

Intellectual Property and the Incentive Fallacy

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The enterprise of intellectual property law has long been based on the premise that external incentives – such as copyrights and patents – are necessary to get people to produce artistic works and technological innovations. This article argues that this foundational belief is wrong. Using recent advances in behavioral economics, psychology, and business-management studies, along with empirical investigations of industry, it is now possible to construct a compelling case that the incentive theory, as a general matter, is mistaken, and that natural and intrinsic motivations will cause technology and the arts to flourish even in the absence of externally supplied rewards. The result is that intellectual property law itself needs a fundamental rethinking.

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I. INTRODUCTION

The whole idea of copyright and patent law is that people won't create or invent things without incentives. If people can just swoop in and make copies, the reasoning goes, these necessary incentives will be lacking. This is the classic economic argument for intellectual property law. And it makes perfect sense. But it turns out to be wrong.

Without anyone really noticing it, the primary rationale underpinning intellectual property law has become hollow. New strains of thinking in the fields of economics, psychology, and business-management studies now debunk the long-venerated idea that legal authority must provide some artificial inducement to artistic and technological progress. At the same time, the incentive theory is being roundly contradicted by the deluge of citizen-produced digital content that is distributed over the internet without any expectation of compensation. At the same time, new artistic and technological ventures that are too capital-intensive for one person are being funded by crowds of strangers connected only by a website and a shared vision. These unfolding events confirm the view that has developed among social scientists, that external rewards are, as a general matter, unnecessary for the flourishing of arts, entertainment, and technology.

Contrary to orthodoxy, the great driver of artistic and technological progress is not external, but internal. Call it *inherent motivation*. People have an intrinsic drive to create. Business firms have natural reasons for innovating. The idea of inherent motivation may be counter-intuitive, but the evidence is compelling. Survey-based studies and even controlled experiments have confirmed this view time and time again. Astonishingly, when it comes to the psychology of the individual, there is even evidence that extrinsic rewards have the opposite of the intended effect and can actually defeat inherent motivation, thus inhibiting creative and inventive endeavor.

The upshot of all this is that it is now possible to say with confidence that the classical economic dogma that lies at the heart of intellectual property law is a mistake.

The incentive theory is, and always has been, elegant. The simplicity and transparent logic of the incentive theory is one of its strongest features. But the theory's attractiveness should not be allowed to hide its very best quality – its falsifiability. The incentive theory yields predictions about the world that can be tested. Specifically, the incentive theory predicts that economic actors will tend not engage in economically valuable creativity and innovation without external rewards. And, as it turns out, digital networked technologies have been testing this prediction. The evidence is in, and it refutes the theory. What's more, work in business-management studies and the social sciences is putting together a new, more nuanced theoretical picture of innovation and creativity. That new theoretical understanding – while less elegant as a matter of theory – is in line with empirical observations. The necessary implication is that thinking about intellectual property must be completely revised.

There are exceptions. That is, there are circumstances where external incentives may sometimes be necessary to spur progress. My argument in this paper is not that external incentives are never necessary or useful. Instead, my argument is about the general case. In general, the kind of creativity and innovation that benefits society as a whole is not in need of externally supplied incentives. Thus, my contention in this Article regards what standing the incentive theory ought to have among judges, lawmakers, and

legal scholars. It's due for a downgrade. The most accurate view is that intellectual goods requiring external incentives are the exceptions, not the rule. Flipping our presumption about intellectual production is not a mere matter of academic curiosity. Innovation and creative labor are among the most important aspects of the world economy. Inasmuch as creativity and innovation may drive most of the growth of economies, it may be argued that innovation and creative production constitute the single most important aspect of economic functioning. It follows that changing our default policy with regard to innovation and creative production has the potential to work a positive, wide-scale transformation in our economy as a whole.

Looking at the incentive theory's troubles with present circumstances begs a fresh look at its past. Indeed, the incentive theory has a long and venerable pedigree that contributes to a reluctance to set it aside. But the incentive-theory tradition is not actually quite so well-rooted in history as one might think. While it's natural to think that the development of intellectual property law was guided by careful reasoning on the basis of classical economics, in reality, it wasn't. The real history is not so much Adam Smith as Niccolò Machiavelli. The monopolies now understood as copyrights and patents were originally created by royal decree, bestowed as a form of favoritism and control. As the power of the monarchy dwindled, these chartered monopolies were reformed, and essentially by default, they wound up in the hands of authors and inventors. Thus, now that happenstance indicates the unfitness of the incentive theory, we should not hesitate to humble it.

As a matter of framing the issues, I should be clear about what I mean by "intellectual property." In this paper, in talking about intellectual property, I am talking about patents, copyrights and various sorts of *sui generis* intellectual property rights.¹ Generally speaking, when I say "intellectual property" in this paper, I am not intending to include rights of publicity and traditional trademarks – logos, trade names, and the like.

Trademark law has its own economic justification that is quite distinct from the one for other forms of intellectual property. The idea of trademark is not to give incentives for creative or innovative labor, but rather to legally protect indications of commercial source, thus letting businesses profit from a well-earned reputation for quality. That being said, I do not exclude trademark doctrine from my argument entirely. Trademark doctrine has been expanding wildly in the past two decades. Increasingly, it is covering "creations" rather than just indicia of commercial source. For example, trademark law has been construed by some courts to cover designs for vehicles and toys.²

¹ The term *sui generis* describes unique intellectual property entitlements created to fill specific niches where there was an industry call for protection but no existing legal scheme provided it. The chief examples in the United States are the 10-year term of protection for patterns of circuits lithographed on silicon semiconductor chips (Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 901–914, Pub. L. No. 98-620, 98 Stat. 3347 (Nov. 8, 1984)) and the 10-year term of protection of the shape of boat hulls (Vessel Hull Design Protection Act, 17 U.S.C. §§ 1301–1332, passed as part of the Intellectual Property and Communications Omnibus Act of 1999, Pub. L. No. 106-113, 113 Stat. 1536 (Nov. 29, 1999)).

² See, e.g., *Gen. Motors Corp. v. Lanard Toys, Inc.*, 468 F.3d 405 (6th Cir. 2006) (upholding exclusive right to vehicle design represented in toy on the basis of trademark doctrine); *Warner Bros., Inc. v. Gay Toys, Inc.*, 724 F.2d 327 (2d. Cir. 1983) (upholding exclusive right to toy vehicle livery on the basis of trademark rights to "Dukes of Hazard" television series). Note, however, that the doctrinal soundness of such decisions is dubious. See, e.g., Eric E. Johnson, *Intellectual Property's Need for a Disability*

To the extent that trademark law behaves in this way or is intended to be justified in this way, my critiques are meant to apply.

The right of publicity is also distinguishable from mainline intellectual property entitlements in terms of its underlying justification. At least as originally conceived, an action for right-of-publicity infringement is really a tort claim. Specifically, it arose as a branch of the tort of invasion of privacy, not as a species of intellectual property law, *per se*. As with trademark, however, I do mean to include the right of publicity within the scope of my argument to the extent that it is argued that publicity rights are justified based on the need to supply incentives for creative labor.³

At any rate, once the core/traditional form of trademark is taken out of the mix, the great balance of what is left over in the intellectual property sphere, in terms of its economic significance and societal impact, is copyright and patent. Thus, my discussion below focuses mainly on these two areas of the law.

As a final matter of framing the issues, I need to point out that scholars have advanced various theories that might justify intellectual property.⁴ The external incentive theory is only one theory. But it is by far the most influential theory, throughout the world and in the United States especially. The incentive theory carries the prestige of legions of U.S. Supreme Court decisions.⁵ And the incentive theory is also the motivating force behind IP globalization efforts. After all, the slogan of the United Nation's World Intellectual Property Organization is "Encouraging Creativity and Innovation."⁶ Other theories that scholars have identified can be compelling, and occasionally they are persuasive to policymakers and courts. Nonetheless, the incentive theory remains the engine of IP policy. Thus, the theory's prospective demise is significant.

Here is a look ahead: In Part II, I explain the incentive theory in depth, showing why it is such a powerful intellectual argument. In Part III, I look at where intellectual property rights came from – their historical pedigree – and I show how the incentive theory, despite its logical appeal, is really best understood as a post-hoc rationalization

Perspective, 20 GEO. MASON U. CIV. RTS. L.J. 181, 204-06 (2010) (criticizing the Lanard Toys decision).

³ See, e.g., Mark F. Grady, *A Positive Economic Theory of the Right of Publicity*, 1 UCLA ENT. L. REV. 97, 110-111 (1994) (discussing the incentive theory as applied to the right of publicity).

⁴ See, e.g., William W. Fisher, III, *Theories of Intellectual Property*, NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY (Stephen R. Munzer, ed. 2001) (reviewing various theories). Note also, that the incentive theory is not the only economic theory of non-trademark IP rights. Some scholars have sought to justify IP entitlements based on the perceived problem of "overgrazing." See, e.g., William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471 (2003)(overgrazing of creative works); see also Grady, *supra* note 3, (overgrazing of celebrity identities).

⁵ See discussion in Part III, *infra*.

⁶ The slogan of the World Intellectual Property Organization, appearing on its website, is "Encouraging Creativity and Innovation." See WIPO - World Intellectual Property Organization, <http://www.wipo.int/portal/index.html.en> (last visited Mar. 25, 2011). According to its website, "The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations. It is dedicated to developing a balanced and accessible international intellectual property (IP) system, which rewards creativity, stimulates innovation and contributes to economic development while safeguarding the public interest." See WIPO, What is WIPO?, http://www.wipo.int/about-wipo/en/what_is_wipo.html (last visited Mar. 25, 2011).

for a creature of pure politics. In Part IV, I discuss the burgeoning field of behavioral economics and what it and social psychology have to say about intellectual property law. In particular, I show that the social-science literature leads to the identification of a general rule that intellectual labors will tend to flourish naturally, without external rewards. In Part V, I look at how technology – particularly the internet and network-connected digital devices – have revealed a human passion for creative expression and puzzle solving that corresponds with the new understandings from social science. In Part VI, I review historical-based empirical work that tells us about the motivations of authors in the past. As we’ll see, these findings are consistent with a general rule that creative and innovative human labors are not dependent on external rewards, but, instead, will tend to flourish of their own accord. In Part VII, I present a case study: the market for stock photography. This exploration shows in microcosm how an industrial model built on the idea of external incentives quickly reveals its flaws when technology fully liberates people to follow their passions to engage in creative labors. In the next two parts, I take a look at the corporate context. In Part VIII explain how empirical research shows that external-incentive theory fails to make sense as a general principle even among firms, including capital-intensive industrial sectors where production, development, and research are coordinated by large shareholder corporations. Then, in Part IX, I explain how intrinsic motivations of individuals can aggregate to partially or complete capitalize large-scale creative production and innovation. Then, in Part IX, I offer my prescriptions, both for the scholarly debate and for the substantive law.

II. THE IRRESISTIBLE LOGIC OF THE INCENTIVE THEORY

There is a quote that is often used to explain the idea that people need an inducement to create intellectual works. They are the words of 18th-Century man-of-letters Samuel Johnson. He said, “No man but a blockhead ever wrote, except for money.”⁷

Take a novel. The thinking goes like this: Why would any novelist go through the trouble of writing a novel if, as soon as the first copy were released, everyone and anyone could simply make copies of it, not paying so much as a dime to the writer?

This perceived problem – the ability to copy – is what intellectual property law is intended to remedy. Intellectual property is aimed at inventions, works of art, books, music, and other intangibles for the very reason they are copyable. Most goods aren’t susceptible to copying. If I sell you a bushel of wheat, and if you want more, you’ll have to buy more. You cannot simply copy the first bushel that you purchased. Regular goods, like bushels of wheat, are what economists call “rivalrous” and “excludable.” A good is rivalrous if one person’s enjoyment of it defeats another person’s ability to enjoy it: Once I’ve eaten a loaf of bread, you can’t. It’s rivalrous. Excludability means that other persons can be prevented from enjoying the good. Bread is excludable because, to keep you from enjoying it, I can lock it in my house.

By contrast, copyable goods, such as artistic works and technological inventions,

⁷ Quoted in JAMES BOSWELL, LIFE OF JOHNSON, INCLUDING BOSWELL’S JOURNAL OF A TOUR TO THE HEBRIDES AND JOHNSON’S DIARY OF A JOURNEY INTO NORTH WALES IN SIX VOLUMES, VOLUME VI: ADDENDA, INDEX, DICTA PHILOSOPHI, &C. (George Birkbeck Hill, ed., The Project Gutenberg eBook edition) <http://www.gutenberg.org/dirs/1/1/7/2/11729/11729.txt>.

are what economists call “nonrivalrous” and “nonexcludable.” They are nonrivalrous because more than one person can use them at the same time. They are nonexcludable because there is nothing you can do to stop other people from using or enjoying a copyable work. (Unless, of course, there’s a law.)

Goods that are both nonrivalrous and nonexcludable are called “public goods.” This does not mean they are funded with public money. It means that, as soon as they are created, they instantly inure to the benefit of the general public. In other words, everyone can take a free ride on the labor of persons who create public goods. This leads to the “free rider problem.”

Now, it’s important to understand that the supposed problem with free riders is not that they are taking a free ride. That is, the free ride itself is not the problem. From an economic perspective, a free ride, all else being equal, is a boon to societal welfare. American courts are in accord with that perspective and have repeatedly upheld free-riding on the creative and innovative labors of others to be a good thing.⁸ The problem is what the potential for free riding does to the incentives for engaging in intellectual labor.

If no one pays for the ride – the reasoning goes – the bus isn’t going anywhere.

A. The Wonderful Invisible Widget Sorter

The economic theory of intellectual property starts from a point of view supportive of a free market – that is, an Adam Smith / invisible hand / laissez-faire kind of approach.⁹ The starting assumption is that if the economy is left free of government planning and intervention, then buyers and sellers, acting in their own self interest, will make deals that will have the overall effect of directing labor and capital to be employed in the most efficient ways, thus making society as a whole as wealthy as possible.

Reasoning from the classical free-market credo, intellectual property law is, at first blush, unjustifiable. After all, intellectual property law is a form of government-imposed ordering on the economy. Instead of allowing people to make what they want and sell it as they would like, intellectual property confers legalized monopolies on certain parties. The people so blessed with these monopolies are then able to sell their wares without the burden of competition. Indeed, some economic thinkers of a more purely libertarian stripe see intellectual property law as incompatible with free-market ideals.¹⁰ Among free-market supporters, however, the most widely accepted view is that intellectual property rights are a necessary exception to an otherwise free market. Boiled

⁸ See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989) (recognizing that “imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy”); *Dastar Corp. v. Twentieth Century Fox Film Corp.*, 539 U.S. 23, 33 (2003) (discussing the general “right to copy”); *In re Morton-Norwich Prods., Inc.*, 671 F.2d 1332, 1336 (C.C.P.A. 1982) (describing “the judicial theory that there exists a fundamental right to compete through imitation of a competitor’s product, which right can only be temporarily denied by the patent or copyright laws.”).

⁹ That is, I mean the kind of normative economic theory that is generally traced to Adam Smith, *THE WEALTH OF NATIONS* (1776).

¹⁰ For example, many in what is called the Austria School of Economics view intellectual property entitlements as compromising market freedom. See Peter J. Boettke, Austrian School of Economics, *The Concise Encyclopedia of Economics*, <http://www.econlib.org/library/Enc/AustrianSchoolofEconomics.html>.

down to its essence, the thinking is: *Why would anyone undertake the hard work of creating something supremely valuable if everyone else can just use it without paying?*

That describes the essence of the traditional economic rationale for propertizing public goods. But the argument is both more elegant and more powerful than this simplified version suggests. The argument, in its full form, indicates not merely that intellectual goods won't be produced in a free market, but that they won't be produced at optimum levels.

To appreciate the complete argument, you need to start with the story of how the free market efficiently orders the production and consumption of tangible goods. For an example of a tangible good, I'll use that hallowed item made famous in economics classrooms everywhere: the "widget." The widget could be a bushel of wheat, a door-stop, a gross of wooden dowels, or anything else.¹¹ The story goes like this: If a widget is worth \$50 to a potential buyer, and if a widget can be produced at a cost of \$50 or less, then someone will build the widget. The willingness of buyers to pay \$50 and the willingness of producers to sell for \$50 will, through the interactions allowed in the marketplace, result in the most efficient quantity of widgets being produced and used. Beyond this quantity, the production of an extra widget would be a waste. And below this quantity, the lack of a widget would be a regrettable loss. Thus, the market produces the efficient outcome. In general usage, the word "efficient" has all kinds of connotations, but as economists use it, the word "efficient" means simply that, from an economic point of view, it's how we'd like things to turn out.

Change the facts slightly. Let's suppose that no one wants to buy a widget unless it costs \$20 or less. Perhaps people just don't value widgets that highly. If it remains the case that a widget cannot be produced for less than \$50 (maybe the skill and labor required are just too great), then no widgets will be produced. This outcome – of nonproduction – is also efficient.

Running through these kinds of if-then scenarios demonstrates how the free market solves the problem of how much to produce and how much to consume. If the market is allowed to operate freely, the negotiations of buyers and sellers causes an efficient production (or nonproduction) of all goods. And a free market does this all without a central-planning committee in the government trying to divine the consumer needs of the future. In fact, with a smoothly operating free market, nobody needs to plan anything. That's what's particularly magical about the free market – it reaches efficient outcomes without conscious deliberation. That's the "invisible hand" concept. It's almost as if some perfect central-planning committee in the sky figured out the perfect number of all goods of every kind to be produced and exactly to whom they should be distributed so as to maximize the total level of wealth in the society, and then made this happen. This blissful result arises naturally out of prices being efficiently determined in a free market of buyers and sellers.

As you can see, it's a powerful argument. But wait, there's more.

The argument includes more than prices and quantities. It can also be extended to

¹¹ The whole point of the word "widget" in explaining economic or business-management principles is that it doesn't mean anything. It's a placeholder word, denoting some unspecified manufactured item. I personally have always pictured a widget as an item you'd have on your desk – like a paper clip, but somehow more complicated. At any rate, for the purposes of the argument, it is intentionally left unspecified.

show that a free market will also lead to ideal levels of quality and craftsmanship of all goods. In fact, the free-market theory applies to everything that goes into a consumer's purchasing decision – warranties, store ambiance, legal terms of the sale, and so forth. And the theory also applies to the efficient rendering of services, in addition to goods. Moreover, the free-market theory applies to employment and labor as well, and also to loans, investments, stocks, bonds, and aspects of finance. What is beyond the ability of any human or group of humans to calculate – the needs of consumers and all other economic actors along all dimensions and the corresponding capacities of industry – can and will be determined by the market, so long we just leave the market alone.

B. The Problem with Jefferson's Candle

All the elegant analysis of basic free-market economics changes, however, when certain kinds of goods are involved. Namely, copyable goods.

A frequently repeated quote of Thomas Jefferson indicates the unique economic characteristic of that most copyable of goods, the idea.

"He who receives ideas from me," Jefferson wrote, "receives instruction himself without lessening mine; as he who lights his taper at mine receives light without darkening me."¹²

Jefferson's quote, like its hypothetical object, radiates warmth and light. It makes intellectual goods seem like a loophole in an otherwise hard-knock economic existence: Something available truly for free – no strings attached. But thinking it through, we quickly encounter a big problem.

