

PRESENTATION SCRIPT

THE LAW AND ECONOMICS OF PROGRESS: IP RIGHTS AND COMPETITION POLICY

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Introduction

New York Times columnist David Brooks has recently reported that the economics profession is in turmoil after its failure to predict the Great Recession that still envelops us. Indeed, it was modern economics' faith in free market assumptions and overconfidence in its algorithmic abstractions that led to the the collapse in financial markets and its aftermath by enchanting the judgment of players from hedge fund strategists to investors to regulatory agency officials. But unpredicted financial panics and recessions are nothing new, of course. And economics has long been a troubled enterprise, aspiring to the heights of mathematics to escape its historical roots in moral philosophy and to avoid a behaviorist future as a branch of social psychology. Like the commerce it scrutinizes, modern economic analysis can itself be described as cyclical, with episodic developments, bubbles, panics, inflations, depressions, and recessions, all neatly plotted by the criticisms of esteemed practitioners from John Maynard Keynes and John Kenneth Galbraith to Nobel Laureates Amartya Sen and George Stiglitz, and Paul Krugman just two years ago.

It should come as no surprise, then, that there has long been trouble brewing in the IP economics that prevails in the United States. Given economics' powerful influence on public policy and legislation, the trouble has spilled into IP jurisprudence as well. The trouble with IP economics recently reached its boiling point with the admission by William Landes and Richard Posner, the Chicago School's dynamic duo of law and economics, the admission that there is no ground for the dominant view of IP economics, no ground for the view that an incentive theory can justify, explain, or rationalize IP rights. They made this confession in their book entitled *The Economic Structure of IP Law*. The book has received wide attention and much praise. But the public confession of incentive theory's failure has been largely ignored.

At virtually the same moment, a related but separate development bubbled to the surface of IP jurisprudence: In a recent series of surprising opinions, the US Supreme Court weakened patent and trade dress protection, and in the process recognized the role of competition as an engine for promoting economic progress. The opinions were surprising because they run against the dominant view that pits an IP domain of exclusionary rights against an exogenous antitrust domain of free access. The recent opinions have destabilized this binary opposition between IP rights and competition.¹

In tandem, the failed economics and the unstable state of IP jurisprudence have thrown the dominant approach to IP rights into crisis. This crisis is an emergent form of a long-term problem at the heart of both the economics and the jurisprudence of IP rights, and it cannot be easily resolved.

On the economics side, informed policy makers have long recognized that economic progress is driven by two engines – not only IP rights but also free competition. As economist Kenneth Arrow wrote in his landmark 1962 paper, the great difficulty lies in determining an optimal balance between them. Some years earlier, economist Joseph Schumpeter had already sought to integrate the two engines in his vision of competition as serial monopoly, his perennial gale of creative destruction.²

As for the jurisprudence, the U.S. Constitution presents a corresponding legal challenge to balance the exclusionary rights of IP protection and the open access of free competition. The Constitution empowers Congress to enact copyright and patent protection for the explicit purpose of promoting progress in science and useful arts. So copyright and patent protections are not rewards; they are not natural rights. They are incentives – private means to a public end. But when does the private incentive of IP protection promote the public benefits of progress? In both economic and jurisprudential terms, when does IP protection produce more progress than would otherwise accrue with free competition? The answer to this question has proved elusive to both theorists and empirical researchers.³

In my view, it is this open question at the very core of IP policy that has put analysts and decision makers, including federal judges, in an untenable position – what Texans call being squeezed between a rock and a hard place: On the one side, policy makers are pressed to make

decisions; on the other, they are blocked from making rational decisions because there is no analytical methodology at hand. Not only between the rocks and hard places of Texas but throughout the United States, policy makers have sought to extricate themselves by taking a fall-back position, the position that maximizing the means maximizes the ends, the position that greater IP protection naturally leads to more invention and thus to more progress. In my view, this fall-back position explains the so-called propertization of IP rights that has increasingly transformed them into natural property rights even though the influence of IP economics has grown since the 1980s. This fall-back into natural rights is not surprising, given the powerful ideology of private property rights in the United States. But it makes no logical sense. Nor is it supported in theory or fact. Indeed, it is well-known that too much IP protection as well as too little can stifle innovation and impede economic progress. So both the economics and the law present IP policy makers with a Goldilocks problem. But there is no calculus for determining what amount of IP rights is just right, particularly in a unitary system that does not discriminate among different kinds of inventions. At the same time, it must be recognized that there is no clear justification for simply eliminating IP rights entirely as a means to encourage invention and thus to promote economic progress.

