Competition as the Design Parameter in Patent Law

Oskar Liivak*

Over the past half century patent law has come of age. The PTO has been issuing patents at an exponentially increasing rate while Congress and the courts have been strengthening patent scope and validity. But despite its new found strength, patent law is still not accepted by many, especially many economists. Their suspicions are rooted in the common assumption that patent law is an exception to competition. This article argues that patent law need not be viewed this way. Patent law can instead be a natural extension of traditional property rationales that are inherently designed to be consistent with free markets and competition. To date property centric rationales have been employed to strengthen and broaden patent rights but here a property centric view, properly tempered by competition, points towards narrower rather than broader patent rights.

This article removes the one assumption that has caused all the trouble. Rather than assume that patents are inconsistent with free market competition, this article assumes that there exists a functioning patent system that is compatible with our general notions of competition and free markets. The goal of the article is simply to find that patent system. For guidance, the article begins by examining and then emulating traditional property. Recalling only Blackstone and his "sole and despotic dominion," many would find it surprising that traditional property could help to reform patent law. But a deeper exploration finds that the lessons of traditional property are particularly relevant. Traditional property is the darling of economists; it is one of the absolutely essential pillars of competitive, free markets. As explained by the Classical Economists like Hume, Bentham and Smith, traditional property is not just compatible with competition; it is fundamentally necessary for it. In this regard traditional property manages a feat that seems improbable to many in intellectual property. Traditional property grants effective exclusive rights while also encouraging competition. Armed with this example but still cognizant of the differences between tangible and intangible resources, this article constructs a patent system that is competitive by design; it designs a patent system that simultaneously provides protection yet still encourages competition. The article concludes by comparing such a theoretical, competitive patent system with our current patent system and with a patent system envisioned by Judge Learned Hand some fifty years ago.

---

* Assistant Professor of Law, Cornell Law School. I would like to thank the participants from the George Washington University Law School IP Workshop Series for comments on a previous draft of this article. I would especially thank Michael Abramowicz and John Duffy for their helpful comments and criticism.

For the past fifty years, there has been a growing consensus that technological innovation is the single most important factor in increasing industrial production.[1] With that critical role, we would hope that one of the main legal institutions for fostering technological innovation, namely the patent system, would be well understood and well accepted. This is not the case. Many people, especially many economists, worry about the patent system, thinking it is broken, unnecessary, and harmful.[2]

Much of the criticism stems from the basic description of the patent system. Patent law is described as a difficult compromise between monopoly incentives and public access to ideas and inventions. In order to incentivize or reward inventors for creating and disclosing their inventions, the government grants them a limited time monopoly on their inventions. Most economists are deeply dedicated to a free market economy. If patents are government created monopolies, or even if they are government created intrusions into the competitive market place then, in the eyes of these economists, patent law is irredeemably flawed. In their eyes, the patent system is antithetical to competitive free markets and they should therefore be abolished.

Other economists have a less visceral reaction and are willing to at least listen a bit longer. For them, if after accounting for the costs associated with these government-created rights, evidence can prove that on the whole the patent system provides benefits that exceed its (monopoly induced) costs, then they are willing to support the patent system. Unfortunately, such evidence does not exist and worse yet, there seems little hope of ever developing the evidence. Over fifty years ago economist Fritz Machlup, evaluating the difficulty of patent law's balancing act between monopoly and public access, reported to the Senate that

> [i]f we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting [the patent system]. But since we have had [one] for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.[3]

And not much has changed in the intervening fifty years. We are still, in Machlup's words, "muddl[ing] through."[4]

In 1986 George Priest, argued that "[t]he ratio of empirical demonstration to assumption in [patent] literature must be very close to zero."[5] Priest somewhat depressingly concluded that "[p]ersonally, I believe there is little hope that economic analysis can resolve the question of the appropriate scope of the protection of intellectual

---

[1] *See* Peter Menell, Intellectual Property: General Theories 134 (1999) ("Robert Solow demonstrated that technological advancement and increased human capital of the labor force accounted for most (between 80 and 90 percent) of the annual productivity increase in the US economy between 1909 and 1949, with increases in the capital/labor ratio accounting for the remainder. . . . It is now widely recognized that technological advancement and enhanced human capital are the principal engines of economic growth in the United States and other industrialized countries.") *See also* F. Scott Kieff, Commercialization, 699 n. 4

[2] *See* generally Josh Lerner and Adam Jaffe, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT (2004). See also America's patent system Methods and madness May 8th 2008 | WASHINGTON, DC From The Economist print edition Patent reform may soon happen in the courts, if not on Capitol Hill

[3] Fritz Machlup, An Economic Review of the Patent System 80.

[4] *Id.*

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

property."[6] More recently and after more attempts had been made towards empirical reification, Mark Lemley, similarly admits that "[given the difficulties in line drawing] between protection and the public domain … it is hard—and perhaps even impossible—to ever calibrate intellectual property law perfectly."[7] Thus, without firm empirical support, even people willing to weigh the cost and benefits of the patent system are likely making their assessment more on faith and hope than on fact. In a fundamental way, this is a particularly unsettling situation. As such an important part of our economy, patent law needs firmer footing.

Some time ago, the patent system was not evaluated so ambiguously. Jeremy Bentham argued that the patent system "produces an infinite effect and costs nothing."[8] Others also echoed similar support.[9] Such language creates interest. In light of all the modern criticisms, could a patent system really cost nothing and could it produce an infinite effect? Was he crazy? What kind of system was he envisioning? Would it look anything like our current patent system?

In searching for such an ideal patent system, this article begins by using a favorite trick amongst economists: assume away the problem; in other words assume away the costs.[10] Almost all the costs related to the patent system stem from its perceived anti-competitive effects. This article will assume that there exists a patent system that both can provide exclusive rights for inventors while also allowing for and in fact encouraging competition. The key will be to find and then to explore the contours of such a system.

Despite the conventional wisdom, this is not such a wild thought after all. The Federal Trade Commission states that "competition through free enterprise and open markets is the organizing principle for most of the U.S. economy."[11] And in particular with regard to patents, the Supreme Court has made clear that "free competition" is "the baseline."[12] Why shouldn't we try to design a patent system that is consistent with these principles? Recently, there has been a renewed interest in the compatibility of competition and patent law.[13] There is renewed confidence that competition can be used effectively in the design of intellectual property.[14] Kenneth Dam described the patent

---

[6] *Id.* at 24.

[7] Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1035 (2005). Despite the difficulties, Lemley optimistically notes that "[w]e may not know exactly how to calibrate the right level of intellectual property protection, … we can be reasonably certain that neither 'no protection' nor 'absolute control over externalities' is the right answer. Hard as it is to get the balance right, we will never do it if we simply stop trying." *Id.* at 1036.

[8] Jeremy Bentham, III A Manual of Political Economy Works 71 (Bowring ed).

[9] *See* Machlup at 20. Among one of the supporters is Proudhon. He famously said that traditional property is theft but he surprisingly argued that intellectual property was a necessity in society. *Id.*

[10] *See* A. Mitchell Polinsky, An Introduction to Law And Economics 1 (1989).

[11] FTC Report at 1.

[12] Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 146 (1989).

[13] *See* Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (October 2003); Jessica Litman, *Breakfast with Batman: The Public Interest in the Advertising Age*, 108 YALE L.J. 1717, 1729 (1999) ("If competition is still the American way of doing business, then before we give out exclusive control of some coin of competition, we need, or should need, a justification."); see Rochelle Dryefuss; See Gustavo Ghidini.