Not only are flames and ideas nonrivalrous – Jefferson's point – but they are also nonexcludable. The nature of flames and ideas allows buyers to simultaneously keep them and resell them. It takes but a skip and a hop of economic reasoning to see that the market for flames and ideas will quickly become glutted. As soon as a market opens up, the prices for freely copyable flames and ideas will drop almost instantly to zero.

Imagine you are a caveman living thousands of years ago. You are the only person who can figure out how to make fire. If that's the case, then you can sell a flame for a lot of money. But only once. After you've lit just one stick, torch, or widget on fire and handed it over to just one buyer, you will face an immediate business calamity. You can expect your feckless customer to instantly get into the flame-selling business and undercut your price. The invention of intellectual property can be re-imagined from this caveman hypothetical. We want innovating cavemen to have the proper incentive to figure out a way to make fire. To make sure someone will undertake the intellectual labor of innovating a way to make fire – supposing doing so is worth the trouble – then we want to make sure there is an incentive commensurate with how valuable fire is for cave society. The innovator, in order to have the proper incentive, needs to be able to sell flames at premium prices. And to allow the fire innovator to keep selling flames at premium prices, we either need a monsoon or a law. Obviously, it's easier to lobby a legislature for laws than to command nature to rain.

¹² The Thomas Jefferson Papers Series 1. General Correspondence. 1651-1827, Thomas Jefferson to Isaac McPherson, August 13, 1813. Available at http://eejlaw.com/m/Letter_Thomas_Jefferson_to_Isaac_McPherson_August_13_1813_original_images.pdf (image-based) and http://eejlaw.com/m/Letter_Thomas_Jefferson_to_Isaac_McPherson_August_13_1813_text-based.pdf(text-based).

Nonexcludable, nonrivalrous goods thus make a mockery of the elegant equations of free-market economics. If goods can be copied for no cost, then prices sink to zero. Markets, of course, need prices to be able to function and calculate efficient outcomes. Without prices, there are no sellers, no buyers, and, inevitably, no goods. Thus, we end up with a “market failure.” The benevolent invisible hand stops its benevolent ordering of society and ascends into the sky to scratch its invisible forehead.

This is a convincing account for the need for intellectual property laws. But, once again, there’s more. The economic argument, in its full form, not only shows that external rewards are needed for nonexcludable goods, the argument also demonstrates that in order to incentivize just the right amount of nonexcludable goods, the cumulative amount that people are willing to pay must equal the innovator’s cumulative receipts. That is, optimal production of intellectual goods will not occur unless the full value is recoupable by the people who produce them.

The reason why is best explained with an example. If a movie is worth \$10 to each of 10 million people, then the value of the movie to the world as a whole is \$100 million. That means that the optimal economic outcome is for someone to produce the movie so long as it can be done for \$100 million or less. Thus, according to this line of thinking, some intervention in the market is necessary so that the movie’s producer can receive \$100 million. Doing so is the only way to ensure that the movie *will* be produced so long as it *can* be produced for \$100 million or less. At least that’s the theory.

Note that if the movie can be produced for less than \$100 million, then the producer gets to keep the extra as surplus profits. But the existence of surplus profits doesn’t change the fact that the outcome is economically efficient. Why not? As long as the movie is worth more than it costs to produce, then someone is going to wind up reaping some kind of surplus. Either the producer will get more than it costs to make the movie, or the public will get a bargain when moviegoers pay less than they were willing to. In the first case, there’s a “producer surplus.” In the second case there’s a “consumer surplus.” In either case, there’s someone who can exclaim, “Sweet!”

While consumers and producers might care about who gets the surplus, from the point of view of societal welfare, the distribution of the surplus is irrelevant. All that is important in reaching an efficient result is that the market system ensures that the movie be produced if, and only if, its aggregate worth equals or exceeds its aggregate cost.

So, according to traditional thinking, something needs to be done to intervene in the market in order to make sure that nonexcludable, nonrival intellectual goods will not just be encouraged, but that they will be produced at optimal levels.¹³ It bears mention that this particular aspect of the incentive theory is often glossed over or neglected by legal scholars, including those who support intellectual property on the basis of the incentive theory. I emphasize it here because, once understood, the power of the incentive theory, as a policy prescription, is considerably strengthened.

Thus we arrive at the fundamental assumption of intellectual property – that intellectual goods need powerful external incentives. As long as intellectual goods can be copied, the producers of those goods are guaranteed only to get an efficient price for the

¹³ See, e.g., CHRISTIAN HANDKE, THE ECONOMICS OF COPYRIGHT AND DIGITISATION: A REPORT ON THE LITERATURE AND THE NEED FOR FURTHER RESEARCH (2010), <http://www.ipso.gov.uk/ipresearch-economics-201005.pdf> (“[S]tandard economic theory predicts that in a freemarket, fewer creative works would be supplied than would be socially desirable.”).

sale of the first copy. After that, competition will drive the price down to zero. Granting the filmmaker (or whomever) the legal ability to exclude persons from the movie (or whatever) assures that the intellectual labor will be compensated commensurate with its worth. That legal ability to exclude is the intellectual property entitlement – copyright, patent, or other.

This is the story of the free market and its failure to properly incentivize nonexcludable, nonrival goods of an intellectual nature. It has an irresistible logic. Its intellectual appeal, in fact, is sparkling. Its utter good sense has even caused it to be enshrined in that most admired document in American law: the Constitution.

In the summer of 1787, while the most rudimentary aspects of the American government were being hammered out at the Constitutional Convention in Philadelphia, some thought was given to intellectual property and how it would be justified. Among its four pages of dense handwritten text, the Constitution expressly harnessed Congress’s lawmaking power in the area of intellectual property to the external-incentive theory. Article I, § 8 provides: “The Congress shall have 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.”

In consonance with this constitutional charge, the U.S. Supreme Court has explained that the purpose of copyrights is a public one: to motivate creativity.¹⁴ The intended beneficiaries of copyright law are not the copyright holders, but the public at large.¹⁵ The view is summed up in the words of Justice Blackmun:

Copyright is based on the belief that by granting authors the exclusive rights to reproduce their works, they are given an incentive to create, and that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in ‘Science and the useful Arts.’¹⁶

The story with regard to patent law is the same. The U.S. Supreme Court has said that Congress’s authority to create patent entitlements “is exercised in the hope that ‘[t]he productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens.’”¹⁷

¹⁴ *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984). *See also* *Harper & Row, Publishers, Inc. v. Nation Enterprises*, 471 US 539, 546 (citing the foregoing).

¹⁵ *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 158 (1948) (“The sole interest of the United States and the primary object in conferring the monopoly lie in the general benefits derived by the public from the labors of authors. It is said that reward to the author or artist serves to induce release to the public of the products of his creative genius.” (internal quotes omitted)). *See also* *Sony Corp. of America*, 464 U.S. at 477 (J. Blackmun, dissenting) (“The monopoly created by copyright thus rewards the individual author in order to benefit the public.”)

¹⁶ *Sony Corp. of America*, 464 U.S. 417, 477 (J. Blackmun, dissenting; citing to and quoting *Mazer v. Stein*, 347 U.S. 201, 219 (1954); internal quotes omitted).

¹⁷ *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (quoting *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480 (1974)).

III. THE DUBIOUS PEDIGREE OF THE INCENTIVE THEORY

With the beautiful logic of the incentive theory, and with its entrenchment by constitution-drafters and the judiciary, it is easy to understand why intellectual property law was developed in response to such a demonstrated privation. Yet it wasn't.

Today, we understand that the need to encourage artistic production and invention is intellectual property's *raison d'être*.¹⁸ It is widely assumed that IP law was cleverly created to fill a hole in an otherwise well-developed microeconomic model of efficient markets. But this is a just-so story. The historical record tells a different tale. With intellectual property, the *d'être* preceded the *raison*.

As you travel back in time attempting to trace the origins of some aspect of intellectual property law, you will find that in the vicinity of the 17th Century, the ideas of "patents" and "copyrights" become snarled and intertwined not only with one another, but also with "monopolies." All of these legal concepts represented variations on a theme: a monarchy's efforts at maintaining control and doling out favors in an era of increasing threats to royal power. Thus, the origins of modern IP law are not found in a scholarly disputation of economics, but rather in the vast political struggle between the monarchy and the various power bases in mid-millennium society.

To tell the story of how American intellectual property law came to be, we need to start in Britain. Beginning around the middle of the last millennium, there was a period of 200 years or so during which there was great change in British governance. The power of the throne was progressively marginalized over that time as freedom was gained in the political and commercial spheres. Copyright and patent laws were leftovers of this process. They firmed up from the batter of royal governance that escaped through the fingers of democratization and economic liberalization.

The first red-letter date was 1557, when Queen Mary used her sovereign authority to charter the incorporation of the Stationer's Company, a guild with the exclusive authority to print and sell books.¹⁹ The fillip to bestow this exclusive royal province was the perception of an imminent need to control the press.²⁰ Subsequent to its spread through Europe, those in charge correctly understood that the press could be perilous for authoritarian rule.²¹

The next year, in 1558, Queen Elizabeth I ascended to the throne. Her reign was marked by, among other things, an explosion in the issuance of letters patent. These open letters – patent means "open," after all – gave exclusive franchise over some aspect of commerce to a lucky beneficiary. These crown-chartered monopolies locked up various

¹⁸ See, e.g., Jerome H. Reichman & Rochelle Cooper Dreyfuss, *Harmonization without Consensus: Critical Reflections on Drafting a Substantive Patent Law Treaty*, 57 DUKE L.J. 85, 122 (2007) (regarding patents); Kevin C. Hormann, *The Death of the DMCA? How Viacom v. YouTube May Define the Future of Digital Content*, 46 HOUS. L. REV. 1345, 1373 (2009) (on copyrights).

¹⁹ See SIVA VAIDHYANATHAN, *COPYRIGHTS AND COPYWRONGS: THE RISE OF INTELLECTUAL PROPERTY AND HOW IT THREATENS CREATIVITY* 37 (2001); CYPRIAN BLAGDEN, *THE STATIONERS' COMPANY: A HISTORY, 1403-1959* 19 (1977).

²⁰ See VAIDHYANATHAN, *supra* note 19, at 37.

²¹ See *id.*

categories of goods or services, which, for a long time, had been open to all takers.²² These letters patent were issued without concern for providing economic incentives to innovators.²³ The monarchy was looking out for itself.

The monopoly-happy Elizabethan Reign persisted until the dawning of the 17th Century. In the decades that followed, two things happened: The political power of the monarchy declined. In 1624, Parliament passed the Statute of Monopolies. This act sought to end the resented practice of royal favoritism through patent granting. Though the statute banned letters patent as a general matter, an exception was carved out for inventions that were novel.²⁴ Thus, modern patent law was born not by design, but as the residuum of a purge. In the meantime, the broader timeline of history depicts a decline in royal authority of a more far-reaching character. As students of English history will know, through the efforts of Oliver Cromwell, the monarchy was removed entirely from power from 1649 until the Restoration in 1660. It was during this time that philosophical thinking evolved to provide a rational basis for a society with a weakened monarchy. In 1689, John Locke published his *Second Treatise on Government*, giving the idea of property rights a rational foundation other than their justification as a derivative of the divine right of kings.²⁵

In the midst of these changes, modern copyright law sprang up. Like patent law, it too was royal jetsam. In the late 1600s, government inaction allowed the Stationer Company's royally chartered monopoly to expire.²⁶ The Stationers went to Parliament seeking a statute to replace the royal charter. But the book industry was rebuffed – at least partially. In 1710, seeing no point in rewarding the book industry for the efforts of authors, Parliament replaced the Stationers' monopoly with a specially crafted limited-term monopoly to authors over their written works – a “copyright.”²⁷ While this wasn't exactly what the book business asked for, it was far better than nothing, for it laid the legal foundation for a transfer of rights from authors to publishers. That, in turn, allowed proprietors in the book trade to avoid competition with regard to individual titles. Without copyright law, printers and booksellers would have been reduced to trading on quality – the secureness of bindings, the crispness of print, and the like. That, of course, would have been very good for consumers, but it would have made the book trade a much less profitable enterprise for proprietors.

Thus, by the first quarter of the 18th Century, modern patents and copyrights had

²² *Bilski v. Kappos*, 561 U.S. ___, 130 S.Ct. 3218, 3240 (2010) (Stevens, concurring) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 5 (1966) (internal quotations omitted)).

²³ MICHELE BOLDRIN & DAVID K. LEVINE, *AGAINST INTELLECTUAL MONOPOLY* 44 (2008).

²⁴ 21 Jam. 1, c. 3, § 6 (1623), available at <http://www.statutelaw.gov.uk/content.aspx?activeTextDocId=1518308>. *See also* *Bilski*, 130 S.Ct. at 3239–40.

²⁵ An alternative justification for intellectual property rights that is sometimes advanced is the same as Locke's justification for property rights in land and tangibles, that people deserve to own the product of their own labor. It is thus worth noting that intellectual property law not only preceded its economic-incentive rationale, but also largely preceded Locke's articulation of this labor-desert theory.

²⁶ LYMAN RAY PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* 143 (1968); BLAGDEN, *supra* note 19, at 175; VAIDHYANATHAN, *supra* note 19, at 39.

²⁷ VAIDHYANATHAN, *supra* note 19, at 37; BLAGDEN, *supra* note 19, at 175-177; PATTERSON, *supra* note 26.

been established. Their establishment had nothing to do with careful economic reasoning and everything to do with political reordering and special-interest jockeying.

The history of copyrights and patents as preferential dispensations is at odds with the imagined account of calculated design. The conclusion that the development of modern intellectual property was *not* guided by modern economics is further confirmed when you consider what happened distinctly *after* the development of modern patent and copyright law: Modern economics was developed.

Following the 1623 Statute of Monopolies and the 1710 Statute of Anne, Enlightenment philosophers undertook the project of bringing rational thought to economic ordering. The watershed moment was in 1776, when Adam Smith published his carefully reasoned defense of free markets, *The Wealth of Nations*. The event signaled the beginning of economics as a disciplined way of thinking about the production and consumption of wealth. The book was an immediate success – the first edition sold out within six months of hitting store shelves.²⁸

Notably, the same year Smith’s masterwork was published, the American Colonies declared independence from the British Crown. The subsequent American Constitutional Convention in 1787 drafted a set of powers for Congress that included the ability to issue patents and copyrights, but with two facial limitations: the granted monopolies could only be for limited times, and they were to be for the purpose of encouraging creators and inventors. America’s first copyright law, the Copyright Act of 1790, used the 1710 Statute of Anne as its “doctrinal blueprint,” largely mimicking its “basic concepts, structure, and text.”²⁹

Over the course of the next century, the notion of the normative superiority of free markets solidified. The result was a “hands off” prescription for governments as a way of permitting free markets to develop. But in the later third of the 1800s, radical industrialization and rapid concentration of industrial power in the hands of corporate magnates changed the prescription. Free-market boosters saw a new role for government: guaranteeing free and competitive markets through antitrust laws, an evolution marked by the passage of the Sherman Act in 1890,³⁰ the cornerstone of contemporary American antitrust law.

In today’s law school catalogs, antitrust and intellectual property are treated as separate subjects. Their crisp delineation is not, however, a matter of rational foreordination, but rather of historical vicissitude. Antitrust law and intellectual property come from the same place. What we now think of as antitrust law began as an Enlightenment absolution of kingly corruptions and mercantilist market manipulations. We’ve given the name “intellectual property” to the legal doctrines that are the survivors of that process.

Some have argued that “intellectual property” is a pernicious misnomer. Richard Stallman – a persistent critic of intellectual property – has called it a “seductive

²⁸ JACK RUSSELL WEINSTEIN, ON ADAM SMITH 57 (2001).

²⁹ Oren Bracha, *The Statute of Anne: An American Mythology*, 47 HOUS. L. REV. 877, 878 (2010).

³⁰ Sherman Act, ch. 647, §§ 1-2, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1-7).

mirage.”³¹ As he explains:

It has become fashionable to toss copyright, patents, and trademarks – three separate and different entities involving three separate and different sets of laws – plus a dozen other laws into one pot and call it “intellectual property”. . . . There is no such unified thing as “intellectual property” – it is a mirage. The only reason people think it makes sense as a coherent category is that widespread use of the term has misled them. The term “intellectual property” is at best a catch-all to lump together disparate laws. Nonlawyers who hear one term applied to these various laws tend to assume they are based on a common principle and function similarly. Nothing could be further from the case. These laws originated separately, evolved differently, cover different activities, have different rules, and raise different public policy issues.³²

But Stallman’s only partially right. It’s true that many people, including politicians, diplomats, lobbyists, lawyers, and others, commonly trumpet disparate doctrines under the banner of “intellectual property” in a way that inures to the benefit of special interests. But those doctrines did not originate separately. Rather, they are legal threads that are rejoining one another after a couple of centuries of separate travels.

Stallman’s historical reconstruction also gives the law credit it doesn’t deserve, which is ironic, since Stallman is a prominent detractor of intellectual property entitlements:

Copyright law was designed to promote authorship and art, and covers the details of expression of a work. Patent law was intended to promote the publication of useful ideas, at the price of giving the one who publishes an idea a temporary monopoly over it – a price that may be worth paying in some fields and not in others.³³

The verbs “designed” and “intended” are too flattering by far. It’s a kind instinct to assume such thoughtful planning on the part of those who incrementally evolved our intellectual property laws, but a skeptical eye on the past indicates that it never happened.

One wonders, if the incentive theory was not the motive force behind intellectual property in the English common law countries, perhaps it was elsewhere. The evidence is to the contrary. Throughout Western civilization, as well as in Asian countries with strong Confucian influences, press censorship and state control appear to be the prime motivations behind copyright-type laws.³⁴

³¹ Richard M. Stallman, GNU OPERATING SYSTEM, DID YOU SAY “INTELLECTUAL PROPERTY”? IT’S A SEDUCTIVE MIRAGE, available at <http://www.gnu.org/philosophy/not-ipr.html> (last visited Feb. 20, 2011) (paragraph returns omitted).

³² *Id.*

³³ *Id.*

³⁴ See Jiarui Liu, *The Tough Reality of Copyright Piracy: A Case Study of the Music Industry in China*, 27 CARDOZO ARTS & ENT. L.J. 621, 655 (2010).

IV. CREATION, INNOVATION, AND INTRINSIC MOTIVATION

Putting history to one side, it is clear that theory introduced by social science, mostly economics, has a powerful-present day influence on our thinking about intellectual property and on law in general. But the social science is changing. Because of that, our thinking about the law is due for a change as well. Most importantly for the purposes of this Article, it is increasingly clear to social scientists that intrinsic motivation is generally more important than extrinsic motivation when it comes to tasks that are creative in nature. This line of research has already been disruptive to the field of economics. Once it is understood in a legal context, it necessarily puts intellectual-property theory into a state of crisis.

A. Digging Up *Homo Economicus*

According to classical economics doctrine, extrinsic incentives are necessary for the production of intellectual property for the simple reason that extrinsic incentives are necessary for *all* human behavior. In the eyes of classical economics, people are rational and self-interested, which means, to economists, that they are always looking to maximize their assets. Their assets, in this sense, includes money and everything that is exchangeable for money.

