

TOWARD AN INCENTIVIZED BUT JUST
INTELLECTUAL PROPERTY PRACTICE:
THE COMPENSATED IP PROPOSAL

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INTRODUCTION

Commonly recognized as necessary for societal progress,¹ intellectual property rights constitute a battlefield where the interests of corporations and authors are often said to conflict with those of the public. Contrary to Jeremy Bentham’s statement that copyright “produces an infinite effect, and it costs nothing,”² constitutional advocates and consum-

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¹ See U.S. CONST. art. I, § 8, cl. 8 (declaring the purpose of patents and copyrights to be the promotion of “the Progress of Science and useful Arts,” a sentiment that has been echoed throughout U.S. jurisprudence).

² JEREMY BENTHAM, *A Manual of Political Economy*, in 3 THE WORKS OF JEREMY BENTHAM 31, 71 (John Bowring ed., 1843).

ers argue that intellectual property rights impose unjustifiable costs on the public. Jeremy Waldron echoes this sentiment when he concludes that property rights introduce legal duties that “constrain conduct and in that sense limit freedom.”³ On this battlefield, authors’ and inventors’ claims to exclusive property rights meet the counterclaim that intellectual creations should enter the public domain for unencumbered, constructive use by future creators.

Arguing that intellectual property (hereinafter “IP”) rights lie at the heart of social progress, IP advocates have long sought exclusive rights and accompanying financial rewards for original creations.⁴ By their account, financial benefits provide incentives crucial for private entities to invest in often long, costly work to create socially beneficial products. The United States Constitution and jurisprudence remain sympathetic to this claim, even as stakes are high and growing higher in this escalating debate. As the Walt Disney Corporation lobbied Congress to extend copyrights protections by an additional 20 years in 1998,⁵ and as patent requests in biotechnology now reach expected values of billions of dollars,⁶ an institution originally intended to benefit society seems dangerously skewed towards producers. Increased rights and rewards accorded to producers entail costs borne by the public and perhaps even impede the very social progress that patents seek to promote.⁷ With recent legislation sure to spark further debate about further fair use restrictions⁸ and amidst well-publicized multi-million dollar legal battles over patent ownership,⁹ it may be time to re-examine intellectual property both in the abstract and the pragmatic.

The guiding question throughout this essay is whether IP practices can be justified on philosophical grounds, and, if so, what type of system

³ Jeremy Waldron, *From Authors to Copiers: Individual Rights and Social Values in Intellectual Property*, 68 CHI.-KENT L. REV. 841, 844 (1993).

⁴ *Id.* at 844-45.

⁵ The resulting legislation is the Digital Millennium Copyright Act, nicknamed the “Mickey Mouse Copyright Law.” See Bill Hillburg, *Writer’s Block: High Court to Look at Copyright Laws*, THE DAILY NEWS OF LOS ANGELES, Sept. 8, 2002, at N1; see also *High Court Set to Tackle ‘Mickey Mouse’ Copyright Case* (Oct. 7, 2002), available at <http://www/freedomforum.org/templates/document.asp?documentID=17066> (explaining that the Copyright Term Extension Act of 1998 quickly became known as the “Mickey Mouse Extension Act”).

⁶ See Arlene Weintraub, *The Clone Wars*, BUSINESS WEEK, Mar. 25, 2002, at 96 (estimating “the potential market to be well over \$10 billion a year”).

⁷ See generally *Eldred v. Ashcroft*, 255 F.3d 849 (D.C. Cir. 2001) and *Reno v. Eldred*, 239 F.3d 372 (D.C. Cir. 2001) (discussing the argument that the Copyright Term Extension Act violated the preamble to the Copyright Clause and that extending copyrights does not promote the progress of science and useful arts).

⁸ See, e.g., Digital Millennium Copyright Act of 1998, 17 U.S.C. §§ 201-203 (1998), available at <http://www.copyright.gov/legislation/archive>. Title II of the Act severely limits the fair use of copyrighted material on the Internet.

⁹ See Weintraub, *supra* note 6, at 96 (describing legal battles over patented biotechnology).

would be most compatible with such justifications. “IP practices” in this article include copyrights and patents, and the term refers specifically to three features of the institution: identification of the product with the author through name recognition and attribution; the creator’s right to withhold or limit access to the product; and large economic profits resulting from artificially high prices.¹⁰

This article argues that traditional attempts to justify IP practices through moral desert using Locke or Hegel or egalitarianism are generally unpersuasive. In contrast, utilitarian arguments that view IP as providing incentives for social progress are more convincing. Financial incentives in current IP practices, however, are excessive and introduce unnecessarily and unjustifiably high social costs, in the process undermining the very utilitarian foundation on which they are based.

This article is divided into three main parts. Section I explores desert-based arguments through egalitarianism, Lockean labor-value theory, and Hegelian personality theory. It argues that although public recognition for inventors is essential to satisfy Hegel’s personality theory, artificially high prices and restrictions of use are unjustifiable, particularly on egalitarian and Lockean grounds. Section II discusses utilitarian, incentives-based arguments as credible justifications for IP but argues that our current IP system is over-incentivized. Beyond fairness questions, artificially high prices and low supply create significant monopolistic deadweight loss and generate unintended consequences that undermine social progress. Representing the synthesis of these two sections, Section IV builds a more efficient and philosophically congruent IP system. The “Compensated IP Proposal” retains financial incentives for producers but lowers them to a merely sufficient level, transferring much producer surplus to consumers. The Compensated IP Proposal contains two components: creators of intellectual products receive cost-based compensation from the government for their products and in exchange and products immediately enter society for unrestricted use. Inventors retain all public credit and recognition for their work. This system would alleviate desert-based objections to current IP practices while satisfying utilitarian calls for financial incentives to encourage research and development.

¹⁰ While many differences exist between copyright and patent law, by limiting “IP practices” to these three features, this article intends to adapt a very broad and complex discussion into a narrower treatment. In limiting its scope primarily to authors and research institutions, this article also omits major areas such as like information technology.

I. PHILOSOPHICAL JUSTIFICATION FOR IP – DESERT

Various authors have discussed the merits of desert arguments in IP.¹¹ This section attempts to synthesize and build on existing viewpoints. It argues that desert-based justifications for IP are generally unpersuasive. This section contrasts the Hegelian justification of the inventor's need for recognition with the Lockean and egalitarian suggestion that IP practices are unjust in that they harm society while providing undue benefits to undeserving individuals.

A. EGALITARIAN PERSPECTIVE

In a challenge to utilitarianism, egalitarians prioritize justice over aggregate welfare in their analysis of social institutions. Articulating this sentiment, John Rawls wrote, "Each person possesses an inviolability founded on justice that even the welfare of society as a whole cannot override."¹² The concept of justice, ultimately linked to fairness and equality,¹³ places questions of desert into focus. Individuals, through no responsibility of their own, have varying endowments in the original position that affect their success in the quest for primary goods.¹⁴ Realizing that original endowments de facto punish individuals for disadvantages outside their control, welfare egalitarians such as Elizabeth Anderson and G.A. Cohen have argued that society should compensate unfairly disadvantaged individuals for their suffering.¹⁵

The question, then, is as follows: Given advantageous endowment sets that allow greater material success, do individuals deserve to keep their earnings? In the IP debate, this is a highly relevant question, and it is one that luck egalitarians would answer in the negative.

The common argument, articulated by Justin Hughes, that "[i]ntellectual property is far more egalitarian"¹⁶ than traditional property is based on the premise that IP is "obtainable by anyone."¹⁷ In contrast to tangible property, according to this argument, possibilities for ob-

¹¹ For a sample of these discussions, see Lawrence C. Becker, *Deserving to Own Intellectual Property*, 68 CHI.-KENT L. REV. 609 (1993); Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1998); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287 (1988).

¹² JOHN RAWLS, *A THEORY OF JUSTICE* 3 (rev. ed. 1999).

¹³ See *id.* §§ 11-14.

¹⁴ See *id.*

¹⁵ See Elizabeth S. Anderson, *What Is the Point of Equality?*, 109 ETHICS 287 (1999); G.A. Cohen, *On the Currency of Egalitarian Justice*, 99 ETHICS 906, 937 (1989) (advocating compensation for "disadvantages which are not traceable to the subject's choice and which the subject would choose not to suffer from").

¹⁶ Hughes, *supra* note 11, at 291.

¹⁷ *Id.* at 291.

taining IP are virtually limitless and only depend on talent.¹⁸ This view clashes with egalitarianism for two reasons. First, talent itself is generally outside an individual's control. Second, resources are increasingly requisite for the creation of patentable or copyrightable products.

Edwin Hettinger, for example, questions individuals' desert based on talent and luck. "A person who is born with extraordinary natural talents, or who is extremely lucky, *deserves* nothing on the basis of these characteristics. If such a person puts forward no greater effort than another, she deserves no greater reward."¹⁹ The author of a novel, for example, may have been endowed through no choice or effort of his or her own with superior creativity. Similarly, a research scientist who develops the cure for cancer may have been blessed with superior intelligence—again, through no choice of his or her own. The dominance of "brute luck,"²⁰ beyond sheer effort in these individuals' accomplishments cast doubt on their desert of rewards.

Hughes himself later concedes that IP may not be as egalitarian as he first suggests, writing, "it would not be surprising if historical studies showed that most holders of copyrights and patents come from at least middle-class backgrounds." This statement points to the increasingly relevant reality that inventions depend not only on talent and effort but also on an individual's ability to fund the creative endeavor. Writing a book or conducting research often require considerable time and alternate sustenance, either through personal financial endowments or outside sponsorship, in order to produce successful results.