So, what's to be done? In my view, the answer is clear: Change the fall-back position. Reverse the presumption. When confronted with jurisprudential or economic indeterminacy, go forward with the presumption that competition promotes the progress called for by the constitutional directive. Given the indeterminate economic value of both competition and IP rights in encouraging invention, policy analysis should begin with the presumption of free competition. In choosing between two rules or standards, policy makers should adopt the one that better expresses the policy of free competition. Why adopt rules that promote the open access of free competition rather than the exclusionary rights of IP protection?

In economic terms, because competition produces a tie-breaker for its indeterminacy stalemate with IP rights. The tie-breaker is competition's superior distributive effects. When patents and other IP rights produce monopoly prices, they create welfare losses in both static and dynamic terms. In the short run, consumers pay higher prices or go to second best substitutes. In the longer run, follow-on inventors also pay higher prices or go to second best substitutes, causing some combination of a decline and a substitution in follow-on inventive activity. In this light, any rule or policy that would expand IP rights should first be shown to promote greater progress than would occur without the expansion.

A vivid image for this regime shows islands of IP protection scattered in a sea of competition. I often return to this image, even though it is unhelpful analytically, because it is so evocative, because it is rhetorically powerful.

The remainder of my paper proceeds in three parts. First, I explain the failure of incentive theory as the economic justification for IP protection. Next, I turn to the law side to sketch the dominant view of IP jurisprudence, and an emergent view as well. Finally, as time permits, I give an example or two of changes to IP policy that would come of taking seriously the emergent view and, I am convinced, the better view, the view that each precinct of IP rights – patent, copyright, trade secret, trademark – is fundamentally a competition regime.

[The Economics of Progress]

I begin with the state of mainstream IP economics in the United States, in particular the failure of incentive theory as the economic justification for IP protection, and conclude with a comment on the IP economics that remains viable.

In the United States, the current economics of progress has adopted a mythical origin not unlike that of Athena, the Greek goddess of wisdom and culture who sprang fully formed from the head of Zeus. Like Athena, the economic logic of progress is seen as springing fully formed from the divine thinking of Kenneth Arrow, whose eminence was established even before his award in 1972 of a Nobel Prize in Economics. His eminence stems from his canonical 1962 paper entitled *Economic Welfare and the Allocation of Resources for Invention*.

Of course despite such mythology, there is a substantial pre-history that posed fundamental questions and deep criticism of IP protection, much of it still pertinent today. Virtually all the questions emerged in the widespread European debates of the 19th century over patent protection; many of the criticisms were sharpened in the trenchant analysis of Sir Arnold Plant in his 1934 article entitled *The Economic Theory Concerning Patents for Inventions* and in a companion piece on copyright. Plant raised many of the searching questions later addressed by American economists. The most difficult question concerned the opportunity cost of invention. This fundamental question

asks when use of society's resources to invent "is superior to alternative uses from which they are diverted."

The opportunity cost of invention opens a gap in the incentive logic of IP rights, a gap between the private value and the public benefits of IP rights. There is little doubt that IP rights create a private incentive to invent: indeed, few could afford simply to give time to the enterprise of invention without remuneration. Yet the private value of IP rights has no necessary logical or economic relationship with their public benefits, benefits that depend on a wide array of factors. The opportunity cost of invention is but one powerful caution to take account of what I call the Incentive Gap. Ignoring it produces the category error of equating IP rights' private value with their public benefits. Taking the Incentive Gap into account transforms the question into an empirical inquiry.

None of this had noticeable impact in the United States before economist Fritz Machlup authored his 1958 Report to Congress, entitled *An Economic Review of the Patent System*. His was the most influential of 15 reports commissioned by a Congress concerned whether the costs of the patent system were justified. Here is Machlup's summary of the economic literature:

None of the empirical evidence at our disposal and none of the theoretical arguments presented either confirms or confutes the belief that the patent system has promoted the progress of the technical arts and the productivity of the economy.⁴

It is under this cloud of indeterminacy that Kenneth Arrow published his landmark paper four years later. The paper would be taken as resolving the question whether IP rights encouraged invention, by demonstrating that patent rights promise the monopoly profits necessary to attract investment in the risky enterprise of invention. After all, without investment there is no invention. And without incentive there is no investment.

