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**DECODING AND RECODING NATURAL MONOPOLY THEORY
IN
INTELLECTUAL PROPERTY LAW**

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I. The Metaphor of Regulation and Property in Intellectual Property Law

Reading intellectual property scholarship nowadays is much like watching a bad performance of Hamlet. We witness the self-doubting and inward looking prince steeped in his brooding adolescence, but there is no gravity. Perhaps the questioning (“To exclude, or not to exclude?”) reflects the life cycle of the field which, the case could be made, is a full-fledged sophomore now. More likely, it reflects a field that is grappling with difficult issues that have implications for so much of human activity, whether commercial or non-commercial, and the assimilation of new institutions and technologies in both the developed and the developing world. In short, the introspection reflects an attempt of a field to deal with modernity, specifically the expansion of the rationalizing impulse of the law to the more fluid domains of creativity, invention, and artistic and scientific expression.

Despite all that has been written about the nature of intellectual property, the answer to the riddle of what is intellectual property is relatively simple. Intellectual property consists of statutes (federal patent, copyright, and trademark laws; state trademark, trade secret, and right of publicity laws) and common law decisions providing a gloss on these statutes. This body of law serves to regulate the activities associated with marketing, creating, and inventing new products and services. Once intellectual property is properly understood as regulation, a whole host of institutional and policy issues become unlocked. For example, a regulatory view of intellectual property allows the reconciliation of the exclusive rights of various forms of intellectual property with the public benefit that is meted out through such doctrines as fair use, experimental use, first sale, reverse engineering, and the legal standards for injunctive relief. Neither purely proprietary nor purely public, neither purely a means for commercial aggrandizement nor a set of cultural signifiers, intellectual property conceptually combine various legal and equitable tools for regulating creative and inventive activities.

This article will develop the idea of intellectual property as regulation by appeal to an important scholarly literature on the economics of regulation, the theory of natural monopoly. Applying the theory of natural monopoly and its criticisms to intellectual property incorporates issues of consumer demand, administrative agencies, and market institutions into intellectual property policy.

The application of natural monopoly theory to intellectual property enriches the rhetoric

of intellectual property law and policy, providing an alternative metaphor to that of property, which is commonly used to understand intellectual property. The rhetorical device of metaphor, however, is potentially misleading for understanding patents, copyrights, trademarks and related fields. To say X is like Y can very easily lead to saying X and Y are the same, a move that unfortunately has affected the debate over intellectual property. But as Professors George Lakoff and Mark Johnson warn, a common misconception is that metaphor is based on similarity.¹ This misconception consistently arises in intellectual property as patents, copyrights, and trademarks are reflexively understood in terms of real and personal property. But, as Lakoff and Johnson teach, the use of metaphor acknowledges two domains with multiple mappings from one domain to the other.² To say that property is the metaphor for patents, copyright, and trademarks implicitly acknowledges that the domain of property and the domain of what is collectively referred to as intellectual property. One domain may map onto the other, but they are separate and the analogy is an interpretative device to clarify patents, copyrights, and trademarks. Where the analogy is not instructive, it fails and other interpretative devices need to be found.

The theory of natural monopoly provides another metaphorical device, with all the limits of any metaphor, including that of property. Natural monopoly, in law and in economics, describes a market in which only one firm can survive through competition because of the cost and demand structure in the marketplace. The theory of natural monopoly explains why regulation is needed in such markets and, more importantly, what shape the regulation should take. Intellectual property is often understood as a type of natural monopoly. Although no one argues that intellectual property results in what would be a monopoly under antitrust law, a market with one firm that has power to affect price, the exclusivity associated with intellectual property can be understood in the same terms as the exclusivity enjoyed by a natural monopolist.

Intellectual property scholarship and doctrine implicitly or explicitly justifies the grant of exclusivity by appealing to the high fixed costs of producing and the negligible marginal cost of distributing the subject matter of patents, copyrights, and trademarks. This cost structure also justifies natural monopolies and their regulation. Hence, the metaphor of natural monopoly serves to map the domain of regulation onto several doctrinal elements of patent, copyright, and trademark law.

To the extent that natural monopoly serves as a competing metaphor for intellectual property, then the criticisms of natural monopoly need to be acknowledged in structuring intellectual property through the lens of natural monopoly theory. Judge Richard Posner, who explicitly distinguishes intellectual property and other legal privileges from natural monopoly, presented a compelling case for reforming natural monopoly regulation in the 1970's.³ His work

¹ See George Lakoff & Mark Johnson, *Metaphors We Live By* 244-245 (2003).

² *Id.* at 265.

³ See Richard A Posner, *Natural Monopoly and Its Regulation* (1999).

provides a model for privatizing natural monopolies, such as public utilities and telecommunications. Intellectual property can similarly be reformed and recast through the criticisms of natural monopoly, documented by Judge Posner. This rhetorical move, however, has implications that contrast with reforms of public utilities and communications. While deregulation of traditional natural monopolies leads to the strengthening of private property rights, reforming intellectual property leads to the limiting of private rights and the recognition of public interest and public values in intellectual property. Criticisms of natural monopoly when applied to intellectual property challenge the exclusivity of patents, copyrights, and trademarks and permit the inclusion of public interested intellectual property law.

The parallel between criticisms of natural monopoly that promote privatization and the those that limit the exclusivity of intellectual property share a common appeal to freedom. For conservatives who criticize public utility regulation, the goal is freedom from government bureaucracy that hampers consumer choice and the technological developments of the marketplace. For liberals who criticize strong intellectual property rights, the goal is freedom from the stranglehold of rights owners on users that hampers inventive, creative, and expressive processes. More subtly, however, the parallel reflects that the deregulatory move, whether involving utilities or intellectual property, is actually a “re-regulatory” one, entailing the transformation of regulatory structures rather than their extinction.

The parallel also illustrates the use and limits of metaphor and analogy in legal analysis. By exploring the metaphor of natural monopoly, I intend to create a counternarrative to the current pervasive stories being told of intellectual property. This counternarrative provides substance to my proposed view of intellectual property as a system of regulation, consistent with its statutory and common law foundations. Furthermore, developing the regulatory approach through an examination of how natural monopoly theory and its critiques informs intellectual property has three implications. First, a deeper consideration of the demand side of intellectual property allows for a more integrated consideration of the user in intellectual property systems. Second, the new economics of regulation refocuses attention on the role of administrative agencies in intellectual property systems. Third, moving beyond old fashioned natural monopoly thinking allows consideration of the political economy of intellectual property and a recognition that intellectual property systems entail both a set of markets for producing and distributing the subject of intellectual property and a set of legal and social rules for how these markets are structured and regulated. This last point has implications for intellectual property and antitrust as well as intellectual property and economic development.

I structure my argument into three parts. The first part, presented in Section Two, documents the pervasiveness of the natural monopoly metaphor in intellectual property scholarship and case law. In this section, I examine current scholarship on intellectual property and the metaphor of property, the use of the term natural monopoly in intellectual property case law, and most importantly, the use of reasoning that parallels natural monopoly theory in intellectual property doctrine. The second part of my argument, presented in Section Three, presents the developments of natural monopoly theory and its criticisms in the economics and

public policy literature. This second decodes the natural monopoly metaphor and provides the basis for the third part of my argument, presented in Section Four. My recoding of the natural monopoly metaphor provides the basis for more critical consideration of consumer values, administrative agencies, and distributional and development issues in intellectual property law. Section Five summarizes and concludes.

II. Denaturalizing Natural Monopoly Thinking: An Exercise in Creating Metaphor

This section demonstrates the use explicit and implicit use of the metaphor of natural monopoly in intellectual property scholarship and doctrine. Outlining the contours of this metaphor initially requires surveying the foundations of intellectual property in the familiar argument about incentives.

The language of incentives pervades intellectual property law. Some courts and commentators describe the intellectual property grant as a reward for publicizing the fruits of one's creative efforts.⁴ Others characterize intellectual property as a quid pro quo whereby exclusivity is granted in exchange for disclosure and dissemination to the public of valuable new technologies and expressive works, both informative and entertaining.⁵ Even proponents of intellectual property that start from a natural rights perspective, grounding the grant in the rights of authors and inventors in the personality of the creator, emphasize the need for legal protection to channel energies towards creative activities.⁶ Given how pervasive the incentive rationale is, one would conclude that the foundations of intellectual property are settled, and the big debates are over the application to controversies raised by new technologies and economic and social changes.

But there are big problems with the justification of intellectual property through a story about incentives. The most obvious, that invention and creation occurs absent the grant of intellectual property, is perhaps the least interesting. The problem with the incentives story is that it predicts very little about the structure of intellectual property rights, except for the implication that intellectual property rights need to be strong as possible in order to maximize the incentives. While there may be some limits on rights in order to protect cumulative innovation and improvements, consistent with the incentives story, these limits are, in practice, introduced as an afterthought and as ad hoc exceptions to the assumption that intellectual

⁴ See, e.g., *Figueroa v. United States*, 66 Fed. Cl. 139 (Fed. Cl. 2005)(discussing patent as a system of reward).

⁵ See *Eldred v. Ashcroft*, 537 U.S. 186 (2003)(justifying retroactive intellectual property protection as an incentive to disseminate works).

⁶ See, e.g., *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239 (1903)(granting protection to even “low works” of creation, such as an advertising poster).

property rights need to be as strong as possible.

This article focuses on one of the errors in the incentive story. The error is that intellectual property protection is needed in order to correct the market failures arising from the combination of the high fixed costs of creating and the low marginal costs of distributing the new products that are the subject of intellectual property.⁷ My argument is that this error appears in many critical intellectual property cases and academic commentary. When strong intellectual property rights are justified in terms of the prevention of free riding, a version of this error is made. The error is also made when intellectual property is limited in order to give the owner enough of an incentive to create the work initially. In both instances, intellectual property rights are being determined by the costs of creating and distributing the work. I am not denying that industries in which intellectual property rights are common (e.g. pharmaceuticals, entertainment, software) have unusual cost structures that make competition difficult to implement and hence intellectual property necessary. My point is that cost structure by itself tells us very little about the details of how to structure intellectual property systems and implement policies. An emphasis on cost structure alone ignores the broader market and institutional arrangements which intellectual property helps to shape. Basing intellectual property law on a consideration of cost overemphasizes the importance of cost and trivializes the role of distribution and consumption.