[14] *See* Christopher Yoo, *Product Differentiation in Copyright* 224-225. ("The differentiated products approach, in contrast, makes far more modest demands of the government. It requires only that the government facilitate entry, depending instead upon market forces to bring revenues into balance with fixed costs."). *See also* Lemley, *Ex ante* at 149 ("[I]f we rely on the decisionmaking of one company rather than

system as "creat[ing] property rights in order to allow a market system to function."[15] Though largely agreeing with Dam's analysis, this article goes further and stresses that a patent system should not only create a market for inventions but more importantly it should create a competitive free market for inventions. A patent system should be designed to enable the economic benefits of competitive markets to extend to business models that sell inventions. There would be many immediate advantages to such a patent system. It would inherently be consistent with and thus integrated into the broader market system. This would largely address many of the current critics of patent law. Such a patent system would also be inherently consistent with the principles of antitrust law. To this day there has been an ongoing (I would argue wasteful) tension between patent law and antitrust.

The initial goal of this article is a theoretical one. Rather than describing the current patent system, this article will try to construct a theoretical patent system where balancing security with competition is the central, guiding design principle. The article draws upon traditional property for guidance. Having examined traditional property, the article proceeds to outline a design for a competitive patent system. The article concludes that a competitive patent system has two distinctive features. The exclusive rights under such a system extend only to copyists and not to independent inventors. Furthermore, the exclusive rights are relatively narrow extending only so far as needed to prevent piracy of the particular embodiments of the invention that are being sold on the market. The article then compares this theoretical competitive patent system with the current patent system finding that both of these two distinctive features conflict with the current patent system. Lastly, the article compares such a competitive patent system to patent reforms urged by Judge Learned Hand some fifty years ago and the article finds that, despite its departure form existing views of patent law, his vision squares nicely with the competitive patent system.

I. The Traditional Free Market Property System: Security with Competition

The fundamental role for an economic system is allocating scarce resources to productive ends.[16] An economic system determines how a society should use its land, labor, and capital to meet its needs.[17] The United States economy and indeed much of the

---

the aggregate decisions of the market as a whole--we give up the very discipline that guarantees us the decisions it makes will be the right ones.")

[15] Kenneth Dam, The Economic Underpinnings of the Patent System, 23 J. LEG. STUD. 247, 248 (1994).

[16] William J. Baumol & Alan S. Binder, Economics Principles and Policy 34 (4th 1988).

[17] *Id.* at 35. On the scarcity of different types of resources: "the property rights literature has viewed the central problem as one of scarcity, while information has appeared to be an example of something that can be used without limit. There is, however, a scarcity of resources that may be employed to use information, and it is that scarcity which generates the need for a system of property rights in information." Edmund Kitch, The Nature and Function of the Patent System, 20 J. L. & Econ. 275-76 (1977). "Scarcity is a more promising theme. Indeed, one scholar defines property as "a system of rules governing access to and control of scarce material resources." John J. Sprankling, Understanding Property Law 7 (1999)(quoting Jeremy Waldron, What Is Private Property?, 5 Oxford J. Legal Stud. 313, 318 (1985))"There is, at least, no dispute between the socialist and the liberal traditions on the following points: that without some assumption of scarcity, there is no sense talking about property and justice…." Jeremy Waldron, What Is Private Property?, 5 Oxford J. Legal Stud. 313, 320 (1985).

world uses a free market system for this purpose.[18] A free market economy was first described and advocated by the Classical Economists such as Hume, Smith, Bentham and Mill.[19] They envisioned a "System of Economic Freedom," "a certain framework of law and order and certain necessary governmental services," that creates a "spontaneous co-operation"[20] that harnesses "the immense potential of free pioneering individual initiative."[21]

Although they certainly favored a strong, direct role for government in many other areas[22], in relation to the market, the Classical Economists outlined a critical but limited role for government. In a free market economy, the drive for engaging in business enterprise exists inherently in people's need to acquire resources for survival and enjoyment. The government needs only to create institutions that allow this inherent drive to flourish. In particular, if left completely unregulated such an economic system would never emerge as the rest of us might either take or destroy the fruits of the business enterprise. The government needs to prevent theft but as it is assumed that the overall economy is a free market the government needs to do little else. In other words, in such an economy, business persons are willing (maybe grudgingly) to face competition, but they should not have to face thieves. On this, Bentham argued that business people make a simple request from government: "we have no need of favour – we require only a secure and open path."[23]

In Bentham's statement, two opposing requirements appear: security and openness or, as they are also known, property and competition.[24] It is through fulfilling these two opposing requirements that a free market achieves it success. Property and competition shape a free market by both liberating and constraining the actions of market participants.[25] In so doing individual profit motive is directed towards the "interests of all concerned."[26] The security of property liberates the property owner and constrains the world. Property provides the owner security from theft so that they can focus on productive business enterprises. Property constrains others by preventing theft.[27] In contrast, competition liberates the world and constrains the property owner. Competition

---

[18] *Id.* at 46. Cite Baumol noting blemishes on record on free markets. "An economy is a market economy when the distribution of economically important resources takes place on the basis of bilateral exchange rather than central reallocation."Jeremy Waldron, What Is Private Property?, 5 Oxford J. Legal Stud. 313, 343 (1985).

[19] *See* Lionel Robbins, The Theory of Economic Policy in English Classical Political Economy 3 (1961). Here Mill refers to both James Mill and his son John Stuart Mill.

[20] *Id.*

[21] *Id.* at 19.

[22] Cite Robbins on Bentham and the civil service.

[23] Robbins, *supra* note xx at 12 (quoting Bentham, 3 Manual of Political Economy 35). As to Adam Smith on such laissez faire views see *id.* at 7.

[24] Felix S. Cohen, Dialogue on Private Property, 9 Rut. L. Rev. 357, 370 (1954)(agreeing with "Ely's statement 'By property we mean an exclusive right to control an economic good'[.]") ; Jeremy Waldron, What Is Private Property?, 5 Oxford J. Legal Stud. 313, 327 (1985)(arguing that private property is essential for a free market: "[c]learly, the existence of a private property system giving owners a power of alienation which they can exercise at will is a necessary condition for a capitalist economy and thus the abolition of private property would cripple capitalism decisively.")

[25] *See* Kenneth G. Dennis, 'Competition' in the History of Economic Thought 100 (1977).

[26] *Id.* at 15.

[27] *See* Cohen.

preserves the privilege[28] for market participants to emulate and compete against existing business enterprises. Competition constrains the property owner as they must (if they still want to make a profit) adjust their market behavior in response to competition from others.

By adjusting the actions of market participants, property and competition together produce the free market. To better understand these two concepts, the following will further outline competition and property. Most importantly, the discussion will highlight that these two concepts, though they seemingly oppose each other, are actually compatible. Not only is traditional property consistent with the ideals of competitive free markets, property is seen as an essential feature of free markets. "[F]ree market" is a term used inter-changeably with "private-property market."[29] Property imposes duties while competition mandates privileges.[30] But there will be no conflict between them as long as the actions that need to be barred by property are not the same actions needed for competition. Thus the following discussion must distinguish the types of actions that property prohibits and those that competition requires.

The following discussion breaks the analysis into three parts. First, the discussion explores the theoretical goals of private property in a free market. Then, the article explores the needs of competition in a free market. Then, the article explores how, as a practical matter, property achieves both of these goals. This then sets the stage for the applications of these lessons to intellectual property and particularly to patents.

a. Free Markets & Security

As the name implies, a free market puts particular emphasis on freedom. A central theme is that businesses are free to choose their preferred business enterprises and consumers are free to choose what products to buy. Such emphasis on freedom suggests government intervention only where government backed property rights and regulations are needed.[31] But this does not mean that the government's role is not important and critical to a free market. Absent critical government 'regulation', the hope for a free market economy is but a dream. As argued by Lionel Robbins, "[w]ithout Hume's theory [on property], or something very much like it, the classical theory of self interest and the market would remain completely in the air. Not only good society, but the market itself

[28] Privilege here is used as used by Hohfeld as the jural opposite of a duty.