Few would dispute that natural talents are significant components for success, but the degree to which such these components should dominate questions of desert in IP is contentious. Ronald Dworkin distinguishes between "option luck" and "brute luck" and offers insurance as a way to bridge the gap and to thereby advance equality of resources.²¹ Characterizing this dichotomy as choice versus circumstance, Samuel Scheffler notes that the line separating the two is murky at best.²² With specific regard to talent and abilities, Scheffler writes, "even if talents are themselves unchosen, people can nevertheless choose whether to develop them."²³ By suggesting that many circumstances actually arise due to

¹⁸ *Id.* at 291.

¹⁹ Edwin C. Hettinger, *Justifying Intellectual Property*, 18 PHIL. & PUB. AFF., Winter 1989, at 31, 42 (1989).

²⁰ RONALD DWORKIN, *SOVEREIGN VIRTUE: THE THEORY AND PRACTICE OF EQUALITY* 73 (2000) (differentiating brute luck, which constitutes the effects of random occurrences, from "option luck," which represents the results of "deliberate and calculated gambles").

²¹ See DWORKIN, *supra* note 20, at 73-74.

²² See Samuel Scheffler, *What Is Egalitarianism?*, 31 PHIL. & PUB. AFF. 5, 19-22 (2003).

²³ *Id.* at 20.

choice, this reasoning can neutralize luck egalitarians' claims of non-desert.

To break this stalemate, the discussion's focus should shift from the IP owner to the rest of society. Economic theory suggests that, in the short run, society is zero-sum; one person's gain is another's loss, and financial gains to the inventor derive from payments by other members of society.²⁴ In determining the merit and extent of desert, then, the inventor's choice to pursue his or her talents must be balanced with the cost others shoulder by virtue of their circumstances. Many members of society may have entirely lacked the talents and the skills necessary to produce similar inventions and yet are now forced to pay artificially high prices due to IP practices. When IP de facto punishes naturally disadvantaged individuals by imposing high financial costs on them while offering financial rewards to inventors, the justice of IP practices is drawn into question.

As time passes, intellectual creation becomes increasingly rigorous, and potential develops to exacerbate further the effects of individuals' disadvantaged endowments. As technology progresses and inventions become increasingly complex, inventors and intellectual contributors require progressively sophisticated knowledge and skills in order to succeed. Each patent raises the bar for future inventions; progress becomes increasingly concentrated in the hands of the best endowed. The ability to benefit from IP today is much more contingent upon talent and natural abilities than it might have been generations ago.²⁵ Irrespective of the amount of effort expended and the choices a less-talented individual makes, it is unlikely that the individual will be able to contribute to biotechnology, for example, in a way that allows him to claim IP rights.

It is important to note that egalitarianism, as treated in this article, would not object to modified IP practices. Egalitarianism objects to the current IP practice of high financial rewards for investors and the resultant undue cost burden placed on consumers, but it does not argue that inventors should not receive *any* compensation or recognition for their work. Instead, egalitarianism would advocate a system of effort-based

²⁴ See, e.g., Glen O. Robinson, *On Refusing to Deal with Rivals*, 87 CORNELL L. REV. 1177, 1180-83 (2002) (discussing zero-sum in economics in the antitrust context). See also WALTER NICHOLSON, *INTERMEDIATE MICROECONOMICS AND ITS APPLICATION* 284-91 (9th ed. 2004) (discussing the relationship between consumer and producer surplus).

²⁵ This realization adds a cross-generational dimension to the IP debate that is particularly relevant to egalitarians because of the centrality of brute luck in the generational disadvantage. To be sure, Scheffler's claim that choice and circumstance are related has some merit, but in the case of generational disadvantages, the answer is clear: individuals can neither choose nor change the time and generation into which they are born. And yet, such timing is crucial in determining the degree to which an individual has a choice in overcoming a poor endowment and benefiting from IP.

compensation.²⁶ Unlike talent and natural ability, the effort individuals exert on projects is entirely their choice.²⁷ Current IP, however, is not congruent with this egalitarian premise. As Sandra Day O'Connor stated in a 1991 Supreme Court decision, the test is originality, not "sweat of the brow."²⁸

B. LOCKEAN LABOR THEORY OF VALUE

At the center of John Locke's labor theory of value lies an age of abundance and two principles for property acquisition: no waste and no harm. Current IP practices violate both principles, and the ability to inflict harm suggests that the age of abundance is not applicable to IP. This section builds on others' discussion of Lockean labor theory of value to strengthen the existing assertion that IP justifications using Locke tend to be unconvincing.²⁹

"God gave the World to Men in Common,"³⁰ Locke wrote, specifying in *Adam's Title by Donation* that "men in common" signifies the "Species of Man" across the generations.³¹ He continues, "[God] gave it to the use of the Industrious and Rational, (and *Labour* was to be *his* Title to it)."³² According to Locke, abundant resources and land lay vast and uncultivated in the state of nature comprising the Common. In this unlabored state, resources possess little value. Only by mixing one's labor with the resources does one create value and use the Common in the intended way, thereby according property rights to the individual. Locke wrote,

Man has a *Property* in his own *Person*. . . . The *Labour* of his *Body*, and the *Work* of his *Hands*, we may say, are properly his. Whatsoever then he removes out of the State that Nature hath provided, and left it in, he hath

²⁶ See Hettinger, *supra* note 19, at 42-43 ("Because the effort a person expends is much more under her control than her innate intelligence, skills, and talents, effort is a far superior basis for determining desert. To the extent that a person's expenditure of effort is under her control, effort is the proper criterion for desert.").

²⁷ See *id.* at 42-43.

²⁸ Waldron, *supra* note 3, at 853 (citing *Feist Publ'n, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 359-60 (1991)).

²⁹ See generally Gordon, *supra* note 11, at 1544-55 (investigating within the framework of civil society the possible natural-rights claims to the entitlements of intangible products); Hughes, *supra* note 11, at 296-300 (presenting both instrumental and normative interpretations of Locke's labor theory).

³⁰ JOHN LOCKE, *The Second Treatise of Government*, in TWO TREATISES OF GOVERNMENT 285, § 34, at 309 (Peter Laslett ed., Cambridge Univ. Press 1960).

³¹ See JOHN LOCKE, *The First Treatise of Government*, in TWO TREATISES OF GOVERNMENT 159, § 30, at 179-80 (Peter Laslett ed., Cambridge Univ. Press 1960).

³² LOCKE, *supra* note 31, § 34, at 309.

mixed his *Labour* with, and joined to it something that is his own, and thereby makes it his *Property*.³³

To reconcile individuals' privatization of the Common with the notion that the Common belongs to all mankind, Locke asserted the principles of "no waste" and "no harm" in property acquisition. Ensuring that individuals would not acquire more than they could use, "no waste" constitutes a kind of safeguard against "Quarrels or Contentions" arising from unequal degrees of property acquisition.³⁴

The no harm principle, also known as the "enough and as good" provision,³⁵ ensures that the Common would not be depleted thereby preventing all individuals from benefiting equally, "[f]or he that leaves as much as another can make use of, does as good as take nothing at all."³⁶ "No waste" and "no harm" preserve the Common's abundance. After all, "the *Possessions* [man] could make himself upon the *measures* we have given, would not be very large, nor, even to this day, prejudice the rest of Mankind, or give them reason to complain, or think themselves injured by this Man's Incroachment."³⁷

Although Locke did not consider non-tangible property in his treatises, his no waste and no harm principles provide a useful framework with which to examine IP. Upon closer scrutiny, it is clear that IP, particularly current IP practices, do not pass muster under the two Lockean principles. Critics are right to object that the definition of the Common needs to change in order to accommodate non-tangible goods, but, as Wendy Gordon has argued, the basic premise of the Common remains the same, even if the details change. "Everyone has an equal right to use the common, and everyone needs to use the common for sustenance."³⁸ Acceptance of this premise is sufficient to make the two principles applicable. The following subsections demonstrate IP's violation of both principles, supporting the conclusion that Lockean labor theory cannot endorse current IP practices.

³³ *Id.* § 27, at 305-06.

³⁴ *Id.* § 31, at 308. In asserting the no waste principle, Locke wrote, "*God has given us all things richly But how far has he given it to us? To enjoy. As much as any one can make use of to any advantage of life before it spoils; so much he may by his labour fix a Property in. Whatever is beyond this, is more than his share, and belong to others.*" *Id.* Locke saw the no-waste principle as a way through which to regulate the quantity of individuals' possessions. He writes later in the text, "*The measure of Property, Nature has well set, by the Extent of Mens Labour, and the Conveniency of Life: No Mans Labour could subdue, or appropriate all: nor could his Enjoyment consume more than a small part*" *Id.* § 36, at 310.

³⁵ *Id.* § 33, at 309.

³⁶ *Id.*

³⁷ See *id.* § 36, at 311.

³⁸ Gordon, *supra* note 11, at 1559.

1. *No Waste Principle*

The right of inventors and authors to limit use of their creations violates the no waste principle. IP practices create financial gains for individuals by restricting use and raising prices. IP turns a good that is generally non-rival and non-exclusive into a private good by limiting access and prohibiting various uses.³⁹ By limiting access, patents and copyrights can impede society's consumption of the product and its use for further development.⁴⁰ IP practices thus prevent the product from realizing its maximum value and deprive society of the product's full value, creating waste and spoilage.