The metaphor of natural monopoly appears explicitly and implicitly in legal scholarship and case law. I look at each in turn, focusing first on legal scholarship, turning next to explicit use of the phrase “natural monopoly” in case law, and concluding with an analysis of how natural monopoly concepts inform the adjudication of patent, copyright, trademark, and antitrust cases that implicate intellectual property.

A. Legal scholarship

The debate over whether intellectual property is property rages through the law reviews

⁷ One illustration of the relationship between average costs and incentives is seen in the debate over the free riding rationale in intellectual property. See Mark Lemley, Property, Intellectual Property, and Free Riding, 83 Tex. L. Rev. 1031, 1059 (2005)(suggesting the intellectual property protection should be set “to the extent necessary to enable [creators and inventors] to cover their average fixed costs”); John Duffy, Intellectual Property Isolationism and the Average Cost Thesis, 83 Tex. L. Rev. 1077, 1093 (2005)(explicitly adopting approach to intellectual property based on natural monopoly theory). For a discussion of the crosscurrents of intellectual property and natural monopoly, see Douglas G. Baird, The Story of *INS v. AP*: Property, Natural Monopoly, and the Uneasy Legacy of a Concocted Controversy (Unfair Competition), in Jane C. Ginsburg & Rochelle Cooper Dreyfuss, eds., *Intellectual Property Stories* 9-35 (2006). Many of the ideas in Professor Duffy’s paper builds on John F. Duffy, The Marginal Cost Controversy in Intellectual Property, 71 U. Chi. L. Rev. 37 (2004).

and intellectual property conferences. Academic focus on this debate is sparked by the tendency to understand intellectual property infringement in the language of trespass with the implications of strong legal protection. Industry groups jump on the language of property to espouse expansions of intellectual property rights through extending the duration of copyrights, lowering of the standards for nonobviousness, expanding the domain of patents and trademarks, endorsing strong injunctive relief, narrowing traditional defenses such as fair use, experimental use, and misuse, and generally shifting the focus of intellectual property from competition and the regulation of inventive and creative activities to innovation, high technology, and industrial concentration as spurs to economic growth and development. Perhaps, more disturbingly, advocates for intellectual property users that challenge the efforts of intellectual property owners also adopt the language of property. Framing the debate in terms of the language of the commons or by reference to common law doctrines such as easements and necessity implicitly endorse the notion of intellectual property as a form of property, ignoring much like the opposition the broader regulatory and legislative background to intellectual property.

Academic debate on the status of intellectual property as property generally points in the right direction. To ask whether intellectual property is property is to ask how property rights are to be defined over the products of creative and inventive activities. The need for property rights comes from the presence of external benefits that arise from creation. If I invent a new drug or create a new movie, anyone who accesses the drug or movie for whatever purpose benefits. The question is should the creator appropriate a portion or all of these resulting benefits. Markets can standardize traditional goods and services so that the benefits can be contained and appropriated by the seller. Intellectual property law provides some degree of standardization and this standardization permits exclusion by the owner. But the standardization and resulting exclusion means that many of the benefits may be lost. For example, when a cure for a disease is embodied in a pill that no one can experiment with or replicate without violating patent law, then the inventor of the cure can capture the benefits but at the expense of some potential uses, unless the inventor chooses to license these uses. The same argument holds for the expression that is captured in a song, movie, photograph, sculpture, computer program, brand name, logo, product packaging, or other subject matter of intellectual property. In short, the academic debate over intellectual property as property is a debate over how strong the property rights of intellectual property should be.

When understood this way, the metaphor of property becomes more understandable. The metaphor serves as a stencil against which to form intellectual property rights. Recasting the debate over property as one over the scope of property rights also demonstrates how the metaphor of natural monopoly enters into the debate. The recent debate between Mark Lemley and John Duffy is an excellent example of how the property metaphor shifts into the natural monopoly metaphor. Professor Lemley accurately states that intellectual property law has always been and should continue to be about establishing the proper incentives for creating and inventing as exceptions to the norm of competition. He concludes “that there is no economic justification for granting inventors and creators the right to control positive externalities flowing from their creations, except to the extent necessary to enable them to cover their average fixed

costs.” Professor Duffy also accurately states that there is a need for a unified theory of property that can explain all the varied items that have some characteristic of property, land, patents, copyrights, and ordinary goods. Interestingly, for the purposes of this article, he cites as one hint of a possible unified theory, his “own work has shown the similarities between intellectual property and a particular form of physical property--properties having natural monopoly characteristics.”

What is remarkable about this exchange is how readily the metaphor of property gives way to that of regulation. Explicitly, Professor Duffy appeals to natural monopoly theory to show a family resemblance between the debate over marginal cost pricing and the treatment of intellectual property. I discuss this resemblance, particularly criticisms of natural monopoly theory, in the next section. My point here is that Professor Duffy’s call for a unified theory of property may actually be found in a theory of regulation, which explains how different types of property rights serve to regulate different types of conduct whether involving the development of land, the sale of goods, or the appropriation of benefits from creative and inventive activities. To the extent that intellectual property law is analogous to the law of natural monopoly, then the question is what justifies the respective bodies of law. Furthermore, the criticisms of natural monopoly regulation would apply, a fortiori, to intellectual property law. The metaphor invites both the bitter and the sweet, and to the extent that natural monopoly regulation has given way to the political and economic preference for freedom and competition, then so should intellectual property.

While the reminder that intellectual property is about incentives to create in a competitive environment does not seem to implicate natural monopoly, Professor Lemley’s suggestion that rights should create enough exclusion to allow the creator “to cover their average fixed costs” sounds like classic natural monopoly regulation. Professor Duffy questions the proposal because in a competitive market, with functioning capital markets, creators should be able to recover their fixed costs. The scope of intellectual property rights would therefore determine only what types of works are created and marketed in a competitive market. But if the subject of intellectual property is like natural monopoly, the real issue is whether markets would be functioning as competitively as Professor Duffy suggests. When markets are not competitive, then intellectual property law can serve to determine both what types of works are created and marketed and what the market looks like for these works. Professor Duffy is assuming that the case for intellectual property rights is the same as the case for property rights in competitive markets, an argument usually associated made by libertarians for governments limited to enforcing property and contract rights. The proposal for defining rights to cover average fixed costs recognizes that the market for works protected by intellectual property may not be competitive. Furthermore, the proposal sounds quite a bit like rate regulation for natural monopolies, which attempts to set rates for public utilities in order to cover the average cost of production. Rate regulation is designed to mimic the perfectly competitive outcome that is unattainable because of the presence of average costs that are declining relative to the demand in the marketplace. Professor Lemley’s argument about fixed costs and intellectual property, unintentionally, parallels this argument.

In this section, I have shown that the metaphor for property in intellectual property shifts to a metaphor for natural monopoly, inviting thinking of intellectual property law as a form of regulation. In the next two subsections, I show how the metaphor of natural monopoly explicitly and implicitly appears in the case law.

B. Explicit References to Natural Monopoly in the Intellectual Property Caselaw

A search of the ALLCASES database in Westlaw uncovers inconsistent use of the term “natural monopoly” in cases involving intellectual property. The concept of fixed costs arises quite consistently in intellectual property remedies cases where the fixed costs of the alleged infringer are an issue for calculating profits that are recoverable as damages. But there is no discussion of the fixed costs of intellectual property owners although, as I explain in the next section, there is discussion of the effort of creating a work as a factor in determining intellectual property protection. Despite the infrequent reference to “natural monopoly” in the cases, the few references are worthy of comment.

One case expressly rejects equating a patent with a natural monopoly. In *Fishman v. Estate of Wirtz*, a 1986 antitrust case involving a professional baseball franchise, the Seventh Circuit stated in a footnote that “[a] patent is not a natural monopoly in the same sense as is a franchise for the provision of electric power.”⁸ The court’s reference to patents arose in its discussion of its precedent in *Brunswick Corp. v. Riegel*, an antitrust case involving a dispute involving the patenting of a process for making anti-static yarn obtained through a confidential relationship.⁹ The *Fishman* court cited *Riegel* for the proposition that mere improper acquisition of a patent does not state an antitrust violation since the claim entails harm to a competitor rather than to the competitive process. As the *Fischman* court noted, “[t]he market could accommodate two or more producers of antistatic yarn but-to advance policies wholly divorced from those informing the antitrust laws-an administrative decision is made to confer a temporary monopoly on one producer.”¹⁰ This analysis reflects the current view of patent and monopoly and is effectively endorsed by the Supreme Court’s 2006 decision in *Independent Ink v. Illinois Tool*, holding that the ownership of a patent did not create the presumption of market power.¹¹

Nonetheless, some cases still imply a close proximity between intellectual property and natural monopoly. In *Roberts v. Sears, Roebuck & Co.*, a 1983 patent infringement case from

⁸ 807 F.2d 520(7th Cir. 1986).

⁹ 752 F.2d 261 (7th Cir. 1984).

¹⁰ 807 F.2d at ____.

¹¹ 126 S. Ct. 1281 (2006).

the Seventh Circuit, Judge Posner cautiously rejects the treatment of a patent right as a monopoly, but does cite in a footnote a speech by the Judge Markey, then Chief Judge of the United States Court of Appeals for the Federal Circuit, that “the inventor has a ‘natural monopoly’ at the moment the invention is conceived..”¹² But the Chief Judge is quoted as going on to say that “[t]he genius of the patent system is that disclosure of the invention is encouraged; the inventor cedes his natural monopoly in exchange for a short-term property right.” While this statement distinguishes natural monopoly from the patent grant, it recognizes that the act of inventing creates a natural monopoly that is superceded by the patent. A similar style of thinking can be seen in *Broadcast Music, Inc. v. Moor-Law, Inc.*, a 1982 district court case involving copyright infringement, where the court states that the parties

are in basic agreement about many features of the market, including the applicability of the economic concepts of natural monopoly and public goods.