[29] Armen Alchian & William R. Allen, Exchange and Production at 18 (1977). Economic historians have argued that the evolution of property lifted Europe out of the Dark Ages. The Rise of the Western World: A New Economic History 18 (1973) Douglass C. North, Robert Paul Thomas. Economist's praise for private property has often overflowed beyond its direct economic impact. Milton Friedman declared that "you cannot have a free society with private property" Tom Bethell, The Noblest Triumph Property and Prosperity Through the Ages 9 (1998). Freidrich Hayek similarly emphasized that "private property is the most important guaranty of freedom." F.A. Hayek, The Road to Serfdom 115 (1994).

[30] Cite to Hohfeld.

[31] See Jeremy Bentham, Theory of Legislation 94 (1931) ("There is always one reason against every coercive law, and one reason which, were there no other, would be sufficient by itself: it is, that such a law is restrictive of liberty. Whoever proposes a coercive law, ought to be ready to prove, not only that there is a specific reason in favour of this law, but also that this reason is more weighty than the general reason against every law.")

is an artifact [of private property]."[32] Private property is essential to the functioning of a free market economy.

Traditional property has been justified under many different theories. Today, the predominant justification is utilitarian and such justifications can be traced back to the 1700s. Two objectives have been emphasized. First, property, especially its alienability, allows scarce resources to be transferred to the highest valued user of the resource. Second, through the protections afforded by property, productive business enterprises can flourish. As Merrill and Smith relate, property allows people to focus on "planning, effort, and investment"[33]:

> [e]choing Hobbes's famous argument, Blackstone argued that property rights are important because they establish a basis of security of expectation regarding the future use and enjoyment of particular resources. By establishing a right to resources that holds against all the world, property provides a guarantee that persons will be able to reap what they have sown. As Blackstone put it, '[i]t was clear that the earth would not produce her fruits in sufficient quantities, without the assistance of tillage: but who would be at the pains of tilling it, if another might watch an opportunity to seise upon and enjoy the product of his industry, art, and labor'"[34]

In this view, property rights allow people to "reap where they have sown" without the paralyzing fear that someone will intentionally plunder or inadvertently ruin their investment.

For the purposes here, private property is best understood not by what it allows property owners to do but rather by the actions that it prohibits in others. In other words, for this discussion, the article focuses property's power to exclude others from specific acts.[35] Following the suggestions of Felix Cohen, "[p]rivate property is a relationship among human beings such that the so-called owner can exclude others from certain activities or permit others to engage in those activities and in either case secure the assistance of the law in carrying out his decision."[36]

Similar sentiments were associated with Classical English Economists. For them, property excluded others from acts such as theft and vandalism. "For Hume, the rules of justice are the rules that determine the stability of possessions, including the rules which give rise to ownership and the rules which govern transference. Anything that undermines the stability of possessions, such as theft, is therefore unjust."[37] In other words, for Hume property provided its benefits by prohibiting certain destabilizing actions by others. Hume argued that "[f]ew enjoyments are given us from the open and liberal hand of nature; but by art, labour, and industry, we can extract them in great

---

[32] *Id.* at 57.
[33] *See* Carol A. Rose, *In the Shadow of the Cathedral*, 106 YALE L.J. 2175, 2188 (1996).
[34] Thomas W. Merrill & Henry Smith, *What Happened to Property in Law and Economics?*, 111 YALE L.J. 357, 361-62 (2001)(quoting Blackstone at *7).
[35] Felix S. Cohen, Dialogue on Private Property, 9 Rut. L. Rev. 357, 371 (1954)("Then can you say that the kind of power to exclude that is essential to the institution of property is the power that exists when we can count upon agencies of the state to help us to exclude others from some activity?")
[36] Felix S. Cohen, Dialogue on Private Property, 9 Rut. L. Rev. 357, 373 (1954).
[37] A. T. Nuyen Hume's Justice as a Collective Good Hume Studies Volume XII, Number 1 (April, 1986) 39 - 56. At 43

abundance. Hence the ideas of property become necessary in a civil society."[38] Similarly, Adam Smith argued that protection of property was one of the three roles for government.[39] And Jeremy Bentham, perhaps most emphatically of all, emphasized that property provides security[40] so that we can confidently plan and invest in socially beneficial projects.[41] Property rights prevent others from taking actions that might destabilize these undertakings.[42] Bentham argues that lack of property (lack of security) impacts more than just the person who is accosted. Lack of security in property will paralyze industry and force us to "exist from day to day" rather than planning and investing in future industry.[43] Insecurity "deaden[s] … Industry."[44] Thus for Bentham, and the other Classical Economists, a central purpose of property was to protect business enterprise from theft. He argued that "[l]aw does not say to man, Labour, and I will reward you" rather "it says: Labour, and I will assure to you the enjoyment of the fruits of your labour – that natural and sufficient recompense which without me you cannot preserve; I will insure it by arresting the hand which may seek to ravish from you."[45]

Both Blackstone and Bentham, in this instance, agree that property enables people to reap where they have sown or similarly, allows them to enjoy the fruits of their labor. By assuring us that activities like vandalism and theft are prohibited, property rights enable us to explore market opportunities that we would others assume to be unprofitable. The exclusive prohibitions of property are directed at those actions that stop enterprising individuals from undertaking beneficial business ventures. In most business ventures involving tangible goods this can be accomplished by preventing both theft (physical taking of goods) and vandalism (physical destruction of goods). These two activities, especially theft, if left unchecked, have the potential to stop all business activity. If a business person knows that nothing prevents the fruits of their business from theft, then they would never undertake the venture. By preventing theft and vandalism, property stops this paralyzing dynamic. In so doing, it opens the door for all manner of new business opportunities, and by exposing those businesses to a competitive environment, the ensuing private-property market relatively efficiently allocates our scarce resources to productive ends. Or more eloquently, it is through security and its immense social

---

[38] *Id.* at 52 (quoting Hume vol ii p. 183)

[39] Lionel Robbins, A History of Economic Thought 152 (1998).

[40] Jeremy Bentham, The Theory of Legislation 109 (1931) ("We have now arrived at the principal object of the Laws: the care of security. This inestimable good is the distinctive mark of civilization: it is entirely the work of the laws. Without law there is no security; consequently no abundance, nor even certain subsistence. And the only equality which can exist in such a condition, is the equality of misery."); *see also* Carol Rose, Property and Persuasion 3 (1999)("[As] expressed by the eighteenth-century philosopher Jeremy Bentham: property is designed to do something, and what it I supposed to do is tap individual energies in order to make us all more prosperous."); *see* Richard Posner, The Economic Analysis of Law 36 (5th ed 1998)(describing this rationale as the dynamic analysis that "has been well known for hundreds of years").

[41] Socially beneficial in this sense means projects that stock the store shelves with products that are in demand.

[42] *See* A. T. Nuyen Hume's Justice as a Collective Good Hume Studies Volume XII, Number 1 39 (April, 1986) at 43 ("In his Enquiry Concerning Human Understanding, Hume defines injustice explicitly as 'a violation of property.' Justice, for Hume, is observation of the rules designed to promote the stability of property. Just actions are those that are in conformity with those rules.").

