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Recommended Citation

Epstein, Richard, "What is So Special about Intangible Property? The Case for Intelligent Carryovers" (2010). *New York University Law and Economics Working Papers*. Paper 243.
http://lsr.nellco.org/nyu_lewp/243

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**WHAT IS SO SPECIAL ABOUT INTANGIBLE PROPERTY?
THE CASE FOR INTELLIGENT CARRYOVERS**

by
Richard A. Epstein*

ABSTRACT

One of the major controversies in modern intellectual property law is the extent to which property rights conceptions, developed in connection with land or other forms of tangible property, can be carried over to different forms of property, such as rights in the spectrum or in patents and copyrights. This article defends the thesis that, once the differences in the optimal duration of patents and copyrights are taken into account, the carryover of basic property conceptions from tangible to intangible property should be much encouraged. In some instances, the property rights concepts applicable to land often work even better for intangible property because some of the difficulties in designing land-based systems disappear. The short life of patents, for example, obviates the need to create rules dealing with restraints on alienation over time. This article also critiques the recent development in *eBay v. MercExchange*¹ that has limited the availability of injunctions in protecting exclusive rights of patent use. In a similar fashion, the article also notes that the limitations on rights of alienation in the spectrum create major social losses, as does the use of the patent exhaustion rule in the licensing of intellectual property, as applied by the Supreme Court in *Quanta v. LG Electronics*.²

INTRODUCTION: POINTS OF DIFFERENCES AND POINTS OF SIMILARITY.

The purpose of this article is to explore anew the much contested relationship between property in tangible and intangible resources. For these purposes, I consciously use the term intangible property because it embraces not only all forms

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¹ 547 U.S. 388 (2006).

² 553 U.S. 617 (2008).

of intellectual property, but also other nonphysical forms of property, including, most critically, the airwaves and the Internet. It should be apparent from the outset that there is a tremendous diversity of resources on both sides of this line. What is less commonly accepted are the powerful similarities that span the divide between tangible and intangible property. Indeed, the quasi-separationist proposition—that we should be quite wary of drawing analogies from tangible to nonphysical property—is now taken almost as a point of conventional wisdom in academic³ and judicial⁴ writings. The physical descriptions that dominate the one area are said to create misleading metaphors that leave us ill-equipped to deal with the complexities of the other.

There is no doubt that significant differences exist between tangible and intangible property. But that point has to be put into perspective. There are equally significant differences between the various branches of the law of tangible property, such that the principles that govern land, water, minerals, oil and gas, and air rights vary immensely. There are also significant variations within the different classes of intellectual property.⁵ But, before we celebrate the culture of irreducible differences, it is important to glance at the opposite side of the coin, which shows that, on many key points, there are tight logical and functional resemblances among the various forms of tangible and intangible property. I shall stress these points of connection in order to give a more systematic understanding of the organization of a wide range of property rights systems.

In Part I, I shall give a thumbnail sketch of the basic arrangements used to deal with tangible property. I shall stress the basic common features and ignore all the small variations between the laws of different states. However important these differences are for dealing with individual cases that are selected for litigation, they

³ See, e.g., Dan Hunter, *Cyberspace as Place and the Tragedy of the Digital Anticommons*, 91 CAL. L. REV. 439 (2003); Dan L. Burk, *The Trouble with Trespass*, 4 J. SMALL & EMERGING BUS. L. 27 (2000). For the opposite view, see David McGowan, *The Trespass Trouble and the Metaphor Muddle*, 1 J.L. ECON. & POL'Y 109 (2005); Richard A. Epstein, *Intel v. Hamidi: The Role of Self-Help in Cyberspace?*, 1 J.L. ECON. & POL'Y 147 (2005).

⁴ See, e.g., *Intel Corp. v. Hamidi*, 71 P. 3d 296, 309-11, 310 n.7 (Cal. 2003) (Werdegar, J.).

⁵ I have discussed many of these issues in Richard A. Epstein, *Intellectual Property: Old Boundaries and New Frontiers: Addison C. Harris Lecture*, 76 IND. L.J. 803 (2001).

have little systemic importance for assessing the overall desirability of various property rights regimes.

In Part II, I shall identify what I think to be the salient differences between some forms of intangible and tangible property with an effort to cash out those differences. In this regard, it is critical to remember that different systems of intangible rights take on different forms, such that these differences will play out in separate, but predictable, ways as we go across different areas. In working through these examples, we must remember that the movement from tangible to intangible property actually has two opposing effects. In some instances, the shift increases the complexity of organizing a property rights system. In other cases, however, the shift to intangible property actually works a welcome *simplification* of legal doctrine.

In Part III, I apply this framework to a number of key issues that deal with the protection and transfer of property rights in order to show that the misunderstanding of the similarities between the two systems leads to serious intellectual confusion and social losses that could have been avoided by a more careful analysis of the overall situation. The first of these examples concerns the use of the highway analogy in cyberspace, most notably, in *Intel Corp. v. Hamidi*.⁶ The second deals with the right to exclude and the rise of forced transactions under *eBay Inc. v. MercExchange L.L.C.*⁷ and its progeny. A third example deals with the ability to sell or to license intellectual property, which is put in stark form by the recent decision in *Quanta Computer, Inc. v. LG Electronics, Inc.*⁸

I. PROPERTY RIGHTS IN PHYSICAL RESOURCES

Every legal system has to devise a system of property rights in order to establish entitlements to both physical and intellectual resources. In dealing with this question, the issue of natural resources came first. The Roman law system of Justinian set the framework for both the civil and common law developments for tangible property in the United States. Its initial distinction was between common

⁶ *Intel*, 71 P.3d at 296.

⁷ *eBay*, 547 U.S. at 388.

⁸ *Quanta*, 553 U.S. at 617.

and private property.⁹ Common property covers those resources that all individuals may use but that none may occupy exclusively, which, in classical times, included the air, the water, and, to a limited extent, the beach.¹⁰ On top of that system, individuals were entitled to acquire, by first possession, outright ownership of land, animals, and chattels, which they could then hold and use in exclusion of all others.¹¹ On this model, land could therefore be held in perpetuity, and animals and chattels could be held until they were consumed, used up, or destroyed. For none of these resources did the law impose an artificial limitation on the time period during which its owner might enjoy its exclusive use.

This simple division between common and private property made good sense. By keeping waterways in the commons, for example, the law facilitated transportation between owners of different parcels of private property. To allow any person to privatize a river would disrupt these valuable forms of interaction, which would then paradoxically reduce the value of all private properties that lie along the commons. The basic judgment here does not take any deep empirical insight. Water taken from a river and put into a barrel is worth a lot less to everyone than the water in a river where it can support transportation, recreation, and plant and animal life. That some water could be taken out of the commons for private use was always recognized. At the same time, however, it was always subject to limitations as part of a crude effort to make sure that, at the margin, the last drop of water taken for private consumptive use had an equal value with the last drop of water left in the river for common uses. The case for limiting withdrawal was so compelling that all customary systems have recognized the mix of collective and

⁹ J. INST. 2.1 (J.B. Moyle trans., 5th ed., 1913) (With respect to things: “some admit of private ownership, while others, it is held, cannot belong to individuals: for some things are by natural law common to all, some are public, some belong to a society or corporation, and some belong to no one.”).

¹⁰ The beach is the intermediate case because individual occupation often makes sense as when people build huts to take refuge from storms. This involves more intensive use by one individual than others, where there is a high utility to shift. But at the same time, the private interest so created is strictly limited in time. Once the storm has passed, the shelter has to come down and the beach is returned to the commons.

¹¹ J. INST. 2.1.12; J. INST. 2.66.

private uses, at least in those riparian jurisdictions where both types of uses are feasible.

Unfortunately, these open access systems are always vulnerable to political override. That destructive tendency was clearly realized with the construction of multiple castles along the Rhine River, each of which charged tolls to the commerce that passed along its banks.¹² That non-cooperative behavior allowed for the erection of blockades along the river that cut sharply into its value for transportation and communication. The whole incident thus became a symbol of what happens when certain forms of property are privatized in ways that run against the common law tradition. Yet the danger of state involvement is not limited to cases of this sort. The dominant characteristic of American water law shows the identical weakness that stems from the ability of the United States government to unilaterally override the sharing arrangements for common property that were developed under customary law. Thus, the creation of the federal “navigation servitude”¹³ has allowed the federal government, free from any obligation to compensate, to destroy existing mills or to block access to rivers by its own public projects.¹⁴

The river and the ocean are said to be held in common “by nature” because

¹² For discussion, see MICHAEL HELLER, *THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES* 3 (2008). Heller gets the right description of the problem to which he supplies the wrong diagnosis. The castles along the Rhine represented mini sovereigns before the unification of Germany. The river was one reopened for commerce by the Treaty of Westphalia, which explicitly prohibited tolls in two sections and called for a return to the customary regimes of open access. Treaty of Westphalia, Holy Rom. Emp.- Fr., art. LXIX, LXXXIX (Oct. 14, 1648), available at http://avalon.law.yale.edu/17th_century/westphal.asp. This illustrates the perils of too much government, not too little. For further discussion, see Richard A. Epstein, *Heller's Gridlock Economy in Perspective: Why There is Too Little, Not Too Much, Private Property* (forthcoming) (U Chi. Law & Econ. Olin Working Paper No. 495, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1505626.

¹³ The navigation servitude is defined as “[a]n easement allowing the federal government to regulate commerce on navigable water without having to pay compensation for interference with private ownership rights” or as “[a]n easement, based on the state police power or public-trust doctrine, that allows a state to regulate commerce on navigable water and provide limited compensation for interference with private ownership rights.” BLACK’S LAW DICTIONARY 1400 (8th ed. 2004).

¹⁴ See, e.g., *United States v. Willow River Power Co.*, 324 U.S. 499 (1945) (invoking the navigation servitude to deny compensation to a power company whose ability to generate electricity was diminished when the water levels were raised after the government constructed a dam across a navigable river).

no human action was needed either to create or preserve these waterways. The need for communication and transportation is, however, so powerful that within societies it is necessary to create, by condemnation if necessary, other long, thin, and continuous common resources that help link individuals together. In rough historical order, state action was needed to organize highways, railroads, telecommunications, electricity, pipelines, airplanes, and the Internet, all of which share the same long and thin characteristics of rivers and coastlines, which must be integrated functionally with the squarish tracts of land used for agriculture, manufacture, and retail. So long as each of these skinny network elements represents the only way to get from point A to point B, they will exhibit some of the open access elements of common property. But since they are not networks created by nature, some conscious human action is needed to construct and maintain them. These requirements make it impossible for these systems to operate as open networks with no price, as the natural commons were able to under customary regimes. Accordingly, these networks require some collective expenditure for their creation and upkeep, which has to be funded by some combination of general revenues and user fees. The entire area of rate regulation is, in effect, held hostage by the need to organize these common networks.¹⁵ To be sure, this need for common access changes when technological advances allow for the creation of competing networks, as with modern cable and telecommunications systems, that can operate in competition with each other so long as there are some appropriate interconnection rules. But until very recently, the model of the commons as a regulated network industry fit the technical realities of what is sometimes called a “natural monopoly” – i.e., industries where, over the relevant range of outputs, a single supplier could satisfy the market at diminishing marginal costs.