But Arrow's paper also offered the ironic corollary that patent monopolies decrease the social welfare competition would otherwise produce. Here is how he put it:

In a free enterprise economy, inventive activity is supported by using the invention to create property rights; precisely to the extent that it is successful, there is an underutilization of the information.⁵

I call this Arrow's Trade-Off. Arrow posed the social welfare question as a trade-off over time insofar as the current costs of patent monopoly pay for the future benefits of increased invention.

In the end, Arrow's Trade-Off only restated the question of IP's social value. It identified but did not close the Incentive Gap between the private value and public benefits of IP protection. And so the subsequent economic literature continued to address the question. But the theoretical scholarship largely rehearsed the European debates and Arnold Plant's economic analysis.

Ultimately the theoretical impasse was taken as a call to empirical inquiry. What of the empirical literature that followed?

A wide array of studies, almost all involving patents, developed various data sets to investigate different proxies for economic progress. Researchers have interviewed corporate decision makers; they have measured research and development expenditures and patenting activity on the input side, and productivity gains and economic growth on the output side. Studies have looked at single sectors, individual countries, and across countries.

The longest series of studies developed interview data from senior executives in the research and development departments of commercial firms. Five studies between 1959 and 2001 all reached the same conclusion: The prospect of patent protection was typically a factor of third or fourth order importance to research and development decisions, with the exception of the drug industry and perhaps chemicals. Still, it must be understood that these studies investigated only the private value of patents; neither public benefits nor public costs were addressed.

Other recent studies *have* inquired into the public benefits by looking at the relationship between changes in patent protection and changes in research and development expenditures. Japanese and U.S. studies found the data inconclusive. One study across 29 countries found a mild positive correlation and another across 60 countries found a weak negative one. Moreover, the findings have been mixed in studies of statistical correlation between patent protection and the ultimate economic goal of increasing growth.

A rare statistical study of copyright protection has just been published. Relying on data from 1870 to 2006, the authors conclude: “Despite the logic of the theory that increasing copyright protection will increase the number of copyrighted works, the data do not support it.”⁶

In sum, the empirical literature on the public benefits of patent and copyright is at best inconclusive.⁷ This brings us back full circle to the theoretical impasse that preceded it. Small wonder, then, that so many policy makers in the United States have taken the fall-back position, the simplistic and mistaken focus on the means itself – on maximizing IP protection in the erroneous belief that progress will be maximized as a natural result.

Where does that leave IP economics? Some alternatives to the mainstream approach have emerged, alternatives ranging from conservative incrementalism to radical repeal. Landes and Posner sit at the conservative end of the spectrum, where they argue that we should try to optimize the system and do the best we can with what we have. Economists Michele Boldrin and David Levine have been the latest to lay claim to the radical end, where they argue that IP rights are not necessary because free competition produces adequate profits to attract the invention necessary to promote economic progress. Of course these positions as well as those between them are not new.⁸ I will not elaborate them today.

[Tertium Quid.⁹ Deriving IP Policy from a Baseline of Free Competition]

Instead, I want to use the remaining time to propose a tertium quid, an alternative outside the familiar spectrum from conservative incrementalism to radical repeal.¹⁰ First of all, this alternative reverses the standard polarity of law and economics in which current flows from economics to law. In my view, the economics should flow from the law. Second, this alternative rejects the mainstream view that IP rights are categorically necessary to encourage invention. But it does not reject entirely the value of IP rights. And so it keeps both competition and IP rights, both law and economics, in the mix. But it reverses their relationships by giving priority to competition over exclusionary rights and to law over economics.