Both parties' experts agreed that this market has natural monopoly characteristics. Because there are thousands of individual copyright “sellers” seeking to deal with thousands of GLA buyers, the potential transaction costs are very high. Economies of scale exist as sellers band together to spread transaction costs of identical transactions over a larger group. Thus, some pooling of copyrights by individual copyright holders is a necessity in order to take advantage of the natural monopoly characteristics of the market.¹³

The court relied on this characterization of market failures to rule that BMI was not in violation of the antitrust laws. Finally, the most striking case in which the similarity between natural monopoly and intellectual property is made is *Monaghan v. City of Indianapolis*, a 1905 Indiana appellate decision involving a successful challenge to a city’s competitive bidding for the right to pave the streets with a patented paving material.¹⁴ The majority found that the competitive bidding was defective because the presence of the patent kept the bidding process from being competitive.¹⁵ The dissent stated unequivocally that “there can be no difference between a patent and a natural monopoly” and argued that the competitive bidding process for the paving with a patented material was no different from competitive bidding for a public utility franchise.¹⁶

¹² 723 F.2d 1324 (7th Cir. 1983).

¹³ 527 F. Supp. 758 (D.Del. 1981).

¹⁴ 76 N.E. 424 (Ind. App. 1905).

¹⁵ Id. at ____.

¹⁶ Id. at ____.

These three cases indicate the often inconsistent use of the term “natural monopoly” in the case law. The phrase “natural monopoly” appears also in a sentence that appears originally in a *Industrial Bldg. Materials v. Interchemical Corp.*, a 1970 Ninth Circuit case: “[A] manufacturer has a natural monopoly over his own products, especially when the products are sold under trademarks.”¹⁷ Variations of this phrase appear in sixteen cases following *Industrial Bldg.* from 1970 to 1999. All of them are antitrust cases involving market definition, six are from district courts in the Ninth Circuit,¹⁸ six from district courts in other circuits (Second, Fourth, and Third),¹⁹ two from the Ninth Circuit,²⁰ and two from other appellate circuits (Fourth and Fifth).²¹

Two things are interesting about this phrase. The first is the connection being made between trademarks and natural monopolies. The suggestion is that each manufacturer has some exclusivity in his own product, arguably created from locational or other advantages, and that trademark law serves to strengthen this exclusivity. Of course, it is correctly recognized that the type of exclusivity described in this sentence does not rise to market power for antitrust purposes. The second, and more troubling, aspect of this statement is its origin. The Ninth Circuit in *Industrial Bldg.* attributes this sentence to the Supreme Court’s antitrust decision in *United States v. DuPont*,²² a 1956 case dealing with market definition in the market for cellophane. The problem is that this phrase does not appear in the case literally. The Court does not use the term “natural monopoly” in that case although the Court has used that term in twenty-two cases, starting with *City of Omaha v. Omaha Water Co.*²³ and most recently in *Kelo*

¹⁷ 437 F. 2d 1336 (9th Cir. 1970).

¹⁸ *Ajir v. Exxon Corp.*, 1995 WL 429234 (N.C. Dal. 1995); *Sadler v. Rexair*, 612 F. Supp. 491 (D. Mont. 1985); *Dimidowich v. Bell & Howell*, 590 F. Supp. 45 (E.D. Cal. 1984); *Island Tobacco Co. v. R.J. Reynolds*, 513 F. Supp. 726 (D. Hawaii 1981).

¹⁹ *Disenos Artisticos v. Work*, 676 F. Supp. 1254 (E.D.N.Y. 1987); *Sweeney v. Texaco, Inc.*, 478 F. Supp. 243 (E.D. Pa. 1979); *Neugebauer v. Abell Co.*, 474 F. Supp. 1053 (D. Md. 1979); *Wales Home Remodelling Co., Inc. v. Alside Aluminum, Corp.*, 443 F. Supp. 908 (E.D. Wis. 1978); *Gelardi Corp. v. Miller Brewing Co.*, 421 F. Supp. 237 (D.N.J. 1976); *Cicone v. Schmidt*, 403 F. Supp. 643 (E.D. Pa. 1975).

²⁰ *Trixler Brokerage Co. v. Ralston Purina Co.*, 505 F.2d 1045 (9th Cir. 1974); *Bushie v. Stenocard Corp.*, 460 F. 2d 116 (9th Cir. 1972).

²¹ *Stearns v. Genrad, Inc.*, 752 F. 2d 942 (4th Cir. 1984); *Spectrofuze Corp. v. Beckman Instruments Inc.*, 575 F. 2d 256 (5th Cir. 1978).

²² 351 U.S. 377 (1956).

²³ 218 U.S. 180 (1910).

v. City of London.²⁴ The Court in DuPont does suggest that a manufacturer might have some advantages in the marketplace, but it does not expressly connect this to trademarks or other intellectual property. The introduction of the term of natural monopoly and its association with intellectual property, specifically trademarks, has uncertain origins and reflects, in general, the undeveloped use of the term in the legal lexicon.

While the term “natural monopoly” has infrequent and inconsistent usage in the case law, the concept of natural monopoly has had influence in how courts have shaped intellectual property doctrine. I turn to this point in the next subsection.

C. The Concept of Natural Monopoly

A natural monopoly arises when the average costs of producing a product or service declines as more of the product or service is supplied to the market. Because of declining average costs, it is more efficient from the perspective of lowering the average cost of production to have one firm service the market rather than duplicate expenditures. Average costs are falling either because there are huge fixed costs to production or because the costs of producing an additional unit of the product or service is negligible. I explore the economics of natural monopoly more thoroughly in Section Three. I present the standard definition here to highlight the elements that are critical for the existence of a natural monopoly, the presence of high fixed costs or the negligible marginal costs. In considering the intellectual property case law, I considered many instances where the high cost of producing the work was a critical factor in shaping intellectual property rights. I examine these cases and suggest that to the extent that a court has emphasized costs as a factor in creating a work, it implicitly adopts a natural monopoly metaphor for intellectual property. What this metaphor means is something I explore in Sections Three and Four. But for the purposes of this section, I document these cases to show that the metaphor arguably has influence in the doctrine.

I break the cases down into three categories: 1. Patent and copyright cases; 2. Trademark cases; and 3. Antitrust cases that implicate intellectual property.

1. Patents and copyright

The metaphor of natural monopoly appears in patent and copyright whenever protection is accorded to a work based on how much expense and labor is used to protect it. Patent and copyright have moved in divergent directions on this point. With the rejection of the sweat of the brow doctrine in the Feist decision,²⁵ copyright protection rests more firmly on a personality theory of expression rather than an incentive theory. Consequently, expense and labor have, in theory, very little to do with copyright protection. Patent law, by contrast, contained what could

²⁴ 125 S. Ct. 2655 (2005).

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be called a personality theory of inventorship in its pre-1952 version of the doctrine of nonobviousness. Wholly a common law doctrine, nonobviousness was determined through findings of flashes of genius or ingenuity in inventing a novel work that was a significant step beyond the prior art.²⁶ The judicial analysis was not far from how some courts approach the originality inquiry in copyright after Feist. With the enactment of the 1952 Patent Act, Congress codified the nonobviousness doctrine in an attempt to create a more objective approach to determining nonobviousness that did not rest on the manner in which the invention occurred.²⁷ Ironically, current nonobviousness doctrine sometimes seems to focus even more on expense and labor in a way that echoes the pre-Feist copyright cases, particularly those in the Nineteenth Century.²⁸ Despite this divergence, the case can be made that both patent and copyright cases still appeal to factual determinations of the cost and effort of creation in concluding whether a work is protected.

The role of cost and effort in patent law can be seen in the treatment of pharmaceuticals in particular and in the doctrines of utility and nonobviousness. The debate over pharmaceutical patents focuses not only on the high price of pharmaceutical products to the consumer but also on the high cost of creating the products. These high costs are often used to justify protection both in the developed and even more in the developing world. The arguments for controlling pricing or imposing other limits on the exclusivity provided by patent echo many aspects of natural monopoly. Absent exclusivity, it is argued that firms would engage in duplicative expenditures and destructive competition that would undermine the industry. Furthermore, given the negligible cost of producing an additional unit of the product, the case is made that the price of the product would be driven to zero in the face of competition. As a result, the exclusivity of patent law is justified in the same way as the exclusivity for a public utility. This analogy will be explored in more detail in Section Three.

While the parallels between pharmaceuticals and natural monopoly are well documented, the prevalence of the natural monopoly metaphor in the utility and nonobviousness doctrines has not been recognized. Patent's utility doctrine requires that the applicant show some general and sometimes specific application for the invention before the patent can be granted. As the Supreme Court famously stated in *Brenner v. Manson*, its last decision to address the utility doctrine, "A patent is not a hunting license."²⁹ What this statement means on its face is that the patent is not a license to determine what the practical application of an invention is. Rather, as the Court completed its metaphor, a patent is a reward for a successful hunt. The applicant must have nailed the invention down, giving it substance and working out its usefulness. More

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importantly the applicant must have expended effort to show how the invention can be used. Given two inventors, both of whom may have invented a chemical process (to take the facts of the Manson case), the inventor who has worked through the uses of that process gets the patent while the inventor who has not done so fails. The implication of the Court saying that the hunt must have occurred before the patent is granted is that the inventor must have expended some effort in order win patent rights.