Yet by the same token, the historical development of a private property side for other resources has proven presumptively efficient. Neither lands used for production, nor animals, nor chattels can be put to their most highly valued use if

¹⁵ For the most recent Supreme Court pronouncements on the problem, see *Duquesne Light Co. v. Barasch*, 488 U.S. 299 (1989) (allowing alternative rate base methodologies) and *Verizon Commc’ns. Inc. v. FCC*, 535 U.S. 467 (2002) (using a deferential approach in construing Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56).

they are left in the commons. Few individuals will invest in clearing land if he knows that someone else thereafter may plant crops on it. No one will take care of animals that others may take or kill. No one will plant crops on land if he knows that some interloper may harvest them with impunity. A system that grants exclusive rights in these assets *over time* therefore offers the most convenient baseline for incentivizing investment in natural resources. Thus, it is commonly said that a system of private property depends on the right to exclude.¹⁶ That point is true as far as it goes, but it does not go far enough to tell the whole story.

The right to exclude in and of itself is a weird concept. In isolation, its only value appears to be the right to block others from using a particular invention. But wherein lie the gains from excluding others if the nominal owner cannot use the property himself? Nor does the right to alienate compensate for the loss of the right to use. Even an owner who can sell his right to exclude will find no buyers who cannot use, or license others to use, the invention in question. In the end, the right of exclusion, if left naked, will keep everyone from using anything that is subject to property rights. Clearly, the key element of the right of exclusion is that it sets up rights of a property owner to enter, possess, use, or dispose of the property in question. All mature systems of private property rights, which regulate disputes between neighbors, accordingly assume that these “incidents” are part of the bundle of rights that we call property rights. All owners of land, for example, must have unimpeded access to the network elements of the property system, which means that they must have the right to both enter and exit their lands. In addition, they must have the right to use that land and to develop it in ways that are consistent with the like rights of their neighbors, which usually imposes some restrictions on use typically embodied in the law of trespass and nuisance.¹⁷ The protection of use rights in land normally implies the recognition of development rights, including the

¹⁶ Indeed it is the preoccupation with exclusion, without regard to use, development, and sale, which makes hash out of modern takings law in land. On this point, contrast the near per se rule of compensation that protects land from invasion in *Kaiser Aetna v. United States*, 444 U.S. 164 (1979), with the squishy protection for regulatory takings in *Penn. Cent. Transp. Co v. City of New York*, 438 U.S. 104 (1978).

¹⁷ I will not to trace out these elements here, but I have developed them at length in Richard A. Epstein, *Nuisance Law: Corrective Justice and Its Utilitarian Constraints*, 8 J. LEGAL STUD. 49 (1979).

right to construct improvements, subject to the same nuisance constraints. Within very broad limits (which are usually applicable to family interests), ownership also carries with it the right to dispose of the land, in whole or in part, to one or more individuals, on whatever terms and conditions one sees fit. It is this possibility of alienation, when combined with labor contracts, which allows property owners to take advantage of gains from trade and specialization. Similar rules apply with respect to animals and chattels, although obviously the notion of perpetual ownership in those instances means ownership only for so long as the asset continues to exist.

To be sure, this basic system is subject to some notable limitations that also play a key role with intangible forms of property. The first deals with the rules of acquisition and relates to the problem of excessive hunting and fishing in the commons, with the consequent creation of a commons problem leading to the premature extinction of species that are of value to man.¹⁸ There is no sensible way, of course, to abandon or tinker with the first possession rule as the way to establish ownership over these animals. So long as these rules are efficient in deciding conflicts between two claimants to a given resource, they should be left in place. But it is, on the analogy to the use of rivers, possible to limit, through an *independent* system of regulation, the quantity of wildlife or fish that can be gotten from the commons in order to avoid this problem. The exact form of limitation is critical. Permitting the transfer of rights to catch, allowing one to assign his catch rights for cash to other parties who can better utilize them, thereby simultaneously reduces the costs of capture and increases overall yield.

The important lesson that comes from this simple exercise is that it shows us the importance of the *partition* of different regulatory systems with different purposes. For example, as was already mentioned, the worst way to fix the common pool problems is to tinker with the rules that deal with the capture of wild animals. There is no point in creating such inefficiency when independent means can be used

¹⁸ For an account of how well-designed responses can improve net yields from common pool resources, see R. Quentin Grafton et al., *Private Property and Economic Efficiency: A Study of a Common-Pool Resource*, 43 J.L. & ECON. 679 (2000).

to address the overconsumption problem. This partition shows that it can be efficient to keep old rules in their limited office when new problems arise. There is no reason, as we shall see, that similar approaches cannot be used to deal with intangible forms of property.

The second limitation that attaches to the basic system of property rights deals with the ability to use contractual devices for the purposes of exchange or cooperation. Exchange and cooperation normally increase the size of the pie and thus are welcome. But there are always counterexamples. For instance, every modern system of property rights profits from the articulation of some antitrust law that is intended, broadly speaking, to prevent various kinds of contractual arrangements that operate in restraint of trade. Thus, the cooperation among individuals does not carry with it the right to fix prices or to divide territories or take other steps to convert the exclusive ownership of property into cartel-like form. In addition, a second set of more difficult rules is directed toward unilateral practices that can also work to raise prices and reduce output. In practice, the most powerful application of these antitrust laws is to an exclusive provider of services who would normally be subject to common carrier regulations of universal service in virtue of its monopoly position. Yet, owing to the peculiar nature of the business, the hookups to end users are done most efficiently at a zero price, which is often the appropriate rule for internet connections.¹⁹

The third limitation deals with the risk of holdouts that may arise in cases of imminent danger of loss of life or destruction of property.²⁰ Natural perils, such as storms, radically restrict the set of alternatives that are available to outsiders. For when caught in a storm, it is no longer possible for a boat owner to choose to use any one of a number of docks to land. It is either the nearest dock or serious danger to person or property. The privilege of necessity thus allows the outsider, in such cases, to take or use the property for the duration of the risk, subject normally to a duty of compensation once the risk has passed. As such, this rule avoids a potential

¹⁹ I develop this theme at greater length in RICHARD A. EPSTEIN, *ANTITRUST CONSENT DECREES IN THEORY AND PRACTICE: WHY LESS IS MORE* 74-76 (2007).

²⁰ *See, e.g.,* *Ploof v. Putnam*, 71 A. 188 (Vt. 1908); *Vincent v. Lake Erie Transp. Co.*, 124 N.W. 221 (Minn. 1910).

holdout by the dock owner, who could charge a fortune for the use of a dock that in comparison has little value to him.²¹ This set of rules can apply either to individuals who need to clamber to safety in times of personal peril or to prevent the unnecessary loss of goods at sea under the principle of general average contribution, which provides for the deliberate and orderly destruction of low valued goods in order to save the remainder.²² The point in all of these cases is to recognize that when competitive markets no longer work, duties to allow entry, similar to those imposed on common carriers,²³ emerge.

This theme of holdout and necessity also carries over to cases where the excessive fragmentation of interests prevents the productive deployment of resources. That assembly problem can arise whenever large numbers of small landholdings have to be put under common ownership to make way for an extensive project like a railroad or hospital. It is best coped with by the creation of an eminent domain power that can be exercised either by the state or by private authorities acting under state power. This enduring solution gives the state entity the power to take private property for public use, but only if it pays compensation to the owner that leaves him at least as well off as he was before the taking took place. The requirement of compensation counteracts the risk of excessive condemnation. The limitation of such compensation to market value prevents any private owner from holding out when the needed land use assembly takes place. Needless to say, condemnation powers are often exercised in connection with network industries, as in the acquisition of land, or rights of way over land, for railroads, highways, power lines, and gas mains. They can also be used to assemble large tracts of land for public purposes such as building schools and hospitals.

²¹ See, e.g., *Vincent*, 124 N.W. at 222.

²² For the early development, see *Mouse's Case*, 66 Eng. Rep. 1341 (K.B. 1609) (holding that in order to save a ship, some cargo may be thrown over, but the loss must be split equally amongst all parties). For longer discussion of the efficiency characteristics of the rule of general average contribution, see William M. Landes & Richard A. Posner, *Salvors, Finders, Good Samaritans, and Other Rescuers: An Economic Study of Law and Altruism*, 7 J. LEGAL STUD. 83, 106-08 (1978).

²³ A common carrier is a "commercial enterprise that holds itself out to the public as offering to transport freight or passengers for a fee. A common carrier is generally required by law to transport freight or passengers or freight, without refusal, if the approved fare or charge is paid." BLACK'S LAW DICTIONARY 226 (8th ed. 2004).

In basic summary, then, mature systems of property in tangible assets have rules that demarcate common from private property and specify how private property may be acquired, used, and transferred. It also has three sets of limitations: rules to deal with common pool problems for all forms of wildlife and natural resources, antitrust laws to deal with contracts in restraint of trade, and rules governing necessity and condemnation to deal with fragmentation and holdout problems.

II. THE TRANSITION FROM TANGIBLE TO INTANGIBLE PROPERTY

How does the tangible property system transfer to the world of intangible property? In many instances, very well. One element that arises in analogous fashion in both physical space and cyberspace is the separation of elements into common and private. The analogy to physical resources that are open to all in cyberspace are of course ordinary language, ideas, laws of nature, and other naturally occurring phenomena, none of which are located within the sphere of private property.²⁴

On the other hand, there are two key differences between private property in physical things and intellectual property. One is that the demarcation of the scope of property rights in some forms of intellectual property—e.g., patents—is sometimes more difficult than it is for physical property, even though both systems divide themselves up conveniently into private and common resources. That difference of specification is less critical in areas like copyright and trademark, where the distinctiveness of the claim is easier to establish. In large measure, this explains why the recordation systems for these two forms of intellectual property more closely resemble the ministerial systems that are used to record title to land and automobiles, while the registration of patent rights involves a far more complex system that requires the filing of a detailed specification at the outset, followed by public examination, all before any rights are even conferred upon the patent holder. Even then, the government imprimatur through the Patent Office only receives presumptive validity,²⁵ which can be challenged in judicial proceedings.