This concept of a rational, economic-utility-maximizing actor – branded *Homo economicus* – has lent enormous power to the discipline of economics. Thanks to this perspective, economics has become susceptible to a kind of mathematical rigor almost unheard of outside the physical sciences. Most people, most economists, even, would acknowledge that people are motivated by more than money. But within economics, it was nearly universally agreed that whatever differences there might be between real people and economic stick figures, those differences were immaterial for the purposes of economic analysis.

That view is beginning to erode. Swiss economist Bruno S. Frey has written that nothing less than a revolution in economics is currently underway.³⁵ Sometimes referred to as “behavioral economics,” this new, ascendant mode of thinking views the differences between *Homo economicus* and the real megillah to be of crucial importance in understanding how markets work.

One thing that humans don’t have in economic models, but do have in real life, is intrinsic motivation. In the real world, people have “the drive to engage in [an] activity because it is interesting and involving.”³⁶ That is, even if the activity doesn’t make them any money. As Frey explains, new research shows that:

[I]ndividuals derive utility not only from income (as is implied in much of received theory) but also from highly valued social relations and from [a sense of] self-determination, as well as [from capitalizing upon] their own competence. Moreover, individuals derive utility from *processes*, not just from outcomes.³⁷

³⁵ BRUNO S. FREY, HAPPINESS: A REVOLUTION IN ECONOMICS x (2008).

³⁶ TERESA M. AMABILE, CREATIVITY IN CONTEXT 17 (1996).

³⁷ FREY, *supra* note 35, at x.

This realization strikes at the very core of economic thinking. For economics to maintain its predictive strength in all its classical, rigorous mathematical splendor, people must be motivated only by external punishments and rewards. Thus it threatens the entire enterprise of classical economics to uphold the idea that intrinsic motivations are not only important, but are *more important* than extrinsic incentives.

To be sure, people are not intrinsically motivated to do everything and anything. Behavioral economists have not traded one monochromatic view of human nature for another. In the new view, intrinsic motivation only goes so far. For example, people generally don't seem to have a lot of intrinsic motivation to engage in dull, repetitive tasks – such as making wooden dowels or milling flour. Indeed, the kind of tangible property that is the mainstay of classical economics – the archetypal “widget” – is exactly the sort of thing people are not intrinsically impelled to produce. People are, however, intrinsically motivated to undertake novel and challenging intellectual tasks. That is, people are naturally driven to create, to invent, to tinker, to write, and to compose – all those labors that are the celebrated province of intellectual property. Indeed, a growing literature, primarily from social scientists, shows that for creative labor, intrinsic motivation – as opposed to extrinsic motivation – is the most important stimulus to action.

Lawyer and business-writer Daniel H. Pink has surveyed that literature and has explored the implications for modern business-management thinking. He says:

Too many people hold a very narrow view of what motivates us. They believe that the only way to get us moving is with the jab of a stick or the promise of a carrot. But if you look at over 50 years of research on motivation, or simply scrutinize your own behavior, it's pretty clear human beings are more complicated than that.³⁸

In saying this, Pink isn't talking about intellectual property. His intended audience is business people – particularly those managing employees who are called upon to engage in creative, innovative work. But most of what Pink says has tremendous implications for intellectual property policy. Pink explains that beyond primal urges and responses to rewards and punishments, we have what he calls “a third drive.”³⁹ He explains, “We do things because they're interesting, because they're engaging, because they're the right things to do, [and] because they contribute to the world[.]”⁴⁰

These claims are both banal and revolutionary. On the one hand, it is entirely obvious that people are motivated in creative endeavors by something other than extrinsic rewards and punishments. On the other hand, in the context of economics and business-management discourse, these contentions are positively heretical. In conventional economic models, money is understood to be the universal currency for all wants and desires. And in the business world, it is rare to regard employees as being inherently motivated to do challenging, brain-intensive creative work. This same thinking has been all-powerful in discourse about intellectual-property policy.

³⁸ Daniel Pink quoted in *The Great Cognitive Surplus*, 18.06 WIRED 128, 130 (June 2010).

³⁹ *Id.*

⁴⁰ *Id.*

Close investigation of what is currently motivating artistic production is in accord with the economic and psychological research. Recent work by Rebecca Tushnet makes the persuasive case that commercially successful authors generally have the same essential motivations to write as amateur authors of fan fiction.⁴¹ This holds even though fanfic authors must, of course, not be motivated by money, since their works are legally infringing and are thus commercially unexploitable. Tushnet writes:

[T]he desire to create can be excessive, beyond rationality, and free from the need for economic incentive. Psychological and sociological concepts can do more to explain the creative impulse than classical economics. As a result, copyright law that treats creative activity as a product of economic incentives can miss the mark and harm what it aims to promote.⁴²

Notice that the research by Tushnet on the motivations of fiction writers is in perfect accord with the conclusions drawn by Bruno Frey.

B. Twain on the Fence

There is more. A great volume of research shows that external rewards can actually *disincentivize* creative labors. As business and psychology scholar Teresa M. Amabile has written, “Intrinsic motivation is conducive to creativity, but extrinsic motivation is detrimental.”⁴³ Or, as Pink puts it, “[R]ewards can perform a weird sort of behavioral alchemy: They can transform an interesting task into a drudge. They can turn play into work.”⁴⁴

In pioneering experiments conducted in the early 1970s by research psychologist Edward L. Deci, subjects performed more poorly at a creative-problem solving exercise when they were offered a cash incentive than when they were simply allowed to engage in the puzzle for the fun of it.⁴⁵ These and subsequent experimental results were roundly dismissed by economists as an aberration. But decades worth of follow up experimentation has corroborated the original findings.

Conducting a meta-analysis in 1999, Deci and two colleagues wrote: “Careful consideration of reward effects reported in 128 experiments lead to the conclusion that tangible rewards tend to have a substantially negative effect on intrinsic motivation[.]”⁴⁶

These are not merely phenomena observable on short time frames. A longitudinal study conducted of students at the School of the Art Institute of Chicago looked at

⁴¹ Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513 (2009).

⁴² *See id.*

⁴³ AMABILE, *supra* note 36, at 17.

⁴⁴ DANIEL H. PINK, *DRIVE* 37 (2010).

⁴⁵ Edward L. Deci, *Effects of Externally Mediated Rewards on Intrinsic Motivation*, 18 JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY 105-115 (1971).

⁴⁶ Edward L. Deci, Richard Koestner, & Richard M. Ryan, *A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation*, 125 PSYCHOLOGICAL BULLETIN 627-668 (1999). *See also* PINK, *supra* note 44, at 39.

extrinsic motivation experienced by art students and their later record of career success. The relationship was inverse: The less evidence there was of a person having extrinsic motivation during art school, the more professional success the person tended to have in an art career 20 years later.⁴⁷

Pink describes the disincentivization of creative/innovative labor as the “Sawyer Effect” – named for Tom Sawyer’s famed manipulation of his boyhood friends into whitewashing a fence for him and even paying for the privilege of doing so.⁴⁸

A passage from Mark Twain’s *Tom Sawyer*, quoted by Pink, illustrates the point nicely:

There are wealthy gentlemen in England who drive four-horse passenger-coaches twenty or thirty miles on a daily line, in the summer, because the privilege costs them considerable money; but if they were offered wages for the service, that would turn it into work and then they would resign.⁴⁹

As Pink explains, “People use rewards expecting to gain the benefit of increasing another person’s motivation and behavior, but in so doing, they often incur the unintentional and hidden cost of undermining that person’s intrinsic motivation toward the activity.”⁵⁰ Pink calls this phenomenon “one of the most robust findings in social science – and one of the most ignored.”⁵¹

Pink summarizes the potential for harm by identifying “deadly flaws” in extrinsic motivations.⁵² Among them are extinguishing intrinsic motivation, diminishing performance, crushing creativity, and crowding out good behavior.⁵³

So if it is not helpful to provide creators with money, is there anything that it is helpful to give them? Yes. According to Pink, creators thrive if they are given positive feedback, gratitude, and useful information about their contribution.⁵⁴ All of these abet a person’s experience of intrinsically felt motivation.⁵⁵

The nonmonetary rewards that boost intrinsic motivation can be thought of in a framework that Deci and Richard M. Ryan have called “self-determination theory.” According to self-determination theory, people have three innate psychological needs:

⁴⁷ See PINK, *supra* note 44, at 45-46, citing Jean Kathryn Carney, “Intrinsic Motivation and Artistic Success” (unpublished dissertation, 1986, University of Chicago).

⁴⁸ *Id.* at 36.

⁴⁹ MARK TWAIN, *TOM SAWYER*, Chapter 2; quoted by PINK, *supra* note 44, at 36-37. See also ROY F. BAUMEISTER, BRAD J. BUSHMAN, *SOCIAL PSYCHOLOGY AND HUMAN NATURE* at 84.

⁵⁰ PINK, *supra* note 44, at 39 quoting a behavioral science textbook at n.4.

⁵¹ PINK, *supra* note 44, at 39.

⁵² PINK, *supra* note 44, at 59.

⁵³ *Id.* at 59.

⁵⁴ PINK, *supra* note 44, at 67 and Edward L. Deci et al., *Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again*, 71 *REVIEW OF EDUCATIONAL RESEARCH* 14 (Spring 2001), quoted by PINK, *supra* note 44, at 67.

⁵⁵ Deci, quoted by PINK, *supra* note 44, at 67.

competence, autonomy, and relatedness.⁵⁶

Today, the destructive effect of extrinsic incentives on innovation and creativity is well established. But there is a lag in its acceptance among social scientists.⁵⁷ Perhaps for that reason, relatively scant attention has been paid in legal scholarship to the behavioral literature on intrinsic motivation. But the work has not escaped notice entirely. Recently, legal scholars have begun to look into this literature for a variety of purposes.

John Quiggin and Dan Hunter have explored the role of intrinsic motivation in the explosion of amateur production and innovation on the internet.⁵⁸ Yochai Benkler has discussed the role of intrinsic incentives in explaining what he calls commons-based peer production, an economic mode of which open-source software is an example.⁵⁹ Rebecca Tushnet has touched on the new understandings in economics within the context of her recent article looking at the motivations of authors of fiction.⁶⁰ Steven J. Horowitz has cited Deci's work in urging a view of the public domain that is more liberal and conducive to democratic culture.⁶¹ And Lydia Pallas Loren has cited Amabile in arguing that motivation should be a factor in determining the proper scope of rights under copyright law.⁶²

One scholar who has really begun to really appreciate the importance of this body of social science literature for intellectual property theory is Diane Leenheer Zimmerman. In January 2011, Zimmerman published an article directly applying the work of Deci, Amabile and others to the incentive theory of copyright.⁶³ On this basis, Zimmerman recognizes, quite correctly, that “the idea that for copyright to be any kind of useful incentive, it must offer the prospect of a larger and larger pot of gold through more control spread out over longer and longer times seems simply disconnected from what is really going on in the creative sphere.”⁶⁴ But while Zimmerman is skeptical of copyright as a way to incentivize creativity as a psychological process, she does not foresee a subversion of IP's ultimate assumption – the public goods problem. Zimmerman continues to see a need for “incentives to invest time and capital in the production of works.” Thus, she concludes that in light of the new social science, “Copyright becomes

⁵⁶ *Id.* at 72, citing to Richard M. Ryan & Edward L. Deci, *Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being*, 55 AMERICAN PSYCHOLOGIST 68 (Jan. 2000).

⁵⁷ See PINK, *supra* note 44, at 39.

⁵⁸ John Quiggin & Dan Hunter, *Money Ruins Everything*, 30 HASTINGS COMM. & ENT L.J. 203 (2008).

⁵⁹ Yochai Benkler, *Coase's Penguin, or Linux and the Nature of the Firm*, 112 YALE L.J. 369, 426 (2002). See also YOCHAI BENKLER, *THE WEALTH OF NETWORKS*, 92–99 (2006).

⁶⁰ Tushnet, *supra* note 41.

⁶¹ Steven J. Horowitz, Note, *Designing the Public Domain*, 122 HARV. L. REV. 1489 (2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1350454.*Id.* at 1499.

⁶² Lydia Pallas Loren, *The Pope's Copyright? Aligning Incentives With Reality by Using Creative Motivation to Shape Copyright Protection*, 69 LA. L. REV. 1 (2008).

⁶³ Diane Leenheer Zimmerman, *Copyrights as Incentives: Did We Just Imagine That?*, 12 J. THEORETICAL INQUIRIES IN L. 29 1 (2011).

⁶⁴ *Id.* at 57.

a way, simply, to overcome the public goods problem [faced by] authors and disseminators[.]”⁶⁵ The insights gathered from the new social science, as she sees it, may be applied “at the margins,” adjusting the potency of various copyright doctrines and defenses.⁶⁶

In my view, the implications of the social psychology and behavioral economics of creativity are absolutely fundamental. I believe the new social science is much more important to the field of intellectual property law than the explorations of these other scholars suggest. Once the social science is squarely confronted, I believe, it requires us to engage in a fundamental rethinking of the field. That rethinking must ultimately lead to a rejection of the fields’ most sacrosanct precepts. If intrinsic motivations are the dominant driver for creative and innovative labor, and if external incentives have a substantial effect of diminishing intrinsic motivations, then the public goods problem itself is a phantasm, one rooted in our blind love of a beautiful microeconomic theory that is ultimately not borne out by observation or experiment.

C. Clemens on the Hill

So what are the implications for IP policy? The Sawyer Effect would seem to suggest that copyright, by providing financial rewards for activities like creative writing, may actually work to extinguish the motivation to write. Such a conclusion is particularly tickling, because Samuel Clemens (who, of course, wrote as Mark Twain) was a big booster of lengthened copyright terms. Clemens argued before the British Parliament and U.S. Congress in favor perpetual copyright. As he testified in a joint-session committee hearing on Capitol Hill:

I want [the authors’ trade] to be represented and protected and encouraged. They are all worthy, all important, and if we can take them under our wing by copyright, I would like to see it done. I should [also] like to have you encourage oyster culture and anything else.⁶⁷

Twain, through the allegory of Tom Sawyer’s whitewashing, tells us that extrinsic rewards can crush a natural enthusiasm to work. Clemens, through his testimony, tells us we ought to encourage authors with copyright. Whose message should we believe? Twain or Clemens? If you look at the science, it supports the Twain view. There’s also a sense of candor that comes through the lens of one’s fiction. Clemens, on the other hand, was somewhat biased in offering his opinions to lawmakers. He had, as he admitted, an “extraordinary interest” in the copyright-extension bill he testified in favor of.⁶⁸

If we step back from self-interested rhetoric and take a hard look at the science,

⁶⁵ *Id.* at 58.

⁶⁶ *Id.* at 57.

⁶⁷ Samuel L. Clemens, quoted in ARGUMENTS BEFORE THE COMMITTEES ON PATENTS OF THE SENATE AND HOUSE OF REPRESENTATIVES, CONJOINTLY, ON THE BILLS S. 6330 AND H.R. 19853, TO AMEND AND CONSOLIDATE THE ACTS RESPECTING COPYRIGHT 116 (Gov’t Printing Office 1906), available at: <http://books.google.com/books?id=ZIA-AAAAYAAJ>.

⁶⁸ *Id.* at 120.

it's clear that our confidence in the classical economic view – with its understandings of incentives and public goods – was seriously misplaced.

V. OPPORTUNITY BEEPS: THE SUDDEN FLOURISHING OF CREATIVE PRODUCTION

Serendipitously, as scholars have been coming to grips with the nonclassical economics of creative labor, humanity has arrived at a moment in history – the digital revolution – that is providing an empirical confirmation, on a grand scale, that creative labors will flourish in the absence of external incentives. The reason why can be summed up in a word: *opportunity*. While people do not need extrinsic motivation to invent and create, they do need opportunity. The internet and computers have provided that.

One way of defining human behavior is to think of it as motivation filtered through opportunity.⁶⁹ Historically, the opportunities for creating and inventing have been tightly circumscribed. Even if one found the leisure time to engage in substantial creative or inventive activity, there was limited opportunity to share the resulting intellectual goods with the world at large. But as society has become wealthier and as standards of living have climbed, our lives' fractional share of leisure time has also been on the rise. At this point in history, most people in the industrialized world have considerable time left over after working and sleeping. That time is important, because intrinsically motivated people can use that extra time to create and invent.

Beyond having the spare time, there is also a question of whether the proper tools are available. Beginning in the 1980s, increasingly sophisticated and affordable computer technology has put more and more creative power in the hands of the masses. First were word processors. Then came programs for layout, photography, and illustration. Most recently, editing suites for high-definition video and multi-channel audio have become available to everyone with a fairly up-to-date computer. These tools allow for the making of a vast amount of creative content.

Once the technology and economics are there to permit creative production, there remains the question of whether the opportunity exists to distribute that content. Since 2000, the broadband internet, along with ultra-cheap storage capacity, has provided just such an opportunity. Ordinary people – ones who are neither professionals nor obsessive hobbyists – can now distribute text, images, films, music, and audio programs worldwide. And it's not even hard. If anything, some people think it's too easy. Understandably, many parents grimace at the terabytes worth of teen-created content circling the planet – content that is frequently confessional, compromising, or both.

True to theory, and consistent with experimental results obtained in the social scientist's laboratory, legions of everyday non-professionals have rushed in to seize creative opportunities as they have opened up – even when there has been zero expectation of getting paid. The great passive audience that, not long ago, sat in front television sets eating chips and surfing channels, has now turned into a hunched-forward production militia, pointing and clicking into existence a staggering amount of new content.⁷⁰ To describe this material, we've created the oxymoronic neologism “user-

⁶⁹ Clay Shirky quoted in *The Great Cognitive Surplus*, 18.06 WIRED 128, 132 (June 2010).

⁷⁰ See generally, CLAY SHIRKY, COGNITIVE SURPLUS: CREATIVITY AND GENEROSITY IN A CONNECTED AGE (2010).

generated content.” It’s also called “Web 2.0.” I’ve used the term “nano media.”⁷¹ But whatever you call it, this citizen-made media multiplies like an exotic alien virus. Open-source software, blogs, shared photo collections, videoed skits, free podcasts, and a firehose of tweets and Facebook updates have risen to become an enormous portion of worldwide data production. Taken together, this wave of homebrew creative product is proof writ large that people don’t need external rewards to be creative and share the resulting product with the whole world.

Media scholar Clay Shirky writes, “Because all the public media we’ve known until recently abided by Gutenberg economics, we assumed, without even really thinking about it, that media needed professionals to guarantee its very existence.”⁷² But as the post-millennial media boom shows, we humans will create and invent without a receiving so much as a dime in return.

Of course, some people will resist the idea that the user-generated media revolution stands as an empirical refutation of classical economic wisdom. Many will suggest that creating things for free and sharing them over the internet is some sort of weird, digitally induced aberration. But it is not. Shirky explains, “Human motivations change little over the years, but opportunity can change a little or a lot, depending on the social environment . . . [and] when opportunity changes a lot, behavior will as well, so long as the opportunities appeal to real human motivations.”⁷³

Michael Lewis, in his book *Next*, echoes Shirky’s point when he describes how he stopped worrying about “the social consequences of the Internet” and started getting interested in “the Internet consequences of society”.⁷⁴

People take on the tools they are ready for, and only make use of what they need, how they need it. . . . If the Internet was giving the world a shove in a certain direction, it was probably because the world already felt inclined to move in that direction. . . . Inadvertently, it was telling us what we wanted to become.⁷⁵

New media has not somehow changed human nature. New media has *revealed* human nature. Our new digitally networked reality has laid bare an aspect of humanity that, in turn, reveals a fatal flaw in classical economics. The upshot is that a simple tinkering with classical economics will not do. What is called for is a wholesale change in how we think about the law’s relationship with technology and creativity.