As my examples will show, this tertium quid can produce what complexity theorists call the butterfly effect – a radical change in system behavior produced by a small change in initial conditions. The familiar image for this is a butterfly in the Villa Borghesi whose fluttering wings alter the course of an entire weather system in the Amazon rain forest.¹¹ A presumptive shift in IP

jurisprudence to competition policy is consistent with the traditional view that free competition promotes economic progress. And reversing the polarity between law and economics is more a change in emphasis; law and economics in the United States have always been engaged in a dynamic back and forth relationship. These two changes in initial conditions are small but they can effect sharp and surprising turns in IP policy.¹²

In the time that remains, I discuss only the presumptive turn to free competition and its consequences. The reversed polarity between law and economics I leave to another day.¹³

A presumptive turn to free competition can already be glimpsed in the current jurisprudence. Its appearance is not entirely new, but rather a re-emergence of a recessive strain of IP policy in the United States.

But first the dominant view, which the Supreme Court long ago declared: “Since the primary aim of the patent laws is to promote the progress of science and useful arts, an arrangement which diminishes the incentive is said to be against the public interest.”¹⁴ Last year the Federal Circuit Court of Appeals, which is the specialty court for all patent and trademark cases, characterized an amendment to the Patent Act as a “legislative effort to reinforce the value of the patent statute as an innovation incentive.”¹⁵ Although these pronouncements might seem to be synonymous, they are not. There is a subtle but significant difference between them.¹⁶ While the Supreme Court addressed the general enterprise of promoting progress, the Federal Circuit focused on innovation, which reflects only one aspect of progress. Innovation is not invention but rather its commercialization. The distinction between invention and innovation is important in two respects. First, because attracting investment to innovation can draw investment away from invention. Second, because a focus on innovation defines the primary form of progress as material advancement of day-to-day life through commercialization.

The Federal Circuit’s focus on material advancement diverges¹⁷ from numerous statements by the Supreme Court that “[t]he primary purpose of our patent system . . . is directed to disclosure of advances in knowledge which will be beneficial to society; it is . . . an incentive to disclosure.”¹⁸ In other words, patents make public new knowledge which would otherwise be hidden under the blanket of trade secrecy. The public value of new knowledge goes beyond the Enlightenment virtue of edification. It has use value for follow-on inventors: Disclosure reduces the costs of competition

by invention. In short, the public benefit of disclosure is the free competition that results from free riding on the patented efforts of prior inventors.¹⁹

This insinuation of competition is not exceptional. Indeed, monopoly has long been disfavored in the United States. As Thomas Jefferson put it over 200 years ago, the patent system must draw “a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not.”²⁰

What patent law has always favored is free competition. From the very start, patents have been characterized as an embarrassment, albeit a necessary one that must be minimized. This internal conflict has produced a fundamental tension that Supreme Court Justice Sandra Day O’Connor identified, a tension “between the need to encourage innovation and the avoidance of monopolies which stifle competition.” Twenty years ago, Justice O’Connor wrote that “free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception.” There is, she explained, a “baseline of free competition upon which the patent system's incentive to creative effort depends.”²¹

Here are four instances of recent Supreme Court jurisprudence that reflect this view:²²

The requirement that a patented invention be nonobvious in light of prior art draws a line between patent monopoly and free competition. Beginning in the 1980s, the nonobviousness requirement was increasingly trivialized. For example, in 1999, the Federal Circuit Court ordered that the US Patent Office issue a patent to an applicant, I cannot bear to call him an inventor, an applicant who decorated large black plastic garbage bags with orange pumpkin faces. The Federal Circuit declared that this combination of garbage bags and Halloween decoration, each element itself obvious, was a nonobvious combination that merited a patent.²³ In 2003, the Federal Trade Commission issued a widely praised Report criticizing patent protection’s descent into triviality.²⁴

Then, in 2007, the Supreme Court published a decision that raised the nonobviousness requirement for the largest category of patents, those like the Halloween garbage bag, that involve combinations of prior art. The decision instructed the Patent Office to reject applications for combination that show only “ordinary creativity” or common sense.²⁵ The Patent Office has since rejected on the ground of obviousness a surprising number of applications for combination patents, and the courts have upheld those rejections.

While the Supreme Court made no explicit mention of competition in this opinion, the clear context is the FTC's competition policy concern. And the clear result is that competitors now have open access to make, use, and sell products that would have been protected by combination patents under the lower level of creativity.