Courts and the USPTO have grappled with the question of how much teeth to give to the utility requirement as new technologies have developed. With biotechnology, the question became quite important as many companies moved towards sequencing the genomes of humans and other animals, but without necessarily working out all the therapeutic and diagnostic applications of the sequences. The lowering of the utility requirement, particularly in light of the bar set by the Court in Manson, shows how the standard is adjusted to grant rights when effort becomes expended and needs to be rewarded. In the case of genetic sequencing, the object of the hunt was the particular sequences themselves, and the applications, while certainly important, could be developed and patented later.³⁰

The goal of rewarding effort also can be found in the nonobviousness doctrine. In biotechnology, the nonobviousness doctrine permits the patenting of arguably obvious homologues of known sequences in order to reward those who have identified new sequences although they may be obvious variants of known sequences. The Federal Circuit has recognized the effort needed to sort through millions of possible codons and genetic mappings and therefore has relaxed the standard in order to both promote and protect the expense associated with such ventures.³¹ The nonobviousness doctrine demonstrates this choice outside of biotechnology as well. The controversial teach, suggest, motivate (TSM) approach to nonobviousness requires the patent examiner, or other challenger to a patent, to establish how the prior art taught, suggested, or motivated a particular invention to justify a finding of obviousness. While this test was created primarily to deal with the problem of subjectivity and hindsight bias in a nonobviousness determination, one of the implications of the TSM approach is to reward patents based on effort and expense.³² Under the approach, one indication that an invention is nonobvious is that the prior art taught away from the inventive direction that the inventor adopted. In other words, inventors that took more difficult or less lighted paths in pursuing an invention are more likely to establish the nonobviousness requirement.³³

Copyright law also shows a tendency to reward labor and effort despite the express rejection of the sweat of the brow doctrine in *Feist*. In *Apple v. Franklin*, the Third Circuit

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decision that set the precedent for the copyright protection of object code, the court cited the findings of the CONTU report that “[t]he cost of developing computer programs is far greater than the cost of their duplication” to conclude that “the jeopardy to Apple's investment and competitive position caused by Franklin's wholesale copying of many of its key operating programs would satisfy the requirement of irreparable harm needed to support a preliminary injunction.”³⁴ Many preliminary injunction cases in copyright and patent also rely on these losses to the time and effort of the copyright owner to impose a preliminary injunction. The cost structure of the industry, as reported by CONTU, not surprisingly mirrors that of what one would find in a natural monopoly.

Post-Feist cases also illustrate the continuing sway of sweat of the brow in determining originality. This sway appears whenever a court interprets Feist to impose a low threshold for originality. In several cases, courts have extended copyright protection to price data or compilation of statistics largely on the basis of the costs and effort taken to select, arrange, and coordinate information.³⁵ While some courts have denied copyright protection because the creation was the result of slavish copying, other courts have found copyright protection based on the market value created by the work, reflecting in part the costs of producing the work.

The influence of the natural monopoly metaphor in copyright can also be seen in the treatment of databases. On this point, the United States seems to diverge from the natural monopoly framework while Europe has seemed to succumb. In the United States, copyright protection of databases was determined by the Supreme Court in its 1992 decision *Feist v. Rural Telephone Service*.³⁶ The decision affirmed two propositions. The first is that copyright does not protect facts. The second is that copyright does protect the selection, coordination, and arrangement of facts into databases, but does not protect mere “sweat of the brow,” or the effort expended in constructing the database. These two propositions have been interpreted to mean that copyright gets thin copyright protection in the United States. A creator of the database cannot use copyright law to protect raw data, but can use copyright law to protect creative choices on how the data was selected, coordinated, and arranged in the database. Cases following Feist have tested how thin copyright protection actually is, with the general conclusion is that protection might extend to data when the data itself reflects the choices and judgement of the creator. Firms in database industries have pushed for greater protection through amendments to the Copyright Act and to the enactment of sui generis legislation. Neither of these initiatives have been successful.

By contrast, the European Union Database Directive was enacted in 1996 in order to make up for limited protection under the copyright laws of the member states. The twin goals were uniform and harmonized protection for databases and for greater protection than provided

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under copyright law. The European Court of Justice interpreted the Directive in *British Horseracing Board v. William Hill*,³⁷ in which Hill was accused by the Board of violating its sui generis rights by using its gathered data on running horses as part of an Internet based betting service. The Court held in favor of Hill, finding that the Board's database was not protected because it consisted of data that was created rather than gathered and that was of an official nature. The distinction made between created data and gathered data derived from the need for sui generis protection to secure the effort and investment made in constructing the database.

The contrasting approaches to database protection on either side of the Atlantic provide a helpful example of my discussion of natural monopoly theory and intellectual property. The European perspective almost wholly follows a natural monopoly rationale, grounding sui generis protection for databases in the high fixed costs of producing a database. In the *British Horseracing Board* opinion, reference is made to the millions of pounds spent by the Board in making the database, a point that worked in the Board's favor at the lower court level. The United States approach would ignore this cost issue as an example of "sweat of the brow," an approach rejected in *Feist*. Criticisms of natural monopoly theory imply that we should be skeptical of these claims of high cost because any incentive mechanism that bases economic reward on self-reported costs alone will be biased. If self-reported costs are used as a basis for legal protection, then the costs need to be audited very closely and should never be the sole basis for determining the scope of protection. By rejecting "sweat of the brow," however, the United States takes an approach that distances database protection from a natural monopoly rationale. Mere effort is not enough to warrant intellectual property protection, whether in the form of copyright or sui generis legislation. Instead, there must be a spark of creativity as demonstrated in selection, arrangement, or coordination justify protection.

The emphasis on creativity in U.S. jurisprudence might be interpreted as an appeal to a nonutilitarian, or author's rights, basis for protection, one founded in a theory of personality rather than utility. I think this is mistaken. Instead, the *Feist* decision is a utilitarian decision that is consistent with a rejection of natural monopoly rationales based on incentives and costs. Although the critique of natural monopoly did not inform the arguments leading up to the decision explicitly, the final decision is consistent with the identified criticisms of natural monopoly theory. First, the rejection of sweat of the brow is consistent with the skepticism of cost based justifications for protection. Sweat of the brow is subject to distortions and problems of information, especially since the creator will always have better and often unverifiable information about how much effort it took to make the database. Second, the reluctance in the U.S. to adopt sui generis protection for databases is often supported by the ability of competitive forces to ensure that database manufacturers do not exploit a monopoly position and to generate rents for the production and distribution of databases. Database creators profit not from strong exclusivity, but from producing a better database that meets the demands of consumers. They also compete through better interfaces and services in maintaining and accessing databases. Third, this reliance on alternative forms of competition also reflects the interests of consumers

and institutions subsidiary to the market in the development and distribution of databases. In short, the U.S. approach to databases shows an alternative to strong intellectual property protection that is consistent with the critique of natural monopoly theory that has developed in the scholarly and policy literature over the past fifty years.

To the extent that costs of creating a work determine either patent or copyright protection for the work, the metaphor of natural monopoly is having an influence on intellectual property. This part has explored that influence on patent and copyright. Even though the two areas of law have arguably diverged on the role of effort and costs in determining protection, the continuing prevalence of efforts and costs as factors of consideration suggest that the metaphor of natural monopoly has some sway over both areas of law.

2. Trademarks

As the quotation of dubious origin discussed in the previous section shows, there is a connection between trademark and natural monopoly. Much like with copyright and patent, trademark protection is justified as protecting that high fixed costs that must be incurred when a firm creates the subject matter of trademark which make the firm analogous to a natural monopoly. There are three ways in which the metaphor of natural monopoly operates in trademark law: 1. trademark protection of goodwill; 2. trade dress protection; and 3. famous marks.

Protection of goodwill is often cited as a reason for enforcing trademark rights. A trademark infringer is often deemed to have free ridden on the goodwill of the trademark holder in order to steal customers and sales. In some instances, goodwill often is mentioned in a copyright infringement suit. Black's Law Dictionary defines goodwill as "[p]roperty of an intangible nature, commonly defined as the expectation of continued public patronage,"³⁸ citing *In re Marriage of Lukens*,³⁹ a case about the division of assets upon divorce as the source. The relationship between trademark and goodwill is not completely clear. In some cases, a trademark might be an embodiment of goodwill, capturing the continued patronage in a valuable symbol. In other cases, trademark law creates a set of rights that protects goodwill from being misappropriated. In other instances, still, goodwill might be a property of the trademark itself with its ability to attract customers and create consumer recognition.

Another definition of goodwill provided by Black's is "[t]he ability of a business to generate income in excess of a normal rate on assets, due to superior managerial skills, market position, new product technology,...[or] due to establishment of favorable community reputation

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and consumer identification of the business,”⁴⁰ citing *Community Hospital v. Harris*,⁴¹ a case about Medicare reimbursement by a hospital as the source. Although the definition does not mention trademark, relationship between goodwill and “reputation and consumer identification of the business” implicates trademarks. What is interesting about this definition is the parallel with one definition of a natural monopoly that sometimes occurs in the economics literature. To the extent that trademark law creates consumer identification, and this consumer identification creates goodwill which results in the ability to generate income in excess of a normal rate, this definition of goodwill establishes a relationship, albeit tenuous, between trademarks and natural monopoly.

But the relationship among goodwill, natural monopoly, and trademark might be more straightforward than the definitions in Black’s Dictionary reveal. Goodwill is the product of business investment to create identification by consumers of the source of a product. These investments often will entail high cost ventures such as advertising and marketing campaigns to promote consumer loyalty and to generate continuing business. To the extent trademark law is protecting goodwill, trademark law is also protecting the extensive costs to create goodwill. In this way, there is a connection between trademarks and natural monopoly at a metaphorical level. Goodwill results from the presence of fixed costs and trademarks serve to protect these investments much in the same way that natural monopoly regulation serves to protect firms that operate under a particular cost structure.

