILE, CREATIVITY IN CONTEXT: UPDATE TO THE SOCIAL PSYCHOLOGY OF CREATIVITY 119 (1996)).
188. *Id.* at 306.
189. *Id.* at 305.
190. MERGES ET AL., *supra* note 20, at 10.

vidual creativity while they foster corporate power, including the power to innovate, as discussed in Part V. Even so, the economic assumption that extrinsic incentives necessarily foster creativity must be rejected as reflecting and perpetuating a naïve and largely false understanding of human creativity.

B. The Creative Unconscious and Conceptual Blending

Just as studies in social psychology affirm that social factors (beyond extrinsic rewards) play a far larger role in creativity than acknowledged in the West or reflected in its IP regime, cutting-edge cognitive science instructs that most "individual" creative processes occur unconsciously through a process called "conceptual blending." As cognitive scientists Gilles Fauconnier and Mark Turner describe it, "conceptual blending choreographs vast networks of conceptual meaning, yielding cognitive products that, at the conscious level, appear simple" but "[t]he way we think is not the way we think we think."[191]

As conceived by Fauconnier and Turner, conceptual blending involves two or more "small conceptual packets constructed as we think and talk, for purposes of local understanding and action."[192] A third mental packet, the "generic space," maps onto each of the inputs and contains the shared elements of the two initial input spaces. A fourth mental space, the "blend," receives selective projections from the first two input spaces. This blend develops emergent structures, not present in either of the input spaces, through processes of composition, completion, and elaboration.[193]

Conceptual blending is a process thought to underlie much of human creativity.[194] Yet even in this "micro" approach to creativity, culture rears its head. According to Fauconnier and Turner:

> Although it can be hard to come up with good projections, once the culture has them they are easily learned, precisely because cultures have invented systems of form, such as language, whose purpose is to prompt for various kinds of imaginative work like selective projection. Finding a blend for which the culture has no previous recipe can involve considerable amounts of unconscious cognitive exploration, but using the formal prompts pro-

191. FAUCONNIER & TURNER, *supra* note 154, at v.

192. *Id.* at 40.

193. *Id.* at 17-38.

194. *Id.* at 38 ("What has occurred, then, is a convergence toward the essential idea that there is a single mental operation involved in creativity in a number of different domains.").

> vided by culture to reconstruct such a blend once it has been found is much easier.[195]

In short, creativity is intimately related to the unconscious *and* to culture. Yet the dominant economic underpinnings of the IP regime are feeble because they incorrectly focus on culturally neutral individual, conscious choice and disposition, tempered only by extrinsic economic incentives.

C. Conclusion

Creativity is more significantly affected by social factors and unconscious processes than the IP model of the rational actor as romantic author suggests. The IP model foregrounds individual creativity when creativity is fundamentally social. To the extent that creativity is an individual accomplishment, it is largely achieved through unconscious universal cognitive processes such as conceptual blending and not through individual dispositions arrived at through introspection. Finally, the current IP model calls for extrinsic incentives, which research shows inhibit creativity.

The conception of TK as socially-embedded creations (but not as communal creations that are completely and uniformly distributed in a social group), as based on cumulative innovations, and as connected to the larger environment meshes far more closely with the emerging scientific understanding of creativity. However, an argument could also be made that the relation of much TK to myth, such as the role of the dreamtime in the designs at issue in *Milpurrurru*,[196] reflects—in culturally specific terms—a greater awareness of the unconscious factors central to all creativity than the prevalent IP model reflects.

V. CORPORATE CREATIVITY

> New ideas are the precious currency of the economy, but generating them doesn't have to be a mysterious process. The image of the lone genius inventing from scratch is a romantic fiction. Businesses that constantly innovate have systematized the production and testing of new ideas, and the system can be replicated by practically any organization.[197]

As discussed above, IP law and theory have thus far turned a blind eye to scientific insights about creativity. Corporations, however, have not.

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195. *Id.* at 73.

196. *See* Milpurrurru v. Indofurn Party Ltd. (1994) 54 F.C.R. 240.

197. Andrew Hargadon & Robert I. Sutton, *Building an Innovation Factory*, *in* HARVARD BUSINESS REVIEW ON INNOVATION 55 (2001).

Corporations that promote IP conceptions of creativity externally simultaneously promote TK-like conceptions of creativity internally. While the irony of this may be blithely ignored, its existence is irrefutable. There are two important points to note about corporate creativity. First, despite the theoretical indeterminacy and empirical uncertainty of the role of the IP regime in fostering creativity (either individual or writ large onto developing states), the IP regime undoubtedly benefits corporations over all other groups. Second, corporations are well aware of and utilize the insights from social and cognitive psychology in fostering creativity among their workforce. As a result, corporations wield immense power over both the production of creativity and its profits.

A. Corporations Benefit

Intellectual property laws are being strengthened, lengthened, and globalized with corporations as the primary beneficiaries. Lessig traces the expanding ambit of protection in copyright law through an increasing duration (from an average of 32.2 years in 1972 to 95 years today), a broadening scope (from regulating publishers to regulating users), and an emerging practice of treating almost all electronic uses as potentially infringing "reproduction[s]."[198] He argues that this expansion, in connection with market consolidation, curbs individual freedom.[199]

Although the evidence proving the incentive model is at best uncertain, it is clear that the expanding IP system supports the interests of corporations, primarily multinational ones.[200] The 1999 UNDP Human Development Report found that companies from developed states hold 97% of all patents worldwide, that over 80% of the patents granted in developing states are owned by residents in the developed world, and that the top five biotechnology companies control over 95% of gene transfer patents.[201] The story of how several multinational corporations in the United States formed the Intellectual Property Committee to lobby the United States government to include strong intellectual property protection as part

198. LESSIG, *supra* note 1, at 131-73.

199. *Id.* at 169.

200. *See, e.g.*, Hansen & VanFleet, *supra* note 14, at 5 (arguing that "there has been a clear bias" in the IP regime in favor of the creative efforts of corporations by allowing them to derive benefits "from their use of indigenous knowledge with disregard for the moral rights and material (financial) interests of indigenous peoples themselves").