[43] *Id.*

[44] *Id.*

[45] Jeremy Bentham, The Theory of Legislation 110 (1931)

benefits that led Bentham to declare that the law of property is "the noblest triumph of humanity over itself."[46]

But as will be explored more fully below, allowing us to reap where we have sown is suitable as a rough guide but, under closer examination, it is too broad. It may be tempting to equate property with a broad prohibition on free-riding and all too often people have done so. Their argument is that if property allows me to reap where I have sown, then property should be directed at preventing others from benefiting (reaping) anything associated with my labors. But such a conclusion would not be accurate in a free market economy. This article is about designing a free market property system and, as described below, competition can be viewed as a type of desirable free riding. Thus we must still discuss competition before we are ready to fully describe the type of security property should and should not provide. Property certainly allows us to reap most of what we are trying to sow but in critical ways, especially in a competitive free market, we do not reap absolutely everything.

b. Free Markets & Competition

The above discussion certainly underscores the reverence economists feel towards property, but if there was something that they hold in the same or higher regard, it would be competition. In order for a free market property system to function, the exclusive rights of proeprty must not interfere with competition. Competition is a central feature of a free market and, through competition, free markets manage their allocation of resources. In Adam Smith's famous words, competition creates "an invisible hand" that guides the actions of business person and competitors even though they are both intent "only on [their] own gain."[47] Competitors are free to "emulate"[48] other business enterprises[49] and through the dynamic of leaders and followers a competitive system guides all business effort towards the "interests of all concerned."[50]

Before proceeding, we should pause to define this all-important concept. Perhaps due to its centrality, the concept of competition has had many meanings. For some it has a precise meaning relating to perfect competition. In that context, competition defines the end point of rivalrous competition where prices are forced to marginal cost. This important but narrow definition of competition is not the one used here. Instead, as used here, competition refers more generally to competitive business conduct rather than the

[46] Jeremy Bentham, Principles of the Civil Code, in Property, Mainstream and Critical Positions, 53 (ed. C.B. Macpherson Toronto: Univ. of To Press 1978).
[47] *Id.* at 11 (quoting Adam Smith , Wealth of Nations p. 421)
[48] *See* Kenneth G. Dennis, 'Competition' in the History of Economic Thought 44 (1977).
[49] *Id.* at 100 (describing both the "freeing and constraining" effects of competition).
[50] *Id.* at 15.

long term economic equilibrium that results from that conduct.[51] But fully articulating what is 'competitive business conduct' is not trivial.[52]

For this article, a competitive environment (necessary for a free market property system) will be one where barriers to entry are minimized.[53] Two types of competitors are worth considering: unintentional competitors and intentional competitors. A free market property system allows for both types. Unintentional competition occurs when a business enterprise encounters competition from a pre-existing business or from a later arriving business created independently from the business enterprise. For example, a farmer (at one time a relatively advanced business model) faces competition from hunter-gatherers (a pre-existing business model). Similarly, if a first business person starts farming, that initial farm may face competitive pressure from others who independently undertake similar business models. This result makes sense as these activities can hardly be said to be free-riding off the initial farmer's efforts. These are examples of what I am calling unintentional competition and, despite the fact that such competitors will generally reduce the available profits for a business enterprise, traditional property, though preventing theft does not restrict such competition.

Moreover, free markets require and encourage an even tighter form of competition; they in fact encourage a specific kind of free riding. Competition in part derives its efficiencies by directing capital resources into new profitable industries. As described by Lionel Robbins, a central part of the Classical Economist's 'System of Economic Freedom' was the freedom of producer's to maximize the return of their labor and capital: "if the supplies available in any market can command a price which brings to the producers gains higher than they can get elsewhere and if markets are free, there is an incentive for more producers to move in, withdrawing resources from other markets where the value of what they produce is less and augmenting the supply where the value of what they produce is more."[54] This is what I have termed intentional competition: seeing the profits made by another, a producer can retool and follow in the footsteps of the profitable enterprise. This is a type of free riding. The initial business person took the risks to uncover a profitable business model and competition allows and encourages others to follow that initial lead. Ultimately such competitive entry drives profit down to average cost.[55] Underscoring this idea, the term competition was at one time

---

Paul McNulty, Economic Theory and the Meaning of Competition, The Quarterly Journal of Economics, Vol. 82, No. 4, (Nov., 1968), pp. 639-656 (quoting F. A. Hayek, The Constitution of Liberty (Chicago: University of Chicago Press, 1960), p. 265)("Since, as Hayek has rightly noted, "the law cannot effectively prohibit states of affairs but only kinds of action," a concept of economic competition, if it is to be significant for economic policy, ought to relate to patterns of business behavior such as might reasonably be associated with the verb "to compete." That was the case with the competition which Adam Smith made the central organizing principle of economic society in the Wealth of Nations.")

[52] Paul McNulty, Economic Theory and the Meaning of Competition, The Quarterly Journal of Economics, Vol. 82, No. 4, (Nov., 1968), pp. 639-656 at 640.("There is a striking contrast in economic literature between the analytical rigor and precision of competition when it is described as a market structure, and the ambiguity surrounding the idea of competition whenever it is discussed in behavioral terms.")

[53] See the discussion in the next section, for property as preventing theft. Property is in some sense a barrier to entry. It prevents a very specific type of business model (i.e. theft) but it should do very little else.

[54] Lionel Robbins, The Theory of Economic Policy in English Classical Political Economy 15 (1961).

[55] As related by Robbins, Adam Smith argued that "to narrow the competition, is always the interest of the dealers," Robbins at 21.

synonymous with emulation.[56] It is here that we find that closest conflict between property's need for security and competition's need for freedom. Intentional competition not only reduces the profits of the initial business enterprise but it does so through what could be viewed as free riding, emulation, or copying. Here competitors can in some sense reap where an initial competitor has sown.

For example, imagine that I expend resources trying to determine what type of restaurant to open in downtown Ithaca. I ultimately determine that Ithaca consumers want and are willing to pay for barbequed ribs and the like. I can buy a piece of real property and build the restaurant and fill it with all the personal property needed. Imagine I open the doors and I am soon making a huge profit with lines that extend out the door every evening. Traditional property keeps others from occupying my land or walking away with my goods but nothing stops someone from noticing that I have proved that Ithacans are hungry for barbeque and then, following my lead, opening a competing restaurant. In fact assume this competitor is actually a much better restaurant manager (even if I am the better restaurant visionary) and he eventually puts me out business. In my eyes that competitor was obviously free riding on the market information that I produced at great risk and cost. Despite the seeming unfairness, traditional property does little to prevent this. This type of competition is encouraged. Despite the free riding and the seeming unfairness that results, economists and other supporters of free markets see this type of competition as necessary and beneficial. Thus, some types of free riding are prohibited (theft) and other types are permitted (competition). We must endeavor to articulate a clear distinction between competitors and thieves.

As outlined above, theft has the ability to stop any business enterprise. Where there is unfettered theft, business opportunities cannot hope to make a profit. Desirable competition is different. Competition does drive down profits down but in most cases it will lead to zero profits only in equilibrium.[57] An initial business faced with competition still has the potential to make (in aggregate) abnormal profit as they have a first mover advantage and ultimately all entrants (if they made the correct business decisions) can recover at least their fixed costs and opportunity costs.

Therefore, it seems appropriate to confine theft to a relatively narrow set of actions. Theft includes only those acts that eliminate the ability for economic actors to recover their fixed costs independent of how well and efficiently they have commercialized their product.[58] For traditional property, theft then translates into physical stealing of goods.

---

[56] *See* Dennis *supra* note XX at 44.