A second important Supreme Court decision recently tightened the requirement for obtaining an injunction against a patent infringer. A more stringent requirement means that infringing competitors are not so easily restrained from making, using, and selling patented inventions; instead, the remedy of compulsory licenses opens competition to patent infringers who would otherwise have been excluded from the market.²⁶ A concurring opinion by Justice Anthony Kennedy makes numerous references to the FTC Report on patents and competition.

In a third case, Justice Stephen Breyer recently made reference not only to the FTC Report but also quoted Justice O'Connor's "baseline of competition" opinion to express the concern that too much patent protection, whether for basic scientific relationships or for business methods, would upset the "careful balance" that "the federal patent laws ... embod[y]."²⁷ At this very moment, the Supreme Court is considering a case that presents the question whether patents should be issued for business methods and for other processes that do not produce concrete and tangible results.²⁸

Finally, I make mention of a trade dress opinion by the Supreme Court even though trade dress is a species of trademark and thus should be an easy example of the competition baseline because it derives from the common law of unfair competition. But the recent trend of propertizing the IP protection has affected not only patent and copyright but also trademark policy. In consequence, some recent trademark doctrine has abandoned its common law roots of unfair competition and protecting consumers, for the property ground of protecting the investment of trademark owners.

Given this recent propertization trend, the Supreme Court's rationale for imposing a heavy burden on firms seeking IP protection for product packaging was unexpected. The rationale was that "[c]onsumers should not be deprived of the benefits of competition." Indeed, the Court was even concerned that "Competition [would be] deterred . . . by the plausible *threat* of [a] successful

[law]suit.” When in doubt, the opinion concluded, “courts should err on the side of caution” and hew closely to a baseline of competition.²⁹

These recent decisions offer evidence of an emergent view, actually a re-emergent view of the IP domain as a competition regime. First, the Court raised the level of nonobviousness for patentability. Second, it eliminated the practice of automatic injunctions that had kept accused patent infringers out of the market. These two decisions narrowed first the scope and second the anti-competitive effects of patent monopolies.³⁰ The trademark decision raised competition concerns that explicitly run counter to the established trend toward increased propertization.

These decisions signal a re-emergence of the competition baseline for IP protection. Moreover, let me remind you that the dominant IP law and economics’ reliance on incentive theory is like riding a dead horse.³¹ It cannot make even one step of progress because it lacks logical or economic sense. What does make sense is a baseline of free competition. And so I close with two examples of significant changes that would emerge from a patent regime that takes seriously free competition as its baseline.

The first involves the experimental use defense to patent infringement. Almost twenty-five years ago, the Federal Circuit turned unauthorized experimental use of another’s patented invention into patent infringement. Its rationale lay in a questionable extension of the already questionable logic of incentive theory. The court determined that a patent holder’s power should extend beyond the commercial rights to an invention to include control of its every use. Why? The court began by attributing a “business interest” to everyone from garage tinkerers to research scientists, a business interest that was itself seen as endangering the incentive value of patents. An unlicensed researcher could overcome this powerful presumption of a business interest only when the purpose was literally the “idle curiosity” of a “dilettante affair.”³² Since the doctrine’s announcement, not one published decision has reported a successful experimental use defense to patent infringement.

The demise of the traditional privilege to engage in unauthorized experimental use of a patented invention is another instance of the expansionist propertization trend in US IP protection. It is a particularly harmful instance because experimental use is the most important form of competition in the patent domain. If instead, unauthorized experimentation were seen as presumptively competitive conduct, then the patent holder would be required to *prove* commercial injury and public harm. And commercial injury results not from imagined intentions but from

actual commercial conduct, from manufacturing, distributing, and selling. A viable experimental use defense and, with it increased competition, would produce public benefits by lowering the costs of follow-on research, increasing the number of improvement patents, and, finally, bringing the United States in line with most of the rest of the world, to which unlicensed research activities are drawn to escape the harsh US regime.