The failure of resources to reach their full value potential is not a problem per se. After all, much land lies uncultivated in Locke's state of nature. A problem arises, however, when individuals want to extract unclaimed value from resources but are prevented from doing so. The holder of IP is thus analogous to the Lockean laborer who privatizes more land than he can till and leaves acres uncultivated.⁴¹ An IP holder is someone who takes more than his fair share and violates his or her claim to the Common.

In addition to impeding the creation of new intellectual products and thereby failing the no waste (or no spoilage) requirement, IP also reduces others' welfare, thereby violating Locke's no harm principle.

2. *No Harm Principle*

IP advocates argue that while the quantity of tangible goods is naturally finite, ideas and potential intellectual creations are quantitatively limitless.⁴² Theoretically, then, the age of abundance that ends with the

³⁹ Restrictions on use are the focus of debates about fair use. See, e.g., Wendy Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 82 COLUM. L. REV. 1600 (1982).

⁴⁰ Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 526 (1998) ("There is ample evidence that the goal of intellectual property law is to balance the incentives given to property owners against the harm experienced by consumers and next-generation competitors."). A concrete example of how IP rights limit further development involves patents and reverse engineering. See Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1590 (2002) (noting that reverse engineering is banned despite the fact that "a right to reverse-engineer has a salutary effect on price competition and on the dissemination of know-how that can lead to new and improved products").

⁴¹ See LOCKE, *supra* note 31, § 33, at 309.

⁴² See, e.g., R. Polk Wagner, *Information Wants to be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995, 1001-02 (2003) ("In intellectual property, of course, we deal in intangible, nonrivalrous goods. [I]t is also widely recognized that creativity and invention is a profoundly dynamic process. Creation begets more creation; invention leads to further invention. Information fuels the fire of human progress."); Benjamin G. Damstedt, *Note: Limiting Locke: A Natural Law Justification for the Fair Use Doctrine*, 112 YALE L.J. 1179, 1181, 1189 (2003) (noting that although "the common of tangible goods

introduction of currency to Locke's physical world should be perpetual in IP.⁴³ The implication of this is that individuals who are restricted from using certain intellectual products can simply resort to creating their own.

Such a claim is fallacious because it denies the role of society in shaping the tastes of the public and the direction of future inventions. There are certain areas of innovation that members of a society deem overwhelmingly valuable, such as medicine and technology. As Jeremy Waldron notes,

[T]he private appropriation of the public realm of cultural artifacts restricts and controls the moves that can be made therein by the rest of us. . . . This environment, having been thrust upon us by those in whose interests cultural commodities circulate, is now the only one we have, so that it is now in a sense unfair to deny us the liberty to make of it what we will.⁴⁴

The fact that we live in one society, share a single culture, and are shaped by similar forces means that intellectual products are not perfectly interchangeable.⁴⁵ Society's role in shaping the direction of progress further means that while ideas are technically limitless, the realm of useful and worthwhile ideas is much more focused and accessible only to those who have access to previous intellectual products.⁴⁶

Some advocates have tried to demonstrate that IP cannot harm individuals in society by arguing that the intellectual product under question would not have come into existence without the inventor in the first place. John Bates Clark argued, for instance, that the owner of intellectual property should be allowed,

exclusive control of something which otherwise might not and often would not have come into existence at all. If it would not—if the patented article is something which society without a patent system would not have secured at all—the inventor's monopoly hurts nobody. . . . His gains consist in something from which no one loses, even while he enjoys them.⁴⁷

is inherently scarce,. . . intangible goods [are] at once unlimited and singular," and detailing three ways in which intangible goods have unlimited qualities).

⁴³ See LOCKE, *supra* note 31, § 36, at 311.

⁴⁴ Waldron, *supra* note 3, at 885.

⁴⁵ *Id.* at 883.

⁴⁶ *Id.* at 885-86.

⁴⁷ CLARK, ESSENTIALS OF ECONOMIC THEORY 360-61 (1907), *cited in* Waldron, *supra* note 3, at 866 n.75.

From this perspective, it would be implausible for IP to cause harm since individuals would not have benefited from the product without its creation. John Stuart Mill echoes this point when he states, “It is no hardship to any one, to be excluded from what others have produced: they were not bound to produce it for his use, and he loses nothing by not sharing in what otherwise would not have existed at all.”⁴⁸ Aside from the fact that patents and other intellectual creations typically are the products of many laborers and not merely that of the latest contributor,⁴⁹ Mill and Clark’s sentiments fail because exclusive rights through IP constitute hardship to aspiring creators and consumers.

According to existing literature, an individual “who wants access is entitled to complain only if he is worse off (in regard to the common) when he is denied access than he would have been if the item had never come into existence.” Based on this standard, aspiring creators have reason to claim harm. As new intellectual discoveries and products come into existence, the field inevitably changes. The production of a seminal work or the discovery of, for example, a cloning procedure irreversibly alters existing attitudes, beliefs, and culture. Scholars and aspiring creators require access to these groundbreaking discoveries either to build on or to revise their own works. Limiting access to and use of these new creations forces such individuals to maintain their reliance on what Gordon calls the “now devalued common.”⁵⁰

Proclaiming that “property is theft,”⁵¹ Pierre-Joseph Proudhon offers a complementary, and slightly more forceful, rebuttal of Mill and Clark’s claim. It is not only that creators suffer setbacks when forced to use a devalued common, it is that they may even be *prevented* from completing their work and earning a living. Echoing Reid, Proudhon would argue that the right to life by definition automatically entails a right to the means of life—in this case, labor—and that “to prevent the labour of another is the same sort of injustice as putting him in chains or throwing him into prison, and it provokes the same resentment.”⁵² Justice demands that individuals maintain their right to labor as a means toward self-sustenance. For Proudhon, permitting private property inevitably prevents others’ right to labor and self-sustenance. Given that the means of labor is land, recognizing that the “right of territorial property is to

⁴⁸ 2 JOHN STUART MILL, *PRINCIPLES OF POLITICAL ECONOMY WITH SOME OF THEIR APPLICATIONS TO SOCIAL PHILOSOPHY*, ch. 2, § 6, *cited in* Waldron, *supra* note 3, at 866 n.76.

⁴⁹ Hettinger, *supra* note 19, at 39.

⁵⁰ *Id.* at 1570.

⁵¹ PIERRE-JOSEPH PROUDHON, *WHAT IS PROPERTY?* 13 (Donald R. Kelley & Bonnie G. Smith eds. & trans., 1994).

⁵² *Id.* at 46-47.

give up labour. . .it is to compromise a natural right and to violate our humanity.”⁵³

Applying Proudhon, IP is analogous to property rights over land. By preventing individuals’ access to past intellectual creations, IP inhibits scholars’ access to their means of intellectual labor. The principle of fair use, for example, was codified in 1976 and allows individuals to use copyrighted materials for educational and scholarly work purposes.⁵⁴ Increasingly, the fair use principle has become embattled in the courts, steadily infringing on individuals’ ability to use the materials even in good faith.⁵⁵ The narrowing definition of fair use to the point of disappearance in the Digital Millennium Copyright Act of 1998⁵⁶ is problematic in itself but becomes even more so in light of the fact that some scholars need to use previous creations for their own work. By preventing scholars from accessing prior creations for continued work, IP impedes individuals’ studies and prevents the creation of their own intellectual products. It thus deprives scholars of their means of labor and affirms Proudhon’s objection to property.

Aspiring creators are not the only group harmed by property rights under IP. The welfare of consumers also declines upon learning of the existence of a valuable new intellectual product but simultaneously being prohibited from accessing it.⁵⁷ To illustrate this point, Gordon proposes an example where consumers become addicted to a newly manufactured enzyme.⁵⁸ Without continued access to the enzyme or knowledge of its manufacturing process, the public would physically suffer. Gordon concludes that, “Having changed people’s position, the inventor cannot then refuse them the tools they need for surviving under their new condition.”⁵⁹ Examples need not be as extreme as this, however, to make the same the case effectively. The fact that we live in one society and share a single culture means that individuals’ welfare depends on their relative valuation of themselves and their status in society, partially determined by their consumption.⁶⁰

Researchers have found empirical justifications for the claim that relative valuation considerably influences individual utility. Daniel Kahneman received a Nobel Prize in Economics for his development of

⁵³ See *id.* at 74.

⁵⁴ See Copyright Act, 17 U.S.C. §§ 101-809 (1982).

⁵⁵ See L. Ray Patterson, *Free Speech, Copyright, and Fair Use*, 40 VAND. L. REV. 2, 53-63 (1987).

⁵⁶ See 17 U.S.C. §§ 201-203 (1998).

⁵⁷ See Gordon, *supra* note 11, at 1567.

⁵⁸ *Id.* at 1567.

⁵⁹ *Id.* at 1568.

⁶⁰ See generally RAWLS, *supra* note 12.

Prospect Theory, which exposes individuals as non-rational actors.⁶¹ According to this theory, loss aversion causes individuals to experience a disproportionate decline in welfare in the face of a perceived loss relative to a specific reference point.⁶² An individual's utility function is not linear; it is concave above the reference point and convex below it.⁶³ Gains with respect to the status quo result in utility changes that are smaller in absolute terms than perceived losses.⁶⁴ Importantly, reference points (which are closely linked to the status quo) can shift upon receipt of new information.⁶⁵ As individuals learn of new, useful inventions in society, their reference point rises because the invention becomes a consideration in their relative utility valuation. Since the reference point includes the new invention, limits or prohibitions placed on consumer use of the product represents a perceived loss. Particularly with loss aversion, consumers lose significant utility from constraints due to IP.