[57] It is even too broad to label as thieves all those that force the initial farmer to sell at a loss (i.e. at a price below their average cost). It may well be that the initial farmer picked a profitable area to explore but unfortunately chose a particularly inefficient or costly way of exploiting that area. Thus although it again may seem unfair to some degree, "[t]he competitive process rewards efficient producers and penalizes inefficient ones. Without this process, there is less assurance that efficient firms will emerge and survive." Thomas DiLorenzo & Jack High, *Antitrust & Competition, Historically Considered*, 26 Economic Inquiry 423, 428 (July 1988). *See also* Jack High, Bork's Paradox: Static vs. Dynamic Efficiency in Antitrust Analysis, Contemporary Policy Issues, 21, 28 (Winter 1984-1985)("Businessmen whose decisions do not compare well with others will have a harder time attracting funds. Their control over deciding where to employ resources will be reduced as compared with the more successful. There is a selection process at work that fosters specialization in entrepreneurship, with the more successful rising to the top. Specialization in entrepreneurship is one of the main reasons the enterprise system is so efficient.")

[58] Recall that in my sad restaurant example I was driven out business because I couldn't run a business as efficiently as my competitors.

If thievery is present then no entrepreneur can hope to make even a normal profit no matter how good they are at business and they will be unlikely to undertake such business enterprises.[59] By limiting property's exclusive reach to theft and other physical destruction like vandalism, property leaves ample room for healthy competition.

For traditional property, delineating a practical demarcation between theft and competition is not too hard. The object of theft is generally very different than the object of competition. In the typical business enterprise that is enabled by traditional property, the focus of the enterprise is the creation of some physical tangible object. Theft occurs when someone physically steals those tangible objects. Thus, traditional property prevents physical theft by preventing others from gaining possession of and carrying away the central focus of the business enterprise.

In contrast, the objects needed by competitors are generally not tangible. Instead, competitors are looking to glean information. What products are being sold? How profitable are they? Even with sole and despotic dominion over the four corners of a manufacturing plant, this type of competitive information spills over into the market and competitors can take advantage of it. Partly traditional property can manage to easily prevent theft while allowing competition because thieves require a physical spillover while competitors only need an information spillover.

c. Implementation: Choosing an Efficient Property Rule

So far the discussion has been theoretical. The analysis has focused on the purpose of property and it has yet to answer how, practically, society could implement that purpose. If we aim to prevent theft and vandalism, society could simply outlaw theft and vandalism but we don't do just that. As practically implemented, real property does not just prevent specific acts. It is instead a rule that can be described as

> "To the world:
> Keep off X unless you have my permission, which I may grant or withhold.
> Signed: Private citizen
> Endorsed: The state"[60]

Thus, even though as a theoretical matter we want to prevent theft and vandalism, we bind the world with the duty to "keep off X." In the case of real property X is the four corners of some property; owners are given "sole and despotic dominion" over the four corners of their plot. By preventing others from entering onto the land, real property achieves its purpose of preventing theft and vandalism. Of course such a rule excludes more than just theft and vandalism. Even if I will do no harm to the owner, I cannot walk across someone else's land.

Thus, the practical implementation of real property is over-inclusive. The reason this rule is chosen lies with administrative costs. In order for property to work we need to consider administrative costs incurred by citizens in their every day attempts to abide by

[59] Normal profit here means recovering all costs including opportunity costs.
[60] Felix S. Cohen, Dialogue on Private Property, 9 Rut. L. Rev. 357, 374 (1954).

the property rule, costs incurred by property owners trying to monitor the property rule, and the costs incurred by society in adjudicating conflicts over the property rule.

The traditional real property rule, though over-inclusive, is quite efficient to administer. When I walk home, I can very quickly figure out where the four corners of other people's property boundaries are and I can easily keep my self in the clear.[61] Likewise, property owners can easily see when others have transgressed their property.[62] Similarly, it is relatively easy to adjudicate cases of trespassing: the court simply determines if the defendant was within the four corners of property or not. Thus, even though it may prevent certain acts that do no harm to the property owner, property nonetheless prevents these acts because of the higher administrative that would be incurred by a more tailored rule.

Ultimately then we can draw an important lesson from this discussion of the interplay between competition and private property. A free market system with both private property and competition can exist if two conditions are met. First, the actions of thieves must be distinct from the actions of competitors. If this condition holds, then as a theoretical matter we could forbid the actions of thieves while allowing those of competitors.

Second, even if, as a theoretical matter we can identify some distinction, we must then choose an efficient property rule that effectively prevents theft while still allowing competition. In this regard we can be guided by a simplifying assumption. As competition requires the world to be free to compete and emulate, all things being equal we should choose the minimal property rule that prevents theft. As evidenced by the rule chosen in real property, the only rationale that could lead us to choose a broader property rule would be administrative efficiency. Ultimately, after deciding on a property rule, if that rule as implemented protects against theft while still allowing competition, then we have implemented a property system that enables a free market. With these lessons in mind, the article now turns to intellectual property and particularly to the patent system.

II. Anti-Competitive Exceptionalism in Patent Law: The Root of the Criticism

The patent system exists to solve the problem of piracy that plagues many types of inventions.[63] It is generally a story that sounds very similar to story about theft for traditional property. In a regime of complete freedom, inventors will likely not invest resources to develop new inventions because copyists could easily pirate their invention. As the copyists only need to recoup the presumably low reproduction costs, they can undercut the original inventor. This rationale justifies the granting of exclusive rights to the extent necessary to protect inventors from the fear of pirates.[64] As patent law tries to

---

[61] *See* Robert Ellickson, Property in Land, 102 Yale L. J. 1315, 1327 n. 38 (1991)(describing self-control as "the cheapest method of social control")

[62] *See* Robert Ellickson, Property in Land, 102 Yale L. J. 1315, 1327 (1991)(describing the "[g]enius of individual land ownership … is that detecting the presence of a trespasser is much less demanding than evaluating the conduct of a person who is privileged to be where he is.") .

[63] Mark A. Lemley, *Ex Ante Versus Ex Post Justification for Intellectual Property*, 71 U. CHI. L. REV. 129, 129-130(2004)[hereinafter Lemley, *Ex Ante*].

[64] Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1031 (2005) ("Intellectual property rights … are granted only when - and only to the extent that - they are necessary to encourage invention.") [hereinafter Lemley, *Free Riding*]

solve the problem of piracy, it is seen to be introducing other social costs.[65] The three most noted of these secondary costs are generally referred to as the monopoly dead weight loss costs, dynamic innovation costs, and rent-seeking costs.[66]

First, there is the dead weight loss which is most often associated with patents as monopolies.[67] By definition, patents allow the patentee to price above marginal cost. Only by pricing above marginal cost, can the patentee hope to recover the fixed costs of research and development. Second, there is the social cost associated with inhibiting future developments. As all invention is based in part on previous inventions, the grant of exclusive patent rights may retard the creation of new improvements.[68] Mark Lemley has referred to this as the "dynamic cost." Third, there is the social cost of wasteful racing to invent. Like the wastefulness of overeager treasure hunters, in trying to win the patent race, inventors "dissipate any social surplus associated with an invention."[69]

All of these costs are linked to a common root: competition.[70] As Mark Lemley has argued, "free competition is the norm. Intellectual property rights are an exception to that norm…."[71] They are an "an artificial deviation from competition…."[72] Patents are seen as "limited islands of monopoly" surrounded by a "free-enterprise economy dedicated to competition."[73] This exceptionalism has been called the "basic economic inconsistency" of the patent system.[74]

In the traditional private property system discussed earlier we generally do not worry about these costs. Traditional property does not cause dead-weight losses due to the property owner's monopoly. We do not worry about rent-seeking or dynamic effects. In a competitive system there are no long term abnormal profits and as substitutes are available few improvements are prevented by uncooperative property holders.