The internet has long been regarded as a watershed for intellectual-property law because of its capacity to abet “piracy.” But the real crisis for intellectual property precipitated by the internet is metaphysical. By providing the opportunity for intrinsically motivated individuals, the internet shows that IP’s central economic tenet, its mission in life, is a misapprehension. Widespread digital production and distribution capacity has provided an outlet whereby the fruits of intrinsically motivated creative labor can be

⁷¹ See Eric E. Johnson, *Rethinking Sharing Licenses for the Entertainment Media*, 26 CARDOZO ARTS & ENT. L.J. 391, 396 (2008).

⁷² *Id.* at 56-57.

⁷³ *Id.* at 63.

⁷⁴ MICHAEL LEWIS, *NEXT* 16 (Norton 2002).

⁷⁵ *Id.*

widely distributed and consumed. And so they have.

Media scholar Clay Shirky writes, “Evidence accumulates daily that if you offer people the opportunity to produce and to share, they’ll sometimes take you up on it, even if they’ve never behaved that way before and even if they’re not as good at it as the pros.”⁷⁶

What is more, the production intellectual goods and the desire to share them with others are inextricably linked.

“The sharing, in fact, is what makes the making fun,” Shirky explains.⁷⁷

As discussed, the most important feature of intellectual property, economically speaking, is that it is non-rivalrous – it can be *given* without being *given away*. What’s more, it can be given over and over again. The fact that non-rivalrous goods are developed through creative labors is very fortuitous, because the same intrinsic motivation that encourages creative labor also encourages altruistic sharing. As Daniel Pink explains, intrinsic motivation simultaneously pushes people to undertake tasks because those tasks are naturally interesting and engaging, and because they are “the right things to do,” and because they “contribute to the world.”⁷⁸

A. The Great Geek Giveaway

Perhaps the two most prominent examples of freely distributed content that comprises enormous value are Wikipedia and open-source software.

From a classical economic frame of reference, Wikipedia is a big, expensive absurdity. How big and expensive? English-language Wikipedia has more than 3.6 million articles,⁷⁹ which makes it by far the largest encyclopedia ever written. Trying put a price tag on Wikipedia is not easy, but one can determine very quickly that it represents an enormous amount of uncompensated labor. An estimated 100 million hours of labor have gone into writing and editing Wikipedia.⁸⁰ To make a rough translation of that figure into dollars, we can use the median hourly wage for writers in the United States, which is \$25.51.⁸¹ Thus, the development cost of Wikipedia something in the neighborhood of \$2.5 billion. That kind of feat is entirely inexplicable in terms of traditional economics. But it can be understood readily in the context of the desires that Deci and Ryan spoke of in the context of self-determination theory.⁸²

As valuable as Wikipedia is, even its economic contribution is dwarfed by open-

⁷⁶ SHIRKY, *supra* note 70, at 22.

⁷⁷ *Id.* at 19. Here, Shirky was writing in the context of lolcats.

⁷⁸ Daniel Pink quoted in *The Great Cognitive Surplus*, 18.06 WIRED 128, 130 (June 2010).

⁷⁹ Wikipedia Statistics – Tables – English, <http://stats.wikimedia.org/EN/TablesWikipediaEN.htm> (last visited July 14, 2011).

⁸⁰ SHIRKY, *supra* note 70, at 9-10.

⁸¹ See U.S. Bureau of Labor Statistics, Division of Occupational Employment Statistics, Writers and Authors, <http://www.bls.gov/oes/2009/may/oes273043.htm> (last modified date: May 14, 2010).

⁸² See Part IV.B. and note 45, *supra*, re self-determination theory.

source software.⁸³ This software is *free* in both sense of the word. It's free in the sense that the price for a copy of the software is zero. And the software is also free in the sense that it is liberated – it is without a master, and anyone can undertake to revise it, improve it, reconfigure it, and re-distribute it. Open-source software is written under the terms of a special set of legal restrictions – most commonly the GNU Public License – which acts to prevent the software from becoming subject to a copyright monopoly controlled by any single creator or firm.⁸⁴

Most people have little conception of how ubiquitous open-source software is. For average computer users, the most visible software tends to be proprietary – largely creations of Microsoft or Apple. But this view from belies open-source's importance and pervasiveness. According to Microsoft's CEO, some 60% of internet servers use the Linux open-source operating system.⁸⁵ That means that everyone who's made more than a trivial use of the internet has made a substantial use of open-source software. In high-end research computing, Linux's market share is even greater. About 90% of the world's supercomputers use Linux, including U.S. Department of Energy computers that provide modeling for nuclear weapons research.⁸⁶ Estimating the total economic value of open-source software is naturally hard to do, but one estimate put it at \$30.6 billion per year.⁸⁷ Thus, if the open-source community were a country, it would have a level of GDP ranking 77th in the world, putting it right between Bulgaria and Lithuania.⁸⁸ Alternatively, using corporate revenues as a basis for comparison, the open-source community's output is about half that of companies such as Microsoft, Apple, Boeing, and Mitsubishi, and appreciably larger than companies such as Time Warner, Oracle, 3M, and Mazda Motor.⁸⁹

A large part of the explanation for why open-source software has been such a success is intrinsic motivation. Karim Lakhani of MIT and Bob Wolf of Boston Consulting Group surveyed 684 open-source software programmers about why they participated in open-source projects. Lakhani and Wolf found that “enjoyment-based intrinsic motivation, namely how creative a person feels when working on the project, is

⁸³ Open-source software is software that is deliberately unencumbered by the traditional entitlements of copyright. Instead of being held as proprietary, open-source software is released and perpetuated under a license that requires follow-on users to maintain it as unbound by copyright restrictions.

⁸⁴ See GNU GENERAL PUBLIC LICENSE Version 1 (the original GPL, dated February 1989), available at <http://www.gnu.org/licenses/old-licenses/gpl-1.0.txt> (last visited Mar. 27, 2011); see also GNU GENERAL PUBLIC LICENSE Version 3 (the most recent GPL, dated June 27, 2007), available at <http://www.gnu.org/copyleft/gpl.html> (last visited Mar. 27, 2011).

⁸⁵ James Niccolai, *Ballmer Still Searching for an Answer to Google*, IDG NEWS, Sept. 26, 2008, http://www.pcworld.com/businesscenter/article/151568/ballmer_still_searching_for_an_answer_to_google.html.

⁸⁶ Steven J. Vaughn-Nichols, *Linux: It doesn't get any faster* - Computerworld Blogs, June 23, 2009, http://blogs.computerworld.com/linux_it_doesnt_get_any_faster.

⁸⁷ Palle Pedersen, *Inside Open Source: The Open Source Community as a Top 100 Country*, Nov. 9, 2007, <http://www.inside-open-source.com/2007/11/open-source-community-as-top-100.html>.

⁸⁸ *Id.*

⁸⁹ See CNN Money, *Global 500*, http://money.cnn.com/magazines/fortune/global500/2011/full_list/101_200.html and http://money.cnn.com/magazines/fortune/global500/2011/full_list/301_400.html.

the strongest and most pervasive driver.”⁹⁰ In 2007, economists Jurgen Blitzer, Wolfram Schrettl, and Philipp J. H. Schroeder concluded from studying open-source projects around the world that open-source work resulted from “a set of predominantly intrinsic motives,” particularly “the fun ... of mastering the challenge of a given software problem [and the] desire to give a gift to the programmer community.”⁹¹ Daniel Pink wrote that, “ultimately, open source depends on intrinsic motivation with the same ferocity that older business models rely on extrinsic motivation ...”⁹²

Open-source software and Wikipedia are creative efforts that form a kind of geek niche. Most people uses the fruits of these labors, but only a relative few contribute. Nonetheless, they are the leading edge of a bigger explosion of a digitally enabled creative flourishing – one that is getting closer and closer to involving everybody.

B. The Hella-Huge Explosion

To begin to get a grasp on the size of the creativity explosion, you can start with the worldwide expansion of data. While not all data represents copyrighted material, much of it does. And a quick review of the numbers shows that the growth of data has been supernova-like.

Researchers estimated that in 2010, humanity’s total data production, measured by network throughput, would reach 1.2 zettabytes.⁹³ That’s an astonishing 62 percent year-over-year increase from 2009’s output of 800 exabytes.⁹⁴ At these rates of growth, within the next decade or two, the human race could well be sitting on top of more than a 1×10^{27} bytes of data – that’s a whole *hellabyte*. That is a number so huge, it doesn’t even exist. At least not officially – not yet. The metric system currently only goes up to *yotta-*, a prefix designating 1×10^{24} . The international bodies that oversee the metric system have been receiving petitions to add *hella-* as a recognized standard. Worldwide data accumulation is an example of why doing so might be warranted.

It might seem as if most of the explosion in digital data would come from industry, rather than individuals. But that’s not true. An estimated 75 percent of current data output is created by consumers.⁹⁵ One estimate predicted a total production of 692

⁹⁰ See Karim R. Lakhani & Robert G. Wolf, *Why Hackers Do What They Do: Understanding Motivation and Effort in Free/Open Source Software Projects*, in PERSPECTIVES ON FREE AND OPEN SOFTWARE at 3, 12; (J. Feller, B. Fitzgerald, S. Hissam, and K. Lakhani eds.) (MIT Press, 2005); see also PINK, *supra* note 44, at 23 (citing the same).

⁹¹ PINK, *supra* note 44, at 23, citing Jurgen Blitzer, Wolfram Schrettl, & Philipp J. H. Schroeder, *Intrinsic Motivation in Open Source Software Development*, 35 J. OF COMPARATIVE ECONOMICS 17, 4 (2007).

⁹² PINK, *supra* note 44, at 23.

⁹³ One zettabyte equals one sextillion bytes or one billion trillion bytes, i.e., 1×10^{21} bytes.

⁹⁴ See Joe McKendrick, *Data Explosion: enough to fill DVDs stretching to the moon and back*, SMARTPLANET, May 14, 2010, <http://www.smartplanet.com/business/blog/business-brains/data-explosion-enough-to-fill-dvds-stretching-to-the-moon-and-back/7010/>. One exabyte equals one quintillion bytes or one million trillion bytes, i.e., 1×10^{18} bytes. An exabyte is one one-thousandth of a zettabyte.

⁹⁵ I should note that calling this class of people “consumers,” while noting that they are responsible for the bulk of something being produced, is a bit oxymoronic. But here I mean those actors in the economy

exabytes of user-generated content in 2010.⁹⁶ And an increasing fraction of the world's population is contributing. Almost half of internet users in the 13-to-75-year age range have created some kind of online content – such as blogs, photos, videos, web pages or something else.⁹⁷ One way to grasp the size of individual contributions is to compare the digital output of one user-generated-content website, YouTube, and the total digital volume of all the world's medical imaging. They are nearly equal.⁹⁸

Digital photography is a large part of this expansion. At the turn of the millennium, digital cameras, at least in the hands of consumers, were a rarity. Ten years later, they are ubiquitous. The cost of taking, storing, and displaying a digital picture is infinitesimal compared with the cost of taking, developing, and printing a picture with photochemical film and paper stock. The film/digital price-per-image difference, combined with the plummeting drop in the price of digital cameras, has led to skyrocketing rates in the creation of photographs. About 25 percent of the world's current data production is estimated to be from cameras and camcorders.⁹⁹ Virtually all of it is copyrighted, since copyright applies by default.¹⁰⁰ Moreover, picture-taking is overwhelmingly an individual, as opposed to industrial, activity.

How many more pictures are being taken today thanks to digital photography? At the peak of photochemical film's popularity, approximately at the turn of the millennium, about 25 billion photographs were being taken each year.¹⁰¹ Digital cameras have exploded that total. In 2006, around 250 billion photos were taken.¹⁰² An estimate for 2010 predicted 500 billion,¹⁰³ and the percentage of photos currently taken on film is currently declining into insignificance. Digital photography has thus caused, at minimum, more than an order-of-magnitude increase in photographic production over film. And there is still a long way to go before everyone who wants a digital camera has one, especially outside of Europe, North America, and coastal East Asia.

It's clear that producing copyrightable content for reasons other than money is not

traditionally regarded as the audience, that is, individuals acting on their own who have traditionally been on the receiving end of media.

⁹⁶ JOHN F. GANTZ, INTERNATIONAL DATA CORPORATION, *THE EXPANDING DIGITAL UNIVERSE: A FORECAST OF WORLDWIDE INFORMATION GROWTH THROUGH 2010* (Mar. 2007), <http://www.emc.com/collateral/analyst-reports/expanding-digital-idc-white-paper.pdf> at 8.

⁹⁷ See Edward Lee, *Warming up to User-Generated Content*, 2008 U. ILL. L. REV. 1459, 1500 (2008).

⁹⁸ JOHN F. GANTZ, INTERNATIONAL DATA CORPORATION, *THE DIVERSE AND EXPLODING DIGITAL UNIVERSE: AN UPDATED FORECAST OF WORLDWIDE INFORMATION GROWTH THROUGH 2011* (Mar. 2008), <http://www.emc.com/collateral/analyst-reports/diverse-exploding-digital-universe.pdf> at 7.

⁹⁹ See GANTZ, *supra* note 96, at 7.

¹⁰⁰ This has been the case in the United States since the Berne Implementation Act of 1988. See 102 Stat. 2853 at § 13 and WIPO, Berne Convention for the Protection of Literary and Artistic Works, Status on October 15, 2009, available at: <http://www.wipo.int/export/sites/www/treaties/en/documents/pdf/berne.pdf>.

¹⁰¹ Katie Hafner, *Film Drop-Off Sites Fading Fast As Digital Cameras Dominate*, N.Y. TIMES, Oct. 9, 2007, at C1.

¹⁰² See GANTZ, *supra* note 96. See also GANTZ, *supra* note 98, at 3 (less than 10 percent of still images were captured on film in 2007).

¹⁰³ See GANTZ, *supra* note 96, at 7.

an activity just for blockheads. In today's world, the copyright incentive is demonstrably irrelevant to the production of *most* of the world's copyrightable content.

If most of the world's copyrightable content is motivated intrinsically, that leaves open a big question – the corresponding worth of that content. Just because external incentives are irrelevant to its production, it does not necessarily follow that most of the *value* in copyrightable content is not externally motivated. One might point to a movie like *Spider-Man 3*, which set a record for movie budgets in 2007 with an acknowledged \$258 million price-tag.¹⁰⁴ Television produced on the copyright-revenue model is also, of course, very valuable. You can prove this as easily as pointing to the fact that producers agreed to pay Charlie Sheen nearly \$2 million per episode for appearing in the CBS half-hour comedy *Two and a Half Men*.¹⁰⁵ Money paid upfront by producers is, admittedly, an attenuated way to measure value to consumers. But outlays do reflect a rational calculation of what the expected returns are, and those returns spring ultimately from consumer demand priced by the market. And hard numbers on revenue, of course, are indicative of great value as well. In 2010, Hollywood reported about \$10.5 billion in domestic box office receipts. Not all of that reflects the value of the movies themselves, since cineplex operators provide value in the form of the physical space in which to watch the show. But such numbers are a clear demonstration that the copyright-model industry generates a tremendous amount of economic value.

Comparing the economic value of copyright-model media and nano media is difficult to do. One might argue that citizen-generated nano media has no value, since it is being created on a budget of virtually zero, is distributed for free, and is generating almost nothing in receipts. But such a contention is specious. One can only hope to measure value by receipts where production and distribution are purposely tailored to maximize receipts. When moneymaking and production are knowingly unhitched, some other measure is needed. A fair way to begin to draw a comparison with traditional copyright-model media is to look at the amount of time people spend consuming media. A time-spent comparison allows an apples-to-apples sort of juxtaposition.

Looking at consumption by units of time, it is clear that nano media has immense value. Americans spend about a half-hour per day, on average, using the internet. Of the time they spend online, about a quarter of that time is on blogs, social media, and video sites such as YouTube. By comparison, Americans spend about two-hours a day watching television. Thus, based on this data, the value of citizen-produced media might be somewhere in the neighborhood of 1/16th of traditional television fare. That makes it seem very valuable, but nonetheless outstripped by TV by an order of magnitude. But there is a strong reason to think that this figure substantially overvalues traditional copyright-model television media.

First, much of television air time is advertising – in the range of 13 to 30 percent.¹⁰⁶ Advertisements are produced to sell products, not as creative ends in

¹⁰⁴ Diane Garrett, *Big-budget bang-ups*, VARIETY, Apr. 20, 2007, available at <http://www.variety.com/article/VR1117963551.html?categoryid=2526&cs=1> (archived at <http://www.webcitation.org/5ILRXg73q>).

¹⁰⁵ Cynthia Littleton, Sheen returning to 'Two and a Half Men,' VARIETY (May 17, 2010), <http://www.variety.com/article/VR1118019521?refCatId=1236>

¹⁰⁶ See, e.g., HOWARD J. BLUMENTHAL & OLIVER R. GOODENOUGH, THIS BUSINESS OF TELEVISION (2d. ed.) 435 (1998); Wayne Schmidt, Growth of TV Time Taken Up by Commercials,

themselves, and thus any external incentive provided by copyright is essentially irrelevant. Backing out advertising time, then, citizen-made media would be somewhere in the area of 1/12th of traditional TV, comparing by time-spent-consuming.

Second, and more importantly, a television can be left on in the background and not watched directly. The internet generally doesn't work that way.¹⁰⁷ The time spent viewing television deserves discounting for engagement in other activities during that time – cooking, cleaning, etc. Consuming citizen-produced nano media undoubtedly reflects a higher level of engagement on a per minute basis. Thus, even the 1/12th number is overvaluing television compared to nano media, but it is not clear by how much.

To avoid level-of-engagement and advertising-portion problems, a better comparator might be the average amount of time that Americans spend watching time-shifted television, such as programs recorded by DVR. Such time-shifted television reflects active watching that is probably a lot closer to internet usage. As of the first quarter of 2010, the average American, on a per-week basis, spent about 2 hours watching time-shifted television and about 4 hours using the internet, plus another 20 minutes watching online video.¹⁰⁸ About a quarter of that internet time is typically spent on social networks. Put together that way, the data suggests that citizen-produced media might be about half as valuable as traditional television.

Even this comparison, however, doesn't take into account the fact that social networks and citizen-produced media is still maturing. As of the summer of 2010, Nielsen measured a 43% gain in share of time online for the "social networks" category. It certainly seems possible, going forward, that the value of citizen-produced media will, gauged by time-spent comparators, overshadow the value of traditional Hollywood copyright-model-produced content. Indeed, more of an increase can be expected as newer generations, comprising people with less of an ingrained preference for older forms of media, form larger and larger portions of the media-consuming population.