The second difference is, of course, that for patents and copyrights the ease

²⁴ For discussion, see *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

²⁵ See, e.g., 35 U.S.C. § 282 (“A patent shall be presumed valid.”).

of noncompetitive use militates strongly against any system of perpetual rights, which in turn suggests that both patents and copyrights should be limited to a fixed term of years. When that term expires, they fall into the public domain, where they can be treated like general ideas or laws of nature, available for simultaneous use by all. That regime, however, would be suicidal for land, whose value necessarily falls if it is designated as common property. Why precipitate a second race for first possession, which is costly in its own right and needlessly disrupts the planning options and incentives of the prior possessor of the land?

Thus far, these differences have pointed to the greater complexity of various forms of intellectual property regimes. But there are other ways in which intellectual property is in fact *simpler* to organize than physical property. In particular, at least four problems tend to disappear as we cross systems. The first is that the shorter duration of property interests for patents and for copyrights (which have become far too long under the Copyright Term Extension Act²⁶) results in a massive simplification of intellectual property law relative to the law of land. The infinite duration of private land ownership leads to its division over time between separate persons. In the Roman system, this differentiation was limited to a single temporal form, the usufruct, which, roughly speaking, gave an inalienable life estate in possession, with access to both use and fruits, with a remainder interest going to the “bare proprietor” of the land.²⁷ Even that one simple division requires the articulation of an elaborate body of law that governs what goes to the usufructuary and what is reserved to the bare proprietor. Nevertheless, that Roman division is far simpler than the common law doctrines of estates which allow for the proliferation of multiple life estates in the same property coupled with a bewildering array of

²⁶ Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified at 17 U.S.C. §§ 302-05) (increasing the length of copyright term from 75 to 95 years). For additional discussion, see, e.g., F. Scott Kieff, *Coordination, Property and Intellectual Property: An Unconventional Approach to Anticompetitive Effects and Downstream Access*, 56 EMORY L.J. 327, 426-28 (2006) (“One reason why extended terms for IP may be problematic is that over time there may be fragmentation of ownership.”). Note that this risk can be obviated by placing the copyrights behind a trust with unified management and divided beneficial interests.

²⁷ For a discussion of the usufruct, see BARRY NICHOLAS, AN INTRODUCTION TO ROMAN LAW 144-45 (1962).

future interests, including contingent remainders and executory interests.²⁸ In part, these interests in land proliferate because real estate and many forms of personal property are treated as part of family settlements, which make it sensible to tie property interest to the life or death of key players. In contrast, patents and copyrights are purely commercial interests, so the life estates, contingent remainders, and executory interests tend to fall away. Given the short duration of these interests, especially for patents, intellectual property law has no use for doctrines intended to clean up the title to land, such as the rule in *Shelley's Case*,²⁹ the doctrine of worthier title,³⁰ and the rule against perpetuities,³¹ all of which are functionally obsolete now that tangible assets can be held in trust.³² The elimination of future interests in property also reduces the pressure on the doctrine of waste, in which the guiding principle is that the life tenant must not use or consume the land, or the fruits thereon, in ways that diminish the value of the remainder interest.³³

The second point of simplification of intellectual property is that it does not have to develop a body of nuisance law to deal with invasions that, despite their nontrespassory nature, nonetheless impinge upon the reasonable use and enjoyment of one's property. The law of nuisance draws a rough distinction between largish invasions, which are in general actionable, and minimal invasions, such as sounds and cooking smells, which are wiped off the slate by a

²⁸ A contingent remainder is "a remainder that is either given to an unascertained person or made subject to a condition precedent." BLACK'S LAW DICTIONARY 1317 (8th ed. 2004). An executory interest is "A future interest, held by a third person, that either cuts off another's interest or begins after the natural termination of a preceding estate." BLACK'S LAW DICTIONARY 611 (8th ed. 2004).

²⁹ 1 Co. Rep. 936 (1581).

³⁰ For a discussion, see *Doctor v. Hughes*, 122 N.E. 221 (N.Y. 1919).

³¹ The rule against perpetuities is a "common-law rule prohibiting a grant of an estate unless the interest must vest, if at all, no later than 21 years (plus a period of gestation to cover a posthumous birth) after the death of some person alive when the interest was created. The purpose of the rule was to limit the time that title to property could be suspended out of commerce because there was no owner who had title to the property and who could sell it or exercise other aspects of ownership. If the terms of the contract or gift exceeded the time limits of the rule, the gift or transaction was void." BLACK'S LAW DICTIONARY 1357 (8th ed. 2004).

³² For a discussion of the rise and fall of these doctrines, see Richard A. Epstein, *Past and Future: The Temporal Dimension in the Law of Property*, 64 WASH. U. L.Q. 667 (1986). I shall not speak about the particulars here.

³³ See, e.g., *Brokaw v. Fairchild*, 237 N.Y.S. 6 (N.Y. Sup. Ct. 1929), *superseded by statute*, N.Y. REAL PROP. ACTS. § 803 (2010), *as recognized in* *Two Guys from Harrison-N.Y., Inc. v. S.F.R. Realty Associates*, 472 N.E.2d 315, 316 (1984). Parallel doctrines existed in Roman law on the duties placed upon the usufructuary.

comprehensive doctrine of live-and-let-live.³⁴ The problem is in fact so acute that oftentimes the law of nuisance is not capable of handling it, such that, for example, in planned unit developments, an elaborate set of covenants is used to *increase* the restrictions placed on land use in ways that tend to maximize the overall value of the land in question by governing exterior design, size, setbacks, green spaces, and the like. The question of nuisance under the Internet, however, is small, as the use of photon packets avoids that problem and leaves only congestion issues to be dealt with. This congestion is far less acute than on physical highways; whatever we may think of spam jams, they are far more benign than traffic jams. For its part, intellectual property is a one-dimensional asset that has none of these physical spillover effects like noise and pollution. The only operative tort, therefore, is infringement, which is subject to boundary-crossing rules that bear close resemblance to the trespass rules for a defendant's entry onto the plaintiff's real property.

Third, intangible property is not subject to the risks of exhaustion through the common pool that occurs with physical property. Excessive consumption is an issue of excluding spam or charging fees to those who send it; spam is not a question of the exhaustion of protons that prevents the next generation from sending desirable messages. Likewise, it is thought desirable for older inventions and writings to fall into the public domain where all can use them, as none can destroy the invention or writing in question. Trade names, on the other hand, to the extent that they remain exclusive identifiers, should never go into the public domain or they could no longer serve their intended (reputational) function of giving consumers brand assurance when they make their service or product purchases. The only problem that remains with copyrights and patents, therefore, is the anti-commons, or an excessive fragmentation issue that also arises in the physical space.

Fourth, in general, the class of needed privileges with intangible forms of property is, if anything, smaller than with physical property. The cases of necessity are sharply limited, for no one needs to use someone else's patent to escape from a

³⁴ See *Bamford v. Turnley*, 122 Eng. Rep. 27, 33 (Ex. 1862); RESTATEMENT (SECOND) OF TORTS § 822 cmt. g.

storm. To be sure, there is the possibility of the need to have government march-in rights³⁵ to take over patents for key drugs to deal with epidemics, but placing a large order would almost always be preferable to taking over the drug in question. For all the hullabaloo, in practice these march-in rights have never been exercised.³⁶ There are, in addition, some highly specialized privileges, which appear to codify common sense. For example, section 117 of the Copyright Act allows for the copy or adaptation of a copyrighted computer program when it provides an “essential step” in the realization of the computer program.³⁷ It is hard to imagine how anyone would ever hope to sell a computer program that did not permit transformations that are so essential to its operation. Likewise, section 110 of the Copyright Act contains a number of ad hoc exceptions to the general rule on exclusive rights that smack more of special privilege than any breakdown in market institutions. For example, section 110(1) gives key breaks to educational institutions that use copyrighted works in face-to-face instruction, that is, in situations where there is no lost market for the copyright holder and little inclination to charge in the first place.³⁸ Section 110(4) does the same for certain public performances so long as there is no direct or indirect effort to secure a financial advantage.³⁹ We might as well have a rule that exempts individuals from casual trespasses from which they gain no commercial advantage and that cause no harm to the owner, since there is no likelihood of suit in these cases anyway. But we do not go that far with tangible property.

In contrast to these ad hoc statutory exceptions, key common law exceptions also exist, such as the qualified privilege against defamation suits for persons who give references on request,⁴⁰ or the privilege of fair comment on artistic works and

³⁵ See 35 U.S.C. § 203 (2006) (allowing for federal revocation of patents under extreme circumstances).

³⁶ See Wikipedia.org, *Bayh-Dole Act*, http://en.wikipedia.org/wiki/Bayh-Dole_Act (last visited June 24, 2010) (“to date, no federal agency has exercised its march-in rights.”).

³⁷ 17 U.S.C. § 117(1) (2006).

³⁸ *Id.* § 110(1).

³⁹ *Id.* § 110(4).

⁴⁰ See *Lewis v. Equitable Life Assurance Soc’y*, 389 N.W.2d 876, 889 (Minn. 1986) (“In the context of employment recommendations, the law generally recognizes a qualified privilege between former and prospective employers as long as the statements are made in good faith and for a legitimate

the like.⁴¹ Other key privileges, such as the fair use privilege for the copyrighted works of others,⁴² should generally be narrowly construed so as to avoid the danger that the original work will not be produced at all.⁴³ So long as a viable market can be created for the resale of copyrighted works, the fair use privilege should not be invoked, for the increased dissemination comes at too a high a cost in the lost creation of new works for which insufficient compensation would be provided.

These quick outlines of the various property type systems set the stage for a consideration of some of the various rules in particular instances. In this context, the basic approach is as follows: make as *few* shifts between the different systems as is necessary to respond to the key differences in type. This approach is just another application of the rules that are used to control catch limits for common pool resources, where the trick was, as noted, to leave the rules regarding first possession in place and then to introduce an independent set of rules that deals explicitly with the problems of overconsumption. The point here is that there is no reason to tie the cure of one problem to the creation of inefficiencies in those portions of the system that work well. The same principle applies to intangible property: carry over the basic rules from various forms of tangible property to intangible property to the extent possible. I shall now address this problem insofar as it relates to both the right to exclude and the right to dispose.

III. THE APPLICATION OF TANGIBLE PROPERTY RULES TO INTANGIBLE PROPERTY

A. The Right to Exclude

It is universally agreed that all forms of private property must necessarily include some right to exclude, without which they would necessarily be forms of common property. But the next question asks what form of remedy should be given

purpose.”), *superseded by statute*, MINN. ANN. STAT. §§ 181.933(2), .962(2) (2009), *as recognized in* *Emery v. Northeast Ill. Reg'l Commuter R.R. Corp.* (citing *Stuempges v. Parke, Davis & Co.*, 297 N.W.2d 252, 257 (Minn. 1980)).