---

[65] This discussion is adapted from Oskar Liivak, *Maintaining Competition in Copying: Narrowing the Scope of Gene Patents*, 41 U.C. DAVIS L. REV 101 (2007).

[66] *See* Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. L. Stud. 247, 249 (1994). *See also* Lemley, *Free Riding* at 1058-1059.

[67] *Id.*at 247-48.

[68] *See* Cincinnati Car Co. v. New York Rapid Transit Corp., 66 F.2d 592, 593 (2d Cir. 1933) (J. Learned Hand)("It is of course possible to imagine an invention for a machine, or composition, or process, which is a complete innovation, emerging, full grown, like Athene, from its parent's head. . . . Such inventions are however mythological. All have a background in the past, and are additions to the existing stock of knowledge which infringing articles embody along with the invention."); Lemley, *Free Riding*, *supra* note XX at 1060 ("Inventions are not created in a vacuum. They build on existing technology and ideas.").

[69] John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 440 (2005). *See also* Yoram Barzel, *The Optimum Timing of Invention*, 50 REV. ECON STAT. 348 (1968); Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305 (1992).

[70] The only cost that defies this broad category is the rent-seeking fear about over investment in redundant upfront fixed costs. In many instances, competition increases this redundant upfront costs rather than reducing it.

[71] Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1031 (2005)

[72] Mark A. Lemley & Brett Frischmann, *Spillovers*, 107 Colum. L. Rev. 257, 267 (2007).

[73] Machlup iii (foreward by Senator John C. O'Mahoney).

[74] Machlup iii (foreward by Senator John C. O'Mahoney) ("This inconsistency [between patents and free competition] has been rationalized in various ways. It is pointed out that the patent monopoly is limited both in scope and time; that this monopoly is more than balanced by the inventive contribution; that patented inventions are not actually monopolistic in fact because they are subject to competing alternatives and substitutes; that such monopoly as does result is unobjectionable because the public is deprived of nothing it had previously possessed; and so on. Such explanations may render the conflict less serious, but they do not resolve it.").

Competition reduces dead weight loss and abnormal profits are generally transient as entrants drive down price and expand output. Noting that patent law's costs have a common root is an opportunity. A patent system that is consistent with competition automatically addresses many of the costs that are at the heart of most criticisms of the modern patent system.[75] The article now turns to consider just such a system.

III. A Competitive Patent System

For some, traditional property is an unlikely place to look for a competitive model for intellectual property. In fact, some have argued that over-reliance on property analogies causes many of the recent problems with the patent system; for them, a real property analogy certainly is not the preferred way to reform patent law.[76] Any discussion of traditional property quickly brings up Blackstone's too quickly quoted[77] characterization

[75] The only cost that defies this broad category is the rent-seeking cost caused by over entry and over investment in redundant upfront fixed costs. In many instances, competition increases this redundant upfront costs rather than reducing it. Oddly though economists have been well aware of the waste that accompanies such over entry, and yet a free market economy does little to address that concern. The one exception is the area of natural monopolies. *See* Duffy, The Marginal Cost Controversy and Duffy, Rethinking Prospect Theory.

[76] As Stewart Sterk has argued, real property analogies have been employed precisely for their rhetorical weight by association with traditional property. Sterk, 83 U Wash L Rev Q 417, 418 (2005)("One might surmise, then, that introduction of the property label into copyright and patent was not accidental. Supporters of expanded copyright and patent protections invoked property terminology to seize rhetorical advantages not otherwise available.") Likewise Mark Lemley fears that the real property analogies are used as a one way ratchet that always increases control by patent owners. Lemley, Free Riding 1032 ("Protectionists rely on the economic theory of real property, with its focus on the creation of strong rights in order to prevent congestion and overuse and to internalize externalities. They rely on the law of real property, with its strong right of exclusion. And they rely on the rhetoric of real property, with its condemnation of "free riding" by those who imitate or compete with intellectual property owners. The result is a legal regime for intellectual property that increasingly looks like the law of real property, or more properly an idealized construct of that law, one in which courts seek out and punish virtually any use of an intellectual property right by another."). As a result, Lemley concludes that "treating intellectual property as 'just like' real property is a mistake as a practical matter." Lemley, Free Riding 1032. But Lemley does make a distinction between real property as an institution and arguments banning all free-riding. He notes that "it might be possible to rehabilitate the property analogy by disconnecting the concept of property from the arguments against externalities and free riding." Lemley, Free-Riding, 1069. Even though Stewart Sterk finds the real property analogy incorrect and harmful, he concludes that "[i]t is far too late to expunge the rhetoric of property from dialogue about copyright." Sterk, 83 U Wash L Rev Q 417 (2005). Lemley also agrees on this last point: "[w]e may have no choice" in stopping property analogies for copyright or patent. *See* Lemley, 1069. I would agree and as this article emphasizes, a clear analogy between traditional property and intellectual property must mean a balanced intellectual property regime that embraces the variety and efficiency forced by competition.

[77] *See* Albert W. Alschuler, *Rediscovering Blackstone*, 145 U. Pa. L. Rev. 1 , 30 n. 175 (1996) and Carol M. Rose, *Canons of Property Talk or Blackstone's Anxiety*, 108 Yale L. J. 601 (1998). Alschuler notes that "Blackstone's most frequently quoted paean to property is: There is nothing which so generally strikes the imagination and engages the affections of mankind as the right of property or that sole and despotic dominion which one man claims and exercises over the external things of the world in total exclusion of the right of any other individual in the universe. As Frederick G. Whelan has observed, this statement is misleading when quoted out of context, as it almost invariably is. Blackstone, in fact, noted many situations in which landowners of his era had no right to exclude others from their property. For example,

that property grants the owner "sole and despotic dominion" over the object of property. As Mark Lemley argues, "[a]sk a layperson, or even many lawyers or judges, what it means that something is my property, and the general answer is along the lines of 'you own it, so you and only you can use it.'"[78] These conceptions of property stress control and indeed exclusive control is an important part of property.[79] But as suggested above, property and its role in a free market is not so one sided. Property does provide security but it does so while still allowing competition.

In order to create a free market in intellectual creations like inventions, we need to define theft (which in the IP domain we will call piracy) and competition. A competitive patent system must protect against pirates and yet will still allow for competition.

a. Providing Security: What is IP Piracy?

Thus following the lead of traditional property, patent law must focus on providing security to inventors such they will invest the resources needed to create and commercialize their inventions. For traditional property, the worry was over both theft and vandalism. In the case of an invention, there is no counterpart for vandalism but there is a counterpart to theft. As the inventor plans on trying to recoup her investment by selling the invention, a copyist that pirates (i.e. takes, copies, and then sells) the invention destabilizes the inventor's business model. Considering the mouse trap example, even though my own use of my idea is not hurt by other users that copy my mousetrap design, it is clear that when others use or worse sell my design, then my ability to sell it myself in a market is hurt if not foreclosed. By undercutting the inventor, a pirate can make it impossible for the inventor to recoup her upfront costs. Foreseeing this scenario, the inventor would likely not invest. The purpose of patent law, as was the case for traditional property, is to provide the necessary security against this type of piracy. The notion that patents provide security for creating and then commercializing inventions is not new. Various other theories of patent law have pushed similar ideas.[80] The difference here is that, though I agree with the focus of existing theories that emphasize both creation of an invention as well as its commercialization, I also emphasize the need to allow others to compete against the initial inventor. In other words, I would argue the patent system needs to provide protection against pirates but it should not do so at the expense of reducing competition.