Considered all together – open-source software, Web 2.0, social media, nano video production, and other citizen-made media forms – it is clear that external copyright incentives are irrelevant for a large portion of the amount of value of total creative production. And that portion is growing. As opportunities for intrinsically motivated creative and innovative labor have opened up, those opportunities have been seized. That being said, traditional business models reliant on external incentives remain prevalent. But it must be kept in mind that today's landscape of creative production reflects a heritage of legally imposed external incentives. The social science tells us that external incentives can stamp out intrinsic motivation. So the economic value in intrinsically

¹⁰⁷ <http://www.waynesthisandthat.com/commerciallength.htm> (last visited July 18, 2011); Gaebler Ventures, How Much Do Television Ads Costs? - A Primer on Television Advertising Costs - Resources for Entrepreneurs, <http://www.gaebler.com/Television-Advertising-Costs.htm> (last visited July 18, 2011) ("The standard half-hour of television contains 22 minutes of program and 8 minutes of commercial"); Erik Blythe, How many minutes of commercials are typically included in one hour of basic cable programming? - Quora, <http://www.quora.com/How-many-minutes-of-commercials-are-typically-included-in-one-hour-of-basic-cable-programming> (last visited July 18, 2011).

¹⁰⁸ Nielsen, THREE SCREEN REPORT, VOLUME 8, FIRST QUARTER 2010, available at nielsen.com/site/documents/3Screens_4Q09_US_rpt.pdf.

motivated creative and innovative product, as enormous as it is right now, may nevertheless be only a small fraction of what it would be if it weren't for society's pervasive ethos of external incentives. It may be impossible to know to what extent the current value of copyright-model creative production has been had at the expense of intrinsically motivated creative production. We can't go back in time and re-run history with changed intellectual property laws to see what happens. But we can go back in time and get a perspective on what motivations were prevalent before today's business models of television and motion pictures were developed.

VI. AN ARCHAEOLOGY OF COPYRIGHT INCENTIVES

The archaeologist's job is to reconstruct knowledge about people in the past by studying what they have left behind. Archaeology is especially well adapted to studying prehistoric societies that did not have written language and, therefore, left no written record. But oddly enough, an archaeological technique is apt for studying copyright and its incentive effect.

When it comes to copyright, what's telling is not only what creators have left behind, but what they haven't. Today copyright has the peculiar feature of attaching to your work whether you want it to or not.¹⁰⁹ That is, the application of copyright law is automatic as soon as a work is "fixed" in some tangible form, it is copyrighted. But in decades past, creators had to take affirmative steps in order to secure the copyright entitlement. Looking back to the era when these formalities were required for protection, we see that most creators skipped them, allowing their opportunity to claim copyright to lapse. It follows that the copyright monopoly was not incentivizing their labors.

Beginning in 1790, under the first version of American copyright law, there were three requirements to procure a copyright: Authors had to register their work, deposit a copy of the work, and then affix copyright notices to all publicly distributed copies.¹¹⁰ With the Copyright Act of 1909, the deposit and registration requirements were sidelined, giving creators the ability to garner copyright protection merely by placing a copyright notice of the prescribed format on all copies.¹¹¹ The notice requirement was eliminated in 1989, when Congress changed American copyright law in order to accede to the international community's major treaty on copyright, the Berne Convention.¹¹² Since

¹⁰⁹ For a discussion of the effect of the default application of copyright, see LAWRENCE LESSIG, *FREE CULTURE* 287-91 (2004) (available at: <http://www.free-culture.cc/freeculture.pdf>).

¹¹⁰ These were the requirements of Copyright Act of 1790, which were retained in the Copyright Act of 1831 retained these requirements. See 1 Stat. 124 §§ 1, 3 & 4; 4 Stat. 436 § 1-5; see also Kahle v. Ashcroft, 72 U.S.P.Q.2d 1888, 1891, 2004 WL 2663157 (N.D. Cal. 2004) (describing the history of copyright formalities).

¹¹¹ See Copyright Act of 1909, Pub. L. No. 60-349 (March 4, 1909), 35 Stat. 1075, 1080-1081 (1909). Note that for the copyright to be extended beyond its initial 28-year term, it had to then be registered, at which point the copyright was valid for another 28 years for a total of 56 years. See *id.* at §§ 9 & 18; see also Kahle, 72 U.S.P.Q.2d at 1891. The notice requirement was retained when the law was overhauled with the Copyright Act of 1976. See Pub. L. 94-553 §§ 302, 401-406, 407(a), 408(a); see also Kahle, 72 U.S.P.Q.2d at 1891.

¹¹² See *id.* at § 7, 17 U.S.C. § 401; see also The Berne Convention for the Protection of Literary and Artistic Works, Art. 5 (available at: http://www.wipo.int/export/sites/www/treaties/en/ip/berne/pdf/trtdocs_wo001.pdf).

then, all creators have automatically received copyright on all newly created works, whether those creators cared for it or not.¹¹³ These changes marked American copyright's "flipping over from a system that protected only rights that were claimed to one that vests all rights, whether claimed or not."¹¹⁴ Since copyright was once an "opt out" regime of legal protection, we can use past practice as a way of gauging the amount of reliance people had on the copyright entitlement.

Against this background of changing law, we can look at the results of several historical studies: In the United States, in the decade after the passage of the 1790 Copyright Act, only 10 to 20 percent of eligible works were copyrighted,¹¹⁵ leaving 80 to 90 percent of available copyrights unclaimed. A study of works in the period of 1800 through 1870 indicates a potentially higher ceiling, with at most only about 50 percent of eligible works being copyrighted.¹¹⁶ But other studies indicate much lower rates of claiming copyright. A study of works published from 1850 to 1870 found less than 14 percent contained the copyright notice that was necessary to claim the protection of the law.¹¹⁷ A survey of library-held publications from 1908 or prior, found that only about 21 percent of works were copyrighted.¹¹⁸ A similar survey, which looked at posters published before 1976, found that less a third were copyrighted.¹¹⁹

It is a reasonable assumption that if creators did not take the required affirmative step of copyrighting their works, those persons would have created those works without the incentive provided by copyright. This data thus indicates that the copyright incentive was mostly irrelevant to the production of copyrightable content. Assuming that the attitudes that prevailed in prior eras continue to persist today, at a minimum, somewhere between 50 percent and 90 percent of copyrighted works would have been created without the incentive of the copyright entitlement.

But there is a very strong reason to think that copyright was unnecessary to the production of even a greater proportion of works than these numbers indicate. Persons who would have created works with or without copyright's incentive might nonetheless have helped themselves to the copyright entitlement after the fact. After all, the copyright entitlement has never depended on the creators' motivations in undertaking the creative labor. Thus, for people who would have created their works anyway, copyright could have been claimed as a gratuitous bonus. We can call this *the bonus-taking effect*. This effect should be probably especially large after 1909, when registration was reduced from a threshold requirement for protection to a means of extending copyright beyond the initial 28-year term. At that point, all that was required to gain the copyright entitlement

¹¹³ See 102 Stat. 2853 at § 13 and WIPO, Berne Convention for the Protection of Literary and Artistic Works, Status on October 15, 2009, available at: <http://www.wipo.int/export/sites/www/treaties/en/documents/pdf/berne.pdf>.

¹¹⁴ See, e.g., Richard A. Epstein, *The Dubious Constitutionality of the Copyright Term Extension Act*, 36 LOY. L.A. L. REV. 123, 124 (2002).

¹¹⁵ See Christopher Sprigman, *Reform(alizing) Copyright*, 57 STAN. L. REV. 485 (2004) at 503.

¹¹⁶ See *id.* at 510.

¹¹⁷ See *id.*

¹¹⁸ See Sprigman, *supra* note 115, at 512.

¹¹⁹ See *id.* at 513.

was a notice on all published copies. And people still steered clear of the copyright claim in droves.

Taking into account the bonus-taking effect, we can say that the rate of unclaimed copyrights strongly indicates the irrelevance of the external incentive of copyright. Moreover, because of the possibility of bonus-taking, the rate of claimed copyrights has no probative value in establishing that copyright was a necessary incentive to the creation of any works. In other words, rates of copyright claims provides a ceiling on how much incentive effect copyright could have had, but it does not establish a floor.

There is another effect that can be expected to skew the numbers in the direction of overestimating the possible reach of the incentive effect: the costs of production and distribution. In many cases where the copyright incentive was not necessary to get an author to decide to write, we can imagine the incentive might have nonetheless been necessary to make it economically feasible for the publisher to pay to typeset, print, market, and distribute the author's book.

Once you take into account the bonus-taking effect and the effects production/distribution economics, it is likely that the needlessness of copyright incentives was much closer to 90 percent or significantly beyond that. From this data, we can infer that the external incentive of copyright had little to do with the vast majority of widely distributed creative production.

Let's take account of some possible objections to this line of reasoning.

It may be argued that there are various alternative explanations that could be given for these numbers. For example, some creators may have been mistaken about copyright law and thought that their works were protected by copyright without registration or notice. It is also possible that that some persons were incentivized by copyright to produce their works, but, after finishing those works, changed their minds and decided to forgo the law's aegis. These scenarios are perfectly plausible on a small scale. But there is no reason to believe that mistakes or changed minds had any significant effect on the numbers. To the contrary, the bonus-taking effect should entirely overtake any effect of mistakes and changed minds.

Corroborating these conclusions is a research review commissioned by the United Kingdom's Strategic Advisory Board for Intellectual Property. That review found, "Historical investigations of copyrights' effect on authors' supply of works rarely support the view that copyright promotes either the number of the quality of works supplied."¹²⁰

There remains the question of to what extent these noncopyrighted works had any value. But what is measured in the historical studies cited above can be expected to correlate largely with value. That is because the historical data, derived from libraries, counts only works that were deemed important enough for a publisher to publish and for a library to collect and save. Thus, this historical or archaeological evidence strongly shows the copyright incentive was generally irrelevant to creative production. And it strongly corresponds with what we are seeing today's user-made media boom.

VII. A SNAPSHOT OF THE STOCK PHOTOGRAPHY MARKET

You can see the great collision of old assumptions and new media realities with a look at the stock photography market, a market which imploded in a way that is entirely

¹²⁰ HANDKE, *supra* note 13 at 10.

inexplicable by means of the external-incentive theory, but which is wholly consistent with a more nuanced social-science approach. This Part tells that story, looking at the fortunes of industry players and anecdotes of participants. While this view, by itself, doesn't prove the incentive theory wrong, it does serve to illustrate its failings, showing how new social science perspectives have applicability in the real-world of creative production.

“Stock” is the name used to describe photographs that can be used as workparts in constructing some more encompassing media production. You encounter countless examples everyday. A photograph of law books can be used to illustrate a brochure about legal services. Throw in some brass scales and a gavel and you've got something you can use on the back cover of the yellow pages. A photo of a woman with an intent look on her face while she types into a computer could be used to illustrate – well, just about anything. From what I've seen, pretty much every company that's selling “solutions” – whatever that means – seems to use woman-with-a-laptop or man-with-a-laptop somewhere on their website.¹²¹ Shaking hands in front a globe is also popular. At any rate, you get the idea.

Stock photography is one of those things that you might naturally assume needs the incentive of copyright. What kind of a blockhead, you might wonder, would spend considerable time and effort crafting beautiful stock photographs unless it's to make money? No doubt that was the view of people in the mid-1990s taking pitches from companies looking to use the internet to build an online business of stock-photo licensing. But as the ventures played out, it became increasingly clear that there are legions of blockheads with cameras.

A. The Great Stock Photography Crash of 2006

The modern market for stock photography began in the mid-1990s.¹²² Just as the World Wide Web was starting to take off in 1995, Jonathan Klein and oil-fortune heir Mark Getty founded Getty Images.¹²³ Klein and Getty's idea was to bring “the fragmented stock photography business into the digital age.”¹²⁴ Getty's primary clients then and now are megalithic media companies and Madison Avenue ad agencies.¹²⁵ But Getty also holds itself out as a supplier to “bloggers of all kinds.”¹²⁶ The company possesses upwards of 3 billion images and draws 4 million unique visitors to its website

¹²¹ Type “solutions,” “business solutions” or the like into a Google image search and see what I mean. <http://google.com/images> (last visited Mar. 27, 2011).

¹²² Press Release, Getty Images, Getty Images Agrees to be Acquired by Hellman & Friedman in a Transaction Valued at \$2.4 Billion (Feb. 25, 2008) available at http://company.gettyimages.com/article_display.cfm?article_id=171&isource=corporate_website_ind_press_release.

¹²³ Andrew Ross Sorkin, *Getty Images Up for Sale, Could Fetch \$1.5 Billion*, N.Y. TIMES, Jan. 21, 2008 at C1.

¹²⁴ Getty Images, Getty Images: About Us, <http://company.gettyimages.com/>.

¹²⁵ Sorkin, *supra* note 123.

¹²⁶ Getty Images, *supra* note 124.

each month.¹²⁷ Getty's forté is high-quality photos taken by professional photographers.¹²⁸

In the beginning, Getty grew with the web. The web, of course, exploded. And Getty went along with the ride, eventually attaining wild profitability. As Getty's fortunes ascended, Getty managed to push aside wire agencies and in-house file-photo cabinets to become the go-to source for ready-to-drop-in visuals. Customers were willing to pay handsomely for quality images. To understand how handsomely, it is necessary to understand Getty's system of tiered offerings. Getty's stock photos are divided into two categories: royalty-free and rights-managed. Having purchased a flat-fee royalty-free photo, a customer can do with it whatever the customer wants. A rights-managed photo, however, requires the customer to notify Getty exactly how the customer will use the image; Getty then quotes a price accordingly. As Getty's popularity increased, so did its prices. In 2002, the average price paid for a royalty-free photo was less than \$90.¹²⁹ At the end of 2004, Getty customers were paying an average of \$210 per image for royalty-free photos.¹³⁰ The higher-end rights-managed pictures were bringing in an average per-image, per-customer fee of \$585.¹³¹ In 2004, stock photography made up 79 percent of Getty's sales.¹³² And the stock photography business was a good one in 2004. The company garnered \$622 million in revenues and clocked a 19% yearly revenue growth rate with pre-tax profits totaling about \$175 million.¹³³

The next year was even better. At the end of 2005, shares of Getty Images hit \$93.66 on the New York Stock Exchange.¹³⁴ Sales volumes grew.¹³⁵ There was one slightly dull spot, however. Per-image prices stopped their wild growth. The royalty-free photos nosed upward slightly to an average of \$237 per image, but the rights-managed average slipped to \$558. Nonetheless, the year was a fantastic success. CEO Jonathon Klein gushed to investors, "Our 2005 results are a wonderful way to begin the next decade for Getty Images. 2005 was by far the best year in our history. We've built a very good business ... we believe very strongly that this is only the beginning."¹³⁶

No one seemed to recognize I for what it was: The beginning of the end. After 2005, things went downhill fast. The flattening growth of per-image prices was an early manifestation of a problem that quickly grew too big too shrug off. By the end of the next

¹²⁷ Sorkin, *supra* note 123.

¹²⁸ *Id.*

¹²⁹ Getty Images Inc., Event Brief of Q3 2005 Earnings Conference Call – Final (Oct. 20, 2005).

¹³⁰ Getty Images, *supra* note 133.

¹³¹ *Id.*

¹³² Getty Images, *supra* note 133. Note that consistent with general industry custom, Getty uses the term "stock photography" in a manner that is distinguished from "editorial photography," which depicts news and notable events.

¹³³ Getty Images Inc., Event Brief of Q4 2004 Earnings Conference Call – Final (Jan. 17, 2005).

¹³⁴ Jemima Kiss, *Getty Images 'up for sale,'* GUARDIAN, Jan. 21, 2008, <http://www.guardian.co.uk/media/2008/jan/21/mediabusiness.pressandpublishing>.

¹³⁵ Getty Images, *supra* note 135.

¹³⁶ Getty Images Inc., Event Brief of Q4 2005 Earnings Conference Call – Final (Jan. 26, 2006).

year, everyone could see that the tide had turned.

“It is clear that 2006 has been disappointing,” Klein admitted to investors in a conference call the next year.¹³⁷ Getty began rounds of layoffs.¹³⁸ Things were bad. The average prices of images were falling precipitously. Or, at least, that’s what one gathers; hard numbers are lacking. Klein began refusing to provide specific information on average selling prices.

“So what we’ve decided to do will not fill you with glee or enthusiasm,” Klein told investors in a 2007 conference call. “The level of granularity we’ve given around prices and volumes and actual numbers . . . we’re no longer going to do that.”¹³⁹

Since Getty’s peak, the company’s value had fallen by more than 75 percent. The company put itself up for sale, found a buyer, and then was delisted from the NYSE.¹⁴⁰

The explanation for Getty’s precipitous decline in the middle of the decade was that digital history had reached a turning point. The web had become radically democratized – the great mass of media consumers became media creators. The rapid timeline of “Web 2.0” corresponded directly with Getty’s fall. Flickr and Facebook were launched in 2004, and YouTube debuted in early 2005. Later in 2005, Wikipedia’s reader-written content began to grow explosively.¹⁴¹ Then, at the end of 2006, *Time* magazine put a crude flexible plastic mirror in the center of its cover and announced that “You” had been selected as the magazine’s “person of the year.”¹⁴²

And as amateur-generated content skyrocketed, Getty began its slide.

Looking back, you can see that Getty’s 15-year saga reflected the history of the internet itself. The rise of digital technology – primarily the web – made Getty what it was.¹⁴³ But the further evolution of that technology – the advent of broadband and the rising tide of digital photography – led to a flood of competition. Getty was hard pressed to keep charging hundreds of dollars an image when a teeming mass of humanity armed with high-quality SLR digital cameras flooded the web with content. In fact, distributors of pro-am content were soon charging as little as a dollar an image.¹⁴⁴ And that was not as low as prices would go.

The story is similar with Getty’s main competitor, Corbis. Unlike Getty, Corbis has never been public, owned, as it is, by Microsoft tycoon Bill Gates.¹⁴⁵ Corbis is

¹³⁷ Getty Images Inc., Event Brief of Q3 2006 Earnings Conference Call – Final (Oct. 24, 2006).

¹³⁸ Sorkin, *supra* note 123.

¹³⁹ Getty Images Inc., Event Brief of Q1 2007 Earnings Conference Call – Final (May 1, 2007).

¹⁴⁰ Private equity firm Hellman & Friedman paid \$2.4 billion for Getty, which included a 55 percent premium on the share price before Getty put itself up for sale. *See* Getty Images, Getty Images Agrees to Be Acquired by Hellman & Friedman in a Transaction Valued at \$2.4 Billion (press release, Feb. 25, 2008) http://media.gettyimages.com/article_print.cfm?article_id=171 (last visited August 2, 2010).

¹⁴¹ *See* Wikipedia, File:Time Between Edits Graph Jul05-Present.png, http://en.wikipedia.org/wiki/File:Time_Between_Edits_Graph_Jul05-Present.png.

¹⁴² Lev Grossman, *Time’s Person of the Year: You*, TIME (Dec. 13, 2006), available at <http://www.time.com/time/magazine/article/0,9171,1569514,00.html>.

¹⁴³ Getty Images, *supra* note 124.

¹⁴⁴ Sorkin, *supra* note 123.