My second example involves purified forms of naturally occurring substances. Patents have been issued for them regularly since an early 20th century decision, which affirmed the issuance of a product patent for the purified hormone Adrenalin on the ground that it was “a new thing commercially and therapeutically.”³³ While this rationale emerged from a focus on commercial markets, the actual effects of patenting the product were much broader because of the standard scope of protection afforded product patents in the United States. In practical terms, the product patent encompassed the very idea of purified Adrenalin insofar as it included the product as well as its equivalents, for all uses whether or not known at the time of the grant.³⁴

In sharp contrast, an approach beginning with the presumption of competition as patent’s baseline would have confined the scope of protection to what was actually invented – the new process and method of using purified Adrenalin. This approach would have left the product and with it the idea of purified Adrenalin in the public domain.³⁵ In consequence, follow-on researchers would have been free to develop not only new production processes but also find new uses for Adrenalin without regard to the preceding patents.

There are numerous other examples, not only within patent policy but in the other precincts of the IP domain. Moreover, consistently adopting this baseline of competition would change the current US view of IP and antitrust as antithetical regimes, as a binary opposition between monopoly and competition, between exclusion and access.³⁶ What would emerge is a more accurate and more useful view of IP and antitrust as two intertwined regimes comprising policies of both exclusion and access, policies that regulate commercial relationships of competition and cooperation. I leave these larger problematics to another day and to my current project, which investigates the political economy of progress. Thank you for your kind attention.

¹ This paper takes up the theme of IP law as a competition regime explored in my earlier writing, beginning with my *Report to the IP Academy of Singapore* (2002-2003) (revised and published *sub nom Competition Policy and its Implications for Intellectual Property Rights in the United States*, in *THE INTERFACE BETWEEN INTELLECTUAL PROPERTY RIGHTS AND COMPETITION POLICY* (Steven D. Anderman, ed.) (Cambr, UK: Cambr UP, 2006) and variously investigated in other writing. The theme is a special case of the complex relationship between private property rights and competition policy in American political economy, which I first developed in the domain of antitrust (HASTINGS L

REV 1989, DUKE L REV 1990), and then extended to other domains in *COMPETITION POLICY IN AMERICA: HISTORY, RHETORIC, LAW* (NY: Oxford UP. 1996, 2001). This paper sketches the contours of a larger project, whose working title is *THE POLITICAL ECONOMY OF PROGRESS: IP RIGHTS AND COMPETITION*.

² SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* ([1942] 3d ed., 1950); Kenneth J. Arrow, “Economic Welfare and the Allocation of Resources for Invention,” in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS*, R. Nelson, ed., at p. 609 (Princeton Univ. Press 1962).

³ For a close analysis of these issues, see my *Essay. Thinking about Economic Progress: Arrow and Schumpeter in Time and Space*, in *LIBER AMICORUM: FOR HANNS Ullrich* (Josef Drexel, ed.) (Max Planck Institute, Munich, Ger.) (Bruxelles: Larcier Pub., 2009). I do not address in this paper the fundamental question what should be encompassed in the goal of economic progress in addition to economic growth.

⁴ Machlup Report at 79. The Report observes that “there is no functional relation between the earnings under a patent . . . and the ‘social usefulness’ of the invention which it covers.” *Id.* at 30. In this line of analysis, the Report observes that “The question is no longer whether the patent system stimulates inventive talents to use more of their time and energy than they otherwise would for the development of new technology, but rather whether it stimulates business corporations to hire more of these talents than they otherwise would for this task. If this is affirmatively answered, the second question arises whether this use of the talents is superior to the alternative uses from which they are diverted.” *Id.* at 36. Note that this is a modern form of the question posed in the 19th century European debates about what we would term the opportunity costs of diverting scarce resources. Cf. Peritz, “Patents and Progress: The Incentive Conundrum,” *SELECTED PAPERS, 2008 ATRIP CONFERENCE* (London: Edward Elgar Pub., 2009) (2008 *ATRIP Annual Conference*, Max-Planck Institute, Munich, Germany, 21 July 2008) (International Association for the Advancement of Teaching and Research in Intellectual Property [ATRIP]) (draft of underlying research paper available from author).

⁵ Arrow, *supra*, at 617. It should also be noted that Arrow asserted that competitive markets produce more incentive to invent than do monopolized markets. For an analysis and criticism, see Peritz, *supra* note 3.

⁶ 62 *Vanderbilt L Rev* 1669 (2009).