201. 1999 UNDP Human Rights Development Report 68, *available at* http://hdr.undp.org/reports/global/1999/en [hereinafter UNDP Human Rights Development Report].

of the World Trade Organization (WTO) is well documented.[202] These corporations assisted the United States negotiators and teamed up with their industry counterparts in Europe and Japan to leverage their common interests. As Peter Drahos comments, "[m]ultinationals had better information about the strategic use of intellectual property portfolios in various markets around the world than did most governments."[203]

In his book *A Global Political Economy of Intellectual Property Rights*, May argues that corporations, as legal individuals benefit more from IP rights than real individuals.[204] He states, "[t]hough some individuals may still be able to build considerable power based on their work or individuality, in most circumstances it remains the knowledge using and reproducing companies who benefit most from the commodification of knowledge."[205] The IP regime allows these companies to maximize their gains through monopoly rents. Simultaneously, the promise of these gains and the dominance of corporations in the economy leads most individuals to transfer their rights to corporations. Accordingly, "[o]ne of the effects of the current settlement has been to maintain the imbalance between real individuals and legally constituted individuals while allowing the latter to claim the benefits which are justified through the 'rights' of the former."[206]

As May states, "the emergence of property furthers the interests of specific groups in society: those in possession of such resources that can be utilized to accumulate more resources, the nascent capitalists."[207] Neoclassical economics posits that such corporations have every incentive to internalize benefits and externalize costs. And "[a]s has been the case in the history of property, there has been a diminution of the possibility of a public domain of knowledge."[208] Given the focus on the "individual" in the IP narrative, May asserts that "any recognition of the justice of non-individualised [sic] interests is rendered invisible, or merely residual after the more important (owners') interests have been dealt with."[209]

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202. *See, e.g.*, Peter Drahos, *Global Property Rights in Information: The Story of TRIPS at the GATT*, 13 PROMETHEUS, June 1995, at 6-9.

203. Peter Drahos, *Negotiating Intellectual Property Rights: Between Coercion and Dialogue*, *in* GLOBAL INTELLECTUAL PROPERTY RIGHTS 161, 169 (Peter Drahos & Ruth Mayne eds., 2002).

204. MAY, *supra* note 1, at 163.

205. *Id.*

206. *Id.* at 164.

207. *Id.* at 21.

208. *Id.* at 50.

209. May, *Fishing with Dynamite*, *supra* note 68.

If IP rights are so one-sided in terms of individuals vis-à-vis corporations, it is important to ask how the IP regime is perpetuated. I explore this question in the subsequent Section. The answer will also go far in explaining why developing states went along with TRIPS.

B. Corporations Manipulate Social Factors of Creativity

Corporations expend significant resources to influence the social factors in their organizations to stimulate creativity.[210] A few examples of the application of the insights from the psychology of creativity suffice to demonstrate the corporate awareness of the social factors in creativity. Andrew Hargadon and Robert I. Sutton describe in *Building an Innovation Factory* how corporations can use "knowledge brokering" to create new ideas from old ones. Knowledge brokering consists of capturing ideas from a wide variety of sources, keeping the ideas alive through use, imagining new uses from old ideas (physical layout can increase interaction), and turning promising concepts into real products and processes.[211]

Dr. Jay L. Brand notes that "[r]ecently, psychologists have begun to appreciate the larger contexts in which creativity occurs and the roles these play in the manifestation of creative processes."[212] After summarizing recent research, he notes that "creativity rarely, if ever, involves completely new or original concepts or ideas" but rather depends on integrating "existing information into unusual syntheses or juxtapositions, together with only incremental novelty."[213] The Western conception of the "isolated genius with special powers who consistently stuns the world with great insights, inventions or ideas . . . has likewise not enjoyed much empirical support."[214] In its place is a recognition of "the many influences that together produce the ability to build on past accomplishments, approach problems in novel ways and entertain multiple—perhaps even conflicting—alternative solutions."[215]

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210. This is reflected on the shelves of bookstores which bear such titles as the following: CORPORATE CREATIVITY: ROBUST COMPANIES AND THE ENTREPRENEURIAL SPIRIT (Raymond W. Smilor & Robert Lawrence Kuhn eds., 1984); PAUL THORNE, ORGANIZING GENIUS: THE PURSUIT OF CORPORATE CREATIVITY (1992); ANJALI HAZARIKA, DARING TO DREAM: CULTIVATING CORPORATE CREATIVITY THROUGH DREAMWORK (1997); ALAN ROBINSON, CORPORATE CREATIVITY: HOW INNOVATION AND IMPROVEMENT ACTUALLY HAPPEN (1997).

211. Hargadon & Sutton, *supra* note 197, at 55-56.

212. Jay L. Brand, *The Cognition of Creativity*, I&S Continuing Education Series, Mar. 2001, *available at* http://www.isdesignet.com/Magazine/Mar'01/ceu.html.

213. *Id.*

214. *Id.*

215. The following are some of the examples provided by Brand:

Amabile wrote that "[n]ot all motivation is created equal" and that "an inner passion to solve the problem at hand leads to solutions far more creative than external rewards, such as money."[216] After describing the three components of *individual creativity* (expertise, creative thinking skills, and motivation) Amabile asks, "Can managers influence these components?" and responds, "The answer is an emphatic yes . . . through workplace practices and conditions."[217]

The point is simple but profound. Corporations are well aware of the situational factors in creativity, and they take advantage of them internally. Corporations generally do not use patents as incentives for their employees; they use a much broader and deeper range of situational influences, of which incentives for an individual are only a small part, if incentives are used at all. Even without intentional effort, corporations—with their large and diverse workforce, institutional knowledge, and focus on problem solving—lay a situational foundation for much creativity within cultural parameters. This creativity, however, like all thinking, is confined within the scope of the problem being addressed. In the case of corporations, charged by the law to maximize shareholder value, this leads to a focus on short-term gain. Even those who advocate corporate social responsibility

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> 1. Creativity usually comes from an extensive, diverse knowledge base rather than from eccentric or inherently gifted individuals. . . . Increasing the diversity of workers' cultural and ethnic backgrounds and their areas of expertise and the use of interdisciplinary, cross-functional teams should enhance creativity within your organization.
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> . . . .
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> 5. Creativity may depend on group interaction. . . . Explanations of creativity tend more and more to rely on the importance of the broader social context in which it occurs.
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> . . . .
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> 9. Creativity depends critically on the initiation and maintenance of activity, usually over extended periods of time. . . .
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> . . . .
>
> 12. Some evidence suggests that daydreaming and fantasy may be related to creativity. . . . To increase the likelihood of creativity, the effectiveness and efficiency of repetition and "standard operating procedures" must be balanced with time and flexibility to explore and innovate for its own sake.

Id.

216. Teresa M. Amabile, *How to Kill Creativity*, *in* HARVARD BUSINESS REVIEW ON BREAKTHROUGH THINKING 1, 4 (Teresa M. Amabile et al. eds., 1999).

217. *Id.* at 4.

often do so in the name of larger profits, and they too adopt a relatively short time horizon.[218]

Corporations seek to maximize their profit opportunities (and, accordingly, externalize as many of their costs as possible). This is accomplished, in part, through increased production. It is also accomplished through the manipulation of market behavior. The concepts of scarcity and abundance are the Janus faces of market logic. Corporations act as if they are satisfying (and to some degree do satisfy) material needs through perpetual innovation and production. To a greater extent, however, corporations define and expand our needs by fostering a sense of emptiness and scarcity that results in a dependence on consumption that replaces craft and other creative traditions. May argues that IP laws create scarcity of public knowledge by privatizing it just as these IP laws foster corporate wealth.[219] Increases in material production to meet these ever expanding needs of consumers could lead to a self-fulfilling prophecy: a scarcity of material resources (from overproduction) and a scarcity of individual creativity (why be creative when you can buy what you need?). As the economic anthropologist Marshall Sahlins showed, however, the perception of scarcity is not a human universal.[220] Moreover, the quantity of products to consume is no more an indicia of human creativity (or freedom, or happiness) than the number of patents or copyrights. In fact, as Professor Barry Schwartz argues, based on psychological evidence, too many options increase depression, stress, and anxiety.[221] The question should be: Whom is the IP regime serving? It is not safe to assume it is serving the interests of societal, let alone individual, creativity.