Clark and Mill may be correct that, rationally, individuals should not be harmed by being prevented from using something that would not have existed without IP. As psychology demonstrates, however, individuals are not rational, and their judgments of fairness and justice do not strictly follow economic laws.⁶⁶ In the case of IP, the simple introduction of a new work alters the landscape of the field. Inevitably, it renders the public domain less valuable to aspiring creators and lowers consumer welfare by changing individual reference points and creating the sense of a loss. On both counts, then, IP violates Locke's no harm principle.

3. *Lockean Objections to Current IP Practices*

Beyond philosophical objections to a system that allows IP owners to limit the access of other individuals, Locke's labor theory also poses challenges to existing IP practices that provide inventors with large financial rewards. Locke's labor theory provides a justification only for laborers to claim the products of their labor.⁶⁷ In many cases, however, the intellectual creation is the product of many researchers over an extended period of time. Individuals should be rewarded only for the value

⁶¹ Press Release, The Royal Swiss Academy of Sciences, The Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel 2002 (Oct. 9, 2002), available at <http://nobelprize.org/economics/laureates/2002/press.html> (last visited September 14, 2004).

⁶² Daniel Kahneman & Amos Tversky, *Prospect Theory*, in CHOICES, VALUES, AND FRAMES 32 (Daniel Kahneman & Amos Tversky, eds., 2000).

⁶³ Amos Tversky & Daniel Kahneman, *Loss Aversion and Riskless Choice*, in CHOICES, VALUES, AND FRAMES 144 (Daniel Kahneman & Amos Tversky, eds., 2000).

⁶⁴ See Kahneman & Tversky, *supra* note 62, at 33.

⁶⁵ *Id.* at 40.

⁶⁶ George A. Quattrone & Amos Tversky, *Contrasting Rational and Psychological Analyses of Political Choice*, in CHOICES, VALUES, AND FRAMES 451 (Daniel Kahneman & Amos Tversky, eds., 2000).

⁶⁷ See LOCKE, *supra* note 31, § 33, at 309.

they add, “not the *total* value of the resulting product.”⁶⁸ An additional complicating factor is that some IP practices, such as copyrights or patents, do not provide the bulk of rewards to the individual who invented or produced the good. Instead, financial rewards go to institutions, publishing houses, or investors who may have financially supported the product. It is difficult to justify such practices on philosophical, desert-based grounds.

C. HEGELIAN SELF-ACTUALIZATION AND PERSONALITY THEORY

More effectively than other philosophies, Hegelian theory can justify IP through the personality theory, which supports inventors’ rights to public recognition for their IP work. Hegelian theory, however, remains primarily silent on inventors’ rights to large financial gains or limits on access to the product by others.

Unlike Locke, who believed in natural freedom, Hegel argues that freedom is a social product that is acquired through exercise of human capabilities (like thought and judgment) and outside validation.⁶⁹ While individuals have free will, they do not fulfill their potential and come into being until they self-actualize by exerting their will on the external, physical world.⁷⁰ Property thus becomes crucial to an individual’s existence. Hegel noted, “The person must give himself an external *sphere of freedom* in order to have being as an Idea. . . . The rational aspect of property is to be found not in the satisfaction of needs but in the superseding of mere subjectivity of personality. Not until he has property does the person exist as reason.”⁷¹ By appropriating an object, the individual effectively manifests the supremacy of his or her will in relation to the object, which had lacked personality and being by itself. “From the point of view of freedom, property, as the first *existence* of freedom, is an essential end for itself.”⁷² To Hegel, property is the embodiment of personality.

Individuals can take possession in three ways: physical seizure, giving something form, and designating an object’s ownership.⁷³ While physical seizure is “the most complete mode of taking possession”⁷⁴ because of the immediate presence of the individual and her will, it is also “subjective, temporary, and extremely limited in scope.”⁷⁵ By its nature,

⁶⁸ Hettinger, *supra* note 19, at 37.

⁶⁹ See G.F.W. HEGEL, ELEMENTS OF THE PHILOSOPHY OF RIGHT § 41 (Allen Wood ed., Cambridge Univ. Press 1991).

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Id.* § 53.

⁷³ *Id.* § 54.

⁷⁴ *Id.* § 55.

⁷⁵ *Id.*

“taking possession is always incomplete in character. I take possession of no more than I can touch with my body, but it follows immediately that external objects extend further than I can grasp.”⁷⁶ In contrast to physical seizure, giving form transcends the individual’s physical and temporal presence.⁷⁷ By giving form to an object, “its determinate character as mine receives *an independently existing* externality and ceases to be limited to my presence in *this* time and space and to my present knowledge and volition.”⁷⁸ The object assimilates the individual’s effect, making the appropriation consistent with human self-actualization.⁷⁹ Taking possession of an object by “marking” it, finally, entails the individual simply designating an object as hers by placing a sign on the object.⁸⁰ According to Hegel, this is the most comprehensive method of taking possession of an object and incorporates the other two methods.⁸¹ He asserts that the ultimate significance of physically seizing an object or giving form to something is “likewise a sign, a sign given to others in order to exclude them and to show that I have placed my will in the thing.”⁸²

In IP, the most relevant ways of taking possession are giving form to something or marking it for ownership. Herein lies the root for a coherent defense of IP. In order to fulfill their potential and transition from a free spirit into a being, individuals need to interact with the external sphere by infusing their will and personality with it.⁸³ Through property and recognition from others, individuals self-actualize.⁸⁴ In this quest to self-actualize, however, some forms of property are more desirable than others. Although one can physically seize a *res nullius*, Hegel suggests that such a seizure would be qualitatively inferior to shaping (or creating) an object or leaving one’s mark on it.⁸⁵ When an individual writes a book or invents a machine and places his name or trademark on the object, he is able to imbue more of his personality onto the external world and acquires property that is more congruent with Hegel’s Idea.⁸⁶ Margaret Jane Radin relies on this notion when she argues that ideas are

⁷⁶ *Id.*

⁷⁷ See HEGEL, *supra* note 69, at § 56.

⁷⁸ *Id.*

⁷⁹ *Id.* (“To give form to something is the mode of taking possession most in keeping with the Idea, inasmuch as it combines the subjective and the objective.”).

⁸⁰ *Id.* § 58.

⁸¹ *Id.*

⁸² *Id.*

⁸³ See HEGEL, *supra* note 69, at § 21.

⁸⁴ *Id.*

⁸⁵ *Id.* § 60.

⁸⁶ See Hughes, *supra* note 11, at 339-44 (arguing that the degree to which intellectual products contain the creator’s personality depends on the type of product).

closest to the “personhood ideal.”⁸⁷ If intellectual creations, by virtue of being most reflective of the creator’s personality and will, are most conducive to the individual’s self-actualization, then the need to give the creator IP rights is particularly strong.

Although Hegel’s personality theory would justify and even demand an individual’s ability to create and that such an individual be recognized for his creations,⁸⁸ such recognition should not necessitate large financial compensation or others’ exclusion from use.

Hegel draws a distinction between physical and intellectual property.⁸⁹ Unlike physical property, the use of which can be constrained in manner and time, intellectual products are more universal and less open to regulation. Both types of property, however, can be shared without threatening the owner’s sense of self.⁹⁰ That ownership need not cease upon another’s use is clear in Hegel’s distinction between partial or temporary use or possession and actual ownership.⁹¹

In the case of IP, the coexistence of others’ use and the owner’s (or creator’s) personality is even more possible. Hegel notes that the person who acquires a book or other form of intellectual product “possesses its entire use and value if he owns a *single* copy of it.”⁹² However, this need not threaten the creator’s being because “the author of the book or the inventor of the technical device remains the owner of the *universal* ways and means of reproducing such products and things, for he has not immediately alienated these universal ways and means as such but may reserve them for himself as his distinctive mode of expression.”⁹³

Not only is sharing one’s IP (even without imposing constraints on others’ use) entirely congruent with one’s drive to personhood, but arguably it is also in the owner’s best interest to share. By allowing others to use the inventor’s “*particular physical and mental skills* and active capabilities” for limited periods of time, they “acquire an external rela-

⁸⁷ See generally MARGARET JANE RADIN, REINTERPRETING PROPERTY ch. 1; Hughes, *supra* note 11.

⁸⁸ See HEGEL, *supra* note 69, at § 44.

⁸⁹ *Id.* § 69.

⁹⁰ *Id.*

⁹¹ See HEGEL, *supra* note 69, at § 62.

⁹² *Id.* § 69.