⁷ Regardless of their findings, all the empirical work confronts methodological difficulties. Here are two. First, the variables used are controversial. The uses of patent counts, citations, or renewal rates as measures of technological progress have all been criticized, as has the use of research and development expenditure data. Simply counting patents, or copyright registrations for that matter, does not take into account differences in their importance and social value. And more R&D spending does not necessarily lead to more or better inventions.

There is a second methodological difficulty – the intractable problem of disentangling patent or R&D data from other sources of economic growth, sources including trade secrets, improved technical education, or increased production, to name a few. A noted American legal scholar put the general methodological problem this way: “If a state of affairs is the product of n variables, and you have knowledge of or control over less than n variables, if you think you know what's going to happen when you vary ‘your’ variables, you're a booby.” Arthur Leff, *Economic Analysis of Law*, 1974 *VIRGINIA L REV.* (reviewing Posner’s book). “Booby” denotes a stupid person. Etymology: 1590s, from Spanish bobo, “stupid person, slow bird”; originally used for various graceless seabirds.

⁸ The 1958 Machlup Report concludes that “the student of the economics of the patent system” can judge “proposed changes in the existing system.” In particular, “a team of well-trained economic researchers and analysts should be able to obtain enough information to reach competent conclusions on questions of patent reform.” Fifty years later, Landes and Posner define their enterprise in those very terms. It should be noted that these claims are not self-evidently true.

⁹ First used in early Christianity. More recently by Justice Antonin Scalia in *Wal-Mart v. Samara*, discussed *infra*. My use of the term refers to an entirely different and thus a third tertium quid.

¹⁰ Some law and economics scholars have begun to develop non-incentive models to justify patents as performing a signaling function, whether as a strategy to disseminate information about a firm’s R&D prowess or simply as a mechanism that improves the flow of technological information. These information functions seem quite consistent with the incentive models because markets are economically justified insofar as they enhance social welfare.

¹¹ And so this tertium quid can be understood as radical incrementalism. The concept of sensitive dependence on initial conditions in René Thom’s catastrophe theory, later in chaos theory, and even later in complexity theory: small differences in the initial condition of a dynamic system may produce large variations in the long term behavior of the system. Chaos pre-Theory: Edward Lorenz, MIT in 1961.

¹² This effect is an extreme form of the tipping phenomenon derived from mathematician René Thom’s Catastrophe Theory: a sudden and irreversible change in direction from a preceding course that was a steady and reversible. I want to tip the law and economics of IP rights from the current steady course driven by an unfounded incentive theory.

¹³ Insofar as the emergent IP jurisprudence is not fully formed, neither is an epiphenomenal IP economics. What can be said at this juncture amounts to informed speculation. First, since the jurisprudence already displays differentiated baselines of competition in each of the IP precincts, there is a strong likelihood that the economics will also be differentiated. Certainly patent and copyright will embody an innovation economics different from the economics of trademark and trade secret, and most likely different from one another, given the intervention of first amendment values into copyright. Second, the reversal in transmitting and receiving elements might have an ameliorative effect on the unfortunate history of caricaturization that describes the relationship between law and economics in the United States.

Examples include oligopoly theory, contestable market theory, and the fixed sum view of tying economics, all of which left the economics' nuance and conditionality at the door step of law and economics analysis of legal doctrine.

¹⁴ *Transparent-Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637, 646 (1947) (Douglas, J.)

¹⁵ *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 576 F.3d 1348, 1371 (Fed. Cir. 2009).

¹⁶ There is a second subtle difference as well: note that the Supreme Court writes that “an arrangement which diminishes the incentive *is said to be* against the public interest.” The Court is careful to avoid the implication that it adopted this view. This is consistent with the skepticism expressed in the text accompanying the next footnote.

¹⁷ *Kewanee Oil* as example of conflict: Patent and trade secrecy analysis. *Griffith* as another example: first to invent and first to file.

¹⁸ “The primary purpose of our patent system is not reward of the individual but the advancement of the arts and sciences. Its inducement is directed to disclosure of advances in knowledge which will be beneficial to society; it is not a certificate of merit, but an incentive to disclosure.” *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 330 (1945). “The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility.” *Brenner v. Manson*, 383 U.S. 519, 534 (1966). “. . . the public may have the full benefit thereof, after the expiration of the patent term.” *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 147 (1989).