The negative effects of IP on human creativity notwithstanding, the most direct and undeniable result of the IP regime is to foster the concen-

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218. *See, e.g.*, *The Good Company: A Survey of Corporate Social Responsibility*, ECONOMIST, Jan. 22, 2005, at 15 (stating that a rational and self-interested firm should worry about its reputation and consider "sacrifices today for the sake of gains tomorrow, *or five years from tomorrow*," thereby suggesting that five years is a long-term view) (emphasis added).

219. MAY, *supra* note 1, at 8 ("While it may be possible to argue, as many critics of IPRs [intellectual property rights] do, that to commodify knowledge, makes ideas artificially scarce and their use less frequent—and, from a social point of view, less valuable, this claim is for the most part ignored [in discussions of intellectual property rights].") (citation omitted).

220. MARSHALL SAHLINS, STONE AGE ECONOMICS 4 (1972) ("The market-industrial system institutes scarcity, in a manner completely unparalleled and . . . nowhere else approximated. Where production and distribution are arranged through the behavior of prices, and all livelihoods depend on getting and spending, insufficiency of material means becomes the explicit, calculable starting point of all economic activity.").

221. BARRY SCHWARTZ, THE PARADOX OF CHOICE: WHY MORE IS LESS 3 (2004).

tration of wealth in large corporations. These corporations use this wealth to increase profits, and though this is sometimes done through increased innovation, at best, this innovation will be of a particular kind: it will facilitate short-term profit (or otherwise enhance the corporation). The concomitant globalization of the IP regime and the deeper penetration of market relations into previously non-market domains are likely to extinguish modes of creativity that do not serve short-term profit motives.

C. Conclusion

The prior Part endeavored to demonstrate that the IP regime expresses, at best, an impoverished conception of creativity when viewed in light of findings from the psychology of creativity. This Part showed that large corporations, in their internal practices, possess a surprisingly more accurate conception of creativity. The teachings from the psychology of creativity discussed above—whether at the macro- or the micro-level—can be manipulated for corporate gain. It is this broader conception which corporations harness to their ends—sometimes, but by no means always, to our benefit. The argument is not that the IP laws have no relation to creativity but that their effects on creativity are ambivalent and largely overrun by a host of broader economic, psychological, and social factors. TK and IP proponents concerned with fostering creativity for human betterment should engage more openly with what science instructs about the nature of creativity and focus less on treating IP as a conflict over competing, absolutist, and mutually irreconcilable rights claims. This could lead to a legal regime that better promotes creativity.

VI. TOWARD A PSYCHOLOGICAL CRITIQUE OF IP RIGHTS

> We are now threatened with the prospect of our being only consumers, able to consume anything from any point in the world and from every culture, but of losing all originality.[222]

In this Part, I apply the "critical realist" insights of Hanson and Yosifon to the IP regime. Doing so helps to expose a hitherto unrecognized aspect about how the IP model is sustained—not only in light of the theoretical and empirical criticism discussed above, but even by those seemingly harmed by it. By enlisting cognitive bias, corporations promote their monopoly rights while they also control the factors influencing creativity; both in the name of the public good. To the extent the TK discourse provides a more psychologically veridical view of creativity, it has the poten-

222. CLAUDE LEVI-STRAUSS, MYTH AND MEANING 20 (1995).

tial to function as a more realistic, and also more radical, critique of IP than the recent critiques of Boyle, Lessig, and May.

A. Summarizing *The Situation* (Part 1): The Fundamental Attribution Error

In *The Situation: An Introduction to the Situational Character, Critical Realism, Power Economics, and Deep Capture*, Hanson and Yosifon undertake an ambitious multifaceted project.[223] This project commences with two puzzling questions. First, why do legal economists who analyze the functioning of virtually all human activity and posit selfish interests to individuals fail to apply that same analysis to their own field?[224] Second, why, despite strong and often unrebutted criticism of law and economics from prominent legal scholars, does law and economics continue to expand as the dominant legal school of thought?[225]

The answers, they argue, relate to the fundamental attribution error, which leads humans to "underestimate the role of situational influences, and to overestimate the influence of individual dispositions in explaining people's behavior."[226] This bias is even reflected by those who criticize the field of law and economics.[227] Hanson and Yosifon set out not to critique the "rational actor" but to conceptualize human behavior more realistically in its broader social context, or as they refer to it, "the situation." As they describe her, the "situational character" finds herself interpolated into action:

> On a given stage, among other characters, with dialogue and plot proceeding apace around her, and subject to the powerful (if less visible) influence of scripts, props, backdrops, and directors. . . . To be sure, such a character will often behave as if she is a dispositional actor, but alter the stage, the script, and so on, and you will see the pervasive role of situation as the actor's behavior conforms to it.[228]

Their claim is that people significantly overestimate the frequency and ease with which they perceive, choose, and act.[229] Because so much of

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223. Hanson & Yosifon, *supra* note 148.
224. *Id.* at 133-34.
225. *Id.* at 139-41.
226. *Id.* at 136.
227. *Id.* at 148.
228. *Id.* at 155.
229. *Id.* at 173-74. They explain:
> We humans tend to perceive disposition as dominating situation even though evidence from social science strongly suggests the reverse; this

Hanson and Yosifon's approach, and my approach to the IP model, depends on the validity of certain cognitive biases, this Section provides a brief introduction to these biases.

In 1997, psychologist Lee Ross drew on earlier insights that "behavior engulfs the field" because, being the most salient element in a social setting, it "leads observers to over-attribute behavior to dispositional factors—such as abilities, traits and motives—and underestimate the influence of situational factors."[230] That is, in watching another person, our attention is directed to his behavior (movement, speaking) and not background factors (social context, roles, or situational pressures).[231] Ross believed this was so common, and so often led us to make incorrect judgments, that he named it "the fundamental attribution error."[232] A wealth of psychological studies has subsequently affirmed the pervasive robustness of this bias.[233]

Our "folk model"[234] of the mind, dominant at least in the West, leads to certain blind spots that further entrench the dispositional bias. The cognitive anthropologist Roy D'Andrade has identified the five major parts of the Western model of the mind as perception, thought, feeling, wish, and intention.[235] These classes of mental events are thought to relate to each other in a chain of direct causation from perception to thought, then to feeling, to wish, to intention, and finally to action. At the center of the model is the "self," and "a major characteristic of the folk model is that

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> is, again, the fundamental attribution error. The objective here is not to prove or to claim that disposition plays no role in our behavior, or even that it does not sometimes play a very important role. Rather, the objective is to make clear what social science reveals about just how surprisingly slight that role is most of the time—at least as compared with what most of us believe and, perhaps want to believe. . . .