The argument for grounding trademark law in the costs for creating goodwill is quite pronounced in the case law on trade dress. In *Two Pesos v. Taco Cabana*, the Supreme Court ruled that secondary meaning was not necessary to establish trademark protection for restaurant decor.⁴² A business could obtain trademark protection for its decor by establishing that it is inherently distinctive. In reaching this decision, the Court relied extensively on the high costs of creating restaurant decor and trade dress more broadly and the need to protect business establishments, especially small ones, that had expended effort and money into developing the decor. In subsequent cases, the Court backed away from this holding, ruling in *Qualitex*⁴³ that color, an element of trade dress, could be protected only upon a showing of secondary meaning, and in *Samara Brothers*,⁴⁴ that product design, another element of trade dress, also required secondary meaning to receive trade dress protection. In the second of the last two cases, the Court distinguished *Two Pesos* by stating that trade dress involving product configuration

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required secondary meaning while that involving product packaging did not.⁴⁵

With its distinction between product configuration and product packaging, the Court moves away somewhat from the cost justifications that informed its Two Pesos decision. The distinction, first of all, recognizes the effect of trade dress protection on competition. In terms of the thesis of this paper, framing trademark law too tightly within the metaphor of natural monopoly may introduce anti-competitive forces in an otherwise competitive market. Therefore, the Court is reluctant to allow trademark protection unless some other interest, like consumer reliance on trade dress as determined through the existence of secondary meaning, is affected. Second of all, the distinction acknowledges the different roles that trade dress plays in marketing products and services. Product packaging serves only a branding function allowing consumers to distinguish among products and services. Product configuration, on the other hand, may serve many purposes beyond branding. The coke bottle, to take the Court's example, may serve to brand the product, but it also serves to contain and distribute the product.⁴⁶ If trademark too readily protects the bottle, it may be used to exclude two functions rather than one, which can result in harms to competition. Therefore, for cases of product configuration, the trade dress owner must establish secondary meaning to show that the branding function would be lost if trademark protection is denied. In short, the Court's trade dress jurisprudence demonstrates not only the application of natural monopoly thinking, but also its limitations, a point I will return to in Section Four on recoding natural monopoly theory for intellectual property.

Finally, the case of famous mark shows the dominance of the metaphor of natural monopoly in trademark law. The rationale for the special protection for famous marks under the federal anti-dilution statute can be traced to Frederic Schechter's article on dilution in which he stated "that the preservation of the uniqueness of a trademark should constitute the only rational basis for its protection."⁴⁷ The preservation of uniqueness sounds like the strong type of exclusivity that has been used to justify institutions like the post office or the telephone system. The interesting question is the source of the uniqueness. Advocates of protection for famous marks from dilution often point to the costs expended to develop and maintain the marks. Given these costs, protection should extend beyond mere potentially confusing uses of the mark to include uses that blur or tarnish the mark. The relevance of costs to these arguments in defense of anti-dilution are a third example within trademark law of the influence of the natural monopoly metaphor.

3. Antitrust

The concept of natural monopoly is, not surprisingly, pervasive in antitrust law, serving

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as a limitation on illegitimate market power and as a dividing line between antitrust actions against concentrated industries and direct statutory regulation. Natural monopoly, among a minority of scholars, serves as a bridge between antitrust and intellectual property, the concept allowing the use of antitrust to limit the exclusivity of intellectual property through such doctrines as the essential facility doctrine. While this strategy is in most instances misguided, the concept of natural monopoly does provide some common ground between antitrust and intellectual property, illustrating how some shared misconceptions inform each field and how, more generally, the metaphor of natural monopoly, incompletely understood can be problematic.

The most prominent appearance of natural monopoly in antitrust is in the essential facility doctrine, which states that a firm has a duty to compete with competitors and even allow access to its business property when the firm has an essential facility.⁴⁸ Courts, following academic commentators, have defined an essential facility as one of the following: 1. natural monopolies; 2. facilities whose duplication is forbidden by law; 3. Publicly subsidized facilities that cannot practically be built privately; or 4. the sole facility in a relevant geographical area.⁴⁹ Under United States law, very few facilities have been found to be essential, and while the case that intellectual property creates an essential facility (arguably under the second definition) has been made, no court has followed the suggestion.⁵⁰ European competition law has been more forthcoming to deeming intellectual property based assets, such as databases in at least two cases, to have characteristics of an essential facility mandating close scrutiny under competition law.⁵¹ This difference may have to do with different views about competition law and the desirability of intellectual property. The difference may reflect that the European Union is more protective of intellectual property than the United States, the difference in treatment of databases discussed above as one example.⁵² What is interesting for the purpose of this paper is that a natural monopoly may create an essential facility. To the extent that intellectual property shares some characteristics with natural monopoly, what implications do these shared characteristics have for the controversial relationship between antitrust and intellectual property?

The argument that treating intellectual property like a natural monopoly leads to greater antitrust scrutiny of intellectual property fails. While commentators have suggested that a natural monopoly creates an essential facility, no court has actually found an essential facility in the context of a natural monopoly. The Otter Tail case is an essential facility case that implicated a natural monopoly, but the application of the essential facility doctrine in that case

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rose out of the interaction of geographic restrictions and government regulations.⁵³ At issue in the case was the practice of a electric utility company in denying access to retransmission lines to other companies outside the utility's territory. The Supreme Court upheld the antitrust action brought by the United States because the regulatory protection the utility enjoyed combined with the geographic advantages gave the company the market power needed to act anti-competitively. One way to limit this power was to require access to power lines, an essential facility. What *Otter Tail* teaches is not that natural monopoly will create an essential facility, but that close scrutiny of a regulated industry is needed to discover potential anti-competitive effects. To the extent that intellectual property is a system of regulation, as I am arguing, the lesson from the essential facility doctrine is not that intellectual property is an essential facility, but that the particular regulatory structure needs to be more carefully understood in order to determine the application of antitrust scrutiny.

In fact, one recent, and controversial, development in the essential facility doctrine is consistent with this regulated industry view of antitrust law. In *Verizon v. Trinko*,⁵⁴ the Supreme Court retreated from acknowledging the essential facility doctrine, stating flatly that the Court had never recognized the doctrine. The *Otter Tail* case was catalogued as a regulated industry case, involving a different industry and set of regulations than those of *Trinko*. The Supreme Court in *Trinko* held that a telecommunications company could not bring an antitrust suit when denied access to telecommunications infrastructure when Congressional regulation did not permit such a suit. In short, the Court deferred to the regulatory scheme established by Congress, and since the scheme did not allow for an antitrust suit and, furthermore, would have been upset by such a suit, the antitrust claim was dismissed.

Such a result would follow from conceptualizing intellectual property as a natural monopoly. The Court has already shown a strong deference to Congress in its intellectual property jurisprudence. The decision in *Eldred v. Ashcroft*⁵⁵ is perhaps the strongest and most recent indication of its deference, but it is apparent in a string of cases going back at least to *Graham v. Deere*, and continuing on through *Diamond v. Chakrabarty*,⁵⁶ *Feist v. Rural Telephone Service*,⁵⁷ *J.E.M. v. Pioneer Hybrid*,⁵⁸ and *Dastar v. Twentieth Century Fox*.⁵⁹ If the Court were asked to determine the proper relationship between intellectual property and antitrust as framed by natural monopoly theory, the most likely outcome is the one observed in *Trinko*.

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The Court will defer to the regulatory scheme of intellectual property established by Congress, which has developed to be very protectionist, and conclude that intellectual property is exempt from antitrust scrutiny. The Court will back even further away from countenancing the essential facility doctrine that received nominal endorsement in *Otter Tail*.

My point here is that there are strong reasons for being skeptical of treating intellectual property as a form of natural monopoly. But as I discuss below in my decoding of natural monopoly theory, lessons from criticisms of natural monopoly theory may be useful in critiquing intellectual property law and its particular relationship with antitrust implied by Trinko. The lesson is that if one accepts the natural monopoly metaphor in intellectual property, one must accept the bitter and the sweet, the implications of the criticisms of natural monopoly as well as the implications of the theory itself.

The importance of recognizing the criticisms of natural monopoly theory becomes even more crucial as one observes the perverse ways in which antitrust law does incorporate concepts from natural monopoly to support results that are arguably anti-competitive. A striking example of this tendency is the Eleventh Circuit's decision in *Morris v. Professional Golf Association*, a 2004 decision dismissing an antitrust claim of exclusionary conduct brought by a news organization against the PGA.⁶⁰ The Golf Association had, according to the findings of fact accepted by the district court, spend \$ 26 million to create the Real Time Scoring System,⁶¹ which allowed the Association to collect golf scores and transmit them to the Internet in time with the progress of the game. Morris was a news agency in contract with PGA to report on the games and was given access to RTSS to transmit real time scores from the PGA web site to that of newspapers. However, because of some improprieties, Morris was denied access to the system and sued, raising antitrust claims, including denial of an essential facility. The court ruled that PGA could deny Morris access if it had a valid business justification. The valid business justification accepted by the court was the need to protect PGA's extensive investment in creating the scoring system. The court characterized Morris as a free rider, and PGA as a defender of its property.

The result of the case is understandable, but the reasoning is flawed. In a previous article,⁶² I have criticized the court's use of free riding as an antitrust business justification as conflating the boundaries of antitrust and intellectual property. For my purposes in this article, the court's reasoning illustrates how natural monopoly thinking, particularly the reliance on high fixed costs as a need to protect a firm and grant it a right of exclusivity can pervade antitrust as well as intellectual property. It is perhaps not surprising that the emphasis on fixed costs and free riding makes an appearance in *Morris* given the resonance of intellectual property in the

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facts. A contemporary incarnation of *International News Service v. Associated Press*,⁶³ the analysis of the two cases show important parallels. In *International News Service*, the Supreme Court recognized a quasi-property right that allowed a company to sue a competitor for free riding by stealing the fruits of its efforts. In *PGA*, the Eleventh Circuit allows this quasi-property interest to serve as a business justification for exclusionary conduct in an antitrust action. The presence of an intellectual property interest serves to limit the reach of antitrust.