Just as with the previous story of the would-be farmer paralyzed by the fear of theft, here is the story of the would-be inventor paralyzed by fear of pirates. Farming was an obvious business opportunity with the potential for huge benefits for society. From all

---

anyone was entitled to enter private property to destroy "ravenous beasts of prey" like badgers and foxes, and the poor were entitled to enter agricultural land to glean leavings following a harvest." *Id.*

[78] Lemley, Free-Riding at 1037.

[79] *See* Henry Smith discussing Exclusive Rights and Traditional Property.

[80] *See* Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J. L. & Econ. 265 (1977); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 Minn. L. Rev. 697 (2001); John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 440 (2005). The difference between those theories and the one proposed here is that here even rather narrow patent claims can (in theory) provide enough security. Previous prospect and commercialization theories emphasize Schumpeterian innovation through broad claim scope. Here, this article emphasizes the benefits of competition through narrow claims.

the evidence so too is invention.[81] Absent a patent system, would-be inventors might recognize the consumer demand for some new invention but, without preventing piracy, the would-be inventor would not invest the upfront costs needed to create and then commercialize the invention. Thus, an effective patent system must (at minimum) prevent others from copying the embodiment of the invention that is being sold on the market by the inventor.

b. Distinguishing Competition from Piracy

Having considered piracy, we must consider the needs of competition. In the discussion of traditional property, unintentional competition focused on two types of competitors: preexisting market participants and those that independently enter after the initial business enterprise. In the intellectual realm then patent claims should not interfere with preexisting technologies that could compete with the new invention and patent claims should not interfere with technologies that were developed wholly independent from the initial invention. These two types of competitors do not free ride off of the inventor and, as such, they do not destabilize an inventor's decision to invent and commercialize. In fact, as it is being designed to be integrated into a broader free market economy, inventor should expect their business ventures to be exposed to competition.

For intentional competition, we must proceed carefully. In order for competition to work, competitors must be able to be guided to and then enter markets created by new profitable inventions. As before, these competitors do free ride to some extent on the information created by the inventor. Here then is the crux of the issue. Piracy is copying for either private use or for selling while desirable intentional competition requires emulation. The difficulty then lies in trying to disentangle acts that are bad copying (piracy) and acts that are good emulation (competition).

To make matters worse, the patent system is saddled with another problem that is simpler in traditional property. As discussed above, for traditional property, a relatively easy distinction can be made between tangible invasions of the property and intangible spillovers. Traditional property prohibits physical invasions of the four corners of the property while it generally allows competitors to use most intangible externalities spillovers.[82] This is true even if the intangibles that are escaping are clearly items that have been created by the property owner. Traditional property takes advantage of this distinction. For patents, no such easy dividing line exists. The objects of piracy and the objects of competitors are both intangible information. As a result greater care must be taken to delineate between piracy and competition.

If I invent a new mousetrap and if another buys one of my mouse traps and then begins mass producing and selling copies of it, then this is piracy. The pirate is free riding on the labors that I invested in inventing the new design. If instead someone just notes that my mousetraps are flying off the shelves and they decide to enter the mousetrap market with their own design then this is competition. They are free riding on

[81] See *supra* note 1.

[82] *See* DuPont v. Christopher, 431 F.2d 1012 (5th 1970) (holding that spy photos taken of a DuPont plant from the air was an improper means of uncovering DuPont's trade secrets but photos taken from the road would not have been).

the market information that I produced. But as with traditional property, patent law should not concern itself with such free riding. In fact, competition requires that such free riding occurs. But the hard question is where to draw the line? How much, in addition to basic market information, can a second arriving inventor use without becoming a pirate? Where does a competitor follow to closely and become a pirate? As an economic matter, we can be guided by considering fixed costs. Piracy is so damaging because pirates do not incur the fixed, upfront costs of producing the invention. They can easily undercut the initial inventor and as a result they kill the drive to invent. In contrast, competitors generally might be guided by the initial inventor but if they incur their own fixed costs in coming up with their substitute invention, then they generally cannot easily undercut the initial inventor. As a result, competitors unlike pirates just reduce profits for initial inventors but they do not prevent business enterprise altogether.

c. Implementing a Practical Patent Claim

The would-be inventor doesn't need very much from patent law. The inventor simply needs assurance that piracy will be prevented. Piracy is the selling of unauthorized copies of the invention.[83] To prevent such piracy, patent law must at a minimum give the inventor exclusive rights over copies of the particular embodiment of invention that they plan on marketing. In other words, patent law just needs to prohibit others from copying another's invention and then either using it or selling it. To prohibit such piracy, a model patent claim for a competitive patent system would allow the inventor to exclude the world from making or using "copies of my specific machine."[84]

By narrowly defining the patent grant to prohibit copying the specific machine, patent law can still give security. With such a claim there is room for unintentional competition. Pre-existing technologies are not impacted by this claim and a patent holder will face competition from pre-existing technology. Similarly, as written, a patent holder will face competition from independent inventors. The claim only prevents others from making copies of the inventor's invention; it does not prevent others from independently inventing it.[85]

Furthermore, the claim allows competitors to generally follow the lead of the initial inventor. Thus, the making and using of a related but different apparatus would not be prohibited. If a competitor does not copy the specific apparatus but instead copies the principle employed by the apparatus in building a better machine, then, as with the harsh results discussed for traditional property, patent law should not prohibit these actions even though there is a sense of unfairness. Ultimately, society benefits from the better machine. Thus, this model claim seems to provide many of the needed attributes for a competitive patent system.

Now we consider the administrative costs of such a claim. In discussing a traditional property rule, we considered the self enforcement costs, the monitoring costs,

[83] This includes making a private copy for oneself in lieu of buying the product. A great deal of weight is placed on determining what is a "copy." In other words, how much can a competitor follow on the footsteps of the first inventor and how much must they forge their own path. This is the central question.
[84] *See* 35 U.S.C. § 271.
[85] See Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 478-79 (2006).

and the adjudication costs. We concluded that all of these costs are relatively low for traditional property. This is likely not the case for this model. As to adjudication, it is clear that courts would have to deal with the difficult evidentiary distinction between copying and independent invention.[86] And for identical reasons, infringement of such claims may be hard for an owner to monitor. When an inventor sees a competitor performing his patented process or building his patented machine, the inventor cannot easily tell if the competitor simply copied the invention (i.e. infringed) or if the competitor independently created the invention (not infringed). Thus this type of narrow patent claim may have relatively higher costs to monitor and adjudicate.

On the other hand, this proposal lowers administrative costs in other ways. With broad patents especially where there is infringement even for independent invention, researchers need to constantly keep abreast of the high volume of patents that emerge from the PTO. This can be very difficult and costly. With the model claim, the rules are much simpler: if you use your own, independently created work then you are safe; if you rely on the work of others without authorization, then you need to be more careful; if you use too much, then you are infringing. To the extent others rely on their own work, this rule is relatively cheap for the public to self enforce.[87] Without any costly searching I know when I can operate freely and when I need to be more careful because I know when I am intentionally following someone else's lead. Thus, even though this proposal may have higher administrative costs to monitor for infringers and during adjudication, this proposal also may have lower administrative costs with respect to the public's responsibility to not infringe patents.