Id.

230. SCOTT PLOUS, THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING 180 (1993).

231. SUSAN T. FISKE & SHELLEY E. TAYLOR, SOCIAL COGNITION 67 (1991).

232. PLOUS, *supra* note 230, at 180.

233. *Id.* at 180-88 (describing an experiment with seminary students who refused to help a person in need because they were late to deliver a lecture (on the story of the Good Samaritan!), in which helping behavior was correlated with the situational factor of hurriedness, not the dispositional factor of religiosity); *cf.* Daniel M. Wegner, *The Mind's Best Trick: How We Experience Conscious Will*, 7 TRENDS IN COGNITIVE SCIENCES, Feb. 2003, at 65 (suggesting that rather than consciousness causing behavior, consciousness and behavior may both be caused by some third antecedent force).

234. ROY D'ANDRADE, THE DEVELOPMENT OF COGNITIVE ANTHROPOLOGY 158 (1995) (describing a "folk model of mind" as "the representation of what happens inside people . . . that results in their doing what they do").

235. *Id.* at 160-69.

most of the things that happen in the mind are thought to be conscious."[236] In the folk model "there does not appear to be a real unconscious, only a kind of myopia about certain mental states," and the self "is thought to be able to control actions" such that for everything one does "so one could have decided to do differently."[237]

The fundamental attribution error is so prevalent that several researchers have considered it "an automatic outcome of perceptual experience."[238] However, the social psychologists Susan T. Fiske and Shelley E. Taylor argue that it is not an automatic response. First, they note that it needs to be learned. As evidence, they point to findings that children do not explain human behavior in dispositional terms, but, rather, in concrete situational terms.[239] Second, the fundamental attribution error is not universal in its strength.[240] Assessing a review of the findings on the cross-cultural nature of the attribution process, the authors conclude that "although the fundamental attribution error is a ubiquitous part of Western causal inference, it is not as dominant in non-Western cultures."[241]

With the fundamental attribution error in mind, we can return to Hanson and Yosifon's argument. At the risk of greatly reducing the breadth and depth of their article, their elucidation of the above questions proceeds as follows: (1) social psychology has provided copious evidence that human action is far more a result of situational reactions than dispositional actions, and yet for a variety of reasons humans (especially in the West) are biased toward viewing the world dispositionally and reaching conclusions that correspond with this worldview;[242] (2) the rational actor model at the heart of economics (in which the individual acts out of self-interest to maximize preferences) is fundamentally dispositional;[243] (3) law and economics partly holds sway because the dispositional story its proponents tell (of rational market mediated actors), and even the criticism of the field, enlists the bias of the fundamental attribution error; and (4) to the extent that seemingly dispositional actions are more accurately understood

236. *Id.* at 163.

237. *Id.*

238. FISKE & TAYLOR, *supra* note 231, at 68.

239. *Id.*

240. Hanson & Yosifon, *supra* note 148, at 250-51 (arguing that studies suggest dispositionism appears universal, but it is more elaborated in the West, and hence socially, or situationally, influenced).

241. FISKE & TAYLOR, *supra* note 231, at 68.

242. Hanson & Yosifon, *supra* note 148, at 136-37.

243. *Id.* at 139 ("Legal economists are correct to presume the profound influence of the profit motive over the behavior of individuals and institutions in our society, but are mistaken to locate that influence dispositionally rather than situationally.").

as situational reactions, the economists who rely on dispositional attributions may be consistently misguided.[244]

Thus, the first question of why legal economists posit selfish and rational interests to individuals but fail to see the success of their own field in similar terms can be understood as a self-affirming manifestation of the human tendency to attribute explanation to narrow dispositional causes instead of the more important situational or social forces.[245] That is, legal economists view others as dispositionally (typically selfishly) motivated because they can plausibly infer such information from people's conduct.[246] Further, as Hanson and Yosifon state, "[l]egal economists, likewise, see themselves (and others in their movement) as dispositionally driven, but their own purposes are presumed less crass, in part because…they are motivated to attribute their success and their competitors' concomitant failures to disposition, not situational, forces."[247]

The second question of why the field of law and economics continues to hold sway in legal academia despite well-stated criticisms is partly elucidated through the same bias, representing a move away from a situational explanation. Both critics and proponents of the law and economics approach accept the idea that there is a "tournament of ideas," in which "competitors are presumed to win or lose because of dispositional factors" and "the operation and dynamics of the tournament itself is presumed to be independent of broader situational influences."[248] This dispositionally-biased view is reinforced by a human motivation to believe the institutions to which we belong are just, even when we are made worse off by them.[249] In short, the fundamental attribution error and other cognitive biases go far

244. *Id.*

245. *Id.* at 138-39.

246. *Id.* at 161. (In short, they write, "economists are situationally sensitive in only the narrowest sense—taking into account the way in which price might influence people's actions based on their willingness to pay, but refusing to look at the situational backdrop to that disposition.").

247. *Id.* at 138.

248. *Id.* at 148 ("The metaphor of a tournament on marketplace highlights the presumption that competition on the merits is the driving force and that the victor is determined through successful competitive engagements, full stop. Any forces exogenous to the tournament are rarely identified, much less systematically analyzed.").

249. *Id.* at 144. *See generally* Brenda Major & Toni Schmader, *Legitimacy and the Construal of Social Disadvantage*, *in* THE PSYCHOLOGY OF LEGITIMACY: EMERGING PERSPECTIVES ON IDEOLOGY, JUSTICE, AND INTERGROUP RELATIONS 176, 179 (John T. Jost & Brenda Major eds., 2001) ("[P]eople show a pronounced tendency to perceive the status quo as legitimate or just. . . . System justification theories predict that this tendency will lead members of disadvantaged groups to construe their social outcome in ways that justify and legitimize their disadvantaged position.").

in explaining why economists treat the success of their movement through a positive dispositionist bias (and not the negative one they attribute to their critics), and why critics of law and economics also treat that movement's success as meritorious and reflecting critics' own dispositional failures.

B. IP and the Fundamental Attribution Error

Before returning to the remainder of Hanson and Yosifon's argument and its conclusions, this Section relates the IP model to the argument outlined above. First, though, I will recall the cast to the stage. In Part II, I illustrated how the IP model is expanding domestically and globally, despite theoretical and empirical criticisms of it. At the heart of the IP model, as many of its critics have recently pointed out, is the concept of the "romantic author" or "genius inventor." In this vein, copyright scholar Peter Jaszi writes, "[t]he persistence of the notion of 'authorship' in American copyright law makes it difficult for any new legal synthesis, which would focus on the reality of collective creativity, to emerge."[250] In Part IV I applied recent teachings from social and cognitive psychology to show that the process of human creativity does not match the views of the IP model, but better fits the understanding of creativity expressed in the TK discourse—namely that creativity is cumulative, emergent, social, and profoundly affected by situational influences. This understanding does not, of course, obviate the need for a legal regime that fosters creativity, but it does point to the harmfully narrow range of considerations in current discussions of and justifications for the expanding IP regime. I also showed that large corporations are fully aware of these insights from cognitive psychology and spend copiously to influence a wide range of variables to foster the creativity they want. Incentives (let alone IP laws) have minor, or even negative, roles. With the stage set, one part of the answer to the conundrum of the IP regime's success despite unanswered criticism rapidly falls into place.