⁴¹ *See, e.g.*, *Magnusson v. New York Times Co.*, 98 P.3d 1070, 1074-75 (Okla. 2004) (“The common law fair comment privilege extends to fair expressions . . . encompassing expressions of opinion on all matters of public opinion.”).

⁴² *See* 17 U.S.C. § 107 (2006).

⁴³ *See, e.g.*, Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541 (1976) (codified as 17 U.S.C. § 107(4)) (requiring consideration of “the effect of the use upon the potential market for or value of the copyrighted work” in determining whether a particular use is fair).

in the event that a defendant has entered or used the plaintiff's property or threatens to do so for some purpose of his own. The three available remedies, which can be mixed and matched, are self-help, damages, and injunctions. Self-help and injunctions are intended to either stop or reverse the invasion or infringement, as the case may be, while damages compensate for past losses and may, if set at a high enough level, induce a defendant to either forswear or cease any use or infringement of the plaintiff's property. The coordination among these three remedies has been organized around two key cases, *Intel Corp. v. Hamidi*⁴⁴ and *eBay v. MercExchange L.L.C.*,⁴⁵ each of which requires some separate attention.

Intel and the Internet. In *Intel Corp. v. Hamidi*, the question was whether Intel, as the owner of its own computer system, could exclude Hamidi from making unauthorized use of that system to send email messages to Intel employees that in fact caused a good deal of confusion, unease, disarray, and loss of morale within the firm. The remedy sought, injunctive relief under the law of trespass to chattels, was rejected on the ground that the common law of chattels allowed the unlimited use of self-help to keep the outsider off, but denied the use of injunctive relief in the absence of proof of actual damages.⁴⁶

That argument seems wrong for a number of reasons.⁴⁷ The first deals with the nature of the protected interest. The normal laws of trespass to land and chattels allow the plaintiff to recover either actual damages, as measured by tort law, or restitution damages, which represent the benefit obtained by the defendant from the use of the plaintiff's property. Thus, the defendant trespasser who takes his own goods on a shortcut across the plaintiff's land can be forced to disgorge the benefit obtained from the shorter journey even if there is no actual harm to the plaintiff.⁴⁸

⁴⁴ 71 P.3d 296 (Cal. 2003).

⁴⁵ 547 U.S. 388 (2006).

⁴⁶ See RESTATEMENT (SECOND) OF TORTS § 218, cmt. e; *Intel*, 71 P.3d at 302-03.

⁴⁷ For my detailed explanation of those reasons, see Brief for The California Employment Law Council et al. as Amici Curiae Supporting Petitioners, *Intel Corp. v. Hamidi*, 71 P.3d 296 (Cal. 2003) (No. S103781), 2002 CA S. Ct. Briefs LEXIS 39.

⁴⁸ See, e.g., *Raven Red Ash Coal Co. v. Ball*, 39 S.E.2d 231 (Va. 1946) (allowing action for the benefit conferred on the defendant trespasser on the theory of an implied promise); *Jacque v. Steenberg Homes, Inc.*, 563 N.W.2d 154 (Wis. 1997) (defendant liable for nominal and punitive

In *Intel*, it was hard to quantify the indirect damages that were caused to Intel, although they must have exceeded, in the estimation of the firm, the substantial resources that they committed to stop the intrusion. It is also difficult to quantify the non-pecuniary gains to Hamidi, although it surely must have exceeded the costs that he incurred to get the messages through. The difficulty of estimating damages, in most instances, is an argument for allowing an injunction to issue because it restores the status quo ante without putting the burden on courts to calculate numbers that are likely to be both large and subject to significant disagreement. Self-help has exactly the same characteristic as injunctive relief: it can be used without the need to calculate tort damages, by reference to plaintiff's harm, or restitution damages, by reference to defendant's gain.

The question then arises as to the proper relationship between self-help and injunctive relief. The answer, I believe, is the same as for the rule of damages, which allows a plaintiff in trespass cases to elect as its measure of damage the greater of either defendant's gain or plaintiff's loss. In other settings, the plaintiff should be allowed the same option. If self-help does the job, it will generally be preferred because it is cheap. But if it is unable to do the job, leave the plaintiff the option of picking injunctive relief when its additional costs are less than the additional benefits.

There is nothing whatsoever in the *Intel* opinion that addresses this issue. What the court did do was to reject my argument that the entire trespass to chattels model was not quite right given that cyberspace was organized by direct analogy to physical space, with the same mix of common and separate elements.⁴⁹ The use of terms such as "internet addresses" and "internet highway" survive precisely because they render an accurate description of the relevant relationships; each address has to be unique in order to organize the flow of traffic or information, as the case may be. Of course there is no demarcated highway as with land, but the same is usually true with respect to travel by sea and air, where there are at most a

damages for crossing plaintiff's land without permission to deliver a mobile home to a customer, even in the absence of actual damages).

⁴⁹ For the court's discussion of my amicus brief, see *Intel*, 71 P.3d at 309-10.

few markings of where boats and planes are allowed or required to go. Rather, there are a set of enforced conventions that guide boats and planes in their designated lanes in order to avoid the risk of collision and to allow them to reach any given point from any point of departure.

The Internet, in this regard, is easier than the physical world because there are many different ways to go from one point to another, so the key function of interconnectivity is easier to preserve. At this point, the right rule should be that no one can use self-help, damages, or injunctions to block access to the common elements of the system, but anyone can keep other persons from making unauthorized use of their private space on the other side of the Internet device. In *Intel*, this means that the electrons can go where they will so long as the messages do not pop up on computers located within the Intel complex. Judge Werdegar resisted this conclusion by quoting from Lawrence Lessig for the proposition that “to the extent that individual sites begin to impose their own rules of exclusion, the value of the network declines. If machines must negotiate before entering any individual site, then the costs of using the network climb.”⁵⁰

Unfortunately, Lessig’s passage contains two separate ideas, both wrong. The first is the claim that the use of site exclusion techniques reduces the value of the Internet. But sites do exactly this all the time when they impose rules on who can enter a particular site and the purposes for which they can use it. Passwords are the ultimate in exclusion, and they are part of every known wireless system. The ability to exclude from individual sites is no more a danger to the integrity of the Internet than the use of gates and locks in private homes is a danger to the integrity of the public highways. Quite the opposite, the ability of site owners to select who enters and who does not is the key inducement to connect building sites with public roads. That power to select means that the individual site owner can interact only with that portion of the public traffic he chooses, without having to deal with all unwanted actors, spammers included. That ability to select *increases* the willingness to join the network. We know about the general efficiency of this distribution

⁵⁰ *Intel*, 71 P.3d at 310-11 (quoting LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 171 (2001)).

between public and private elements because behind the initial gate often lie other networks that are organized internally with the same distribution of common and private elements - which again increases connectivity by encouraging people to organize networks behind gates that allow them to exclude the rest of the world, just as they do in gated communities.

Nor, secondly, is Lessig correct to think that the costs of running the network will climb because of the arduous difficulties in negotiating entrance. The key point here is that all networks set default options. For ordinary individuated communications, admission is the presumption. Intel embraced that default option because, even when it was firmly in place, all Intel needed was the right to give explicit notice to Hamidi that his use of the network was not desired. Indeed, Intel had (and has) no general desire to set the default in the opposite direction because that would increase its costs of getting new business from strangers. Even endless amounts of spam do not alter the basic equation because spam filters, however imperfect, offer the best line of defense. If Intel, and most everyone else, could also enjoin specific persons and organizations from sending spam, that would offer a highly useful complement to these self-help filters, which suffer from both standard forms of errors: too much junk gets through, just as some desired email gets blocked and lost.

The overall point should be clear. There are superficial differences between cyberspace and real space, which indicate how networks are constructed. But the basic rules on the mix between exclusions and licenses survive quite nicely as one moves from rules that govern access to private homes from the public street to internet interconnections. It is only if the switch between systems is said somehow to mandate odd shifts in orientation, such as a reversal of the usual default rule on contact, that the supposed inefficiencies of a property rights regime appear. Cleanse them from the system, and the carryover is evident.

eBay v. MercExchange. The battle over the scope of the right to exclude shifted to patent law in the Supreme Court's critical, if misguided, decision in *eBay*.⁵¹

⁵¹ *eBay*, 547 U.S. 388 (2006).

At war in that case were two specific conceptions of the right to exclude. The first, which represented the position in the Federal Circuit, was that injunctions were remedies of course in patent cases and could be denied only in well-defined circumstances. Many of the cases denying injunction relate to the behavior of the plaintiff in prosecuting or sitting on a patent claim, thereby invoking such doctrines as laches, waiver, and estoppel. These doctrines are always critical in individual disputes where some delay of the plaintiff in the enforcement of rights may well have set up powerful expectations in the defendant of his freedom to use a particular patented technology. These cases pose no system-wide risk, however, since the injunction cure is always available to the diligent patent owner who gives notice and prosecutes cases in which interlopers seek to take advantage of his position.

The hard issues therefore arise only in those cases in which nothing that the plaintiff has done disentitles him to any relief that is otherwise available. The standard rule for the injunction is based on many of the concerns that are in play in *Intel*, including that damages for improper use are difficult to estimate, even when large. The injunctive relief forces cessation of the practice, which in turn reduces the future likelihood of its occurrence in the first place. A strong injunctive relief system also drives potential infringers to seek voluntary licenses from a patent holder, which in turn expedites the flow of commerce. In light of these considerations, the level of discretion in equitable relief, I believe, should be exercised largely in those cases where the alleged infringement takes place with respect to a complex device of which the plaintiff's patent constitutes only a small part. Here, the damages should be calculated to reflect the patented part's level of functionality in the composite apparatus. In most of these cases, delaying the injunction should be sufficient to allow the defendant to make an easy fix of the technical problem that avoids future infringing activity.