IV. Is the US Patent System Competitive?

a. Comparing the Competitive System with the Current System

The existing United States patent system already provides for some elements of competition.[88] A prime feature that allows this is the competition between inventors often seen in the concepts of "inventing around" or "designing around" an existing patent's claims.[89] Although patent law curbs blatant piracy and, therefore blocks a particular form of copying, patent law encourages at least some competition. But as the current patent system provides relatively broad claims to an inventor, the type of competition induced by inventing around today's broad claims may not be particularly effective. In other words, potential competitors are forced to stay quite some distance away and as a result they are relatively less likely to apply significant competitive pressure.

Furthermore, and more importantly, today's patent system does not excuse independent invention. Even if a second arriving inventor does not rely at all on a first inventor, the second inventor infringes the first inventor's patent claim. From a reward

[86] See Ty v. Perryman (J. Posner). *See* Douglas Lichtman, Copyright as a Rule of Evidence.
[87] *See* Robert Ellickson, Property in Land, 102 Yale L. J. 1315, 1327 n. 38 (1991)(describing self-control as "the cheapest method of social control").
[88] Again, this discussion is adapted from Oskar Liivak, *Maintaining Competition in Copying: Narrowing the Scope of Gene Patents*, U.C. Davis L. Rev (2007).
[89] *See also* Nuno Pires de Carvalho, *The Problem of Gene Patents*, 3 WASH. U. GLOBAL STUD. L. REV. 701, 733 (2004).

theory such a broad claim is argued to be commensurate with the societal value of the invention. But as far as a competitive patent system is concerned, such a broad patent claim is unnecessary. The only acceptable rationale would be to argue that tailoring a patent claim to exclude independent invention has high administrative costs and therefore despite its over-inclusiveness we still choose to use the broader claim.

Thus, the current patent system provides some competitive pressure but in two fundamental ways today's patent system deviates from the competitive model outlined above. Today's claims are relatively broad; often covering far more than the actual products being sold that embody the invention. Similarly, today's claims do not excuse independent invention.

b. Learned Hand's Patent Reform

Though it may deviate from today's patent system, interestingly, a very similar patent system was already suggested more than fifty years ago by one of the most venerated judges that has ever presided over a patent case. On October 11, 1955 the Senate's Subcommittee on Patents, Trademarks, and Copyrights was in the middle of hearings intending to develop suggestions on ways to modernize the patent system. The hearings included many of the leading experts on patent law. For the afternoon session, the committee made special room to hear testimony from Judge Learned Hand who at the time was 83 years old and had served as a Federal judge for over 46 years.[90] In opening his remarks Judge Hand reaffirmed that the committee was looking for suggestions "to consider [patent law] anew from the bottom up." In order to do that Judge Hand argued that

> [t]hat a great deal of the odium that has surrounded the subject [of patents] is because patents are monopolies. I would like to distinguish between monopolies, for they call copyrights sometimes monopolies. I would like to distinguish between that kind of monopoly and a patent.
>
> You may call them both monopolies. Let me define a monopoly as I will use it now for the moment to the right to prevent anyone from doing what you have done, what you have described in your patent regardless of whether he has needed your disclosure to help him at all.
>
> I don't know if I make that plain. In other words, you may say that when I write, we will say, suppose I wrote a verse, a sonnet, anything you like. You may say that my copyright which prevents you from coming along and copying is a monopoly. All right, if you like; that surely is a very different monopoly, because that is the taking of the fruit of my mind. You are using my brains, you are copying from me. Most people would feel that there was a kind of inherent fairness about that. 'If you are going to use this old boy's brain, what he has done, why you ought to get his consent.'
>
> But it is very different if you are going to say here is X which is a certain collection of steps or processes, he did it first. Even if you reached

[90] The committee took pains to make sure that Judge Hand could speak at length and still catch his 4 PM train back to New York.

> the same result without the least recourse to what he has done, he may stop you.
>
> That is a real monopoly…. I think it would be very profitable in your inquiry, if I may say so, and submit it to you, to get all the light you could possibly get in how that system would work. … I don't think there will be any constitutional difficulty in limiting the monopoly to those who could be shown to have copied what the inventor did.[91]

The patent system that Judge Hand envisioned looks quite similar to the competitive model outlined above. Though this quote says little about the relative breadth of the claim, it is quite explicit about the desire to excuse independent invention. Without mentioning its benefits with regards to competition, Judge Hand was already fifty years ago moving towards such a patent system.

Interestingly, Judge Hand was always aware of the administrative costs of such a system and he was not daunted by them. He acknowledged that such a patent system may have higher enforcement costs. Judge Hand responded by suggested that where a patent holder has not yet established copying but has shown that the defendant was making the exact same thing as the claimed invention, then the burden show be placed on the defendant to prove that they did not rely on the patent for their supposed work.[92]

Similarly, Judge Hand acknowledged the difficulty in determining how much a copier could take and still not infringe. He argued for turning to copyright law for its relatively narrow exclusive rights and he argues that patent law's own doctrine of equivalents allows courts to reach beyond the literal scope of the claims if needed to protect an inventor:

> In the copyright law we say there can be no copyright in ideas, it is only in the expression of ideas. That is a borderline that is really in theory very difficult. It is not so difficult in application as one might think. It would rather be much too hard on an inventor to say all you have got is the exact text of your claim. But that comes up in infringement now anyways. You can't avoid that….[T]he scope within the words you have used [for the patent claim] has never been the actual measure….
>
> Formally, the courts have prescribed [the extent of infringement as] 'substantially the same means producing substantially the same result.' I

[91] Remarks of Judge Learned Hand, See American Patent System: Hearing before the Subcomm. on Patents, Trademarks, and Copyrights of the S. Comm. on the Judiciary, 84th Cong. 114 (1956); see also BENJAMIN KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 45 (Columbia Univ. Press 1967) ("With [Judge Frank's relatively low] originality concept [of simple independent recreation from Alfred Bell v. Catalda] correctly installed as central, copyright appeared as relatively easy to achieve but as correspondingly modest in its pretensions to monopoly. This apparent modesty of the system attracts sympathy, and we find Judge Hand later suggesting to an incredulous patent bar that they make over patent on the model of copyright.").

[92] *See* Remarks of Judge Learned Hand, See American Patent System: Hearing before the Subcomm. On Patents, Trademarks, and Copyrights of the S. Comm. on the Judiciary, 84th Cong. 114 (1956).

> don't think that would be an objection. At least it would avoid a great deal of the animosity that has surrounded patents nearly always."[93]

Since Judge Hand made these suggestions, few have even noted them.[94] Based on the discussion above, it seems that for the sake of integrating patent law with the overall economy it may be prudent to do so now.

V. Conclusion

It has generally been assumed that patent law is not compatible with free markets and competition. This assumption has prevented many economists from fully embracing patent law. And just as importantly the cost/benefit analysis that emerges from that assumption appears to be both theoretically and empirically intractable. Though traditional property may also be based more on faith than empirical facts, the general consensus is that traditional property manages to provide effective exclusive rights while also encouraging competition. And by so doing, traditional property has earned a nearly untouchable status and it forms a central legal pillar to our market economy.

As we move into an innovation based world, patent law must similarly integrate itself into the broader economy. If it is still perceived as an anti-competitive deviation from the norms of our economy, I doubt patent law can be integrated successfully. But patent law need not be viewed in that manner. Just as traditional property before it, patent law can be designed to be consistent with competition. Although today's US patent system needs to be adjusted to a competitive system, hopefully this article begins a discussion by which patent law can evolve towards that ideal.

[93] *See* Remarks of Judge Learned Hand, See American Patent System: Hearing before the Subcomm. On Patents, Trademarks, and Copyrights of the S. Comm. on the Judiciary, 84th Cong. 114-15 (1956).
[94] The exception being BENJAMIN KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 45 (Columbia Univ. Press 1967).