⁹³ See HEGEL, *supra* note 69, at § 69.

tionship to [his or her] *totality* and *universality*.”⁹⁴ The creator thus gains outside validation of his self-actualized being.⁹⁵

The question remains whether certain uses of the products could harm the creator of the intellectual product, thereby meriting restrictions on use. Recognizing the unique nature of intellectual creations in that they are not merely possessions but also resources that can lead to uses separate from initial purposes, Hegel briefly discusses the role of copyright protection and plagiarism.⁹⁶ While he recognized the idea that protection against theft of intellectual products helps further the sciences and arts, he noted that plagiarism should be “a matter of *honour*, and honour should deter people from committing it.”⁹⁷ Hegel’s lenience, while perhaps surprising, derives from his understanding of the “destiny” of intellectual products.⁹⁸ By using, learning, and absorbing ideas and knowledge from these intellectual products, individuals synthesize the material into new formulations that, despite relying on already existing ideas, can in turn be alienable creations in their own right.⁹⁹ The rehashing of already existing points is simply the nature of intellectual progress in society. Thus, while such lenience could be subject to flagrant abuse by dishonest intellectuals, plagiarism (and, by extension, other infringements on patents) is more a concern with respect to the author’s or publisher’s financial loss than it is with respect to the author’s sense of being.¹⁰⁰

Hegel’s nonchalance about potential financial losses is telling and suggests that financial compensation for one’s property is not a critical concern. True, money allows individuals to acquire things that better express their personalities, just as it is true that the ability to support oneself through one’s own activity and work instill feelings of “right, integrity, and honour.”¹⁰¹ But money is not the end—it matters only inasmuch as it allows individuals to acquire external things that, in turn, al-

⁹⁴ *Id.* § 67. I have omitted Hegel’s emphasis on the caveat that the use be temporarily restricted because the caveat is most relevant with respect to an individual alienating his physical exertion. He wrote, “by alienating the *whole* of my time, as made concrete through work, and the totality of my production, I would be making the substantial quality of the latter, i.e. my *universal* activity and actuality of my personality itself, into someone else’s property.” *Id.* In the case of IP, however, this is not as relevant since the individual need not give up the essence of his work in allowing others to use it.

⁹⁵ For elaboration on this point see Hughes, *supra* note 11, at 349-50.

⁹⁶ HEGEL, *supra* note 69, at § 69.

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ HEGEL, *supra* note 69, at § 69. For a discussion about the immorality surrounding copyright infringement due to profit deprivation of the publisher, see IMMANUEL KANT, *On the Wrongfulness of Unauthorized Publication*, in PRACTICAL PHILOSOPHY 8:70-8:87 (Mary J. Gregor ed., 1996).

¹⁰¹ See HEGEL, *supra* note 69, at § 244.

low individuals to self-actualize.¹⁰² As long as an individual can self-actualize by being identified with his creations, financial compensation for intellectual products can be secondary.¹⁰³

This leads to the conclusion that allowing unlimited use of one's intellectual products would not only be congruent with individuals' drive to gain personhood but would also be beneficial. If individuals need recognition from their peers on their paths to personhood, then surely the esteem, honor, and admiration that authors and inventors gain through sharing their creations are particularly desirable forms of recognition.¹⁰⁴ While financial compensation is not crucial in this Hegelian world, it is important that authors and inventors gain public recognition and continue to be identified with their products.¹⁰⁵

D. UTILITARIAN / ECONOMIC RATIONALE: INCENTIVES

IP arguments generally break down along two lines: desert and incentives. The previous section explored desert-based arguments through egalitarianism, Locke, and Hegel. In the aggregate, personality theory supports inventors' right to public recognition but rejects their ability to limit and maintain artificially high prices for their products. This section explores economics and incentives-based arguments for IP and examines existing practices, concluding that incentives-based arguments provide the strongest defense for IP but that current IP practices over-incentivize IP, in the process introducing social inefficiency, lowering social welfare, and perhaps even impeding social progress.¹⁰⁶

Alan Ryan shifts the discussion from a question of desert to one of incentives when he writes of the "consensus that 'it's his' invites the further question, 'What good does its being his do for everyone else?'"¹⁰⁷ With this question, the focus changes from one centered on the individual's right to one on public welfare. Irrespective of desert, the

¹⁰² "The rational aspect of property is to be found not in the satisfaction of needs but in the superseding of mere subjectivity of personality." HEGEL, *supra* note 69, at § 41. Material wealth as means to sustenance or as means to fulfill hedonist needs are secondary to the need for existence as reason.

¹⁰³ *Id.*

¹⁰⁴ See Hughes, *supra* note 11, at 349-50.

¹⁰⁵ The European system of IP protection adheres substantially to personality theory and moral rights for the producer or author. When the United States joined the Berne Convention, significant debate ensued about whether the U.S. could or would adhere to the moral rights requirements. See generally *Final Report of the Ad Hoc Working Group on U.S. Adherence to the Berne Convention*, 10 COLUM.-VLA J.L. & ARTS 513, 547-57 (1986). In 1990, the U.S. Congress passed the Visual Artists Rights Act of 1990, which explicitly enacted protections for, among other things, proper attribution of recognition to certain visual artists. See Visual Artists Rights Act of 1990, P.L. 101-650, Title VI, 104 Stat. 5089 (1990).

¹⁰⁶ For elaboration on this point, see William W. Fisher III, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1661 (1988).

¹⁰⁷ See Waldron, *supra* note 2, at 845.

final justification for property rights depends on the value it adds to the rest of society.¹⁰⁸ Striking a chord with economic theory, where financial rewards can change individuals' preferences and behaviors, the common wisdom is that IP promotes the overall progress of society. After all, if one accepts self-interest—defined as individuals' disproportionate valuation of their private utility over aggregate social utility—as the motivation of rational agents, then it is only logical for society to promote its common welfare by creating incentives that align private with public interest.¹⁰⁹ Based on this idea, the United States Constitution grants Congress the power “to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”¹¹⁰

Controversies have arisen on the interpretation of the length of time and the manner in which exclusive rights can be expressed. Both of these affect the financial returns of producers and the costs born by consumers. Objections to IP practices from First Amendment advocates, scholars, and aspiring creators center around fair use and have become more salient in light of ever-expanding copyright protections and Title II of the Digital Millennium Copyright Act of 1998, which virtually abolishes fair use.¹¹¹ These advocates argue that limitations on fair use, such as those prohibiting the use of Mickey Mouse for parodies,¹¹² hamper social progress. Lawrence Lessig uses a four-part rationale to argue that IP rights can harm society: “Creativity and innovation always builds on the past. The past always tries to control the creativity that builds upon it. Free societies enable the future by limiting this power of the past. Ours is less and less a free society.”¹¹³

Arguing that IP can create incentives that encourage individuals to create intellectual products is qualitatively different from arguing that individuals will not produce without rewards associated with IP. The promise of overwhelming financial rewards can maintain some individuals' effort toward success, but there is no conclusive empirical evidence that lack of such rewards will deter individuals from completing their work.

Existing business practices suggest that individuals might be happy to complete their work for little more than recognition at the end. Royal-

¹⁰⁸ *Id.*

¹⁰⁹ This same idea justifies taxing behaviors with negative externalities, like industrial pollution, and subsidizing activities with positive externalities. See NICHOLSON, *supra* note 24, at 530-44.

¹¹⁰ U.S. CONST., art I, §8, cl.8.

¹¹¹ Digital Millennium Copyright Act, 17 U.S.C. §§ 201-203 (1998).

¹¹² See *Walt Disney Co. v. Air Pirates*, 581 F.2d 751 (1978).

¹¹³ See Lawrence Lessig, Keynote Address to Open Source Convention (August 15, 2002), available at <http://www.oreillynet.com/pub/a/policy/2002/08/15/lessig.html?page=1>.

ties for authors upon publication of most books generally range from 10 percent to 12.5 percent for hard cover books and 7.5 percent to 10 percent for soft covers, but can be as low as 2 percent.¹¹⁴ The bulk of the financial gain from such books flows to publishers, even when the book is not solicited by the publisher but is entirely author-generated. Despite this, the book industry is booming, with 150,000 books published in the United States in 2002 alone,¹¹⁵ casting doubt on the idea that individuals will be deterred from working towards progress in the absence of significant financial gains.

Such evidence is not limited to copyrights but also exists in the realm of patents. Scientists, for instance, who are hired at research institutions, do not generally retain any rights to their discoveries upon successful completion of their projects.¹¹⁶ Instead, under federal law, the sponsoring institution receives the patent.¹¹⁷ Nonetheless, many researchers continue to work for research institutions, apparently happy to get the opportunity to work on cutting-edge research and to contribute to science, regardless of whether the researcher owns the patent and the financial rewards that stem from it. Further, as Lessig discusses, arrangements like LINUX and open source have created astonishingly fast improvements in software by promoting unencumbered information sharing.¹¹⁸ At the very least, such evidence corroborates the claim that the absence of IP rights can also promote social progress.

This evidence is not presented to invalidate the incentive argument. Instead, it is presented to suggest that perhaps financial incentives are not as fundamental as IP advocates would have us believe. Individuals appear to be at least as interested in name recognition and the ability to

¹¹⁴ See "Inside Publishing: Royalties and Advances," available at http://www.writersservices.com/res/ri_adv_royalties.htm (last visited Sept. 21, 2004).

¹¹⁵ See ASS'N OF AMERICAN UNIVERSITY PRESSES, AAUP AT-A-GLANCE, at <http://aaup.net.org/news/glance.html> (last visited Sept 13, 2004).

¹¹⁶ See, e.g., Ryan M. Seidemann, *Authorship and Control: Ethical and Legal Issues of Student Research in Archaeology*, 14 ALB. L.J. SCI. & TECH. 451, 480 ("[U]niversities often own faculty-generated research."). Consider also the work-for-hire doctrine. By definition, a "work for hire" is a work "prepared by an employee within the scope of his or her employment; or a work specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire." 17 U.S.C. § 101 (2004). Rights to a work-for-hire is owned by the "employer or other person for whom the work was prepared." 17 U.S.C. § 201 (2004).

¹¹⁷ See 17 U.S.C. § 201(b) (1998) This law provides that "[i]n the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title, and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights comprised in the copyright."