¹⁴⁵ Katie Hafner, *A Photo Trove, a Mounting Challenge*, N.Y. TIMES, Apr. 10, 2007.

especially notable for its acquisitions, which have been fueled by Gates's gargantuan cash reserves. Those acquisitions have made Corbis the owner of some of the most iconic and valuable photographs of all time. The photo of Rosa Parks sitting at the front of a Montgomery city bus is owned by Corbis, as is the famed shot of Marilyn Monroe standing over a subway grate as air blows up her dress.¹⁴⁶ As of April 2007, despite yearly sales of \$250 million, Corbis had yet to be profitable.¹⁴⁷ Corbis, like Getty, has been under pressure from the rising tide of ultra-cheap offerings from citizen-photographers. And Corbis, like Getty, began rounds of layoffs in the wake of the user-generated content revolution.¹⁴⁸

B. Classical Economics Stops Making Cents

The new market reality that dethroned Getty and Corbis, viewed through the lens of classical economics, looks like collective madness. But viewed through a nuanced perspective incorporating new understandings in social science, it all makes perfect sense.

The flood of competition that overtook Getty and Corbis mid-decade came to be called "microstock." The term describes the industry category populated by "You."¹⁴⁹ Some representative microstockists are iStockphoto,¹⁵⁰ Shutterstock,¹⁵¹ and Fotolia.¹⁵² As market analyst Coffey said, "We have pictures on our cellphones. If I can get a reasonably clear picture and the rights are cleared and I pay \$2 for it, then why would I pay Corbis \$200?"¹⁵³

Today, the inducement offered by microstock houses to photographers is money. Indeed, microstock houses, in their current mature form, have built their businesses on the same classical economic assumptions as Getty and Corbis, the idea that you motivate people by paying them. But, strangely, the entire industry was born when one person turned his back on money as a reward for creativity.

In 2000, founder-photographer Bruce Livingstone was looking to become a stock photography entrepreneur, having printed boxes worth of CD-ROMs filled with his stock photos, which would ship to customers.¹⁵⁴ But he "was having problems marketing

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ Daryl Lang, *Corbis Laying Off Another 125 Employees*, PHOTO DISTRICT NEWS, Nov. 14, 2007, http://www.pdnonline.com/pdn/eseach/article_display.jsp?vnu_content_id=1003672197 and Daryl Lang, *Corbis Cutting Another 175 Jobs, Combines Exec Jobs*, PHOTO DISTRICT NEWS, Sept. 11, 2008, http://www.pdnonline.com/pdn/content_display/photo-news/stock-and-syndication/e3ic20afe7664ada9effef42a9c658de202.

¹⁴⁹ That is, *You* in the *Time* magazine sense. See note 142.

¹⁵⁰ <http://www.istockphoto.com>.

¹⁵¹ <http://www.shutterstock.com>.

¹⁵² <http://www.fotolia.com>.

¹⁵³ Hafner, *supra*, note 145.

¹⁵⁴ iStockphoto.com, About Us, <http://www.istockphoto.com/help/about-us> (last visited July 23, 2011).

against a world of me-too competitors.”¹⁵⁵ At that point Livingstone gave up – sort of. He gave up on the idea of making money. But he maintained his drive to provide stock photography to the world. He just decided to stop caring about making money.¹⁵⁶ He put all the photos online and made them available for free.¹⁵⁷ The site became popular, and Livingstone began allowing site users with digital cameras to upload their own photos.¹⁵⁸ When the server bills hit \$10,000, he started looking for a way to get people to pay.¹⁵⁹ Livingstone’s site, iStockphoto, then started selling credits which could be used to download photos.¹⁶⁰ It became more than a way to pay for bandwidth and turned lucrative. As iStockphoto’s fortunes rose, Getty’s plummeted. In 2006, Getty turned around and bought their tormentor, paying Livingstone \$50 million for the company, which Livingstone stayed with as the iStockphoto CEO.

Today, iStockphoto has 7.25 million royalty-free files, all of which are media workparts of some sort – mostly photos, but also illustrations, video footage, and audio.¹⁶¹ The iStockphoto site claims that there are more than 70,000 contributors to its collections.¹⁶² Viewed from the perspective of Getty’s once dominant pricing model, iStockphoto’s prices on royalty-free images go from small, to extremely cheap, to utterly microscopic. An unlimited-run license for using a high-resolution photo in print, such as a book cover, might be \$125.¹⁶³ And that, it turns out, is about the most money you can spend. A large file with very high resolution for more ordinary uses is \$24.¹⁶⁴ A small, low-resolution file for ordinary usage sells for \$1.¹⁶⁵ With the purchase of a subscription, the price per image can go as low as 26¢.¹⁶⁶

Of course, before any money from already bargain-basement license fees gets to the photographer, iStockphoto needs to take its cut. And it’s a big cut: contributors earning the minimum royalty rate get just 20 percent.¹⁶⁷ Thus an ordinary compensation

¹⁵⁵ *Id.*

¹⁵⁶ See Young Entrepreneurs, Interview With Bruce Livingstone – Founder and CEO of iStockphoto, <http://www.retireat21.com/interview/interview-with-bruce-livingstone-founder-of-istockphoto> (last visited July 23, 2011).

¹⁵⁷ iStockphoto.com, *supra* note 154.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ iStockphoto, index page, <http://www.istockphoto.com> (last visited Aug. 7, 2010).

¹⁶² *Id.*

¹⁶³ King Kaufman, *Photog thrilled to get peanuts from Time*, SLATE, July 29, 2009, http://open.salon.com/blog/future_of_journalism/2009/07/29/photog_thrilled_to_get_peanuts_from_time_and_istockphoto_coins_in_the_glass_jar, <http://www.istockphoto.com/stock-photo-6465698-coins-in-the-glass-jar.php> (last visited Aug. 7, 2010).

¹⁶⁴ iStockphoto, *supra* note 161.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

to a photographer for a photo is somewhere just north of a nickel. Long-standing contributors can apply for a special status that permits royalties up to double that amount.¹⁶⁸

Rival company Shutterstock, which bills itself as “the largest subscription-based stock photo agency in the world,” offers a slightly different deal, but like iStockphoto, it’s neither pricey for buyers, nor lucrative for sellers.¹⁶⁹ A subscription, costing less than \$250 per month, allows the subscriber to download about 25 images per day.¹⁷⁰ Out of the prices Shutterstock charges customers, it will pay the photographer a maximum of \$28 and a minimum of 25¢ per download.¹⁷¹ Photographers are put on warning that it may take a while before Shutterstock finds it worth the hassle of actually making a payout: No money is wired into a photographer’s PayPal account until earned royalties add up to \$75.¹⁷² After that, earnings must hit \$75 again before another payment is made.¹⁷³ Thus, if a photographer has relatively few images and those images receive only modest downloads, it could be years before the photographer receives even a single payment.

Another leading site is Fotolia, which claims nearly 10 million images in its collection. A single download, for a small-sized image, goes for as low as 75¢, with a medium-size image costing as little as \$3.75.¹⁷⁴ If a user has a subscription, the per-image price can go all the way down to 14¢.¹⁷⁵ Of course, only a fraction of that will end up with the photographer. On Fotolia, royalty rates and prices are determined by a ranking system.¹⁷⁶ A contributor starts off with the rank of “white” and a royalty rate of 25 percent.¹⁷⁷ After 100 downloads, the contributor reaches the “bronze” level and the royalty rate goes up to 28 percent.¹⁷⁸ Fotolia explains, “Thus, the more you sell the more money you will make[.]”¹⁷⁹ Upon the promethean attainment of 1 million downloads, a contributor would gain the rank of “diamond” and then be paid a royalty rate of 46 percent.¹⁸⁰ It is not apparent from the information on the site that anyone has achieved this status. Although Fotolia’s compensation system may seem unpromising enough, there’s a catch: Not every download on Fotolia is a “download.” A download from a

¹⁶⁸ *Id.*

¹⁶⁹ Shutterstock, <http://www.shutterstock.com/> (last visited Aug. 7, 2010).

¹⁷⁰ Shutterstock, *supra* note 169.

¹⁷¹ Shutterstock, Submitting Content, <http://submit.shutterstock.com> (last visited Aug. 7, 2010).

¹⁷² Shutterstock, Frequently Asked Questions, <http://www.shutterstock.com/faq.mhtml> (last visited Aug. 7, 2010).

¹⁷³ *See id.*

¹⁷⁴ Fotolia, <http://www.fotolia.com> (last visited Aug. 7, 2010).

¹⁷⁵ *Id.*

¹⁷⁶ Fotolia, Contributors, <http://us.fotolia.com/Info/Contributors> (last visited Aug. 7, 2010).

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

subscriber only counts as 1/4 of a download.¹⁸¹

There are some other ways for photographers to make money from microstock websites. Referral programs that allow contributors to receive payments for referring customers to the site – something in the vein of Amway.¹⁸² As one discussion forum attests, however, it is questionable whether anyone actually makes any significant money from referrals.¹⁸³

For at least some microstock producers, the exchange of money seems to be less about income and more about acknowledgement that their work has been utilized. That is, money is cherished for its communicative value rather than its pecuniary value.

All in all, it is pretty clear that the financial incentive enabled by copyright is not what is motivating people to take stock photographs. So something else must be driving photographers to participate. And, it sure looks like intrinsic motivation.

Scrutinizing the stock photography sites themselves, there is evidence that contributors are looking for are the sorts of things that Daniel Pink identified as abetting intrinsic motivation: positive feedback, gratitude, and useful information about their contribution.¹⁸⁴ It seems that what contributors really want is to be paid in the currency of Deci and Ryan's self-determination theory: indications of competence, autonomy, and relatedness.¹⁸⁵

As one might expect in accordance with self-determination theory, contributors to microstock houses would like to know how their images are being used. A “frequently asked question” answered on Shutterstock's site is “Will I know where my content will be used?”¹⁸⁶ Unfortunately for Shutterstock's contributors, there is no way to provide this information, since royalty-free customers are not required to report how they use downloaded images.¹⁸⁷

Similarly, Fotolia's FAQ includes the question: “How are my images being used?” The response is, “[I]t is impossible for us to know exactly how your images are being used ... within the license guidelines.” Apparently the desire to find out how an image is being used gets the best of some people. Fotolia warns: “Please note it is strictly forbidden for you to contact buyers.”¹⁸⁸

¹⁸¹ *Id.*

¹⁸² Amway markets vitamins, cosmetics, and the like. The company calls itself “a global leader in multilevel marketing.” (Ad appearing in Google search results on March 18, 2011.) In other words, the business thrives on signing up more and more people to participate in it. Detractors liken Amway to a legalized pyramid scheme. For example, *In re Amway Corp.*, 93 F.T.C. 618 (1979), considered whether Amway was an illegal pyramid scheme, but ultimately rejected that charge because of certain threshold inventory limits and customer-number requirements that the company maintained.

¹⁸³ iStockphoto, Participate, Forums, Is anyone actually making money from the referral program?, http://www.istockphoto.com/forum_messages.php?threadid=35867&page=2 (last visited Aug. 7, 2010).

¹⁸⁴ PINK, *supra* note 44, at 67 and Edward L. Deci et al., *Extrinsic Rewards and Intrinsic Motivation in Education: Reconsidered Once Again*, 71 REVIEW OF EDUCATIONAL RESEARCH 14 (Spring 2001), quoted by PINK, *supra* note 44, at 67.

¹⁸⁵ Ryan & Deci, *supra* note 56.

¹⁸⁶ Shutterstock, *supra* note 171.

¹⁸⁷ Shutterstock, *supra* note 171.

¹⁸⁸ Fotolia, Frequently Asked Questions, <http://www.fotolia.com/Info/Faq> (last visited Aug. 7, 2010).

Evidence of the same desires can be found on iStockphoto, where one of the site's top-10 questions from photographers is: "Is there a way to find out where my photos are being used?"¹⁸⁹ The answer: "Only the people that used your photo[] know what it was used for."¹⁹⁰ But iStockphoto does provide an "iStock in Action forum thread" where notices can be posted of images that are used, as well as a "Designer Spotlight" where photographers might find their images featured, if they are lucky.¹⁹¹

Some view into the motivation of stock photographers may be found on the blog of Central Pennsylvania photographer and microstock contributor Brad Shearer. In a post titled "Why I shoot stock photography," Shearer wrote:

Stock photography and more specifically micro stock photography isn't going to make me rich ... The photos I have for sale on big stock photo don't bring me clients locally. My family and friends aren't impressed with images that come across. [¶] So what does it do for me? Well I want to take photos, I love taking photos, I have to take photos[;] it's what I do. ... I felt the amount of effort involved in learning how to get good feedback and added expense of popular photo sharing sites was just too much. So for me it's that rush I get when someone purchases my image, the satisfaction in knowing that they looked [all over] and my image stood out the most [to] them for what they wanted[;] that is the ultimate thumbs up or +1 or digg or vote or whatever you want to call it.¹⁹²

Shearer is not alone in his attitude. In April 2009, *Time* magazine ran a cover story called "The New Frugality." The photo used on the cover was of a jar of change. In an ironic turn, the photo illustrated "frugality" in more ways than one. *Time* had purchased the right to use the photo from iStockphoto for an estimated \$125.¹⁹³ Of that, photographer Robert Lam received \$30.¹⁹⁴

When news of Lam's \$30 national magazine cover hit online discussion boards, there was an outpouring of anger.¹⁹⁵ Lam "got screwed" according to one commenter, who said that Lam's work should have cost *Time* several thousands of dollars.¹⁹⁶

But Lam himself was not part of the angry mob. To the contrary, Lam was just happy that his photo made the cover of *Time*.¹⁹⁷ He wrote in the discussion forum that he

¹⁸⁹ iStockphoto, Frequently Asked Questions, <http://www.istockphoto.com/faq.php?FormName=FaqsSearchForm&Category=26> (last visited Aug. 7, 2010).

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² Why I Shoot Stock Photography, <http://studiobrad.com/PTPBlog/?p=122> (Nov. 5, 2009).

¹⁹³ Kaufman, *supra* note 163, and iStockphoto, *supra* note 163.

¹⁹⁴ Kaufman, *supra* note 163, and Posting of R Studios to Model Mayhem, http://www.modelmayhem.com/po.php?thread_id=480730 (July 24, 2009).

¹⁹⁵ Kaufman, *supra* note 163.

¹⁹⁶ *See id.*

¹⁹⁷ *See id.* *See also, e.g.*, Postings of Lee K and Pypi Fashion to Model Mayhem, http://www.modelmayhem.com/po.php?thread_id=480730 (July 24, 2009).

was planning to get a back issue of the magazine – apparently he missed it on newsstands – and that he would then frame it.¹⁹⁸ It's not hard to imagine that the frame could cost more than the \$30 Lam was paid.

Microstock photography is ostensibly a copyright-enabled market relying on money-driven exchanges. But when you look at it critically, considering the high transaction costs, low prices, and general inability of producers to obtain positive economic returns, it becomes clear that Gutenberg economics can't explain what's going on. The more nuanced post-classical economics that is developing, however, has no trouble comprehending the seeming irrationality.

VIII. NATURAL ENCOURAGEMENTS FOR CAPITAL-INTENSIVE PUBLIC GOODS

I hope that what I've laid out up to this point shows that it is misguided to presume that external incentives are necessary for creative, innovative labors that result in public goods – at least insofar as those labors are engaged in by individuals. Empirical observation – experimental and historical – is inconsistent with the incentive theory as holding true with individuals. Moreover, the intrinsic-motivation hypothesis agrees well with the facts.

There is, however, a substantial gap. Not all intellectual goods are produced by individuals. Many, of course, are produced by firms. New theory in the vein of social psychology or behavior economics does not apply to the behavior of firms. With layers of management and shareholder governance, firms, we can stipulate, are relentlessly oriented toward making money. Corporate managerial decisions may depart from the ideal. Managers, as stewards of shareholder interests, may be imperfect in their decision-making. But, as a general matter, corporations clearly act much more like the hypothetical *Homo economicus* than individuals do.

Moreover, the corporate side of creation and invention cannot be ignored as trivial or nonessential. A talented tinkerer, for instance, can make gadgets using commercially available microprocessors. But developing and fabricating microprocessors takes a huge corporation. One such corporation, Intel, recently announced it would spend \$5 billion to build a new fabrication facility in Arizona to manufacture chips with a new level of miniaturization at a scale of 14 nanometers.¹⁹⁹ An intrinsically motivated individual can't do that in a basement. And we can stipulate that firms do not have intrinsic motivation.²⁰⁰ They do not feel love, passion, or the triumph of spirit that comes from contributing to society. So does that mean that the incentive theory, if it does not hold for individuals, at least holds for corporations?

The answer is no, at least not as a general principle.

There is not really anything wrong with the incentive theory for corporations – at least as a theory. The problem is that it has been empirically refuted. The evidence, in

¹⁹⁸ Posting of R Studios to Model Mayhem, http://www.modelmayhem.com/po.php?thread_id=480730 (July 24, 2009).

¹⁹⁹ See Physorg.com, Intel to Invest \$5 Billion in New Arizona Plant (Feb. 18, 2011), <http://www.physorg.com/news/2011-02-intel-invest-billion-arizona.html> (last visited July 25, 2011).

²⁰⁰ But see Part IX., below, in which I explain that firms must enjoy an intrinsic-motivation subsidy in the form of lower wages for workers who are doing creative or innovative work on behalf of the firm.

fact, is overwhelming. As a general matter, firms simply do not depend upon the external rewards offered by intellectual property in making decisions about undertaking innovation. Regardless of the predictions of theory, the fact is that various characteristics of the real-world marketplace make creation and innovation profitable even in the absence of externally provided rewards – at least in most cases. Indeed, empirical research indicates that in most industries, intellectual property rights are considered unimportant to appropriating returns. Further, empirical studies show that business managers are, in large part, ignorant of what must be done to claim intellectual property entitlements, suggesting that those entitlements are not vital to business decisions to innovate and create. This research supports the conclusion that the need for external incentives is the exception rather than the rule.

Returns on research-and-development costs are frequently garnered through marketing strategies and particular ways of doing business. These modes of appropriating profits include “lead time” or first-mover advantage, sales-and-service expertise, superior manufacturing capacity, increasing returns through scale, establishing proprietary architectures, and what has been called “quickness on the learning curve.”²⁰¹ None of these means of garnering a profit involves getting an external reward. Inside the world of an economic abstraction, the ability to copy the innovations or creative output of a firm seems to be perfectly ruinous to that firm’s ability to profit from its investment. But the problem with abstract models is that they assume away friction and delay. They also don’t take account of the buzz that can develop around a brand that is at the leading edge of a cultural or technological phenomenon. In the real world, copying takes at least a little bit of time. And copyists look a little less lustrous to consumers. Moreover, it can be easier to maintain market share than to take it away from others. These little differences between models and the real world can translate into raking in fortunes. Facebook-founder Mark Zuckerberg illustrates the point in talking about his management philosophy. “[O]ne of the core values of Facebook is *move fast*,” Zuckerberg has said.²⁰² “And we used to write this down by saying, ‘Move fast and break things.’ And the idea was, unless you are breaking some stuff, you are not moving fast enough.”²⁰³

The importance of non-IP factors in appropriating returns has been empirically demonstrated. Economists Michele Boldrin and David K. Levine have looked deeply into the role of intellectual property in innovation, and their account might come as a shock to denizens of patent law. They report: “[I]t turns out that businesses do not regard patents as a significant factor in their decisions to innovate.”²⁰⁴ To reach this conclusion, Boldrin and Levine looked at a number of surveys of R&D directors. Being first to the market was rated as the most effective way to profit from a product innovation. For novel processes, maintaining secrecy was rated as the most effective means. Not only were other means of appropriating gains seen as more effective, but patents were largely regarded as being *ineffective*. Astonishingly, only about a third of respondents found that

²⁰¹ See Eric E. Johnson, *Calibrating Patent Lifetimes*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 269, 271 (2006).