Still, the Supreme Court has long expressed skepticism about the incentive value of IP rights. For example, in the *Marconi Wireless* case of 1943, the Chief Justice remarked: “For all I know the basic assumption of our patent law may be false, and inventors and their financial backers do not need the incentive of a limited monopoly to stimulate invention. But whatever revamping our patent laws may need, it is the business of Congress to do the revamping.” *Marconi Wireless T. Co. of America v. U.S.*, 320 U.S. 1, 63-4 (1943).

Economic analysis of disclosure: Patent right and disclosure obligation is the right strategy for those inventions not adequately protected as trade secrets. In this light, patented inventions are those most likely to be disclosed anyway and so public really gains very little if anything. Note tension between this account and traditional norms and incentives to disclose in scientific community, tensions increased with increased proprietization and thus incentive to withhold disclosure until patent application filed. Note also patent doctrine's disincentives to read patents, especially intentional infringement liability for multiple damages.

¹⁹ Of course this would apply as well to cooperative invention, which I leave to another day.

²⁰ 13 WRITINGS OF THOMAS JEFFERSON at 335 (Memorial ed. 1904), cited in, e.g., *Bonito Boats*, 489 U.S. 141, 148 (1989). This passage and others suggest the possibility that for the 18th century founding fathers, property rights had a natural incentive effect. In this view, there was no fundamental distinction between property as natural rights and as incentives.

²¹ *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 145-7 (1989).

²² I discuss the patent opinions in *The Roberts Court after two years: Antitrust, intellectual property rights, and competition policy*, 53 ANTITRUST BULLETIN 153 (2008) (Symposium on Antitrust and the Roberts Court), reprinted in 35 GIURISPRUDENZA COMMERCIALE 1028 (2008) (Rome, Italy) and in 8 CRITERIO JURÍDICO 283 (2008) (Pontificia Universidad Javeriana, Cali, Columbia), available at SSRN URL <http://ssrn.com/author=75649>.

²³ *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999).

²⁴ *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*.

²⁵ *KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1743 (2007).

²⁶ *eBay Inc. v. MercExchange, L.L.C.*, 126 S.Ct. 1837 (2006). Of course the infringing user must be a reasonable royalty as determined by the court. This can be understood as shifting from the patent holder to the court the power to determine royalties. In consequence, the patent holder cannot hold up would-be competitors in what is typically a one-sided monopoly bargaining scenario that does not promise the efficient solution generally attributed to settlements and bargain contracts more generally, per the Coase Theorem.

²⁷ *Laboratory Corp. of America Holdings v. Metabolite Laboratories, Inc.*, 126 S.Ct. 2921 (2006) (dissenting).

²⁸ *In re Bilski*

²⁹ *Wal-Mart v. Samara*, 529 U.S. 205, 213-14 (2000). Opinion written by Justice Scalia, usually the great champion of property rights and freedom of contract.

³⁰ An earlier paper written before these decisions gave injunctions and nonobviousness as two examples of improvements to patent policy that would result from treating the patent domain as a competition regime. See AALS talk, available on SSRN.

³¹ There is an English language idiom – beating a dead horse – meaning that continuing the same course of conduct is futile: The horse will not respond. Riding a dead horse – particularly one stuffed and mounted by a taxidermist – is intended to reflect an even more absurd course of conduct for making progress. The English artist William Hogarth might have called it the Taxidermist's Progress.

³² *Roche Prods. v. Bolar Pharma. Co.*, 733 F.2d 858 (Fed. Cir. 1984) (citing as most persuasive precedent *Pitcairn v. U.S.*, 547 F.2d 1106 (Ct. Cl. 1976)). Moreover, this expanded view of patent rights is a natural result of viewing them through the prism of property logic.

³³ *Parke-Davis v. Mulford*, 189 F.2d 95 (S.D.N.Y. 1911).

³⁴ Only patents for improved or new production processes or methods of use were possible. The result would be blocking patents.

³⁵ Moreover, it seems to be the better result even under an incentive theory since it would reward the inventor only for what was actually invented.

³⁶ The conflict between antitrust and IP is sometimes expressed in terms of ends – allocative efficiency versus dynamic efficiency – and other times in terms of means – the open access of competition and exclusionary rights of IP protection.