What is even more compelling about the parallel between the two cases is that the *INS* decision has been described by one commentator as a case that is really about the regulation of a natural monopoly.⁶⁴ Consistent with the Supreme Court's decision in *Trinko*, which is cited in *Morris*, the Eleventh Circuit permits a natural monopoly to escape antitrust scrutiny implicitly because it is regulated elsewhere. The metaphor of natural monopoly is not bounded by the doctrines of intellectual property law. To the extent that intellectual property and antitrust overlap in its domain, it should be no surprise that the metaphor appears within antitrust doctrine as well.

D. Summary

The point of this section has been to show that there is a metaphor of natural monopoly in intellectual property law, and that it sometimes seeps beyond intellectual property into related areas like antitrust. Having identified the elephant in the room, the next section will attempt to coax it from the shadows so as to better understand it. The subsequent section will attempt to tame. I describe these two moves respectively as decoding and recoding natural monopoly theory for the purposes of intellectual property law.

III. Decoding

The previous section illustrates how the appeal to the concept of natural monopoly in intellectual property theory and practice. As metaphor, natural monopoly makes central the role of cost in shaping intellectual property law. But, what is a natural monopoly? What is wrong with the concept? What does any of this have to do with intellectual property? These three questions are answered in this section in order to correct the misguided use of natural monopoly theory.

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A. When Only One Supplier Can Fit in the Market⁶⁵

A monopoly is a market with one supplier and many demanders of a product or service. Very few markets are actual monopolies since economies are so linked geographically and technologically. Nonetheless, the concept of monopoly is a useful construct to analyze tendencies in markets as firms become more concentrated through mergers, acquisitions, and other forces. A natural monopoly is a construct used to identify certain market conditions that support only one supplier in order to promote efficiency. This construct is used to recognize that in some situations, the norm of competition may not lead to the most socially desirable result from the perspective of efficiency. In the case of natural monopoly, market competition may even be destructive to social goals. As a result, some corrective is needed to protect society from the consequences of unchecked natural monopoly.

When understood this way, the construct of natural monopoly is very similar to that of externality, another condition that leads to the failure of market competition. An externality occurs when individual buying or selling decisions creates benefits and costs that fall on third parties whose interests are not reflected in the buying or selling transaction. The existence of an externality can result in too little or too much of the activity that produces the externality. This situation can be cured by either taxing or subsidizing the transaction or by incorporating the interests of the third party into the transaction in order to “internalize the externality.” The concept of natural monopoly also guides the regulation of market transactions and justifications for various policy interventions. However, the concept of natural monopoly is as problematic as that of externality. The heart of this paper is the exploration of problems with the natural monopoly construct, especially as the construct arises with intellectual property. Before addressing the problem, let me present the basic structure of the natural monopoly argument.

The natural monopoly argument begins with a particular understanding of firm behavior and competition. Firms, first of all, are assumed to maximize profits, which is defined as the difference between total revenue and total costs. The analysis is formulated in terms of profits per unit sold. Since total revenue is the price multiplied by the units sold, profits per unit sold can be measured by comparing the market price with the average total cost of producing those units sold. If firms operate in an environment of competition, the market price will tend to be pushed down to the marginal cost of producing the last unit sold in the marketplace. If competitive conditions are at work, then prices should also be driven down to the average total cost of producing the last unit sold in the marketplace. This last statement is crucial to the argument in favor of competition. If the market price were above average total cost, firms would have the incentive to supply more goods to the market, driving the market price down until it equaled average total cost. Competition leads to a long run equilibrium in which the market price equals both the marginal cost and the average total cost of production. In this long run

⁶⁵ For an extended discussion of the themes in this subsection, see Sanford V. Berg & John Tschirhart, *Natural Monopoly Regulation: Principles and Practice* 1-34 (1988).

equilibrium, firms have no incentive to either enter or leave the market, and market demand is satisfied.

The natural monopoly situation arises when average total cost declines as a firm produces more output. In such a situation, the relationship between market price for the good, the marginal cost of production, and the average total cost are not in the necessary alignment for the long run equilibrium required for competition. When average total cost is declining, several elements work against the forces of competition. First, a single firm can expand production while average total costs are falling and meet more of the market demand. As average costs fall, the single firm can afford to lower the price it charges and take demand away from other firms. Second, if firms try to compete in this way by expanding output and lowering price, the market price will be forced down until it becomes unprofitable for firms to continue in the marketplace. This downward pressure on price arises from the increased supply of product in the marketplace and the tendency of competition to force price down to marginal cost. These forces together result in, what has been labeled, destructive competition. Because of the destructive tendencies of competition, the argument goes, only one firm can profitably survive in the marketplace. In markets where average total costs are declining dramatically, the preferred structure is having a single firm that is regulated in a way that meets the demand of consumers.

There is a superficial similarity between the natural monopoly story and the stories often told about intellectual property. This similarity is explored, in more detail, below. But at the outset, one common element is that a natural monopoly entails granting strong exclusivity to the firm that operates in the marketplace. This exclusivity is established with legal regulations that make it impossible for competitors to enter into the marketplace. Given the implication of strong exclusivity that arises from the natural monopoly story, it should not be surprising that scholars who champion strong rights turn to the natural monopoly story for support. The rhetorical device of natural monopoly, however, has seeds of its own destruction. For the past forty years, the construct of natural monopoly has been under attack, and the criticism of natural monopoly, appropriately serves to challenge and rethink strong intellectual property rights. The next subsection describes the challenge to natural monopoly theory which will be used in the rest of the paper to buttress the case for rethinking strong intellectual property rights.

B. Not So Natural A Monopoly

Criticisms of natural monopoly fall into three types. The first type addresses implicit assumptions about information and cost. The second type raises the possibility that potential competition may lessen the need for government regulation. The third type focuses on consumption and other institutional considerations in shaping the marketplace. Each of these types of criticism has implications for the shape of intellectual property.

Natural monopoly arguments often lead to the establishment of rate regulation for the monopolized entity. Utilities such as electricity and telephone traditionally are restricted in their

ability to set the price for their services and must report their costs to regulatory bodies that use the information to set rates that the utility can charge its customers. The earliest criticism of natural monopoly pointed out that traditional rate regulation created incentives on the part of the firm to overstate its costs in order to be able to charge more rates.⁶⁶ Since rates were usually set based on reported estimates of costs, the firm could raise its rates and receive a larger margin by engaging in behavior that raised costs. The claim of gold plating was a typical one against the regulated entity and was the basis for much reform of rate regulation in the Seventies and Eighties. Critiques of rate regulation also expanded how theorists looked at the natural monopoly problem more broadly. Specifically, government regulation was understood to entail problems of information and manipulation that created the need for new models of competition to deal with the problem of declining average total cost. Natural monopoly was not deemed to be truly natural, or inevitable, but one set of political choices that could be replaced with alternatives.

One alternative was offered through the idea of potential competition, an idea that is the basis for the second set of criticisms of natural monopoly.⁶⁷ Direct government regulation designed to control price and improve service of a monopolized firm would not be necessary if the natural monopolist recognized that his position was temporary and could be deposed and replaced with another firm. The deposing could occur as another firm attracts existing customers by offering better terms of service, or it could be implemented institutionally by creating the natural monopoly by franchise that would be awarded through several possible mechanisms, such as a direct grant by the government, auction, or state licensing. The system of franchise is, of course, remarkably similar to patent or trademark protection, under which exclusive rights are granted to an inventor or user of mark either for a limited duration (as with patents) or under strict conditions such as use and capacity to distinguish (as with trademarks).

What is worth emphasizing here is the type of institutional assumptions that inform the critique of natural monopoly based on potential competition. The most critical assumption is that of the low costs of entry and negotiating contracts that must be true for potential competition to be effective. If customers are reluctant to switch suppliers, or if the granting of the franchise is entrenched for some reason, then the disciplining effect of potential competition is reduced. But the heroic assumption of costless competition is common to many economic arguments. If transaction costs are high, reforms can be implemented to cure them to ensure that the monopoly position is temporary in fact, and not just in theory. What is more compelling is how this critique asks us to rethink the form and nature of competition. Instead of operating solely

⁶⁶ See H. Averch & L. L. Johnson, Behavior of the Firm Under Regulatory Constraint 52 *American Economics Rev.* 1052-1069 (1962). For a survey of these critiques, see Jean-Jacques Laffont, *The New Economics of Regulation: Ten Years After*, 62(3) *Econometrica* 507-537 (1994).

⁶⁷ For the earliest statement of this critique, see George J. Stigler, *The Organization of Industry* 18-22 (1968).

through price signals that seemingly neutrally matches supply and demand, competition is psychological, operating to check opportunistic behavior through the threat of being deposed. Competition is a question of strategy among players in the marketplace as opposed to a matter of pricing and outputs. This conception of competition opens up the possibility of considering alternative ways to structure the market and related institutions.

The third strand of criticism of the natural monopoly construct can be described as a political one with implications for the sociology of the marketplace.⁶⁸ Understood narrowly, this criticism seeks to expand the focus of economic models on profit maximization and private contracting to include consideration of political constraints and institutions on markets. One strand of this approach, deriving from public choice theory, takes the position that natural monopoly regulation is suspect because it will be captured by private interests that will not seek to benefit consumers. A different strand attempts to understand the process of regulation in terms of the a contract between the regulated entity and the regulator using principal-agent theory. While public choice theory reduces natural monopoly regulation to the pursuit of profit through politics, reducing political action to economic ones, principal-agent theory concentrates on politics as a problem of information asymmetry and control. Both of these literatures broaden the study of natural monopoly regulation beyond an emphasis solely on economics to include political bargaining and institutions, albeit through the lens of economic decision making.