The IP model of creativity is as unrealistic in describing what we know of the nature of creativity as it is dispositional. Said another way, its unreality is due in large part to its reliance on dispositionism. It follows that if individuals are dispositionally biased, then those individuals, whether they benefit from the IP regime or not, will be biased to accept IP laws as more natural and intuitive than they are because these laws foreground dispositional concepts of the romantic author and the genius inventor. Further, in

250. Peter Jaszi, *On the Author Effect: Contemporary Copyright and Collective Creativity*, *in* THE CONSTRUCTION OF AUTHORSHIP 29, 31 (Martha Woodmansee & Peter Jaszi eds., 1994).

our folk model of mind, it reasonably follows that the promise of incentives in the form of limited monopoly rights[251] will foster individual creativity. That is, dispositional bias leads people to accept both the description of creativity and the role of incentives at the heart of the IP laws *even though both are likely incorrect*. The Western folk model of creativity is incorrect because the latest science shows that creativity is not entirely or even primarily dispositional. The role of incentives central to the IP regime is equally incorrect because extrinsic incentives, far from having the impact we intuitively expect, inhibit individual (if not corporate) creativity.

A caveat is in order before proceeding forward. My argument is not that the potential for economic remuneration via limited monopoly rights is likely to have no effect (at least for corporations who, as discussed in Part V, own the vast majority of patents and copyrights worldwide), nor that people like Thomas Edison are uncreative, or more broadly, that people never act dispositionally. Rather, the argument is that we systematically overstate the extent to which we (Thomas Edison no less than any of us) act dispositionally (as romantic authors or genius inventors) and underestimate the influence of the situational factors in human action (including creativity), and their manipulability. Further, to the extent our dispositional views of action *seem* to reflect reality, when this is not due to self-affirming bias, self-fulfilling prophecies, or other cognitive biases, it is often because of the stability of the situation, not disposition.[252]

1. The Dominant IP Incentive Model Revisited

Given the theoretical criticism of the economic theory of IP, why has it dominated, and why has it been perceived as "neutral?"[253] William Fisher, in critiquing the reigning utilitarian theory of IP law that prioritizes economic incentive, points out that, in contrast to social planning and personhood perspectives in IP, which are seen as "illiberal" and "paternalistic,"

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251. I say "promise of incentives" because the granting of a patent or the existence of a copyright assures no compensation, but only monopoly rents to the extent the commodity embodying the invention or work of authorship is successful in the market.

252. Hanson & Yosifon, *supra* note 148, at 139 ("The point—and this is a big one—is that even though individuals and institutions may behave *as if* their goal were to maximize wealth, such behavior may actually reflect the social stage of interactions (the situation) more than it does the dispositions of the actors.") (emphasis added).

253. Fisher, *supra* note 22, at 169 (describing as "the most popular" the utilitarian model, which "requires lawmakers to strike an optimal balance between, on one hand, the power of exclusive rights to stimulate the creation of inventions and works of art and, on the other, the partially offsetting tendency of such rights to curtail widespread public enjoyment of those creations").

"the utilitarian and labor-desert approaches, especially the former, have enjoyed an aura of neutrality, objectivity, and above all determinacy."[254] Fisher suggests "[t]hat aura helps to explain why courts . . . have sought guidance most often from economic arguments and least often from social-planning arguments."[255] However, Fisher as well as other scholars who have criticized the economic approach have failed to explain *why* it appears more neutral than other models, or, more to the point, *why* it is dominant. Extending Hanson and Yosifon's argument here, I believe the individual bias of the IP regime plays into the "fundamental attribution error," and that they are mutually reinforcing.

The fundamental attribution error has purchase in explaining several issues that initially appeared unrelated and that do not lend themselves to individual explanations. An important part of the answer to the question of the dominance of the utilitarian IP model is largely the same as the answer to the continued dominance of law and economics: The dispositional bias of the IP regime's core concept of the individualistic and rational author and inventor responsive to extrinsic incentives, no less than in the field of law and economics, enlists the fundamental attribution error that most humans already manifest. The fundamental attribution error leads to dispositionist presumptions in law, economics, and social policy.[256] And the IP model, especially in its economic incentive form, is a dispositionist model *par excellence*.

2. TRIPS and Developing States Revisited

All WTO members accepted TRIPS despite the seemingly certain benefit stronger IP laws would bring to large corporations and the likely negative effects they would have on developing states. In fact, corporations were responsible for getting IP law on the international trade agenda and defining the framework in TRIPS in the first place. This begs the question why developing states signed TRIPS at all.[257] The first reason is

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254. *Id.* at 194.

255. *Id.*

256. Hanson & Yosifon, *supra* note 148, at 287-88.

257. *See, e.g.*, MASKUS, *supra* note 54, at 183-86 (estimating that TRIPS will result in static rent transfers to the United States in the amount of $5.8 billion and noting that "the overwhelming share of rents transferred by stronger global patent rights would accrue to the United States" and that "[a]mong developing countries, the gross outward transfer would rise with the size of the economies and the extent to which patents were strengthened"); DRAHOS & BRAITHWAITE, *supra* note 6, at 11. They explain:

> No one disagrees that TRIPS has conferred massive benefits on the US economy, the world's biggest net intellectual property exporter, or that it has strengthened the hand of those corporations with large

coercion, reflecting larger charges of the "democracy deficit" at the WTO. As Shiva suggests:

> In fact, TRIPs was not negotiated by GATT members. It was imposed by MNCs [multinational corporations] who used the US government to force it on other members. It is the most blatant example of the undemocratic, non-transparent nature of the WTO. The basic framework for the TRIPs patent system was conceived and shaped in a joint statement presented to the GATT Secretariat in June 1998 by the Intellectual Property Committee (IPC) of USA and industry associations of Japan and Europe. IPC is a coalition of thirteen major US corporations dedicated to the finalization of TRIPs in their favor. The members of IPC are corporations like Bristol Myers, Dupont, General Electric, General Motors, Hewlett Packard, IBM, Johnson and Johnson, Merck, Monsanta, Pfizer, Rockwell and Warner.[258]

Shiva describes how the IPC convinced industry groups in Europe and Japan, as well as the GATT Secretariat, that an international IP regime at the WTO was feasible and should be based on the laws of the more advanced countries. In Shiva's view, TRIPS was not a product of democratic processes within the international community, but rather represented "the imposition of values and interests of northern MNCs on the diverse societies and cultures of the world."[259]

A similar answer is given by Drahos and Braithwaite, who argue the TRIPS regime represents a democracy deficit wherein the interests of a small number of U.S., European, and Japanese corporations captured the trade agenda and then caused their governments to impose it through trade power on developing states.[260]

The second view, supported by many policymakers, is that TRIPS was part of the "package deal" of the WTO. In return for strong IP laws, de-

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> intellectual property portfolios. It was the US and the European Community that between them had the world's dominant software, pharmaceutical, chemical and entertainment industries, as well as the world's most important trademarks. The rest of the developed countries and all developing countries were in the position of being importers with nothing really to gain by agreeing to terms of trade for intellectual property that would offer so much protection to the comparative advantage the US enjoyed . . . .