The strength of this approach is reflected in the recent decision of the

Federal Circuit in *Lucent Technologies, Inc. v. Gateway, Inc.*,⁵² which took basically this line with respect to a small component of the Microsoft Outlook Calendar that was found to infringe upon a Lucent patent. The District Court affirmed the jury award of \$358 million, which was presumably influenced by the plaintiff's expert, who had advocated for an eight percent royalty on the entire sales price of the object for the one component thereof—a "date-picker" in the calendar function,⁵³ which was "but a tiny feature of one part of a much larger software program."⁵⁴ The actual award worked out to over \$3 per each of the more than 110 million delivered units of Outlook.⁵⁵ That damage figure seems preposterous on its face, for if only a dozen of the components of this complex program infringed someone else's patents, the total damage award would equal or exceed the entire revenue stream for the program. Microsoft's ability to invent around or to remove the offending component was taken as a given. There should be no difficulty then in issuing an injunction against the future incorporation of this patented component into Outlook, say thirty days after judgment, which would create little or no disruption of the market. The damages should also be cut severely, perhaps not to the \$6.5 million that Microsoft had urged,⁵⁶ or about \$0.06 per unit, but close.⁵⁷ Note that, in this case, no one would urge that an injunction be issued for units already sold to third persons. Of necessity, therefore, royalties are the only remedy for damages attributable to past sales. These of course could be calibrated on the high-side to act as a close substitute for injunctive relief. But, as *Lucent* reveals, the switch to *eBay* offers no ironclad guarantee against legal abuse, regardless of the mix between damages and

⁵² Nos. 2008-1485, 2008-1487, 2008-1495, 2009 WL 2902044 (Fed. Cir. Sept. 11, 2009), *affg in part and vacating in part*, 580 F. Supp. 2d 1016 (S.D. Cal. 2008). Lucent first sued the relevant manufacturers, but Microsoft later intervened. *See also* Brent Kendall, *2nd UPDATE: Appeals Court Throws Out \$358M Verdict Vs Microsoft*, WALL ST. J., Sept. 11, 2009, available at <http://online.wsj.com/article/BT-CO-20090911-709923.html>.

⁵³ 580 F. Supp. 2d at 1042.

⁵⁴ 2009 WL 2902044, at *25.

⁵⁵ *Id.* at *16.

⁵⁶ *Id.* at *17.

⁵⁷ For the complications of valuing specific components that are only sold as part of a larger device, see Neal E. Solomon, *What is a Reasonable Royalty? A Comparative Assessment of Patent Damages Methodologies 25-36* (on file with author), noting the tendency to overvalue a patent when it is "the basis for the demand" for the composite product and undervaluing it when it is. The patents at issue in *Lucent* are not demand drivers.

injunctive relief.

There is, then, little reason to think that the traditional levels of equitable discretion are not sufficient to handle a case in which the injunctive relief looks most unattractive. The question is whether one need go beyond those rules to adopt the second potential approach, the test that the Supreme Court championed in *eBay*, which makes the issuance of an injunction turn on four related factors:

1) that [Plaintiff] has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.⁵⁸

There are many contexts in which this approach may be used to deal with harms as different as water pollution⁵⁹ and price controls⁶⁰ where the operation of comprehensive schemes of public regulation can often have powerful effects on third party interests. Most patent suits do not have these broad social ramifications, so that the relative decline of distinctive third party interests should lead courts to be more cautious in making broad exceptions to the general preference for injunctive relief.⁶¹ The first and second of these factors are mirror images of each other. The question, therefore, is what is added by the third and fourth factors, which take the inquiry far afield of the particulars of the individual case without giving any instruction as to how hardships are to be balanced and the public interest is to be determined. If the system of damages and delayed injunctions mentioned above is applied to the tiny component case, the rest of the exercise looks odd. With respect to the public interest, there is little reason to believe that infringement of any minor patent will disrupt the use of the larger program by third parties who are already protected by the rule that denies the injunction against the end user.

⁵⁸ *eBay*, 547 U.S. at 391.

⁵⁹ See, e.g. *Weinberger v. Romero-Barcelo*, 456 U.S. 305 U.S. 311-313 (1982)(noting general equitable rules for injunctive relief were ousted by specific statutory rules governing behavior of the United States Navy).

⁶⁰ See, e.g., *Yakus v. United States*, 321 U.S. 414, 440 (1944)(showing caution on injunctions in price control cases).

⁶¹ For a more detailed critique, see Richard A. Epstein, *The Disintegration of Intellectual Property?*, 62 STAN. L. REV. 455 (2010).

Furthermore, given the ease with which the small glitch can be fixed, it is hard to see why an individuated inquiry into the balance of hardships works better than the delayed injunction rule. One of the real risks of the equitable rule championed in *eBay* rule is that it calls into question, at least in the eyes of some, the ability of either the patentee who does not practice a patent or of the nonexclusive licensees to obtain injunctive relief. That result is a serious mistake because it means that any effort to license to an industry carries with it the risk that neither the licensor nor anyone in the group of nonexclusive licensees will be able to prevent other potential licensees from going outside the network of voluntary contracts conditional only on their willingness to pay damages. In a world without injunction, some players could just decide to take their chances on defending damage suits when they consciously infringe patents. The combined effect is that these practices collectively will undermine the system of voluntary licensing.⁶²

The point here should be clear. The adoption of a weak rule on injunctive relief generates two sources of social loss. The first is that it eliminates the ability of patentees to decide which firm or firms should be licensees. Any relaxation of [the *eBay* rule](#) would permit, for example, a nonlicensee to establish a pattern of use before a licensing agreement is complete, and thus will necessarily undermine the normal consensual system. It would also make it impossible, for example, for patent licensors to develop territorial limitations on licenses in order to have their licensees better support their products by supplying the ancillary services needed for effective product promotion. Secondly, compulsory damage awards contain no ancillary provisions, which further makes it impossible to spur cooperative behavior between licensors and licensees. The overall efficiency losses from a soft [eBay rule](#) come from the bypass of the licensing function, with its normal gains from trade.

⁶² For the suggestion that courts “should grant injunctions to patent owners who participate in the market, whether by selling the patented invention, exclusively licensing it to someone else who sells it, or selling a product not covered by the patent but which competes with the infringing product,” see Brief of 52 Intellectual Property Professors as Amici Curiae Supporting Petitioners at 9, *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130). For a response, which I coauthored with F. Scott Kieff and R. Polk Wagner, see Brief of Various Law and Economics Professors as Amici Curiae Supporting Respondents, *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130).

The situation becomes graver when poor judicial decisions themselves impair the efficacy of licensing arrangements, a topic to which I now turn.

B. The Right to Disposition

The ability to dispose of property is yet another key element that carries over without a hitch from tangible to intangible property. The key virtue of dispositional rights is that they facilitate cooperation between any two or more parties by allowing for the division of property rights and a coordination of labor on whatever terms and conditions they deem fit. This gain from trade depends only on human ingenuity, and not on the nature of the underlying resource in question. The government limitations on how these dispositional rights can be exercised makes a huge difference, as demonstrated by the following two examples, one from telecommunications and one from patent and copyright law.

Spectrum Licenses. The organization of the telecommunications spectrum could employ either a top-down or bottom-up strategy. For our purposes, the vital difference between the strategies is how the property rights are acquired, and how that influences the way in which they can be used. Historically, the use of top-down licenses in telecommunications meant that the government could determine, in its capacity as owner, which kinds of restrictions could be placed on licenses. Unfortunately, in the grand spirit of the New Deal, that determination never utilized an auction option that would create permanent private licenses subject only to an anti-interference restraint, a limitation which works to maximize resource value just like an auction of condominium units. Instead, Congress decided that FCC allocation decisions were to be permissible so long as they conformed to the “public interest, convenience, or necessity.”⁶³ The difficulty here lies not solely in the incurable vagueness of a standard whose ambition surely exceeds its content. Additionally it lies in the mental frame of justices like Felix Frankfurter who broadly construed the mandate beyond the interference concerns whose analogies carry over so easily from other forms of trespass. In a self-conscious repudiation of the land model, he

⁶³ See *Nat'l Broad. Co. v. United States*, 319 U.S. 190, 215 & n.4 (1943) (saying “[t]he criterion governing the exercise of the Commission's licensing power is the ‘public interest, convenience, or necessity,’” referring to authority under the Communications Act of 1934, 47 U.S.C. § 151 (2006)).

stated that the broad standard “puts upon the Commission the burden of determining the composition of that traffic.”⁶⁴ But just how that is to be done, he never says. It turns out that there are many stations and many demands on their use. The government’s effort to develop a centralized, standard test for desirable frequencies came up empty handed.⁶⁵ One problem is that large stations tend to cater to the median listener, which in turn reduces the ability of fringe players to gain air time.

One private effort to combat this pattern was undertaken by the Cosmopolitan Broadcasting Corporation, whose simple idea was to issue sublicenses for the use of station WHDI to group representatives of various nationalities. That downstream decision allowed for the partition of the license into smaller units, each closer to the public at large, and it put people who knew something of the preferences of the groups that they wish to serve in charge of actual programming. There was much market acceptance of this program. However, the reward for such innovation was the termination of a license at the demand of the FCC, on the ground that the licensee impermissibly delegated its oversight authority to its sublicensees who determined the content of their own broadcasts.⁶⁶

The allocative losses from this heavy-handed approach are, if anything, greater than the limitations on sublicensees in some tangible property contexts. With landlord-tenant relationships, for example, where the sublease of a part could create negative feedback on the retained space, the protection of the retained space often justifies some restriction on the further disposition of the property in question. However, the adjacencies between radio slots are likely to be of little influence, and are in all likelihood fully taken into account by the licensee’s own decision to opt into the station. There is no discernible interest in the government as

⁶⁴ *Id.* at 216.

⁶⁵ For the initial critique, see R. H. Coase, *The Federal Communications Commission*, 2 J. L. & ECON. 1 (1959).

⁶⁶ *Cosmopolitan Broad. Corp. v. FCC*, 581 F.2d 917 (D.C. Cir. 1978) (Bazelon, J.). For my critique, see Richard A. Epstein, *What Broadcast Licenses Tell Us about Net Neutrality: Cosmopolitan Broadcasting Corporation v. FCC*, in *NEW DIRECTIONS IN COMMUNICATIONS POLICY* 85 (Randolph May, ed., 2009). The lesson for net neutrality is to back off from the control of broadcast licenses unless one of the usual grounds for interference with freedom of contract, most notably monopoly power, applies.

the ultimate spectrum owner to interfere in such cases, except for the twisted statutory mandate that drove the final decision in *National Broadcasting*.