¹¹⁸ See LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE 105-108 (1999).

contribute to society as monetary gain.¹¹⁹ Granted, legal clashes like that at the University of Hawaii over researcher versus institutional ownership of biotechnology exist and are related to financial gains, but those have been relatively uncommon to date.¹²⁰

Financial incentives in existing IP practices should resonate better with publishing houses and research investors than with authors or researchers. After all, it is these institutions which would financially benefit the most from successful projects.¹²¹ Indeed, research entities such as pharmaceutical companies strongly lobby for continued patent rights, threatening to exit the market if patents became imperiled.¹²² TRIPS negotiations and the domestic debate over CIPRO brought the centrality of patents to pharmaceuticals' survival to the fore.¹²³ From the pharmaceutical company's perspective, patents allow the recovery of costs while providing the revenue stream necessary to fund other ongoing research and development.¹²⁴

¹¹⁹ Individual researcher-institution, particularly researcher-university, arrangements differ, depending on contract. The law allows institutions to own all rights to patents for the successful product of a project if the employee was hired for a specific project. If, as in some cases, the employee was hired for general purposes but used the institution's resources in the creation of the intellectual product, the employer reserves a "shop right" to the invention. In some institutions, such as Harvard, Stanford, and M.I.T., researchers share royalties the university receives through discoveries. At the University of Hawaii, for instance, researchers typically receive 50 percent of royalties the university receives. Common practice, however, is that employees sign a contract that releases all claims to patent rights and transfers them to the institution. See Alex Salkever, *Ivory Tower: Who Owns the Clones*, Salon.com (August 16, 1999) available at <http://archive.salon.com/books/it/1999/08/16/clones/index.html>.

¹²⁰ *Id.*

¹²¹ See, e.g., Patterson, *supra* note 55 (arguing that third parties often stand to gain most financially from IP rights); KANT, *supra* note 100 (same).

¹²² Michael Woods, *Food for Thought: The Biopiracy of Jasmine and Basmati Rice*, 13 ALB. L.J. SCI. & TECH. 123 (2002) (The United States sought "the codification of intellectual property rights at the Uruguay Round in response to complaints by large pharmaceutical companies regarding lost profits caused by a lack of effective enforcement of intellectual property laws."); Peter Drahos, *Building Institutions of Hope: Trading in Public Hope*, 592 ANNALS 18 (2004) ("Pharmaceutical companies spend millions of dollars every year on lobbying activities in an effort to persuade politicians and officials of the virtues of strengthening the patent system."); Ana C. A. Muller, Nei Pereira Jr., & Adelaide Maria de Souza Antunes, *Protecting Biotechnological Inventions in Brazil and Abroad: Draft, Scope, and Interpretation of Claims*, 13 ALB. L.J. SCI. & TECH. 145 (2002) (noting that in pharmaceutical fields, "where the cost of developing products from research to marketing is very high, the absence of a patent system or a system with an adequate scope of protection would put research at risk"); cf. Steve P. Calandrillo, *Vanishing Vaccinations: Why Are So Many Americans Opting Out of Vaccinating Their Children?*, 37 U. MICH. J.L. REF. 353, 398 (2004) (discussing that low profit margins have caused pharmaceutical companies to exit the vaccines market).

¹²³ Andrew Pollack, *Drug Makers Wrestle with World's New Rules; A Delicate Balance: Patriotism vs. Business*, N.Y. TIMES, Oct. 21, 2001, at § 3, 1; Edmund L. Andrews, *A Nation Challenged: The Drug Maker; Drug Maker Seems Uncertain in Response to Cipro Frenzy*, N.Y. TIMES, Oct. 20, 2001, at A1.

¹²⁴ This is the concept of cross-subsidies. See, e.g., Henry Grabowski, *Politics and Availability: Patents and New Product Development in the Pharmaceutical and Biotechnology Industries*, 8 GEO. PUB. POL'Y REV. 7, 19 (2003) (noting that "[a] few blockbuster successes

The need for financial recovery from the industry or investor perspective is undeniable, and not all of it should be dismissed as capitalist greed. The average cost of “bringing a new chemical entity to market” is approximately \$359 million in 1993 dollars, with R&D accounting for about 30 percent of total costs (assuming costs are discounted to their present value at the time of the launch).¹²⁵ These claims seem particularly convincing when one considers that only a small proportion of pharmaceutical projects actually reach the market.¹²⁶ Such figures and industry claims still need to be balanced with the fact that pharmaceutical manufacturers do earn significant profits. In fact, a 2000 study estimates the pharmaceutical industry’s profit margin at \$27 million—a margin that was higher than that of any other U.S. industry and four times that of the average Fortune 500 Company at the time.¹²⁷ The appropriate question, then, may be less about the conceptual *validity* of incentives than the *magnitude* of such financial motivation.

Moving beyond considerations of fairness, excessive financial rewards in IP create negative externalities that unduly burden society. Current IP practices promote unnecessary social inefficiency in two main ways. First, IP induces monopolistic behaviors that inefficiently reduce consumer surplus and introduce significant deadweight loss by limiting

cover the losses on many other R&D investment projects”); Michele Creech, *Make a Run for the Border: Why the U.S. Government Is Looking to the International Market for Affordable Prescription Drugs*, 15 EMORY INT’L L. REV. 593, 601 (2001) (noting the small success rate of pharmaceutical products and stating that “it follows that successful medicines must cover the costs of the unsuccessful ones”).

¹²⁵ Patricia Danzon, *Parallel Trade and Comparative Pricing of Medicines: Poor Choice for Patients?*, available at <http://www.pfizerforum.com/english/danzon.shtml> (last visited Sept. 13, 2004). A different study, which collected data on R&D costs on 68 randomly selected drugs from 10 multinational firms, found that the average cost of bringing a new product to market was \$ 400 million. This figure includes money spent in the discovery, pre-clinical, and clinical phases as well as an allocation for the cost of failures. The total R&D cost of the pharmaceutical industry is thus pegged at \$27 billion. Grabowski, *supra* note 124, at 8-9. The Pharmaceutical Research and Manufacturer’s Association (PhRMA), the powerful lobbying organization for pharmaceuticals, has consistently asserted that the average cost of bringing a new drug to market is \$500 million after an R&D phase that lasts 12 to 15 years. Creech, *supra* note 124, at 601 (2001).

¹²⁶ According to PhRMA, only one of every 5,000 new medicines tested is approved for use after clinical trials. Creech, *supra* note 124, at 601. See also *Biotech, Drug Firms Sharing Secrets on the Internet*, PROVIDENCE JOURNAL-BULLETIN, May 13, 2001, at 2F (describing one company which created 80,000 biotechnology components but turned only ten into marketable drugs).

¹²⁷ Creech, *supra* note 124, at 610 (“The median return on equity of the pharmaceutical members of the Fortune 500 was 35.8% in 1999, more than double the median return for the Fortune 500 as a whole.”). See also Lester C. Thurow, *Profits*, in THE CONCISE ENCYCLOPEDIA OF ECONOMICS, available at <http://www.econlib.org/library/Enc/Profits.html> (last visited Sept. 1, 2004); Grabowski, *supra* note 124, at 8 (noting that some have “called for the abolishment of pharmaceutical patents on the grounds that they give rise to excessive profits and high prices on new medicines”).

access and keeping prices artificially high.¹²⁸ Second, the skyrocketing monetary values of patents promote costly lawsuits that reduce social welfare for reasons aside from cost.¹²⁹ In response to recent high-profile legal patent disputes, risk-averse investors have begun to pull resources out of companies, start-ups, and research projects for fear of insufficient returns.¹³⁰ Excessive financial rewards thus can reduce social efficiency and indirectly reduce research projects, in both cases undermining the purpose of IP.

The following section proposes a new IP model that seeks to maximize social welfare and minimize social inefficiency while maintaining sufficient financial incentives for the development of intellectual products.

II. TOWARD A NEW SYSTEM: THE COMPENSATED IP PROPOSAL

The objective of the Compensated IP Proposal is to create a more philosophically just IP system that simultaneously acknowledges incentives as essential in promoting the creation of IP products. By ensuring that incentives are not excessively high, however, this Proposal expands consumer and minimizes deadweight loss. The Proposal addresses desert-based criticisms of IP, discussed in Section I of this essay, by proposing a system in which the public gains unencumbered access to the product, thereby meeting Locke's "no waste" and "no harm" principles.¹³¹ At the same time, the Proposal compensates inventors for their labor and maintains their right to public recognition, thereby fulfilling Hegelian prescriptions for self-actualization.¹³²

A. OVERVIEW

At the outset, it is worth noting that (as will become clear below) this model would work best in the context of research entities that are repeat players, have easily quantifiable returns, and seek patents. Thus, although it is possible to adapt the model to copyrights, the discussion in

¹²⁸ See NICHOLSON, *supra* note 24, at 554; see also Fisher, *supra* note 106. Fisher argues that IP exacerbates inefficient allocation of resources by forcing society to sacrifice consumer surplus that would have been created by potential scholars who could simply not afford access to intellectual products.

¹²⁹ See Weintraub, *supra* note 6, at 95.

¹³⁰ *Id.*

¹³¹ See LOCKE, *supra* note 31, at § 31, 308. Locke's "no waste" and "no harm" principles are the reason why simply reducing the *duration* of a patent or copyright would not suffice. For any length of time where access to products is limited, consumer welfare decreases and other creators' work is impeded.

¹³² See HEGEL, *supra* note 69, at § 41.

this section will be limited to research entities, the primary examples of which are pharmaceutical companies.