²⁰² Mark Zuckerberg interview, <http://www.businessinsider.com/mark-zuckerberg-2010-10>, at min. 15.

²⁰³ *Id.*

²⁰⁴ See BOLDRIN & LEVINE, *supra* note 23, at 62.

patents were even minimally effective in appropriating gains from R&D spending.²⁰⁵

In fact, multiple empirical studies confirm that patents are highly effective for appropriating gains only in certain industries.²⁰⁶ One of those industries is pharmaceuticals. But even there, the evidence is mixed. Economist Edwin Mansfield conducted research by surveying business executives to determine how many inventions required the incentive of patents. His results indicated that 65 percent of pharmaceutical inventions would not have been introduced to the market without the incentive of the patent regime.²⁰⁷ So even while most drugs required the patent inducement, more than a third did not. That being said, the pharmaceutical industry is unique. In other industries, including motor vehicles, office equipment, textiles, and others, Mansfield found no evidence that patent protection was necessary for the development of *any* invention, and patents were not even necessary for those inventions' introduction into the market.²⁰⁸

In some contexts, patents have turned out not only to be largely worthless to own, but, even worse, costly to defend against. That is to say, for many commercial sectors, patents are just bringing everyone down. Software patents are a famous example where patents seem to provide no incentive, yet do result in a tangled mess of entitlements that frustrates industry.²⁰⁹ In many industries, businesses have joined with their competitors to moot the patent system by creating "patent pools," whereby they collectively agree not to enforce their patents against one another.²¹⁰

A report commissioned by the British government, having reviewed the available research regarding the effects of the patent system, found:

Despite the emphasis on patents in the economic literature and policy debate, secrecy and lead-time advantages seem to be much more important for firms ... [T]he number of sectors where patents are necessary to generate and sustain firms' competitive advantage are few and concentrated in high-tech and science-based markets.²¹¹

In sum, while there is evidence of a need for external incentives in certain situations, those situations are quite clearly the exception, not the rule. Across the landscape of artistic endeavor and industrial research-and-development, it can be seen that innovation and creativity has the general propensity to flourish in the absence of external rewards. To put this in the language of economics: There is no general public goods problem in corporate innovation. The reason why is that the market already

²⁰⁵ *Id.*

²⁰⁶ See Johnson, *Calibrating Patent Lifetimes*, supra note 201, at 301 (collecting cites).

²⁰⁷ See Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32:2 MGMT. SCI. 173, 175 (1986).

²⁰⁸ See *id.* at 174-75.

²⁰⁹ See, e.g., Robert E. Thomas, *Debugging Software Patents: Increasing Innovation and Reducing Uncertainty in the Judicial Reform of Software Patent Law*, 25 Santa Clara Computer & High Tech. L.J. 191 (2008).

²¹⁰ See BOLDRIN & LEVINE, supra note 23, at 63.

²¹¹ Alan Hughes & Andrea Mina, *The Impact of the Patent System on SMEs* Centre for Business Research 27 (2010), <http://www.ipso.gov.uk/ipresearch-impact-201011.pdf>

efficiently prices much of the cost of innovation into goods – without government interference in the market.

There is another, simpler set of question that can be asked to shed light on the effectiveness and necessity of the intellectual property system: Are firms even aware of the intellectual property entitlements of which they can avail themselves? If not, if firms are proceeding largely in ignorance of intellectual property entitlements, and if firms are innovating in spite of that, then IP entitlements must not be driving the innovation.

A study commissioned by the UK government about the intellectual-property system noted that “awareness of the system is a pre-requisite for it to work.”²¹² That study found that the firms “which form the cradle of IP,” those that are medium-sized or smaller, “are in the main effectively unaware of the IP system.”²¹³ Larger firms had better awareness of intellectual property rights, but still a lot less than you might expect.

One question in the study asked whether publication of an invention before the filing of a patent application for it would prevent a valid UK patent from being obtained.²¹⁴ This gets at an important piece of knowledge, because an invention’s prior publication invalidates a patent application in the United Kingdom.²¹⁵ More than two-thirds of respondents for companies with over 250 employees either didn’t know or guessed wrongly that pre-application publication doesn’t surrender patent rights.²¹⁶ Astoundingly, the persons answering were generally persons in the firm who dealt specifically with intellectual property or they were among the most senior persons in the entire company.²¹⁷ For smaller companies, the percentage in the dark was even higher, ranging between 79% and 89%.²¹⁸

The UK report also carried other indications that firms did not worry too much about external incentives from intellectual property. A total of 98.4% of companies reported not offering any specific incentives to staff to obtain intellectual-property rights, such as a patent.²¹⁹ Of the companies that did report owning intellectual-property rights, 87.7% reported that they do not actively check for potential infringements.²²⁰

Even though the report’s data strongly suggested that IP entitlements are generally unimportant to innovation, the report drew the strange conclusion that efforts should be undertaken to promote IP awareness, encouraging firms to make use of intellectual-property entitlements. But why? If firms are innovating without knowing about IP, then apparently IP is not what’s driving innovation.

²¹² ROBERT PITKETHLY, UK INTELLECTUAL PROPERTY AWARENESS SURVEY 2006 11 (2006), <http://www.ipo.gov.uk/ipresearch-sabipreport-2010.pdf>

²¹³ *Id.* at 8 & 44.

²¹⁴ *Id.* at 17.

²¹⁵ Patents Act, 1977, § 2, available at <http://www.ipo.gov.uk/patentsact1977.pdf>.

²¹⁶ *See* PITKETHLY, *supra* note 212, at 17. A total of 34.0% didn’t know, and 32.9% thought pre-publication did not prejudiced patentability. Of course, it can be assumed that some of the 33.1% that answered correctly were guessing.

²¹⁷ *Id.* at 47.

²¹⁸ *Id.* at 17.

²¹⁹ *Id.* at 26.

²²⁰ *Id.* at 26.

Whether it incentivizes innovation and creation or not, the availability of intellectual property entitlements can be counted upon to incentivize cunning firms to use such entitlements to extract money whenever possible. This bonus-taking behavior – looking to grab gratuitous profits from a monopoly advantage or other distortion of the free market – is what economists call “rent seeking.” While not illegal or unethical, rent-seeking is socially pernicious. By definition, it means income that comes from something other than the kind of free competition that undergirds capitalism’s virtue. Thus, it leads to economic inefficiencies and degrades society’s general level of wealth.

The rent-seeking effect is important to consider in thinking about the applicability of the incentive theory for business. The existence of rent-seeking means that the empirical evidence alluded to in the proceeding subsections is too friendly by far to the case for intellectual property. For example, to the extent that some companies have incentivized their employees to obtain patents, such behavior may spring from calculated, opportunistic rent-seeking. And to the extent industries value patents and appropriate returns using patents, it does not necessarily follow that those patents are necessary inducements to innovation. For instance, there is robust empirical data showing that many *patented* inventions would have been developed even in the absence of the patent system.²²¹ Indeed, research has shown that even where patents were generally ineffective in helping companies appropriate returns, they were nonetheless pursued. Why? In his research, Mansfield found that half of patentable inventions were patented because the patents were useful as a way to delay potential competitors or because the patents were useful as bargaining chips in negotiations.²²²

The existence of rent-seeking effects means thus that we should take the data to be conservative in indicating a lack of incentive effect, and, therefore, quite robust in refuting the external-incentive theory.

IX. INTRINSIC MOTIVATIONS MULTIPLIED

I conceded above that firms are not motivated by intrinsic motivations as individuals are. There are, however, a couple of important caveats to this. While firms, per se, are not intrinsically motivated, there are nonetheless means by which individually experienced intrinsic motivations can lead firms to produce public goods. First, firm behavior is mediated through individuals and is affected by the intrinsic motivations of its workers and managers. Second, persons can be driven by intrinsic motivation to aggregate capital to be employed by firms for large-scale public-goods projects too expensive or time-consuming for an individual or a small group. In these two ways, intrinsic motivations get multiplied and expressed through the actions of firms.

Despite being artificial creations of law, firms are nonetheless made up of individuals, and firms are capable of acting only through the actions of their affiliated individuals. Firm behavior will be affected by intrinsically motivated individuals. For one thing, managers are subject to intrinsic motivation and economic irrationality. But even if managers are able to operate close to the economic ideal of seeking profit maximization,

²²¹ See, e.g., Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32:2 MGMT. SCI. 173, 180 (1986).

²²² *Id.* at 176.

the firm will nonetheless feel the effects of intrinsically motivated employees. Specifically, intrinsically motivated employees will end up providing a kind of economic subsidy for innovative and creative corporate work. This will happen simply as a result of individuals being willing to accept lower wages and being self-motivated to be productive.

Even where economic rationality of firms defeats public goods creation motivated by intrinsic individual tendencies, there is the possibility intrinsically motivated philanthropy to aggregate capital in the place of shareholders. There have long been philanthropic efforts aimed at public goods such as cures for diseases and funding for the arts. But now, because of the internet, a whole new form of philanthropy is taking off: crowd-sourced funding. This new mode of aggregating capital for public goods has proven that it is possible for large-scale creative or innovative projects to obtain needed capital though decentralized generosity.

A. Intrinsic Motivations Inside the Firm

To consider how intrinsic motivations of individuals can mediate firm behavior, take robots. Few things epitomize leading-edge innovation as well as robots. Why do robots get built? You can start to answer the question by asking roboticists.

“Hands down, robots are just plain cool as hell. Ask any roboticist why they do it, and that’s the answer you get,” says Daniel Wilson, a researcher at Carnegie Mellon University. “When you are deciding on what to do for your life, there’s nothing like the sense of making something so tangible, so active.”²²³

That attitude goes well beyond the university context. Colin Angle found himself in graduate school developing the “most sophisticated, cool, crazy-ass robot.”²²⁴ Yet he says doing so left him “with an empty feeling.”²²⁵ Angle joined some schoolmates and formed iRobot Corporation.²²⁶ He is now its CEO.²²⁷ Among other products, the company makes military robots that dispose of roadside bombs.²²⁸

“Getting a robot back, blown up, is one of the more powerful experiences I’ve lived through,” Angle says.²²⁹ “Nothing could make it so clear that we have just saved lives. Somebody’s son is still alive. Some parent didn’t just get a call.”²³⁰

Helen Greiner, another iRobot co-founder, explaining why she and her schoolmates founded iRobot, summed it up: “We always knew we would change the world.”²³¹

²²³ See P.W. SINGER, *WIRED FOR WAR* 139 (Penguin 2009).

²²⁴ *See id.*

²²⁵ *See id.*

²²⁶ *See id.*

²²⁷ iRobot Corporation: Management Team, <http://www.irobot.com/sp.cfm?pageid=39>.

²²⁸ iRobot Corporation: About iRobot, <http://www.irobot.com/sp.cfm?pageid=74>.

²²⁹ *See SINGER*, *supra* note 223, at 139.

²³⁰ *See id.*

²³¹ *See id.*

Corporations cannot act or think except through the actions and thoughts of their employees and managers. The idea that all actions undertaken by a corporation are rationally calculated to inure to the benefit of shareholders is a theoretical ideal, useful for constructing some models, but it doesn't reflect reality. A corporation employing intrinsically motivated people will, at some level, behave in accordance with those intrinsic motivations. That doesn't mean that corporate behavior can be said to be intrinsically motivated in the aggregate. But it does imply that there is a behavioral-economic subsidy for corporations undertaking endeavors that accord with human passions to invent, create, and contribute. The existence of the intrinsic-motivation subsidy means that intrinsic motivation can be expected to cheapen the cost of capital and labor for companies that are engaged in innovation and creative activity. It's the concept that is embodied in the phrase, "Don't tell my boss, but I can't believe they're paying me to do this. I'd do it for free."

This behavioral-economic subsidy does not necessarily mean that capital-intensive innovation would be undertaken by corporations in the absence of external rewards, such as patents. But the existence of the subsidy does change the equation, so that corporations need anticipate less of a monetary return from R&D than they would using simple classical economic assumptions.

The intrinsic-motivation subsidy for business is probably most clearly visible on the expressive/artistic side. Fields such as journalism and book publishing are two fields which just about anyone would agree are not roads to riches. They are, instead, vocations for which people feel a calling. Nothing better exemplifies the intrinsic-motivation subsidy better than Hollywood. As someone who practiced entertainment-industry law in Los Angeles, and who also did some stand-up comedy, I can personally attest to the effect. If the television networks and Hollywood studios had to pay wages to compete, on an equal basis, with jobs such as reviewing boxes of legal documents, all of Tinsel Town would grind to a halt.

As it is, the entertainment unions are probably the single largest factor in driving up the price of mainline film and television production. The Screen Actors Guild well-understands that most of its membership would be tempted to work for slave wages if offered the chance. That's why SAG is so vociferous about Global Rule One,²³² which prohibits all SAG members on an equal basis from accepting work from a producer that has not signed on to the Guild's minimum wage-and-benefit standards. The rule is "global" because it even follows SAG members overseas to low-budget production havens in New Zealand and Eastern Europe.²³³ The only way actors can overcome such temptations is to enter into a group pledge to punish one another for working below-scale.

Movie star Kristin Stewart, most famous for her role in the *Twilight* saga, but whose other roles including playing the babysitter who fought alongside a giant robot in *Zathura*, articulated how a lot of actors feel when she confessed: "I would do it for free every day [even] if nobody saw it. I cannot describe how good it feels to actually have

²³² Global Rule One | Screen Actors Guild, <http://www.sag.org/content/global-rule-one>,

²³³ *See id.* ("Rule One is one of the founding principles and strengths of our union: we stand together as actors and do not work without a Guild contract. Up until May 1, 2002, Rule One was enforced on productions shot in the United States. Now global rule one applies to members working outside the U.S. for foreign producers.")

something that is truly into your heart and soul actually affecting people. And that's amazing."²³⁴

B. Crowd-funding of Public Goods

Robots also illustrate the potential of crowd-funding as a means to wrangle intrinsic motivation to a scale beyond the individual. Or at least half a robot.

Talk about public goods, perhaps nothing better exemplifies the concept of “public good” than a statue of RoboCop on the streets of Detroit. The half-man/half-machine police officer from Paul Verhoeven’s film of the same name, RoboCop endeared himself to moviegoers in 1987 by cleaning up the crime-ridden streets of a dystopic-future Detroit.²³⁵ Suggesting it would one-up Philadelphia’s statue of Rocky, a Twitter user fingered Detroit mayor Dave Bing to suggest the Motor City could use a giant likeness of RoboCop.²³⁶ What began as a cheeky Twitter exchange with city hall soon turned into a all-hands-on-deck real-world project using Kickstarter.com.

The Manhattan-based Kickstarter provides creative projects with means to get funding from a widely dispersed community of donors who often donate in small amounts. It can be described as “micropatronage.”²³⁷ For the RoboCop project, the stated goal was to build a “a weatherized 7 foot tall iron statue ... perhaps bronze and perhaps larger, depending on cost and other factors.”²³⁸ Individuals responded, and the money poured in. On March 26, 2011, the effort was successful, having brought in a total of \$67,436 from 2,718 backers.²³⁹

The crowdfunding of the RoboCop statue is not unique by a long shot. Kickstarter has funded full-length motion pictures, each requiring hundreds of thousands of dollars.²⁴⁰ Capital-intensive musical recordings have also been crowdfunded through Kickstarter. Tens of thousands of dollars have been raised to hire an internationally renowned orchestra to record symphonies by Beethoven, Brahms, Tchaikovsky, and

²³⁴ IMDb, Kristen Stewart (I) - Biography, <http://www.imdb.com/name/nm0829576/bio>.

²³⁵ IMDb, RoboCop (1987), <http://www.imdb.com/title/tt0093870/> (last visited Mar. 28, 2011).

²³⁶ See Brian Braiker, The Internet Wants a RoboCop Statue in Detroit – ABC News (Feb. 17, 2011), <http://abcnews.go.com/Entertainment/internet-robocop-statue-detroit/story?id=12943449> (last visited Mar. 27, 2011).

²³⁷ See Jenna Wortham, *A Few Dollars at a Time, Patrons Support Artists on the Web*, N.Y. TIMES, Aug. 24, 2009, at B1, available at <http://www.nytimes.com/2009/08/25/technology/start-ups/25kick.html>.

²³⁸ Imagination Station Detroit, Detroit Needs A Statue of Robocop! – Kickstarter, <http://www.kickstarter.com/projects/imaginationstation/detroit-needs-a-statue-of-robocop> (last visited Mar. 27, 2011).

²³⁹ *Id.*

²⁴⁰ Steve Taylor, SAVE Blue Like Jazz! (the movie) – Kickstarter, <http://www.kickstarter.com/projects/2128223578/save-blue-like-jazz-the-movie-0> (last visited Mar. 28, 2011) (\$345,992 raised from 4,495 backers); 2 Player Productions, Minecraft: The Story of Mojang – Kickstarter, <http://www.kickstarter.com/projects/2pp/minecraft-the-story-of-mojang> (last visited Mar. 28, 2011) (\$210,297 raised from 3,631 backers).

Sibelius, with the recordings to then be released copyright-free into the public domain.²⁴¹

Nor are Kickstarter projects are not limited to expressive works. The biggest-money project so far was technological – an endeavor to develop watches from Apple’s iPod nano music players. The effort which was funded with close to \$1 million.²⁴² The Kickstarter venture itself is funded by taking a cut of the money raised,²⁴³ and it explicitly disclaims any ownership or intellectual property rights to the funded projects.²⁴⁴

Why would people fork over money, even in small amounts, to help crowdfund creative and innovative projects? It may be, in part, the acknowledgement rewards that donors of certain levels get.²⁴⁵ But the phenomenon is not entirely explainable by reference to the self-interested model of human behavior of classical economics. The reason crowdfunding works is that human beings are a lot less like *Homo economicus*, than we’ve been led to believe. Humans are more like RoboCop himself, whose first prime directive is: *Serve the public trust*.²⁴⁶

X. PRESCRIPTIONS

If the basic assumption underlying our gargantuan structure of intellectual property law is in error, then what do we do with that?

To begin with, we need to make the initial observation that intellectual property has a downside. As a restriction of competition and artificial imposition of scarcity in the market, intellectual property has deleterious effects. There is an honest debate to be had as to how large those negative effects are and whether or not they are offset by advantages. It is, however, uncontroversial that, all else being equal, government imposition of monopoly entitlements incurs some level of harm. In fact, it is not only uncontroversial, it is fundamental. The problem that intellectual property is imagined to solve – the public goods problem – is one that springs from an acceptance of the classical economic model, a model that upholds the classical virtues of a free market, a free market that is partially undone by intellectual property. Since intellectual property exhibits an inherent tendency to injure, it becomes all-important to know if the problem it is imagined to solve doesn’t exist.