The loss of the power of disposition comes with a high price. That cost is even higher than appears at first because alienation or division of broadcast licenses can take place along multiple dimensions (by time, by frequency band, for example), none of which pose serious threats to the public interest. Thus, when technology improves, the subdivision of a license by bandwidth makes good sense. Any such subdivision must abide by the interference constraint with respect to third persons, which is ever easier to do as technology improves. A subdivision must also account for the physical and marketing adjacencies of the new users of the various portions. However, that task is one that the license owner (if he is so endowed) will handle privately for the same reason that condominium associations do well imposing covenants and restrictions on their present and potential unit buyers. All the net gains and losses are reflected in the total revenues received from all sales and licenses, coupled with any impact on any retained interest. Yet those are precisely the costs that any licensing procedure will take into account. Recognizing full rights of disposition also facilitates switches in frequency uses from broadcast, say, to mobile phones, or the reverse. Those use changes, in turn, can alleviate the huge current imbalances in spectrum utilization that stand as mute testimony to the inefficiency of a distinct system of licensing rules.⁶⁷ The bold claim that the distinctive nature of the resource necessitates its own unique rules rings hollow once the legal system assigns frequencies to particular owners. The unique physical feature of spectrum use is static across frequency lines. Once those boundary lines are established, it is easy to transplant the rules that govern trespass, assignment and subdivision. The situation, moreover, is one that becomes easier, not more difficult, over time because the improved technology allows for a narrower bandwidth for each transmission, allowing far more separate signals to be carried by individual owners.

Patent and Copyright Licensing. This basic pattern of argumentation carries

⁶⁷ For a vivid illustration of the differential levels of spectrum use, see Thomas W. Hazlett, *Spectrum Tragedies*, 22 YALE J. ON REG. 242, 248 fig.1 & n.28 (2005).

over, again without a hitch, to the difficult area of patent and copyright licensing. I use the word “licensing” in this context only because the usual pattern of disposition for most forms of intellectual property are licenses due to the difficulty of pricing outright sales. The range of license terms is itself a worthy topic for an extended treatise, because there is no dimension of patent or copyright use over which the parties cannot negotiate, if allowed, for their mutual gain. Consistent with our major thesis, the basic antitrust concern about license pools is whether they will be used to facilitate horizontal price fixing arrangements. This issue is effectively countered by a rule that allows complementary but not substitute patents to be included in the same pool.⁶⁸ The complementary patents overcome the double marginalization problem, with positive social results. The substitute patents facilitate cartelization, with negative social results.

The instructive question is whether it is possible to find some independent normative justification for the impositions on the power of disposition above, beyond those that belong in a sound antitrust system applying to all sorts of endeavors.⁶⁹ Consistent with my core carryover thesis, I think that the set of possible justifications is empty. One major challenge to this thesis arises in the patent law under the rubric of the doctrine of either “patent exhaustion” or “first sale,” and under the law of copyright under the “first sale” doctrine. The purport of both these doctrines is to say that the ability of a patentee or copyright holder to charge royalties is limited to their initial licensees. As a matter of principle, the term “first sale” seems to have more coherence because it leaves open the possibility that the patent or copyright owner could enforce the rights against subsequent takers, while the term exhaustion makes it appear that the right necessarily dies as a matter of first principle.⁷⁰ In a version of the old “privity” requirement, the patent or

⁶⁸ For discussion, see HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 265–67, 277–78 (2006).

⁶⁹ For further discussion, see Epstein, *Disintegration*, *supra* note 61, at 142-60.

⁷⁰ For discussion, see F. Scott Kieff, *Quanta v. LG Electronics: Frustrating Patent by Taking Contracting Options Off the Table?*, 2007–2008 CATO SUP. CT. REV. 315, 320-21 [hereinafter, Kieff, *Quanta*] (relying on Judge Giles S. Rich, Address at Sixth Annual Conference on International Intellectual Property Law & Policy, Fordham University (April 16, 1998), as quoted in F. SCOTT KIEFF et al., *PRINCIPLES OF PATENT LAW* 1144 (4th ed. 2008)).

copyright monopoly reaches only the initial licensee, not further downstream users.

Both these doctrines exhibit the following logic. The positive law has created a monopoly in the patentee or the copyright holder for the express purpose of inducing innovative behavior. The scope of the grant should be limited to that initial purpose, from which it follows that the patentee or licensee should be entitled to one, and only one, royalty with respect to the product in question, after which the patented or copyrighted product passes into the stream of commerce free of any further claim of the original owner.

One common articulation of this doctrine is found in the late nineteenth century case *Keeler v. Standard Folding Bed Co.*,⁷¹ which put the doctrine as follows:

[When a patentee] has himself constructed a machine and sold it without any conditions, or authorized another to construct, sell, and deliver it, or to construct, use, and operate it, without any conditions, and the consideration has been paid to him for the thing patented, the rule is well established that the patentee must be understood to have parted to that extent with all his exclusive right, and that he ceases to have any interest whatever in the patented machine so sold and delivered or authorized to be constructed and operated.⁷²

The obvious question about this particular rule is whether it should be treated as an “inherent” restraint that is embodied in the law of patents and copyrights, binding regardless of the express intention of the parties, or whether it should be treated as though it were a default provision that attached to the normal sale of a patented or copyrighted article, which could be reversed by publishing a clear notice of the patent to all downstream parties, either by affixing that notice to the patented object or by posting notice on some appropriate central website. The manifest parallels between the default and mandatory rules in *Intel v. Hamidi* seem clear, as does the proper resolution. The key distinction is the source of the restraint on alienation, be it by sale or license, or some combination thereof. Thus the government restrictions in the FCC license cases may look legitimate because the state was the first owner of the property. However, it is instructive to note that the bottom-up approach to spectrum acquisition would have denied the government

⁷¹ 157 U.S. 659 (1895).

⁷² *Id.* at 663 (quoting *Mitchell v. Hawley*, 16 Wall. 544, 546, 547 (1872) (Clifford, J.)).

that option by creating perpetual ownership in particular frequencies. The acceptance of government ownership of the spectrum makes it impossible to hold categorically that the license conditions are outside the government's province. The objection to government policy thus rests solely on the dissipation of social wealth through its ill-advised licensing procedures.

With intellectual property, the first set of concerns, which asks whether these restraints should be classified as either default or mandatory, has bite because a patentee or copyright holder is not a mere licensee of the government. Unlike the spectrum licensees under the current legal regime, the intellectual property right holder receives a full-fledged property interest, which is protected against expropriation under the Takings Clause.⁷³ Under these circumstances it is a mistake to treat the first sale and patent exhaustion doctrines as mandatory terms, and better to treat them as sensible default provisions subject to explicit variation by the parties subject only to the standard limitations on contracts embodied in the antitrust laws. The argument here proceeds identically as it did with broadcast licenses. There is joint maximization of all future gains and losses when the patentee or copyright holder issues one or more licenses with respect to a protected work. In addition, the potential gains to strangers to these transactions are, if anything, increased by the more efficient use of the resource. Therefore, the correct social rule should let the parties decide what terms, what conditions, and what parties to involve. The greater the scope of contractual freedom, the larger the gains from trade, which in turn leads to larger social benefits.

In many of these cases, it turns out that the exhaustion rule makes good sense. If a patentee sells a product to one person for resale to a second, the total amount of royalties that can be captured from the sub-purchaser is strictly limited

⁷³ See, e.g., *Seymour v. Osborne*, 78 U.S. 516, 533 & n.1 (1871) ("Inventions secured by letters patent are property in the holder of the patent, and as such are as much entitled to protection as any other property, consisting of a franchise, during the term for which the franchise or the exclusive right is granted."); *Consol. Fruit-Jar Co. v. Wright*, 94 U.S. 92, 96 (1876) ("A patent for an invention is as much property as a patent for land. The right rests on the same foundation, and is surrounded and protected by the same sanctions.").

by the value of the patent to the end user.⁷⁴ That price can be collected in one of two ways. The first is to put a single tariff on the immediate purchaser and to extract no additional revenue from any other downstream purchaser. The second way is to charge each separate user seriatim. The obvious advantage of the first method to all parties is the ease with which this tariff could be determined and collected. It need not be separately stated, but could be included in the price of the article sold. Alternatively, if the initial transaction is a license to manufacture goods, a single royalty eases the burdens of collection and reduces the transactional burdens on third parties. It seems clear that the correct default rule in these cases is to charge but a single fee for the use of the patented technology or the products from which it derives. So limited, the exhaustion rule has thus a firm economic base.

The sense of this economic logic is evident from one of the early cases that inspired its use. In *Adams v. Burke*,⁷⁵ a third party had the exclusive rights to make, use, and sell patented coffin-lids within a ten-mile radius with Boston at its center. That assignee sold a patented item “without condition or restriction” to the defendant, who then used it outside the original territory, only to be sued by the assignee of the patent in that region. In these circumstances, a rule barring a second claim makes perfectly good sense. There is no way that the original seller of the coffin-lid can determine the final resting place for the coffin. Yet it is very difficult to create a two-part tariff to deal with this situation, and pointless as well, given that many people who purchase the coffin-lids outside the smaller territory might use it within that territory. It would be truly grotesque if every movement of the coffin-lid across territories generated a second fee. The simpler rule of a single fee is not likely to switch the ultimate distribution of benefits and costs between the holders of different territories, but it will reduce the transactions costs associated with either. Ignoring movements in all directions is likely to be far cheaper than following the product as it moves across these territorial lines. If the original owner wants to

⁷⁴ For discussion, see Anne Layne-Farrar, Gerard Llobet & A. Jorge Padilla, *An Economic Take on Patent Licensing: Understanding the Implications of the “First Sale Patent Exhaustion” Doctrine* 22–27 (Feb. 9, 2009) (working paper, available at <http://www.cemfi.es/~llobet/Patent%20Exhaustion.pdf>).

⁷⁵ 84 U.S. 453 (1873).

impose restrictions on use, the original deal is the place to do it. Since the sale was without further restriction or restraint, its territorial limitations should not denigrate the value of the patent, for to do so is to reduce the net royalties from patent use across the board. The Court was right to conclude that “when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use.”⁷⁶ Goods that move quickly in commerce should not, unannounced, be subject to multiple royalty claims, as it is just too difficult to make the necessary price adjustments among all the parties in the chain of distribution. The point here, of course, is meant to bolster a regime of freedom of contract, not frustrate it.⁷⁷

The patterns of distribution and use, however, are sufficiently varied that it is dangerous to convert the commonplace into the necessary. To see how differences in product distribution and use can matter, it is instructive to examine the much-mooted case of *Mallinckrodt, Inc. v. Medipart, Inc.*,⁷⁸ which various consumer groups have wrongly attacked as a dangerous repudiation of the patent exhaustion rule.⁷⁹ *Mallinckrodt* brought suits, one for patent infringement and a second for inducement of breach of contract, against two defendants who used or arranged for use of plaintiff’s “UltraVent” patented device for generating, collecting, and analyzing radioactive materials that are inhaled and exhaled from the lungs.⁸⁰ When

⁷⁶ *Id.* at 456.

⁷⁷ See Kieff, *Quanta*, *supra* note 70, at 322–23 (discussing *Adams*).

⁷⁸ 976 F.2d 700 (Fed. Cir. 1992).