The Compensated IP Proposal is simple and has two central components. First, all patented products immediately become available for unencumbered public use. Second, creators of the IP receive compensation from the government in exchange for public access, and the compensation is based on a calculation that primarily considers producers' R&D costs. Creators continue to receive acknowledgments and recognition, as they do under the current system.

Michael Polanyi published a patent reform proposal in 1944 with elements similar to those presented herein.¹³³ Specifically, Polanyi argued that intellectual products should be immediately available to the public in exchange for producers' compensation by the government.¹³⁴ Under his system, use of the product would be free, but users would be required to license the invention and inform the patentee of the value they derived from the invention.¹³⁵ The aggregate value of the invention, as reported by users, then would serve as the basis for the level of the compensation to the inventor.¹³⁶ As subsequent scholars have argued, however, a value-based IP compensation approach is both philosophically flawed and pragmatically problematic. Edwin Hettinger questions the justness of individuals receiving compensation based on market price (analogous to "value" in this case) since they do not set the market price.¹³⁷ Patrick Croskery points out that accountants cannot possibly assess the created value with accuracy, particularly when self-interest can factor to skew the analysis. Such an administrability problem would create a substantial monitoring cost if the honesty of patentees' reports to the government is to be ensured,¹³⁸ and the system of appropriately compensating the inventor would be undermined.¹³⁹

The Compensated IP Proposal departs from this demand-based approach of compensating inventors to adopt a more supply-based approach. In doing so, it shifts its focus from one centered on *value* to one centered on *cost*. At the core of the Proposal is one simple proposition: Firms are risk averse and will gladly accept a lower level of compensation in exchange for the elimination of all production risks.

¹³³ See generally Michael Polanyi, *Patent Reform*, REV. ECON. STUD. 61-76 (SUMMER, 1944).

¹³⁴ See Patrick Croskery, *Institutional Utilitarianism and Intellectual Property*, 68 CHI.-KENT L. REV. 631, 638-40. (1993). See also Polanyi, *supra* note 133, at 61-63. See generally Russell Hardin, *Valuing Intellectual Property*, 68 CHI.-KENT L. REV. 659 (1993) (critiquing Polanyi's and Croskery's arguments).

¹³⁵ See Polanyi, *supra* note 133, at 61, 67.

¹³⁶ *Id.*

¹³⁷ See Hettinger, *supra* note 19, at 39.

¹³⁸ See Croskery, *supra* note 134, at 638-40.

¹³⁹ See *id.* See generally Hardin, *supra* note 134.

B. THE ECONOMIC MODEL

Understanding two factors is crucial to understanding this Proposal. First, firms make production decisions in such a way as to maximize profits.¹⁴⁰ When firms face risk and uncertainty, however, they also factor in the size of risk into their calculations.¹⁴¹ The most important factor in a company's production decision in such a case is *expected profit*. To calculate expected profit, two factors are the most relevant: (1) possible profit outcomes $[\pi_i]$ and (2) the probability associated with succeeding and actually achieving such a profit $[p_i]$.¹⁴² Expected profit $[E\pi]$ equals the sum of all possible profit levels, weighted by their respective probabilities $[\sum p_i \pi_i]$.¹⁴³

Second, firms are generally risk averse,¹⁴⁴ which makes them likely to change their behavior in response to government initiatives that minimize or eliminate risk. The classical uncertainty and insurance model below helps to illustrate this point and the Proposal.

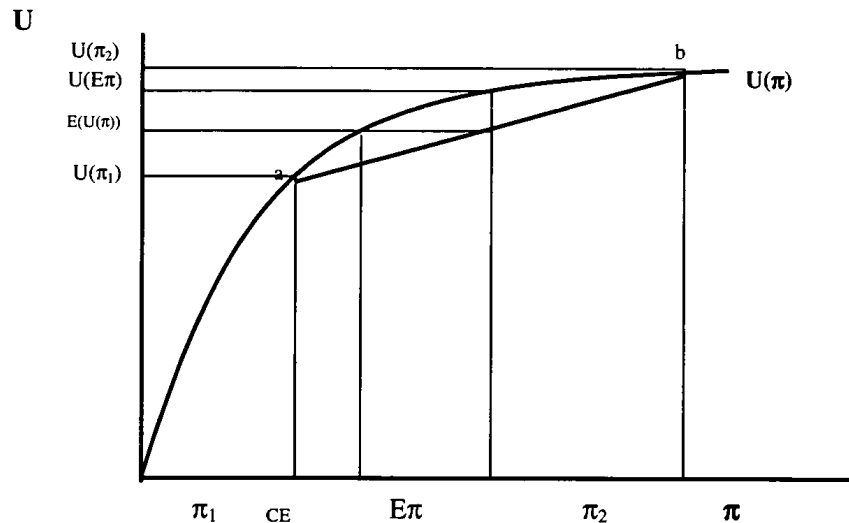
¹⁴⁰ The idea that firms are rational actors whose overarching goal is profit maximization is fundamental in economic theory. For a good introduction to microeconomic theory, see NICHOLSON, *supra* note 24, at ch. 7.

¹⁴¹ The theory of risk and uncertainty, particularly as it relates to insurance schemes, is also prominent in microeconomic theory. While I explain it to the extent necessary to understand the Compensated IP Proposal, a very good and thorough explanation of the theory can be found in NICHOLSON, *supra* note 24, at ch. 15.

¹⁴² The probability associated with a stated profit is simply the difference between 1 and the risk percentage. For example, assume that a project has a 10% chance of failing but would earn \$1000 in profit if it were to succeed. The risk here would be .1, and the profit $[p]$ would be \$1000. The probability of achieving the p would be $[1 - .1]$, or .9; this .9 would be "p."

¹⁴³ Continuing with the example in the last footnote, assume that a project has a .9 probability of achieving the \$1000 profit. Further assume that the project will earn \$0 if it fails. The probability of failing, again, is 10 percent, or 0.1. The expected profit for the project would then be $[(.9 * 1000) + (.1 * 0)] = \900 . This analysis would not change if the profit associated with failure were non-zero.

¹⁴⁴ See, e.g., Rebecca S. Rudnick, *Enforcing the Fundamental Premises of Partnership Taxation*, 22 HOFSTRA L. REV. 229, 290 (1993) ("Recent finance literature sees the firm as a risk-averse individual making decisions based upon perceptions of firm strength."); Bruce Greenwald & Joseph E. Stiglitz, *Asymmetric Information and the New Theory of the Firm: Financial Constraints and Risk Behavior* 11-12 (National Bureau of Economic Research Working Paper No. 3359, 1990); Michael Abramowicz, *Speeding Up the Crawl to the Top*, 20 YALE J. ON REG. 139, 159-60, 177 (2003) (accepting firms' risk-aversion as fundamental premise). Note also that for a risk neutral firm, the company's CE equals its $E\pi$. In the aggregate, there would be no transfer of welfare from producers to consumers or to the government.

FIGURE 1: RISK AND UNCERTAINTY¹⁴⁵

In this model, which mimics the insurance market, the pharmaceutical company faces two possible outcomes. Much like consumers in the insurance market, the company faces a “good state of the world,” where the product succeeds, and a “bad state of the world,” where the product fails. In the “good state,” the company’s successful product yields π_2 , which is a high profit level. In the “bad state,” the company receives π_1 , a much lower profit level. Note that π_1 could be zero or negative, which would change the graph and some of the numbers but not the analytics of this model.

The $U(\pi)$ curve graphically depicts the company’s utility function, which measures the utility the company derives [measured on the y-axis] for each level of profits actually received [measured on the x-axis]. The curve is concave because of the assumption, as stated above, that firms are risk averse.¹⁴⁶

The weighted average of the two possible profit levels is $p_1\pi_1 + p_2\pi_2$, which equals expected profit $[E\pi]$. In other words, the expected profit for the firm is the sum of (1) the probability of the project failing $[p_1]$, multiplied by the profit associated with such failure $[p_1]$ and (2) the probability of the project succeeding $[p_2]$ multiplied by the profit associated with such success $[p_2]$. In the real world, if $E\pi$ exceeds an internally-determined threshold amount, the company will typically proceed with the project.

¹⁴⁵ See NICHOLSON, *supra* note 24, at 504.

¹⁴⁶ The concavity of the curve due to risk aversion is conceptually related to the concept of diminishing marginal utility. This connection, while conceptually relevant, is not crucial to an understanding of the Proposal and is therefore not detailed. For an explanation of the link, however, see NICHOLSON, *supra* note 24, at 503.

As the utility curve $[U(p)]$ depicts, each of the outcomes [i.e., π_1 , $E\pi$, and π_2] has an associated level of utility, or welfare. The utility that the firm derives from π_1 is $U(\pi_1)$ and is noted by point "a" in the graph. The utility that the firm derives from p_2 is $U(p_2)$ and is noted by point "b" in the graph. The straight line connecting points "a" and "b" is the "risk-free line," which is used to determine the "certainty equivalent" [CE]. The CE is the specific amount of profit that, if received entirely risk-free, would give the company as much utility as it would get from $E\pi$ in a risky environment.¹⁴⁷

For a risk-averse firm, the risk-free line will always be inside the utility curve because of the curve's concavity. The CE will therefore always be lower than $E\pi$. This graphical outcome is logical on a conceptual level because a risk-averse firm should always be happy to forego some profit in exchange for eliminating risk and avoiding a risky gamble. The more risk averse a firm is, the lower its CE will be, because the more the firm would be willing to give up to eliminate risk.¹⁴⁸

As shown on the graph, $U(E(\pi))$ is the utility that the firm would obtain if $E\pi$ were obtained with certainty. That is, if the firm were guaranteed $E\pi$ and then actually realized that $E\pi$, then its level of welfare would be $U(E(p))$. $E(U(\pi))$, on the other hand, is a value that includes risk. It is the weighted average of the possible utility outcomes. More precisely, $E(U(\pi))$ is the sum of $[p_1U(\pi_1)]$ and $[p_2U(\pi_2)]$. Because $E(U(\pi))$ incorporates risk, and the firm is risk averse, it corresponds to a lower level of utility than $U(E(\pi))$.