Id.

258. SHIVA, *supra* note 10, at 95-96.

259. *Id.*

260. DRAHOS & BRAITHWAITE, *supra* note 6, at 12 ("The resistance of developing countries was crushed through trade power . . . .").

veloping states obtained the Agriculture Agreement. Lessig, in discussing copyright piracy in developing states acknowledges the role of coercion in the imposition of international copyright laws, but asserts that states must be held accountable for their sovereign choices.[261] But, as Drahos and Braithwaite point out, in support of the first view, "[t]he WTO agreement on Agriculture, however, does not confer anything like the benefits on developing countries that TRIPS does on the US and the European Community."[262] In addition, given that TRIPS covers plants, Drahos and Braithwaite note that developing countries will increasingly have to pay more for inputs they buy from agrochemical companies and thus have "signed away at least some of their comparative advantage in agriculture."[263]

The first view has much to support it.[264] TRIPS would not have been adopted but for the money and influence of a small number of large corporations.[265] Yet this explanation cannot explain TRIPS on its own. First, as the "package deal" proponents note, the states that signed the WTO did so in the apparent belief, however mistaken, that trading TRIPS for the Agriculture Agreement was a fair compromise. If coercion had been the only factor at play, then presumably TRIPS could have been negotiated without any countervailing trade-offs. What needs to be explained is not the negotiation of the trade-off, but why the benefits and costs of TRIPS were so miscalculated. Second, despite initial resistance by developing states, their resolve lessened dramatically.[266] John Jackson, a prominent trade scholar, notes:

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261. LESSIG, *supra* note 1, at 64 ("If a country is to be treated as a sovereign, however, then its laws are its laws regardless of their source.").

262. DRAHOS & BRAITHWAITE, *supra* note 6, at 11.

263. *Id.*

264. JOHN H. JACKSON, THE WORLD TRADING SYSTEM 310-11 (1997) (describing the proponents of IP obligations as primarily from industrialized states and forming "a very strong and sophisticated coalition that developed policy advocacy, both at the national government levels . . . and at the international level").

265. DRAHOS & BRAITHWAITE, *supra* note 6, at 10 ("During the course of an interview in 1994 with a senior U.S. trade negotiator he remarked to us that 'probably less than 50 people were responsible for TRIPS.'"); *see also* Jeffrey L. Dunoff, *The WTO In Transition: Of Constituents, Competence and Coherence*, 33 GEO. WASH. INT'L L. REV. 979, 1003 (2001) ("[T]he pressure for including intellectual property rights (IPRs) into the trading system was led by the software and pharmaceutical industries which argued, inter alia, that WIPO lacked an adequate enforcement mechanism, and that lax enforcement of IPRs distorted international trade.").

266. JACKSON, *supra* note 264, at 311 ("[N]evertheless, by . . . 1991 there seemed to be an enormous change in attitudes . . . of developing countries which led many such countries to be willing ultimately to accept the IP Agreement . . . .").

> One of the developments that was perhaps not entirely foreseen at the outset of the [Uruguay Round] negotiation, was that as time went on, the controversy was less and less between developing countries and industrial countries, and more and more between the industrial societies, such as the tensions between the United States and Europe and other industrial countries, concerning some particulars of patent or copyright protection.[267]

These seemingly inexplicable aspects of TRIPS's acceptance could partly be explained by the fundamental attribution error and what critics have deemed to be base-rate neglect on the part of the policymakers. The fundamental attribution error caused negotiators to overestimate the role of IP laws in fostering creativity. Again, the cross-cultural evidence of dispositionism hints that it is a universal human bias, and that it is more dominant in the West and subject to situational influence and learning.

The dispositionist approach of IP is, not surprisingly, part of the discourse of economic development in which IP is viewed as an "enchanted tool" for growth. As discussed in Part II, IP proponents claim that strong IP rights will foster economic development through increased incentives for innovation in developing states. In particular, this narrative states that an increase in protection will foster foreign direct investment, result in technology transfer, and lead to the production of medicines and technology more relevant to the third world. An example is the WIPO book *Intellectual Property: A Power Tool for Economic Growth* which asserts that, "international acceptance and utilization of IP tools means that there will be more innovation and therefore more creative change and cultural and economic growth."[268] This story applied to the level of the state mirrors the individual incentive model from the initial justification of intellectual property protection; however, the balancing schema is ignored and stronger is just better.

Other justifications for increased IP rights in developing states are even more explicit in their appeal to dispositionism. Thus, a speaker at a World Bank panel on IP and economic development is reported to have commented, "[I]t is quite clear that legal rules [of IP] influence the economic behavior of individuals."[269] Similarly, in *Intellectual Property and Economic Development*, Robert Sherwood argues that strong intellectual property rights can provide a host of benefits for individuals in developing

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267. *Id.* at 312.

268. IDRIS, *supra* note 31, at 4.

269. World Bank, Intellectual Property Rights and Economic Development: An Agenda for The World Bank Group, http://www.worldbank.org/html/fpd/technet/semsums/march5.htm (last visited Nov. 4, 2005).

states: more corporate training, more exposure within a corporation to its technology, and a more rewarding career;[270] yet he notes that developing states have nonetheless resisted strengthening their IP laws largely out of "a simple lack of knowledge."[271]

Recall Carlos from Part II, the fictional Peruvian welder who has an idea for a new clamp. As the story goes, Carlos' fate, along with that of his country, depends on the existence of IP laws. His story illustrates the presumed power of IP to foster economic growth.[272] And indeed it has a ring of plausibility and intuitiveness to it. It is the same story used to justify IP in the West. Not because it is true, but because of the fundamental attribution error; we *perceive* it as truer and more salient than it is.

At the same time, base-rate neglect of the current distribution of patents could have led policymakers in developing states to underestimate the impact of the initial distribution of inventions and works of authorship protected by the IP laws. Base-rate neglect can occur when "a reliance on representativeness leads people to ignore . . . the relative frequency with which an event or fact occurs."[273] The United States and other proponents of TRIPS had a comparative advantage in the sorts of creativity protected by TRIPS. This is true not only theoretically, but also factually. After all, the vast percentage of patents (whether granted in the developed or developing states) are owned by companies from developed states.

Companies with patents obviously benefit by having those patents recognized in new jurisdictions. But the implications are even more profound: any legal recognition of property where it was not recognized before will have disparate effects wherever the thing "propertized" is unevenly distributed. Yet, focusing on process and "best practices" for development and criticizing TRIPS primarily for its process defects, such as Shiva and Drahos do, "[f]oreground[s] problems of *participation* and *procedure* at expense of distribution, implicitly legitimizing the existing distributions of wealth, status and power."[274] Given that corporations in developed states own 97% of the world's patents,[275] it is difficult to imagine a less evenly distributed intellectual property rights system.