⁷⁹ Brief of Consumers Union (CU), Electronic Frontier Foundation (EFF), and Public Knowledge (PK) as Amici Curiae Supporting Petitioners, *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008) (No. 06-937) [hereinafter CU, EFF and PK Amicus Brief] (prepared by Mark N. Bernstein, Fred von Lohmann and Jason Schultz).

⁸⁰ The Court’s full description of the UltraVent device reads as follows:

[A] unitary kit that consists of a “nebulizer” which generates a mist of the radioactive material or the prescribed drug, a “manifold” that directs the flow of oxygen or air and the active material, a filter, tubing, a mouthpiece, and a nose clip. In use, the radioactive material or drug is placed in the nebulizer, is atomized, and the patient inhales and exhales through the closed system. The device traps and retains any radioactive or other toxic material in the exhalate. The device fits into a lead-shielded container that is provided by *Mallinckrodt* to minimize exposure to radiation and for safe disposal after use.

Mallinckrodt, 976 F.2d at 702.

sold to the hospitals, the device contained a clear legend that conspicuously stated the sale was for “single-use only.” With full knowledge of the restriction, Medipart entered into an agreement with hospitals whereby it serviced these devices to refurbish them for further use in violation of that original agreement. The work involved was quite exacting; its improper performance carried with it the risk of infection and other adverse medical consequences. I see no reason why the actions for both patent infringement and inducement of breach should not have been allowed. Indeed the latter is exceptionally important because of the difficulty and expense of chasing after individual hospitals, all of which have relations with Medipart, the breach inducer.

To begin the analysis, it is clear that the original sale price, negotiated on the assumption that the restraints on alienation were valid, doubtless reflected the obligation to return the device to Mallinckrodt for additional servicing and use. These provisions served at least two sensible functions. First, it allowed for some price discrimination among potential buyers based upon the intensity of their use, which has the positive effect of allowing low demand users into the market. The inability to keep this restriction in place would necessarily entail charging a higher single price that would not be able to capture the demand differentials—surely not an issue in *Adams v. Burke*, where we can be quite confident that each coffin had one, and only one, use. Secondly, medical devices are vulnerable to tort liability—an issue unaddressed by the court’s opinion. Divided control could always leave open complex questions as to whether Mallinckrodt or Medipart was responsible for any failure by others who at one time or other were in the same chain of custody. Singular control over the manufacture and servicing obligation does not eliminate the possibility of erroneous use at the hospital level, but the elimination of even one element of concern surely counts as a positive for the manufacturer. Furthermore, we know that these conditions do not raise any antitrust concerns, given the correct decision in *Illinois Tool Works, Inc. v. Independent Ink, Inc.*,⁸¹ which rejected the proposition that ownership of a patented product created a presumption of market

⁸¹ 547 U.S. 28, 31 (2006).

power sufficient to trigger further scrutiny under the antitrust laws. Quite simply, so long as other vendors sold (or licensed) other combinations of the device and the additional service, competition at the first level—that involving the patented device itself—would take into account the full and predictable costs of routine servicing in the aftermarket. It follows, therefore, that it hardly matters whether we call the original transaction between Mallinckrodt and its hospitals a sale or a license. The key issue is not the location of the title, to which the patent exhaustion doctrine (which stresses the first *sale*) gives undue weight, but the economic logic of the basic transaction.⁸² In effect, the Federal Circuit took the position that for these tripartite arrangements, freedom of contract was the norm between the parties: “Unless the condition violates some other law or policy (in the patent field, notably the misuse or antitrust law), private parties retain the freedom to contract concerning conditions of sale.”⁸³ Accordingly, “[a]s was said in *United States v. General Electric Co.*, the patentee may grant a license ‘upon any condition the performance of which is reasonably within the reward which the patentee by the grant of the patent is entitled to secure.’”⁸⁴ This conclusion in turn justified the use of the tort of inducement of breach of contract against the third-party, and the application of patent remedies that specifically reach inducers.⁸⁵ The key point here is that the entire process of reuse within the closed community gave this case a context to which the exhaustion rule did not apply, even though it explicitly kept to

⁸² For a rejection of the proposition that the location of title counts for antitrust purposes, see *Continental T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 57-59 (1977) (making antitrust liability depend on “demonstrable economic effect,” rather than “formalistic line drawing” on questions of legal title). *Sylvania* overruled the prior decision of the Supreme Court in *United States v. Arnold, Schwinn & Co.*, 388 U.S. 365 (1967) (treating vertical restraints as per se illegal).

⁸³ *Mallinckrodt*, 976 F.2d at 708 (citation omitted). Judge Newman cited *United States v. Univis Lens Co.*, 316 U.S. 241 (1942), as an instance in which the patent exhaustion doctrine was justified under the antitrust law, which at that time had a per se rule against resale price maintenance since *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373 (1911) meant that it was not possible at that time to disentangle the two rules. After the Court’s decision in *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877 (2007), resale price maintenance was no longer per se unlawful. For the resurrection of the patent exhaustion doctrine as an independent constraint, see the discussion of *Quanta Computer, Inc. v. LG Elecs., Inc.*, *infra* pages 35-38.

⁸⁴ *Mallinckrodt*, 976 F.2d at 704-05 (quoting *United States v. Gen. Elec. Co.*, 272 U.S. 476, 489 (1926)).

⁸⁵ 35 U.S.C. § 271(b) (2006) (“Whoever actively induces infringement of a patent shall be liable as an infringer.”). The force of the word “actively” is unclear, but surely reaches all parties, like Medipart, that initiated the business transaction.

one side all cases involving products “in the ordinary channels of trade”⁸⁶—those sold to third persons with whom neither the original patentee nor its first buyer have ongoing relations.

The strong freedom of contract spin in *Mallinckrodt* was not evident in the recent Supreme Court decision in *Quanta Computer, Inc. v. LG Electronics, Inc.*,⁸⁷ which applied the patent exhaustion doctrine in cases that once again did not involve sales to the trade in the ordinary course of business. At issue in *Quanta* was a contract settlement between LG Electronics (LGE) and its customer Intel, who agreed to give notice to its customers, including Quanta, that any sale of products that embedded LGE’s products would be subject to a potential royalty to LGE. That notice provision is a cheap and effective way to put the potential buyer in a position to calibrate the initial royalty to allow for the second. Indeed, there is good evidence of its transactional utility. There is evidence that LGE did not want Intel to charge a uniform royalty to all potential buyers.⁸⁸ It appears that some of those potential buyers had already acquired blanket licenses from LGE for the use of all its products, while others had not. Any uniform charge by Intel would not distinguish between these two types of buyers. The notice provision does, for it allows those buyers who have paid for blanket licenses to avoid any further negotiations with LGE, which can deal independently with those who have not obtained such licenses. These negotiations, moreover, need not be done after taking title to LGE products from Intel, at which point a holdup problem could arise. The notice provision has the great advantage of allowing the potential buyer from Intel to negotiate with LGE *before* entering into a contract of purchase to avoid just that risk. The price of that

⁸⁶ *Mallinckrodt*, 976 F.2d at 705.

⁸⁷ 553 U.S. 617 (2008). For my extended critique, see Epstein, *Disintegration*, *supra* note 61, at 154-56.

⁸⁸ See Robert W. Gomulkiewicz, *The Federal Circuit’s Licensing Law Jurisprudence: Its Nature and Influence*, 84 WASH. L. REV. 199, 233 (2009) (noting that the exception in the Intel license “is good news for computer-system manufacturers who have a patent portfolio cross license with LG Electronics. These companies already paid for the patent rights. They do not want to pay again as part of the price of Intel’s microprocessors. For those manufacturers who do not have such a license, however, Intel cannot serve as a ‘reseller’ of LG Electronics’ patent rights. These manufacturers must purchase their patent rights directly from the patentee, LG Electronics.”) My thanks to Rochelle Dreyfuss for pointing out this article, which fills in a big hole in the business back-story of the case. For the concern that Quanta’s “downstream resellers need to be accommodated in the one-time sale with the licensee,” precluding price discrimination, see Solomon, *supra* note 57, at 42.

second license will of course depend on the nature of the substitutes available in the market. Described in this fashion, there is no reason to think that the transactions at issue in *Quanta* raised any distinct antitrust concerns. However, the Court nonetheless held that the patent exhaustion rule blocked the transaction, despite offering no functional explanation as to why there is any reason to do more than apply the standard antitrust restraints, which everyone agrees are inapplicable here.

The fact pattern in *Quanta* is clearly distinguishable from that in *Mallinckrodt* in that the latter case involved key issues of product reuse that posed serious risks of tort liability, while *Quanta* was simply a commercial dispute over royalties without these overtones. Accordingly, it is not illogical that the Supreme Court at no point discussed *Mallinckrodt* in ways that could call its narrow rationale into question. Nonetheless, the case was raised in several amici briefs, including that filed by the Consumers Union, Electronic Frontier Foundation, and Public Knowledge (CU/EFF/PK),⁸⁹ which sought to draw the explicit connection between the two cases by treating *Mallinckrodt's* broad statements in defense of freedom of contract as total repudiation of the patent exhaustion doctrine. In and of itself, such an interpretation would have been a welcome development because the increase in licensing freedom acts as an indirect spur to innovation. Nonetheless, the CU/EFF/PK position predicted a massive loss in consumer welfare from the upset of long-settled expectations resting on the exhaustion rule.⁹⁰ That position is odd for two reasons. First, there is nothing whatsoever in *Mallinckrodt* (or *Quanta*) that is meant to displace the default rule that works so well in the downstream distribution of ordinary consumer products through ordinary commercial channels. Second, it is hard to detect any change in general contracting practices in the two decades that

⁸⁹ CU, EFF and PK Amicus Brief, *supra* note 79. A similar position was taken in the brief offered by the United States on behalf of the petitioners, 2007 WL 3353102, *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2007) (No. 06-937), which concentrates on the doctrinal tension between *Mallinckrodt* and the Supreme Court cases. The major economic argument in the brief, *id.* at *29, that *Mallinckrodt* allows firms to escape antitrust scrutiny if they are not caught by the first sale doctrine, is clearly wrong. The correct analysis allows for antitrust review in all cases, whether or not a restriction complies with the first sale doctrine.

⁹⁰ CU, EFF and PK Amicus Brief, *supra* note 79, at 5-6.