The certainty equivalent, CE, is the amount of profit that yields the same utility as $E(U(p))$. As the graph depicts, the CE involves substantially less profit than $E\pi$ but it yields the same amount of utility because it is received risk-free.

The conclusion, then, is simple. As long as the amount of profit that the firm receives with certainty exceeds CE, the rational firm will prefer that amount and avoid the gamble. It is this concept that forms the backbone of the Compensated IP Proposal: in exchange for eliminating risk, a risk-averse firm will gladly accept a lower level of profits for its inventions. This lower level of profits implies a lower price, a higher output, and an increase in consumer welfare.¹⁴⁹

¹⁴⁷ Recall that $E\pi$ incorporates risk because it is the weighted sum of the two possible profit levels. By definition, the utility that the firm derives from receiving the certainty equivalent without risk is the same utility that it derives from receiving $E\pi$ with risk. That utility level is $E(U(p))$.

¹⁴⁸ See NICHOLSON, *supra* note 24, at 503-05.

¹⁴⁹ See NICHOLSON, *supra* note 24, at 116-20 (discussing consumer surplus).

C. THE MECHANICS OF THE COMPENSATED IP PROPOSAL

Following the described economic model, the bottom line of this Proposal is simple. The government acts as a type of insurer and funds research entities for all of their projects at a level that slightly exceeds the CE. In exchange, the government receives the intellectual property right and can make the product fully available to the public.

As with any insurance scheme, however, there will be moral hazard,¹⁵⁰ and safeguards are necessary. Here, moral hazard can be two-fold. Removal of risk from the company's equation in this model could lead firms to (1) choose inefficient methods of research and/or (2) recklessly excessively high-risk projects.

To guard against such behavior, the Proposal would introduce a requirement that companies maintain a project portfolio whose aggregate risk remains below a pre-determined level. Specifically, the pre-determined level could simply be the company's own aggregate risk level prior to participating in this Proposal.¹⁵¹ Using *aggregate* risk of the portfolio as the determinant instead of capping the risk on individual projects would give the company continued flexibility in managing its own portfolio and reduce criticism about governmental involvement.

A second concern is misrepresentation by the firm about its R&D costs. Because the Proposal would compensate companies for R&D,¹⁵² companies may be tempted to overstate their R&D costs in the final report. To alleviate such temptation, governmental guidelines may be necessary. The government could require detailed research proposals from companies, complete with rigid budget estimates, *prior to* the projects' commencement. At the same time, a separate governmental entity could research the validity and reasonableness of such requests and budgets.

This need not mean that the government controls the substance of the research. The sole purpose of this governmental investigation would be to confirm the project's reported probability for success, the accuracy of cost estimates, and the efficiency of research methodology, before the firm begins its work.

¹⁵⁰ *Id.* at 507 (discussing moral hazard in the context of insurance schemes).

¹⁵¹ Thus, if the company's prior aggregate risk level was .2, the company would be required to maintain a portfolio whose risk did not exceed .2 after entering the program.

¹⁵² By definition, profit is the excess of revenue over cost. As stated above, firms look to profit, not revenue or cost, in determining output and deciding which projects to pursue. Consequently, the Proposal also expresses the CE in terms of profit. It is clear that payment of the profit also involves payment of the cost—R&D—because profit, by definition, includes cost.

D. DISCUSSION

At a level slightly above CE, the level of compensation would be sufficiently high to incentivize the firm's continued operation¹⁵³ while simultaneously being low enough for consumers to capture welfare from the producers. More precisely, the amount of welfare that consumers would capture from producers is the difference between $E\pi$ and CE.

As stated above, all projects yield expected profits of $E\pi$. However, since CE is less than $E\pi$ due to risk aversion, and since companies only receive CE under the Proposal, they forego the difference between $E\pi$ and CE. This difference, previously absorbed by companies, now is transferred to consumers in the form of lower prices. Total consumer welfare under this Proposal rises by the difference between $E\pi$ and CE aggregated across all research projects.

In sum, this model is desirable to risk-averse firms because it allows them to pursue their high-risk projects without the fear of unsustainable losses at the end. The model predicts that by being paid at a slightly higher rate than CE, rational companies will continue all of their projects. In exchange, products become more freely available on the market at a lower price. Unrestricted access to the products, priced significantly below what private companies would have charged, minimizes the social inefficiency and deadweight loss that currently exist due to artificially constrained supply and artificially high prices.

Nonetheless, concerns about this model can be grouped into two separate categories—cost, and de-democratization of research. The following subsection addresses some central concerns in limited detail.

1. *Cost of Implementation*

Critics may argue that this program would be prohibitively expensive to the government. As a practical matter, however, such costs will be minimal and consist primarily of administration expenses. While it is true that the government needs to pay the firm an amount slightly above CE, it is important to remember that the government is not the ultimate bearer of this cost. Rather, consumers are the ultimate payers because they are the ones who actually purchase the products for consumption later on. As stated above, however, consumers are better off because, in the aggregate, they only have to pay the firm CE, which is substantially lower than $E\pi$.

It is also worth noting that this model has a built-in feature that serves as a safeguard to make it more cost-sustainable. By their nature, high-risk projects have low CE's because the CE is related to the

¹⁵³ See above. Note also that since profit equals revenue minus cost, the "CE" and " $E\pi$ " levels of profit here, by definition, already include all research and development costs.

probability associated with the project's success. The lower the probability of success, the lower the E_p . Because CE is always below E_p for a risk-averse firm, a high-risk project means a low CE . This suggests that the actual costs to the government will be low.

2. *De-democratization of Research*

The concept of governmental funds for research raises worries among many. As Wendy Gordon wrote, “[a] democratic society demands decentralized and diverse creation in the intellectual sphere; freedom from state control is essential lest freedom of expression be curtailed by fear of governmental reprisal.”¹⁵⁴ It is important to note that the Compensated IP Proposal is designed such that the government approves projects based not on substance, but based only on efficiency of research and development methodology and companies’ aggregated risk. Perspective may be helpful in further assessing the de-democratization claim.

According to the Association of American Universities, universities perform thirteen percent of total national research and development and fifty-four percent of national basic research.¹⁵⁵ The federal government supports fifty-eight percent of research performed at these institutions; in the year 2002, federal funds to support university research totaled \$22 billion.¹⁵⁶ At the same time, universities are widely acknowledged to be leading sources of innovation.¹⁵⁷

The proposed system of IP, under which government funding is more pervasive in exchange for the public’s unrestricted access to the intellectual products, is thus less radical an idea than it might initially appear. Its primary function would be to reduce the risk experienced by entities while expanding the common.

CONCLUSION

Current IP practices are philosophically problematic on two main grounds. First, IP restricts and even excludes an individual’s access to and use of the product, violating Locke’s “no waste” and “no harm” principles. Second, IP creates high financial rewards for patent holders at a

¹⁵⁴ See Gordon, *supra* note 39, at 1612.

¹⁵⁵ *University Research: The Role of Government Funding*, ASSOCIATION OF AMERICAN UNIVERSITIES 1 (Feb. 2004), at <http://www.aau.edu/resuniv/GvtFunding.pdf> (last visited Sept. 13, 2004).

¹⁵⁶ *Id.*

¹⁵⁷ See, e.g., John Markoff, *National Science Foundation Announces Grant Winners*, N.Y. TIMES, Sept. 26, 2002, at C5 (stating that many of the grants for scientific research go to universities); Karen W. Arenson, *Columbia Sets the Pace in Profiting Off Research*, N.Y. TIMES, Aug. 2, 2000, at B1, B6 (stating that Columbia and other universities are rapidly increasing research innovations).

cost to consumers that are unjustifiable on egalitarian desert grounds. Incentives-based justifications of IP are generally more convincing but cannot justify the excessive financial rewards condoned by current IP practices.

The Compensated IP Proposal addresses egalitarian and Lockean concerns while fulfilling utilitarian concerns and the Hegelian requirement of public recognition for creators' work. By ensuring that intellectual products immediately enter society for unencumbered use, the Proposal meets Locke's principles. The Proposal's use of cost-based compensation, as a proxy for effort-based pay, alleviates egalitarian concerns of existing unjustifiably high payments. Analysis of firms' utility and risk aversion would allow the government to determine the appropriate compensation level for the company where incentives would be just high enough to encourage continued research. Finally, the system minimizes the deadweight loss and social inefficiency that result from artificially high prices and low supplies. The Proposal thus maintains incentives and the public recognition associated with IP while simultaneously redressing philosophical shortcomings.

Certainly, political and social sentiments comprise substantial obstacles to implementation of the Compensated IP Proposal. However, recent advances, such as those in biotechnology, have escalated debates about IP that may soon necessitate a thorough reevaluation of the system. In assessing the justice of our evolving IP system, it will be important to refresh our understanding of the philosophical underpinnings of IP and keep the system congruent with philosophical principles in sight. The author of this article hopes to have contributed to such efforts.