Stated another way, to use a pharmaceutical analogy, if we suppose that intellectual property is potent medicine for the market, that necessarily means it interrupts the market’s normal metabolism. Up until now, the debate has always been whether the

²⁴¹ Aaron Dunn, Musopen: Record and release free music without copyrights. by Aaron Dunn – Kickstarter, <http://www.kickstarter.com/projects/Musopen/record-and-release-free-music-without-copyrights> (last visited Mar. 28, 2011) (\$68,359 raised from 1,276 backers).

²⁴² Scott Wilson, TikTok+LunaTik Multi-Touch Watch Kits – Kickstarter, <http://www.kickstarter.com/projects/1104350651/tiktok-lunatik-multi-touch-watch-kits> (last visited Mar. 28, 2011) (\$941,718 raised from 13,512 backers).

²⁴³ Kickstarter, Frequently Asked Questions (FAQ), <http://www.kickstarter.com/help/faq> (last visited Mar. 27, 2011).

²⁴⁴ *Id.*

²⁴⁵ *See, e.g., id.* (commemorative pin for donations of \$35 or more, \$10 worth of lager for donations of \$50 or more, commemorative t-shirt for donations of \$100 or more).

²⁴⁶ IMDb, RoboCop (1987) – Memorable quotes, <http://www.imdb.com/title/tt0093870/quotes> (last visited Mar. 28, 2011).

benefits outweigh the harmful side effects. Some have thought IP is bad medicine, while others have upheld it as a wonder drug. My thesis, by contrast, is that the disease we thought we were treating doesn't exist.

With that in mind, I offer a few prescriptions.

A. Avoiding a Fashionable Fallacy

At the outset, the clearest implication of the demonstrated unsoundness of the incentive theory is that legal scholars, judges, and lawmakers should tighten their discourse. We should no longer tolerate easy assertions that intellectual goods need external incentives. Indeed, the current legal literature on intellectual property is rife with reliance on the incentive theory. It undergirds IP discourse generally. Today, as scholars weigh in about the future direction of intellectual property law, this great fallacy causes them to draw erroneous conclusions and to champion ill-considered changes in the law.

One good example comes from the red-hot debate about whether intellectual property law should be extended to the fashion industry. The law in the United States has long permitted free copying of clothing designs.²⁴⁷ But many are currently urging that intellectual property should step in to bolster the industry's capacity to generate fresh couture.

A recent article by C. Scott Hemphill and Jeannie Suk argues for the creation of a new intellectual property entitlement for fashion designers that would allow lawsuits against those who make close copies of new designs.²⁴⁸ Hemphill and Suk's argument is a nuanced one, taking careful measure of the culture of fashion and looking deeply into its industrial geography. At base, however, their argument is built upon IP policy's hoary mistake, and, as such, it is folly.

"With respect to close copies, there is no reason to reject the standard justification for intellectual property, that permissive copying reduces incentives to create," Hemphill and Suk write.²⁴⁹ Relying on anecdotes and common-sense-style reasoning, the authors argue that unauthorized close copies of fashion designs reduce designers' earnings.²⁵⁰ Then, proceeding from this premise, they posit: "The reduced profits can be expected to have a negative effect on the amount of innovation; this is a standard result of economic theory."²⁵¹

Standard, but wrong. Hemphill and Suk's article is by no means unique in

²⁴⁷ Fashion designs are not susceptible to copyright protection. *See, e.g.,* *Poe v. Missing Persons*, 745 F.2d 1238 (9th Cir. 1984); *Galiano v. Harrah's Operating Company Inc.*, 416 F3d 411 (5th Cir. 2005). *See also* 17 U.S.C. § 102 (enumerating permissible subject matter of copyright) and 17 U.S.C. § 101 (definitions of "pictorial, graphic, and sculptural works" and "useful article," which work to exclude clothing designs). In addition, the U.S. Supreme Court's holdings regarding trade dress make trademark protection for fashion designs generally untenable. *See Wal-Mart Stores Inc. v. Samara Bros. Inc.*, 529 U.S. 205 (2000).

²⁴⁸ C. Scott Hemphill & Jeannie Suk, *The Law, Culture, and Economics of Fashion*, 61 STAN. L. REV. 1147 (2009).

²⁴⁹ *Id.* at 1153.

²⁵⁰ *Id.* at 1175–76.

²⁵¹ *Id.* at 1176.

embarking on this error. I point to it only as one example, one that is particularly apt in part because it is well-argued in the particulars. There are, in fact, a multitude of such ultimately faulty ventures in contemporary legal scholarship. More surface continuously. No matter how well developed their logic, to the extent they rest on unsound footing in the form of the incentive theory, they need to be rethought.

B. Not Confusing The Exceptions with the Rule

There are undoubtedly exceptions. Valuable intellectual assets whose development almost certainly required the incentive of external rewards, such as those made possible by intellectual property rights, include virtually all large-budget major motion pictures, virtually all large-budget television series, and many or most new pharmaceutical compounds.

The exceptions to the general rule of spontaneous creative labor, however, do not disprove the rule. Why not? The exceptions arise out of the costs of production and distribution of creative and innovative labors, not the creative labor per se.

The best case that can be made for the necessity of copyright incentives is probably major-motion pictures with budgets in the hundreds of millions of dollars. Such financing is way out of the range of current Kickstarter crowd-funding. I would readily agree that this kind of motion-picture production appears to require external incentives, such as copyright. Now, it cannot be said with conviction that a film's underlying creative labor necessarily requires extrinsic incentives. But the project overall does. A group of friends, motivated to do something cool, might make a short, low-budget film. But for a big Hollywood film, the "friends" model is unthinkable. The copyright reward is needed to get the studio to finance a production that coordinates all that labor. Moreover, for a big film, there is also the necessity of a lot of non-creative labor – driving trucks, sawing boards, and, in many cases, waiting hand-and-foot on insufferable celebrities. This kind of labor can't be reasonably thought to be intrinsically motivated. Yet none of this confirms a *general* case for the necessity of external incentives. At most, it appears to make the case for a specific need for external incentives for a large and important segment of motion-picture production.

We should be careful not to extrapolate too broadly from looking at particular modes of production. The book publishing industry, not long ago, could have been described in much the same way as I've described the film industry. In the 1970s and before, producing a book meant the coordination of the work of a lot of people, and it meant a lot of non-creative labor, such as typesetting, layout, and bookstore distribution. It also meant a substantial capital investment in committing to a print-run of enough copies to have a chance to recover the costs of burning plates and setting up a multi-ton offset lithographic press. These days, using widely available software – even free, open-source software – authors can typeset a book and design a cover without professional help. Moreover, with on-demand printing and distribution through online bookstores, authors can reach roughly the same audience with books of roughly the same quality as could be achieved through traditional publishers.

The recorded music industry is similar. Albums can now be recorded in someone's home, using a personal computer, of a quality that years ago would have required a massive recording studio and the involvement of engineers and supporting musicians. High-quality microphones and musical instruments have become extremely

cheap. Moreover, the capacity of software to simulate and manipulate instrument sounds has led to thinking of studio musicians as something of a luxury. Distribution has been democratized even more thoroughly than production. Artists can take a home-recorded album and make it available to a worldwide audience over the internet instantly. As recently as the mid-1990s, record companies had to spend massive amounts of money just to schmooze radio station disc jockeys and music directors just to give people a shot at listening to a song.²⁵²

When assessing any continuing place for the incentive theory, we must bear in mind that technological capabilities, production costs, and distribution costs are wildly in flux, and the trend-line is one of steep decline. Thus, even if there is currently a strong case for the need for monopoly entitlements for big-budget motion pictures, there is no reason to believe it will be persistent. While Disney's *Tron Legacy* movie cost around \$170 million to produce in 2010, many years from now the same movie might be produced by a small group of friends for the levels of investment that one would sink into a hobby. It may seem impossible to imagine, but is only impossible in the same way that the current state of music production would be impossible to imagine from the viewpoint of the 1960s.

Moreover, the concept of crowd-funding is in its infancy. Someday soon, crowd-funded projects may well run to millions of dollars. If crowd-funding becomes more powerful, which it may, and production costs decrease, as they most certainly will, it is at least plausible that today's biggest Hollywood productions could be financed entirely without copyright.

Of course, there is already a long history of donor-funded advances in medicine. And, similar to the way costs have dropped for creative production, the costs of developing pharmaceutical compounds could drop to casual at-home levels as well. If that seems impossible to imagine, consider Stanford University's folding@home project.²⁵³ Affiliated with the Stanford University School of Medicine, folding@home uses distributed computing to run billions and billions of simulations of protein folding, a subject that implicated in diseases such as Alzheimer's, Parkinson's, bovine spongiform encephalitis ("mad cow"), and many cancers.²⁵⁴ Volunteers for folding@home download a piece of software onto their home computers in order to donate spare computing capacity to the effort. During the computer's downtime – such as when a screensaver is running – the computer crunches numbers for enormously complex mathematical models.²⁵⁵ By banding together thousands of computers across the internet, the project manages to create one of the world's largest supercomputers.²⁵⁶ The project has already developed multiple leads for new drug development.²⁵⁷ So in a sense, pharmaceutical development is already beginning to happen at home. Who knows what may happen in the future?

²⁵² I would know; I was an on-air radio personality and worked in music radio in the early- and mid-1990s.

²⁵³ Folding@home - Main, <http://folding.stanford.edu/English/Main>.

²⁵⁴ *Id.*

²⁵⁵ *Id.*

²⁵⁶ *Id.*

²⁵⁷ See Folding@home - Papers, <http://folding.stanford.edu/English/Papers>.

So, although there are cases where valuable sorts of creative and innovative endeavor appear to require external rewards to proceed, those cases are neither necessarily permanent nor indicative of a general principle. Thus, even where IP entitlements seem justifiable now, we should not assume that they will stay that way.

C. Sunsetting Intellectual Property Entitlements

I certainly would not argue, on the basis of what I have presented here, that IP laws are economically unjustifiable. Furthermore, even if IP laws were unjustifiable on the basis of the economic incentive argument, we might as a society find certain restrictions on copying desirable for non-economic reasons, such as giving artists a right to restrict reproductions and modifications of their art in order to protect their sense of artistic integrity. Thus, it does not follow from my argument that intellectual property is unjustifiable.

That being said, there is a difference between “unjustifiable” and “unjustified.” Much of intellectual property law may ultimately be *justifiable*; that is, it may ultimately turn out, after data is gathered and carefully weighed, that a persuasive case can be made to justify wide swaths of entitlement-granting IP law. But, by the same token, most of intellectual property law is currently *unjustified*; that is, no such persuasive case has been made.

The legal doctrines of patent and copyright law – in the manifold kinds of works to which they are applied and the many forms of industry in which they inhere – exist almost wholly without a careful case having been laid for their existence. In light of that, I can offer the overall prescription that intellectual property law, in general, should be sunsetted.²⁵⁸ That is, it should be set on a path of being phased out entirely. Then, going forward, only very targeted, industry-sector-specific, application-specific rights should be developed, and only then upon a showing of compelling evidence for why they are needed. When such cases are persuasively made, we should consider having the government interfere in the free market in some way, which might mean creating a tightly tailored, time-limited regime of monopoly entitlement. When I say “time-limited,” I am not referring to the term of the entitlement, I am referring the regime itself. In other words, the law itself should have a sunset provision. Art and technology change; thus, so should our means of encouraging them.

There is precedent for tightly tailored IP entitlements. One excellent example is the Semiconductor Chip Protection Act of 1984, which protects semiconductor mask works for a term of 10 years.²⁵⁹ Another example is the Vessel Hull Design Protection Act of 1998, which protects boat hull designs for a term of 10 years.²⁶⁰ Both of these forms of *sui generis* entitlements were created after it became clear that current configuration of copyright and patent laws, as interpreted by the courts, prevented

²⁵⁸ Again, let me emphasize the limited way in which I use the term “intellectual property” here. *See* Part I., *supra*.

²⁵⁹ Semiconductor Chip Protection Act of 1984, 17 U.S.C. § 901–914 (2000).

²⁶⁰ Vessel Hull Design Protection Act of 1998, 17 U.S.C. § 1301-1308 (2000).

assertions of IP rights for the subject-matter within their scope.²⁶¹ Both with boat hulls and chip masks, industry made its case, and Congress listened. After considering the arguments, Congress responded with narrow forms of protection having a much shorter term of duration than is the case either of our catch-all systems of copyright or patent.

There is precedent as well for sunseting. It comes not from IP law, but from legislation intended to stimulate the economy, such as time-limited tax cuts, tax hikes, and tax credits. In fact, when IP law is properly thought of as a form of legislated economic stimulus, then the idea of providing a sunset clause seems natural. Sunset clauses in tax legislation often result from political wrangling and compromise, but their principled implementation goes along with the idea that macroeconomic circumstances change. Thus, what is appropriate for the economy now may not be appropriate in a few years. We ought to treat intellectual property law the same way. Recall how the changed circumstances in the record and book industries have largely obviated the need for capital-intensive models of production and distribution, therefore undercutting any case for the need for external incentives such as monopoly grants to overcome public-goods problems with copyability.²⁶²

Sunseting all of intellectual property law would not be easily accomplished. It is a system of entrenched doctrines and expectations, girded by special interests. What's more, that entrenchment is a global problem, one made all the more severe by the trend of harmonizing of IP rights as a part of world trade negotiations. As a consequence of being swept up in world trade talks, treaty-hardened minima now govern the scope and duration of IP entitlements. For example, the world trade framework, largely because of the negotiating efforts of the United States, requires countries to provide patents and requires them to carry a minimum term of 20 years for all patents – a provision of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights.²⁶³

While sunseting all IP law is not a modest proposal, it should be kept in mind that ill-considered interferences with the free market are not a modest problem. Mischievous laws exact their own price. Pushing the market away from what it would do if left alone forecloses opportunities. The lost gains the come with foreclosed opportunities – what economists call “opportunity costs” – are likely huge in the arena of intellectual property. The world's economic production is increasingly oriented toward the creation of intellectual goods. It is a very large part of the American economy already. According to a 2006 report by the International Intellectual Property Alliance, the estimated value added by core copyright industries in 2005 was \$819 billion, with the

²⁶¹ See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989) (holding that Florida state law that provided a monopoly privilege on vessel hulls was pre-empted by federal intellectual property law).

²⁶² Of course, the recording industry famously has argued for changes in IP law based on changes in technology. But those changes were premised on the idea of increased ease of copying, not decreased costs of production and distribution. The two prime examples are the Audio Home Recording Act of 1992 (Pub. L. 102-563) and the Digital Millennium Copyright Act of 1998 (Pub. L. 105-304). Neither had a sunset provision, though the DMCA does include something in that vein with time-limited exemptions created by a rulemaking authority provided the Library of Congress.

²⁶³ Pub. L. No. 103-465 (Uruguay Round Agreements Act, implementing change from 17 years from issuance to 20 years from application; codified at 35 U.S.C. § 154); see Gerald J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 38 IDEA 530, 538 (1998).

estimated value added by total copyright industries – a more inclusive categorization than core copyright industries – being \$1.388 trillion.²⁶⁴ That’s equivalent to about 9% of U.S. GDP. Just imagine what it means if copyright law is miscalibrated and built on faulty assumptions. The opportunity costs incurred from a needlessly perverted market may quite reasonably be some multiple of current copyright-system receipts. That is, the losses could quite plausibly be in the trillions of dollars per year, adding up to a substantial fraction of U.S. GDP. That would only go to the invisible shadow cast by the copyright system. The patent system’s effects could plausibly be similar or even substantially larger.

If we get innovation law wrong – and I think we have in a big way – then we are squandering enormous wealth. As the world increasingly becomes industrialized and computerized, and as human labor inputs are increasingly mental as opposed to physical, this effect will only grow. It may seem like pie-in-the-sky thinking to suggest phasing out all IP law and starting over from scratch, but if the potential economic gain is large enough, then it’s worth pursuing. And, eventually, the prospect may become politically possible.

Consider the global movement toward free trade. When you think about the politics involved, it is amazing that free-trade policies have succeeded as much as they have. While popular with academics in business schools and economics departments, free trade is a political nightmare. Economist Pietra Rivoli notes, “There is perhaps no other issue ... in which the professional opinion of economists differs so markedly from the opinion of the American public.”²⁶⁵ Not only are voters in general turned off by free trade, but global trade liberalization has an incredible array of special interests lined up against it. Yet trade liberalization has progressed nonetheless. Why? The reason it has, I believe, is because the economic argument in its favor is so persuasive. Economic historian Douglas Irwin wrote:

The case for free trade has endured because the fundamental proposition that substantial benefits arise from the free exchange of goods between countries has not been overshadowed by the limited scope of various qualifications and exceptions. Free trade thus remains as sound as any proposition in economic theory which purports to have implications from economic policy is ever likely to be.²⁶⁶

I think a fundamental change in the flow of IP law can also succeed if it is a good enough idea. It is just too important, and the case for it is, I believe, too overwhelming to ignore.

²⁶⁴ STEPHEN E. SIWEK, COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2006 REPORT, http://www.iipa.com/pdf/2006_siwek_full.pdf.

²⁶⁵ PIETRA RIVOLI, THE TRAVELS OF A T-SHIRT IN THE GLOBAL ECONOMY 182 (2d ed. 2009).

²⁶⁶ DOUGLAS A. IRWIN, AGAINST THE TIDE 3 (1997). *See also* RIVOLI, *supra id.*, (quoting the same).

XI. CONCLUSION

The economic centerpiece in the conventional wisdom justifying intellectual property law is a longstanding blunder. There is no broad necessity of incentives for intellectual labor. As a general matter, innovative and creative activity will thrive without artificial support.

The social science itself, including the Amabile Principle and the Sawyer Effect, casts tremendous doubt on the continuing validity of the incentive theory. But what really seals the deal is to consider the social science alongside current history. What is happening right now on the internet fits stunningly well with ideas about intrinsic motivation – blogs, Twitter, YouTube, Flickr, Facebook, Wikipedia, and the like. Whatever you call this revolution, one thing is certain: Viewed from a classical perspective, it's all surreal nonsense. It simply *can't* be happening. But it is. The only conclusion to draw is that the incentive theory has been falsified, and thus it should no longer be viewed as providing general wisdom for policymaking. That conclusion is supported on all sides by unrelated streams of breakthrough scholarship regarding human nature and real-world markets.

While cherished beliefs about incentives and intellectual output can now be revealed as myth, it does not follow that external incentives are never necessary. There would seem to be ample support for the proposition that, in many specific cases, innovation would stymie without external rewards. But it is critical to understand that those situations are the exceptions. Naturally flourishing intellectual production is the norm.

My bottom line is that the general case for intellectual property rights, in so far as it is based on the idea that external incentives are needed to encourage art and invention, should no longer be accorded credibility in policy debates about intellectual property law. Thus, I am urging a paradigm shift.

The stakes are large. More and more of the worldwide economy is moving to intellectual production. How that production is regulated, and whether it is encouraged or discouraged by intellectual property law, will have a vast effect on overall levels of wealth and standards of living. Our collective misapprehension over the economics of innovation and creativity has no doubt already done incalculable mischief. Going forward, it becomes progressively important to get the policy right, even if that means scrapping it and starting over.

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