Casting the research net more widely shows that the third stand of criticism goes beyond the discipline of economics. The literature on privatization of regulated monopolies challenges the purely economic theory of natural monopoly by identifying the democratic virtues that can be promoted and pursued by replacing government controlled monopolies with a combination of private sector initiatives and more transparent and accountable regulation.⁶⁹ Grounded in the political science literature, this approach complements both public choice and principal-agent perspectives by considering institutions in addition to competitive markets and bureaucracies. A deeper cultural critique of natural monopoly theory can also be gleaned from this work. The cultural critique identifies the construction of consumerist values and the place of institutions such as cooperatives and lobbying groups whose interests counter those of regulators and concentrated firms. I call this a cultural critique because the argument shifts the natural

⁶⁸ See discussion in Jean-Jacques Laffont, *The New Economics of Regulation: Ten Years After*, 62(3) *Econometrica* 507-537 (1994).

⁶⁹ For a survey of the literature with a focus on political and market institutions, see Michael Waterson, *Regulation of the Firm and Natural Monopoly* 122-144 (1988). For an engaging discussion on the role of regulation in the construction of the marketplace and the consumer in bookselling, see Laura J. Miller, *Reluctant Capitalists: Bookselling and the Culture of Consumption* 197-205 (2006)(analyzing the politics of consumption). See also Charles Wolf, *A Theory of Nonmarket Failures*, 55 *Public Interest* 114-133 (1979)(developing a theory of political failure that complements theory of market failure).

monopoly problem from an issue of production (as captured by costs) to one of consumer values and the relationship among individuals within the structures of market and government bureaucracy.

In summary, the reactions to natural monopoly theory can be distilled into three points. First, incompleteness and asymmetry of information destabilizes the relationship between the regulator and regulated. Second, alternative forms of competition and structures of regulation can address the problems of information and include broader interests in the construction of market and government. Third, the inclusion of other interests and restructuring of markets and bureaucracies requires a rethinking of politics and the role of the consumer. To the extent that intellectual property is understood through the lens of natural monopoly, each of these critiques has implications for how to revitalize our understanding of intellectual property policy.

C. Natural Monopoly and Intellectual Property

There are two prongs to my argument. First, the intellectual property incentive is justified on the same terms as a natural monopoly. Second, since natural monopoly theory has come under close scrutiny, the terms of this scrutiny should apply to intellectual property. In this section, I explicate both of these points, by showing how the intellectual property incentive parallels the justification for natural monopoly and by illustrating what the critiques of natural monopoly teach for intellectual property.

The case for intellectual property rests on grounds very similar to those for natural monopoly.⁷⁰ Creating and inventing are each costly ventures. Artists and research scientists often must spend many hours and use much capital intensive resources to experiment with various techniques and produce multiple first drafts and prototypes before reaching the final product. In the language of economics, there are high fixed costs to creation and invention. More vexing, once a new work is made and publicized, it is relatively costless to copy the innovation. The combination of high fixed costs and low cost of copying often is used to justify the exclusivity of intellectual property. This justification is similar to that for the exclusivity of a natural monopoly. High fixed costs and relative ease of costlessness, or so the argument goes, would result in destructive competition as the entry of new firms would drive the market price down to zero, resulting in losses and the exit of firms until the market becomes concentrated. More analytically, the combination of high fixed costs and low costs of copying result in declining average total cost, a cost structure very similar to what is observed for natural monopolies. Because of this cost structure, exclusivity is needed to create artificial scarcity in the marketplace that can result in above marginal cost pricing that would avoid the destructiveness of competition. Intellectual property, like natural monopoly, is a necessary

⁷⁰ For some background to the ideas in this section, see Erich Kaufer, *The Economics of the Patent System* 24-41 (1989); Ashish Arora, Andrea Fosfuri, & Alfonso Gambardella, *Markets for Technology: The Economics of Innovation and Corporate Strategy* 115-141 (2001).

exception to the norm of competition, an island of exclusivity and restricted necessity needed to realized the benefits of innovation, as natural monopoly is needed to recognize the benefits of scale.

While the link between natural monopoly style thinking and strong intellectual property rights is clear, even more troubling is natural monopoly style thinking that arises in arguments limiting intellectual property. A common claim is that the exclusivity of intellectual property should be enough to provide incentives to produce the work. Operationally, this claim can mean many things. This statement most often makes a normative admonition against making intellectual property rights too strong. However, if one starts from the proposition that intellectual property is needed because of high fixed costs and low costs of copying, the statement has a parallel in rate regulation of natural monopolies. According to natural monopoly theory, the regulator would set rates according to the firm's average cost in order to allow the firm to cover its cost of production and earn a fair rate of return on its investment. Although the claim of making intellectual property exclusive large enough to create incentives to make the work lacks the mathematical exactness of traditional rate regulation, the parallel is nonetheless striking. Furthermore, other reforms of intellectual property, such as the use of auctions or rewards, also parallel proposals in the natural monopoly literature to deregulate utilities by creating alternative incentive mechanisms to direct regulation, such as through the setting of rates.

To identify a parallel between natural monopoly style arguments and some common arguments in intellectual property may ignore some other very common justifications for intellectual property protection. For example, intellectual property would extend to spontaneous creations, works that may have been created by accident or in general without the high fixed costs that I have claimed to be a common feature of intellectual property justifications. Copyright applies to works that are fixed and original. As the cost of copying has fallen, arguably so has the cost of fixing an original work. Furthermore, as artistic styles have moved from representational to abstract, making creative works that are deemed original has also become cheaper. Therefore, the fixed cost rationale may not exist for many works that are granted copyright protection. In addition, section 103 of the Patent Act states that nonobviousness should be determined without regard to the manner in which an invention is made, implying that even inventions made with low fixed costs can meet the standards for patentability. Taking away the high fixed cost assumption would seemingly loosen the parallel between intellectual property protection and exclusivity. Furthermore, intellectual property protection also extends to situations where the costs of copying may actually be quite high. For example, architectural works and sculptures are both protected by copyright. Complex chemical and industrial processes are protected by patent are not cheap to copy. In these cases, where fixed costs are not high and the costs of copying are not low, arguments for intellectual property protection seem not to parallel natural monopoly arguments at all. Instead, the rationale lies more likely in natural rights or authors rights.

There are two responses to this point. The first is that the counterexamples do not

address the most salient cases for intellectual property. Natural monopoly-like justifications for intellectual property are most prevalent in the controversial areas of database protection, computer software, and biotechnology. Therefore, addressing the high fixed cost-low copying cost rationale is critical even if there are alternative rationales for intellectual property. Second, even if natural rights or authors rights rationales do arise in intellectual property, the predominant paradigm for intellectual property is a utilitarian one supporting the need to create incentives through intellectual property protection. A utilitarian rationale would apply just as easily to the low fixed cost/high copying cost situation. Exclusivity is deemed necessary, regardless of cost structure, in order to create incentives for creating and inventing. It is the broader incentives-based justification that is the target of my argument. Even if the case I make here works solely against natural monopoly-like arguments in intellectual property, I will have made an important step in helping to understand intellectual property as more than just a mechanism to create incentives.

The second prong of my argument is to draw implications from criticisms of natural monopoly theory for intellectual property. Natural monopoly theory has been criticized on three grounds: problems of incomplete and asymmetric information, the need for alternative institutional structures that permit competition, and the role of politics and the consumer. To the extent that intellectual property theory parallels natural monopoly theory, the criticisms are equally fitting. If intellectual property rights are to be constructed in order to provide just enough incentive to create the work, there is an insurmountable problem in determining what the right amount of incentive is. Absent some way to determine what this amount is, even with a heuristic rather than through mathematical exactness, the tendency will be to make intellectual property rights as strong as possible. The problem is equivalent to the gold plating and cost containment problems that affected traditional cost based rate regulation. One response to this problem is to allow for some degree of competition as a cure to the problem of exclusivity, recognizing that the existence of potential competition may cure the dangers of destructive competition. In the case of intellectual property, the influence of potential competition can be introduced through doctrines such as fair use, the first sale doctrine, and experimental use that place fuzzy limits on exclusivity. Finally, the role of institutions other than markets and the place of competition aid in recognizing that intellectual property is not simply about the creation of new works, but about their use. By unleashing the interests of the consumer, intellectual property can temper the exclusivity of intellectual property owners and create institutions that promote innovation and its distribution. Once again, this last critique justifies the need for intellectual property doctrines that place some limits on strong rights of exclusion.

IV. Recoding [Note to reader: This section is being expanded and will be the heart of the paper.]

Decoding the rhetoric of natural monopoly in intellectual property has two implications. First, the language of natural monopoly aids in characterizing intellectual property as a system of regulation as opposed to a system of property. Needless to say, regulation and property are not

binary opposites, with private property rights serving as a well-studied tool for regulation. But recognizing intellectual property as regulatory aids in developing an understanding of intellectual property law as public law. The move from private law to public law is one that can be easily misunderstood and misapplied. Those suspicious of government will be, or should be, concerned that the hand of the state finds its way into control over expressive and inventive activity. Regulation may be deemed as inherently anti-democratic and contrary to freedom of all sorts, economic, political, expressive, and associative. But those suspicious of governmental power should equally be suspicious of private power. Of course, the two are not equivalent, but each is likely to be pernicious and troublesome to the exercise of freedom. Identifying a public interest strain to intellectual property can counter the exercise of private power by ensuring that the freedoms and rights protected by intellectual property are distributed in a just and efficient manner.

Those suspicious of characterizing intellectual property as regulation might find consolation in the second implication from decoding natural monopoly theory in intellectual property, the application of critiques of natural monopoly regulation to intellectual property reform. On this point, the political implications run in many directions. Criticisms of natural monopoly theory have supported a movement towards deregulation and privatization, and such a move for intellectual property may placate those who advocate for stronger rights. But deregulating intellectual property does not simply mean the removal of state intervention and the expansion of private rights. Rather, deregulating intellectual property in a way analogous to the deregulating natural monopolies mandates the loosening of exclusionary rights. Reflecting the complex interplay of the private and public realms that is represented by the state grant of private rights, deregulating intellectual property requires a movement away from strong property rights to a regime that recognizes limits on exclusion. The criticisms of natural monopoly theory can facilitate the identification of these limits.