The more patents a company holds, the more freedom it likely has to develop follow-on innovations, not only because it has the know-how and

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270. SHERWOOD, *supra* note 32, at 191-92.

271. *Id.* at 193.

272. *Id.* at 196-97.

273. PLOUS, *supra* note 230, at 115-16.

274. David Kennedy, *The International Human Rights Movement: Part of the Problem?*, 15 HARV. HUM. RTS. J. 101, 109 (2002) (emphasis in original).

275. *See* UNDP Human Rights Development Report, *supra* note 201.

technology, but also because it has an arsenal of patents to assert offensively against putative competitors and defensively to carve out a wider moat of research freedom. This can create strong barriers to entry for new players.

These second-order cascading effects are difficult to measure and cognize. The importance of this difference in base-rate distribution, and its perpetuation through TRIPS, was underestimated, partly because of the "representativeness" of the dispositionist account of creativity. And the different base-rates (i.e., the current distribution of IP rights) and their effects in further entrenching the status quo are likely to be undervalued precisely because of the salience of the IP romantic author/genius inventor model. Even the equivocal economic evidence is likely to foster dispositionism because "causal ambiguities that fog our experiences allow, and often encourage it."[276]

Again, the point is not that potential economic incentives of the IP regime would have no effect; rather, their effect on creativity and economic development is likely to be far less than assumed. And, with respect to developing states confronting more powerful situational factors, such as the large percentage of people living on less than one dollar a day, funds directed toward implementing the IP system could have been better spent to create far greater effects on development (e.g., research, universities, or water sanitation).[277] After all, the relative surplus of labor and the dearth of capital render the many capital-intensive and labor-reducing inventions typical of patent law of questionable benefit in the first place for the poorest of the developing states.[278] Furthermore, there are definite costs imposed on domestic industry due to limiting technological inputs, because the foreign companies that control the related rights often choose not to market their products or decide their products are too costly for wide distribution.

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276. Hanson & Yosifon, *supra* note 148, at 175.

277. *See* MASKUS, *supra* note 54, at 173 (estimating Egypt's TRIPS compliance costs to be approximately $800,000 with annual training of $1,000,000).

278. *See, e.g.*, CYPHER & DIETZ, *supra* note 33, at 417. They observe:

> It has long been the claim of the structuralist economists that the TNCs employ capital-intensive production systems which are inappropriate in poorer nations where labor is both abundant and relatively cheap, and where the real rate of unemployment and underemployment may be alarmingly high. . . . Thus with more capital-intensive production techniques in use, TNCs contribute to urban unemployment and underemployment.

Id.

The IP system, and in particular the patent system, works by permeating market relations. At the same time, large corporations can charge more for products protected by IP. The TRIPS debate was framed in both "moral"[279] and incentive terms; it was *not* framed in terms of distribution. But as Professor David Kennedy points out regarding international lawmaking in general, "[politicians] err when they isolate politics within a shrinking public sphere, when they assume governance must be built while markets grow naturally. . . . Our foreign policy professionals have systematically underestimated the opportunities for engagement with the background worlds of private law, market institutions, [and] cultural difference."[280] While the fundamental attribution error turns people away from these and other situational factors, Hanson and Yosifon show corporations are well aware of their power in influencing these factors no less than creativity itself, as already argued in Part V.

C. Summarizing *The Situation* (Part 2): Power Economics and Deep Capture

Hanson and Yosifon do not stop at revealing the dispositionist tilt of law and economics and the role the fundamental attribution error plays in supporting its dominance. They further draw on the findings that dispositionism is learned and manipulable[281] while the "situation" far more often influences behavior. Given the apparent power of the situation in influencing individual behavior, they inquire "how this stage is set, who has the power to set it," and whose interests the staging serves.[282]

"Power" is often left unexplained in economic theory, with economists justifying the omission by claiming that power is hard to operationalize. Hanson and Yosifon, however, provide a more concrete notion of power in economics through their concept of the situation. Analyzing a situation with a view toward recognizing dispositional bias reveals "the power of staging over acting."[283] As noted in Milgram's experiments, much of a situation can be managed and constructed to influence us in ways that, because of our dispositional bias, we often fail to perceive. Because power is

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279. DRAHOS & BRAITHWAITE, *supra* note 6, at 61 (describing an op-ed piece in The New York Times written by the then chairman and president of Pfizer International alleging that United States knowledge and inventions were being stolen by (primarily developing) states because their laws did not provide the scope of protection (primarily for patents) that United States law afforded).

280. David Kennedy, *The Forgotten Politics of International Governance*, 2 EUR. HUM. RTS. L REV. 117, 124 (2001).

281. Hanson & Yosifon, *supra* note 148.

282. *Id.* at 149.

283. *Id.*

valuable to those who wield it, and insofar as power can be exercised (often unobserved) through situational variables, Hanson and Yosifon argue that the control of those variables will trade like anything else in a market because "[w]hat we know from economics is that markets will eventually discover and exploit profit-enhancing opportunities for power."[284] "Market forces guarantee the exercise of power through situational manipulation—that is the essence of power economics."[285] In short:

> Power economics predicts that we are living within an ongoing Milgram experiment, in which we, the subjects, perceive our acts to be free and dispositionally motivated, but in which the experimenters—large business entities—wield far greater influence over our movements through situational manipulations than we tend to recognize.[286]

Thus, as the neoclassical economists have claimed, the "situation" will be sold through largely unseen market processes to those able to pay—not because corporations are dispositional (let alone rational) actors, but because of a host of stable situational factors.[287]

Hanson and Yosifon define deep capture as the "self-serving influence that the relatively powerful tend to exert over all the exterior and interior situational features that materially influence the maintenance and extension of that power—including those features that purport to be, and that we experience as independent, volitional, and benign."[288] They claim that large corporations have the ability to deeply capture our institutions and ourselves, and that they achieve this by advocating a dispositionist worldview. They argue that "a dispositionist worldview benefits both individual corporations and the shared corporate interest, and that corporations therefore individually and jointly will act to promote it."[289]

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284. *Id.* at 198-99.

285. *Id.* at 198.

286. *Id.* at 200.

287. *Id.* at 199 n.254 (arguing that corporations tend to behave as if their sole or primary goal is to maximize profits not because they have dispositions, but because they participate in market competitions which work to eradicate those firms and managers that do not effectively maximize profit).