Recoding natural monopoly extends the three criticisms of natural monopoly regulation to intellectual property reform. The three criticisms are (1) the problem of information asymmetry between the regulator and the regulated entity; (2) the problem of potential competition; and (3) the problem of politics in shaping regulation. Each of these criticisms maps onto an important strand of intellectual property reform, as advocated by both the right and the left. First, information asymmetry leads to more openness in the process of intellectual property administration and application. For reasons that I will make clear below, this openness calls for a recognition of the interests of users in intellectual property law. Second, potential competition maps onto the problem of market structure in intellectual property law. And, finally, the problem of politics maps onto more careful consideration of administration and agencies in intellectual property law. I will examine each of these in turn.

A. Rate Regulation, Information Asymmetry and the Place of the User

One aspect of natural monopoly regulation was the setting of rates. Economic theory predicts that in order for a firm to survive in the marketplace, it must be able to charge a price

that allows it to recover its average total cost of producing and distributing the good or service. If price systematically stays below the average total cost, the firm will not be able to survive. More technically, average total cost consists of average fixed cost and average variable cost. The fixed component of cost constitutes what is more commonly known as overhead costs, costs the firm must incur whether it operates or not. The variable component of cost constitutes the operating costs. Since the firm must pay its fixed costs whether it operates or not, sometimes it is said that a firm can survive in the marketplace as long as the price it charges is above its average fixed cost. The formulation becomes more complicated as one varies the time frame within which firms operate, and the typical distinction is between short run and long run costs. Economic theory distinguishes between the long run and the short run based on the ability of a firm to vary its operations. Since in the long run, a firm can vary its operations, all costs are considered variable and the fixed and variable distinction no longer exists. Therefore, sometimes it is stated that in the long run price must be above the average total costs for a firm to survive.

The point of this explanation is to illustrate the difficult task of rate regulation. In practice, the regulatory body would have to set rates so as to cover the regulated firm's average costs, and therefore rate regulation entailed obtaining detailed accounting information about costs from the regulated firm in order to set rates. Rate regulation is largely a practice of the past as many utilities have become deregulated and privatized. But surprisingly we see some vestiges of rate regulation in compulsory licensing schemes that exist, for example, in copyright for broadcast licenses or for digital audio transmission rights. These licensing schemes are negotiated regimes overseen by the Copyright Royalty Board, and therefore quite a bit different from classic rate regulation. But the critique of rate regulation is equally applicable to contemporary, negotiated license regimes, and more importantly, the critique is relevant to understanding the structure of intellectual property law from the perspective of natural monopoly theory.

The critique of rate regulation is a basic one of moral hazard. Since the regulator depends upon the information supplied by the regulated body to set rates, the regulated body has the incentive to inflate the information in order to have the benefit of rates set as high as possible. This inflation may occur through fraud, but auditing and oversight can detect such abuses. More pernicious is the inflation that occurs from the lack of incentive to curtail cost. Economists Averch and Johnson first reported on the incentive of the regulated entity to goldplate its facilities by not producing the good or service in as efficient a manner as possible. Economic theory can take care of this information problem by setting the incentives to curtail costs either by setting parameters for production or by establishing rate setting formulas that the regulated entity can internalize in its decision making. But the presence of moral hazard promotes the need for alternatives to rate regulation as a mechanism for distributing and pricing services and products provided by regulated entities.

Evidence of gold plating can be found in the intellectual property area. Reports in the case law of the costs of creating a database in the English racing cases or the real time scoring

system in the Morris case more than hint at the problem. The rejection of the sweat of the brow doctrine in copyright and the debate over innovation in patent law are consistent with the concern of moral hazard when intellectual property rights are tailored to the costs of producing a work. Furthermore, the absence of government involvement in price setting for intellectual property would seem to imply that the moral hazard issues would be minimal. Private negotiation between willing parties set the rate at which intellectual property protected works are distributed to the public, and this rate would, it is argued, reflect the costs of creating and the private value of using the work.

But the licensing model as a means of measuring value in the marketplace is also riddled with information problems. Potential licensors might hold out on licensing valuable projects for idiosyncratic or arbitrary reasons, which would tend to inflate the costs of licensing intellectual property. The literature on the inefficiencies of licensing are well-documented, and the problems are well known. The usual response to these problems is that licensing, while not the best alternative, is better than other means of distributing intellectual property, such as through government procurement or variations that reflect different forms of rate regulation. The choice, however, is not between voluntary licensing and involuntary licensing, but among different sets of rights structures against which licensing occurs. These rights include not only the rights held by the intellectual property owner, but also the options that the user has to licensing the work. Using these options are limited to creating or inventing around the world. But interpretations of the fair use doctrine and other user protective doctrines can structure the background rights in a way that can resolve many of the information problems associated with licensing.

A well-known critique of fair use is that the methodology tends to be circular when lost licensing revenues are considered as a harm to the intellectual property owner's market that militates against fair use. Of course, this reasoning is circular and turns fair use into a nullity. But the reasoning reflects the often confused intersection between fair use and licensing. What is more troubling about the reasoning is not that it is circular, but that it is backwards. Loss of licensing revenue is not a strike against fair use, but failure to license is arguably a factor that weighs in favor of finding fair use. When failure to license reflects a hold out by the intellectual property owner that would inflate the value of licensing the work, fair use should be used as a check to ensure that the work can be used. While this argument resonates with the well-known rationale that fair use serves to mimic the licensing market when transaction costs are high, the argument is quite a bit different. When a copyright owner refuses to license a work after a user has made an effort to license the work, the licensing failure does not result from transaction costs. Rather, bargaining failure may have resulted because the copyright owner has inflated the value of licensing. The other fair use factors serve, in this circumstance, to aid in determining the value of the use and as proxies to determine if the copyright owner is in fact inflating the value of the licensing. Fair use would be triggered by an unexplained failure to license, but the finding of fair use would rest on a careful consideration of the other factors.

The analysis of fair use suggests a broader point of the importance of the user in the

licensing model of intellectual property. The usual conception is that the intellectual property owner determines how the work will be licensed and on what terms by retaining a firm right to exclude with some narrow exceptions. The problem with this model is that it assumes either that the owner has a fairly good knowledge of the demand for the work and therefore can set rates based on market demand in order to maximize its revenue or that it is only the preferences of the licensor that matters for the licensing decision. Note that either can potentially lead to an efficient outcome. In the first instance, if the owner can perfectly price discriminate, then market demand will be satisfied with each user obtaining a license priced at his willingness to pay. In the second instance, if a potential user cannot license a work, but can invent or create around it, then each user becomes a potential licensor of a new work. The ability of either form of the licensing model to work rests effectively on the judgment of the licensor. The user is effectively a passive participant in the marketplace, rather than an active creator that may generate value for the intellectual property protected work. Just as traditional rate regulation relies upon the information provided by the regulated entity, so the traditional licensing model relies upon the licensor to create the marketplace, ignoring the user.

Deregulating intellectual property along the lines of deregulating natural monopolies requires recognizing the role of the user in creating value for the work. By liberating the user, through intellectual property doctrines that give more scope for potentially unlicensed uses of protected works, the tendency of the intellectual property owner to inflate value will be mitigated. Furthermore, the marketplace for the work will more fully reflect the value of the users in pricing and defining the scope of licenses. In this way, the information asymmetries of the licensing marketplace will be partially cured. [expand this section with more pointed examples]

B. Potential Competition and Intellectual Property Markets

A key argument for the deregulation of natural monopoly markets is the role of potential competition in disciplining a dominant firm in its pricing and distribution decisions. Potential competition also plays a role in the design of intellectual property doctrine in order to create more dynamic markets for technology and innovation. The lesson here, however, is not simply about markets. At the core of potential competition for intellectual property is the design of non-market institutions that can more effectively structure markets.

Outline of section:

- I. Theory of potential competition and contestable markets
- II. Implication of contestable markets for deregulation
- III. Application of contestable markets to technology and other IP based markets
 1. Copyright

- 2. Patent
- 3. Trademark
- IV. Implications of theory for IP doctrines
 - 1. First sale
 - 2. Fair use
 - 3. Experimental use

C. Regulatory Politics and Administration in Intellectual Property

Outline of section:

- I. Politics of deregulation
- II. What politics of deregulation teaches about politics of IP
 - 1. Consumer interests
 - 2. Administrative reform
 - 3. Political economic
- III. Implications
 - 1. APA
 - 2. Congress and courts
 - 3. Specialized courts and agencies: Unusual case of patent law

V. Final Thoughts

Regulation has become the longest four letter word during the last thirty years of debate over the role of government in the marketplace. The word rankles conservatives in the same way that property disturbs those leaning to the left. But regulation has another meaning beyond its connotation of limiting freedom and curtailing activity. To regulate is to standardize and make regular. The debates over the nature of intellectual property center on the ability of law to standardize creative and inventive activity and their outputs. In many ways, the question of what is intellectual property is about the nature of modernity and the standardization of knowledge, information, and culture. This point is especially true for the developing world, but can also help understand the furor in the developed world over the role of copyright and patents in shaping the dissemination of new technologies, such as peer to peer, and of new cultural forms, such as multimedia.

The case for intellectual property as regulation has been made by decoding and recoding the rhetoric of natural monopoly as it arises in intellectual property doctrine and policy. The metaphor of natural monopoly parallels that of property, but also provides an alternative framework for understanding intellectual property. The decoding of the natural monopoly metaphor also requires a recoding that brings to bear the criticisms of natural monopoly to intellectual property. This recoding allows us to consider a wealth of issues that have only simmered in the field: the role of consumer, the role of market structure, and the role of

administrative agencies. Understanding intellectual property as regulation frames intellectual property reform in the debate of deregulation or, to use a more recent turn of phrase, re-regulation. My recasting the problem of intellectual property as yet another chapter in the bigger debate over the role of government regulation will, I hope, revitalize what has become a sterile discussion, ossified in the terms and language of property. The move will advance many causes, but more importantly push intellectual property discussion from a nineteenth century discussion of private rights to a more contemporary discussion of politics, economics, and social organization.