288. *Id.*

289. *Id.* at 226. Their argument is distilled as follows: (1) the ability to influence situations will tend toward those with the ability to pay; (2) corporations share a single common interest of maximizing profits; (3) corporations are effective at exploiting the most efficient means of influencing people and institutions, and they effectuate this through situational influences such as advertising, lobbying, marketing, and public relations; and (4) our well-being is often perceived to be dependent on corporations doing

Corporations do so because dispositionism tends to justify corporate profit-seeking as *socially beneficial*, for if consumers are dispositional (act according to stable preferences) then it reasonably follows that free market transactions can best satisfy those preferences. Thus, "[a]s profit-maximizing entities, corporations act to maximize social welfare by serving consumers' supposed dispositional preferences" and "[p]rofit is the substantiation of those welfare-enhancing transactions and is therefore, by definition, good."[290] This dispositionism minimizes the regulation of corporations because regulation is perceived as impinging on consumer choice while dispositionism purports to place consumers in charge of their own choices, even bad ones.[291]

The power that corporations wield over the situation is trebly insidious. First, it remains largely undetected because of our tendency to fall prey to the fundamental attribution error. Second, by focusing on disposition, we presume there is a consistent and level playing field, a neutral situation, and dispositionally deserved outcomes. Third, we perceive that we have a stake in the system, and tend to defend it as natural in the face of criticism.[292] In response to the hypothetical question of the significance of the fundamental attribution error and a situational approach, Hanson and Yosifon respond:

> [T]hose in power have significant stakes in promoting, among other things, a generally dispositionist framing of an issue. Those stakes have, indeed, led to investments attempting to influence the situation, including the production and distribution of legal-theoretic knowledge that is strongly dispositionist in orientation [i.e., law and economics]. Taken together, those elements suggest that the fundamental attribution error is playing an immense and influential role in our policymakers' worldviews and in their policies.[293]

D. The Power of IP and the Deep Capture of Creativity

If it is generally true, as Hanson and Yosifon assert, that "the deep capture of 'knowledge' is not accomplished without the deep capture of

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well. The article provides numerous examples illustrating that corporations are well aware of the power of the situation, and spend vast amounts of money manipulating it.

290. *Id.* at 227.

291. *Id.*

292. *Id.* at 323 n.685 (pointing to social psychology studies that provide evidence that a threat to existing systems "activates a general motive to justify . . . the system, as is," even those harmed by it).

293. *Id.* at 286-87.

knowledge production, and that is also part of the unseen situation,"[294] this appears especially true in the situation of the expansion of the laws meant to govern mental creations. To the extent corporations foster the dispositionist worldview, they will be able to further leverage IP laws to their economic benefit. They have been quite successful so far. Other critics of IP have made claims about the historical author conception, the coercion into accepting TRIPS, the increasing control of corporations over innovation, and the indeterminacy and contradictions of the theories justifying IP. In one sense this Article attempts to add to that literature.

In another sense, however, this Article further explains the continued pull of the IP laws in the developed world and increasingly in the rest of the world, despite their adverse effects. The situational factors that direct corporations to maximize profits over other values will continue to channel them to promote these laws wherever they do business. And by enlisting cognitive biases, the further entrenchment of the IP regime is likely to continue to appear to many as technical, politically neutral, intuitive, and socially beneficial.[295] But it is hopefully now easier to see both why these laws are not neutral and why they are experienced as true. Any reform effort that fails to grapple with the extent of our own cognitive biases and errors is likely to fail.

E. Conclusion

The TK discourse is largely focused on the incremental and cumulative, social and ecological nature of knowledge production; in short, on its situational nature. Further, unlike the IP discourse, the TK discourse foregrounds distributional issues and reveals culturally contingent assumptions embedded in the IP discourse. It also appears, based on findings from cognitive and social psychology (both likely to be biased toward Western subjects), that the TK discourse contains some fundamental truths about creativity and innovation that the IP discourse gets wrong.

The further inculcation of the IP system (in conjunction with the market system) is likely to penetrate and drive out different modes of knowledge production that do not entail short-term profit-seeking. The IP system

294. *Id.* at 324.

295. The development discourse itself, in which the "solution" to a society's problems is narrowly conceived in terms of economic growth within which the justification for strong IP in developing states is framed, has been subject to recent criticism. *See, e.g.*, ARTURO ESCOBAR, ENCOUNTERING DEVELOPMENT (1994) (arguing that the large scale economic planning approach to development had led to more hunger and poverty); OSWALDO DE RIVERO, THE MYTH OF DEVELOPMENT (2001) (arguing that many so-called developing states are not on the road to progress and instead should focus on basic needs like food, water, and energy).

does not foster creativity (in fact, it may well inhibit creativity). Furthermore, it enlists and incites our dispositionist bias in order to foster corporate wealth through monopoly rights while simultaneously justifying profit-seeking as socially beneficial.

To be certain, the argument is not that indigenous peoples are "romantic savages" to be "preserved" or that they are incapable of donning the garb of the West by adopting free-market values. As David Kennedy advises, "We should judge the global market, like the global political order, by the distribution it effects among today's overlapping cultural, political and economic groups."[296] The issue, challenge, and indeed the potential gift is to take the TK critique of the IP regime seriously. However natural, intuitive, and socially beneficial this IP regime appears and even *feels* to us, there is much more to the situation. Those outside of it, including many TK proponents, are more likely to see it clearly.

The TK discourse is articulated in a stereotypical and limiting opposition to the dominant IP discourse. History instructs that this particular dichotomy is unlikely to serve indigenous people well, especially if it is universalized on an international scale and subsequently overwrites a diverse range of highly specific local practices in the name of "community rights." The TK discourse provides an important and unique critique of the IP regime. At the same time, the polarization of the debate minimizes possible short-term moves within the IP regime that could benefit indigenous peoples and developing countries, such as making full use of the phase-in periods, defining inventions narrowly, or not requiring fixation for copyright.[297]

The current "rights" frame, in which competing powers (states, NGOs, indigenous groups) assert rights in a range of international fora on behalf of indigenous people, will also entail costs, and these may be underestimated, especially by less powerful actors. Although disputes often involve a mix of power, rights, and interests, a refocusing on interest-based approaches to the conflict (for example, mediation) between the treatment of TK and industrial knowledge in global exchange is likely to be more beneficial to indigenous peoples and developing states than an exclusive reliance on rights or power-dominated approaches.[298] For example, a prolif-

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296. Kennedy, *supra* note 280, at 124.

297. *See* CARLOS M. CORREA, INTELLECTUAL PROPERTY RIGHTS, THE WTO AND DEVELOPING COUNTRIES 223-52 (2001) (proposing a range of options in the implementation of TRIPS by developing states).

298. *See* WILLIAM L. URY ET AL., GETTING DISPUTES RESOLVED 7-20 (1993) (arguing that resolving disputes through a focus on interests is generally cheaper, leads to

eration of dialogues between indigenous healer groups and multinational pharmaceutical companies could lead to increased mutual learning and respect, and provide for myriad local and contextually appropriate resolutions. The longer-range task is an inclusive international legal regime that is as informed by diverse local practices and norms as by fundamental human attributes of creativity. The current IP regime falls well short of that goal. Reaching shared understandings, however, is surprisingly feasible given that, beneath their conflicting ideologies and oppositional characterizations, both MNCs and indigenous groups share more practices of creativity than they may realize.

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better outcomes, puts less strain on relationships, and leads to lower recurrence of disputes that does a focus on rights or power).