Mallinckrodt has been in effect. Quite to the contrary, efforts to use clear notice to prevent the unwanted resale of books and records have become ever more common. Law casebooks that are given to teachers as complimentary samples now have notices emblazoned on their front covers signs that say they are for professor use only and not for resale. The reason seems clear enough. It is an effort to reduce the price of allowing professors to sample books for free by preventing their resale to students who would otherwise buy from the publisher. The effort to prevent the resale of demonstration records that are distributed to key figures in the music industry has the same purpose.⁹¹ There are of course difficulties with the enforcement mechanism, but that is hardly a reason to say that the effort to so limit the initial distribution should be illegal. The entire system of notice, through recordation, of restrictive covenants has been widely accepted since the landmark decision in *Tulk v. Moxhay*.⁹² So long as the notice in question is given only to protect valid claims, it is hard to see any reason why techniques that make sense with chattels (where the legality of restrictive is uncertain) and are common with land should be regarded as presumptively unwise with patents and copyrights. In addition, the tort of inducement of breach of contract itself depends on the role of notice. That point is made explicit in the first of the inducement cases, *Lumley v. Gye*.⁹³ Those cases, of course, have to reject the possibility that all efforts to hire individuals should be treated as inducements to breach in order to protect the operation of a competitive labor market. At a minimum that means that one party is always entitled to make offers to hire those who are working for others when the decision to quit (as under most contracts at will) is not a breach. The tort law also protects those third parties that make offers that do induce breach, so long as the offeror has no notice of the contract that the offeree would breach. Thus *Lumley*

⁹¹ See, e.g., *UMG Recordings, Inc. v. Augusto*, 558 F. Supp. 2d 1055 (C.D. Cal. 2008). The case involved the resale of demo CDs given in the music industry which bore a legend prohibiting resale. For a detailed critique of its particulars, see Epstein, *Disintegration*, *supra* note 61, at n.177 and accompanying text.

⁹² 41 Eng. Rep. 1143, 1144 (Ch. 1848). I discuss the connections between real and personal covenants in greater detail in Epstein, *Disintegration*, *supra* note 61, at n.47 and accompanying text.

⁹³ 118 Eng. Rep. 749 (Q.B. 1853) (finding a tort in the inducement to breach where the third party inducer had notice of the breacher's contract of employment).

explicitly equated malice and notice in this context⁹⁴ so as to replicate the property rights structure that is found with real property.⁹⁵

The Amicus Brief of CU/EFF/PK was commendable insofar as it sought to ground the attack on these various contractual restrictions in functional explanations. However, the explanations offered for attacking the restrictions at play in *Mallinckrodt*, and through it the restrictions at issue in *Quanta*, are wholly unpersuasive. They allege that the results of removing the patent exhaustion doctrine include:

- Increased information costs when trying to ascertain restrictions on patented goods;
- Erosion of the well-established right to repair patented goods;
- Interference with the functioning of vibrant secondary markets (such as eBay and Craigslist) enabled by new technologies;
- Diminished opportunities for “user innovation”; and
- Expanded use of inefficient and unfair price discrimination in connection with patented goods.⁹⁶

As to the first, the information costs are trivial if notice is attached to the goods in question as it clearly is in all the relevant cases where the defendant admits full and clear knowledge of the restriction that is attached to the patented object, as in the cases they instance in their brief.⁹⁷ All the burden on information costs are borne by the patentee, which takes the risk that the restriction will fail if notice is not communicated. In those cases of common goods for sale in the ordinary course of business, the costs are never incurred because the restrictions are never imposed.

Second, the erosion of the right to repair patented goods is no different from the rights to repair those goods that are not under patent. Normally, the patentee

⁹⁴ *Id.* at 752–53 (“[I]t must now be considered clear law that a person who wrongfully and maliciously, or, which is the same thing, with notice, interrupts the relation subsisting between master and servant by procuring the servant to depart from the master’s service, . . . whereby the master is injured, commits a wrongful act for which he is responsible at law.”).

⁹⁵ For a defense of that structure, see Richard A. Epstein, *Inducement of Breach of Contract as a Problem of Ostensible Ownership*, 16 J. LEGAL STUD. 1, 2, 19–29 (1987).

⁹⁶ CU, EFF and PK Amicus Brief, *supra* note 81, at 3.

⁹⁷ *See id.* at 2-3 (citing *Ariz. Cartridge Remfrs. Ass’n v. Lexmark Int’l, Inc.*, 421 F.3d 981, 983-84 (9th Cir. 2005) (“single use only” restrictions for toner cartridges)); *Jazz Photo Corp. v. Int’l Trade Comm’n.*, 264 F.3d 1094, 1107-08 (Fed. Cir. 2001) (“single use only” restrictions in camera instructions); *Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp.*, 123 F.3d 1445, 1453 (Fed. Cir. 1997) (“single use only” for ink jet printer cartridges)). These cases are subject to multiple interpretations because in *Jazz Photo* the court did not read the instructions as a license limitation, and held that there was no infringement. *Hewlett-Packard* contained no clear notice restriction.

does have an interest in stopping reconstruction that violates its patents because those devices are sold in competition with those of its own manufacture.⁹⁸ However, repairs present a different issue. The imposition of an unnecessary restraint on purchasers could easily reduce initial sales. Unless there is some efficiency advantage to tying repair services to the product, then, the seller of the patented product has no interest in the repair process and will not seek to impose the condition. The exceptions would be in cases like *Mallinckrodt*, where it could well be that if the risk of tort liability is serious, that condition is often imposed. The issue was not raised in the case, but as a general matter of tort theory, divided control over any product complicates the issue of liability. Similarly, in other contexts, the consumer may gain the right to repair only if he is prepared to forfeit the product warranties that are otherwise attached to the goods. The risk of poor repairs increases the cost of the original warranty in ways that are hard to price. In principle, therefore, I see no reason why that condition should be invalidated, for there is always the risk that poor repairs by an independent party could increase the risk of tort liability of the original product supplier.

Third, it is not creditable to argue that the *Mallinckrodt* rule could interfere with the emergence of efficient secondary markets. *Mallinckrodt* was decided in 1990, and none of the web-based markets emerged until close to a decade later. Clearly the rule had no effect for the simple reason that there is no overlap. The kinds of ordinary consumer goods that get sold in these markets are those to which the general default provision applies. The rapid growth of these markets looks to an outsider to offer proof positive that *Mallinckrodt* does not exert any secret destructive influence on these markets.

⁹⁸ Judge Newman wrote in *Mallinckrodt*:

Even an unconditioned sale of a patented device is subject to the prohibition against “reconstruction” of the thing patented. A purchaser's right to use a patented device does not extend to reconstructing it, for reconstruction is deemed analogous to construction of a new device. However, repair is permissible. Although the rule is straightforward its implementation is less so, for it is not always clear where the boundary lies: how much “repair” is fair before the device is deemed reconstructed. 976 F.2d at 709 (citations omitted).

Fourth, any claim of diminished user options raises the question of the relative importance of downstream and upstream innovation, and the possible coordination of them. Initially, nothing stops the upstream person from offering payments to individuals who improve their products or discover new applications for them. In addition, the downstream user could easily obtain an improvement patent, which gives some leverage for negotiation with the holder of the original patent. Furthermore, where the direct conflict between the upstream and downstream users persists, favoring user innovation could easily come at the expense of manufacturer innovation that could prove to be of greater value. It is now widely known that the United States does not offer any explicit exemption for the users of research tools,⁹⁹ but by the same token it is highly unlikely that any patentee will crack down on downstream innovators of *complementary* products which only increase the sale potential of the patented goods. There is simply no reason to think that there is any way to increase user options that also increases the efficiency of the overall system. The conventional rules on improvement patents should not be displaced.

Fifth, the economics of price discrimination are without question difficult, for there is no *a priori* way to rule out the possibility that some marketing practice increases monopoly power for the seller. But don't count on it, for in many cases price discrimination (which requires a prohibition against resale that could defeat the differential tariff) allows sellers to *reduce* the licensee fees for some class of potential consumers, which thus increases consumer welfare. Furthermore, even if there are cases that do raise legitimate antitrust concerns, the antitrust law remains there to deal with it. As Herbert Hovenkamp has remarked in connection with the so-called patent misuse doctrine, there is no need for patent-specific rules in this area.¹⁰⁰ Here is a classic case where the imposition of two systems of liability is worse than one.

⁹⁹ *Madey v. Duke Univ.*, 307 F.3d 1351, 1362 (Fed. Cir. 2002) (finding no experimental use defense to infringement if “act is in furtherance of the alleged infringer's legitimate business and is not solely for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry”).

¹⁰⁰ HOVENKAMP, *supra* note 68 at 272 (“[I]f ‘misuse’ means the same thing as an antitrust violation, then why bother having a separate concept of ‘misuse’?”). In the same vein, Hovenkamp writes that

At this point, the key issue over *Quanta* is not whether it is sound, but whether the damage can be contained to the small subset of cases that look like it. On this point, it is too early to make any definitive judgment, but the early results point to a broad reading of *Quanta*. Thus in *Static Control Components, Inc. v. Lexmark International, Inc.*,¹⁰¹ the question was whether Lexmark could maintain its action for patent infringement against a remanufacturer of its toner cartridges who accepted them with knowledge of a provision in the original Lexmark sales agreement that stipulated that the cartridge had to be returned after a single use. The contract also stated that the customer could choose a “regular price cartridge” that was free of these return restrictions.¹⁰² This restriction thus differed from that in *Mallinckrodt* insofar as it put both options on the table for the original buyer who, in this instance, sought to get the benefit of the high price option at the low price. The district court noted that *Mallinckrodt* was nowhere discussed in *Quanta*, but nonetheless took the risky path of holding that it had been overruled sub silentio,¹⁰³ notwithstanding the distinction between those transactions that put a consumer between two manufacturers and those that involved a casual resale from one consumer to another in the ordinary course of business.

In so doing, it relied on three separate lines of argument. As a matter of substance, it held that the restrictive arrangements were impermissible but did not explain the source of any welfare loss. Instead, it just relied on the exhaustion rule as if it were an end in itself. In so doing, it did not make any of monopoly power, which in any event seems highly improbable with respect to customers that

“the Federal Circuit’s position seems incredible to someone familiar with the expansive body of antitrust doctrine,” given that “§2 [of the Sherman Act] reaches every act that monopolizes or dangerously threatens to do so.” *Id.* at 273.

¹⁰¹ 615 F. Supp. 2d 575 (E.D. Ky. 2009).

¹⁰² The full clause reads:

RETURN EMPTY CARTRIDGE TO LEXMARK FOR REMANUFACTURING AND RECYCLING

Please read before opening. Opening this package or using the patented cartridge inside confirms your acceptance of the following license agreement. This patented Return Program cartridge is sold at a special price subject to a restriction that it may be used only once. Following this initial use, you agree to return the empty cartridge only to Lexmark for remanufacturing and recycling. If you don’t accept these terms, return the unopened package to your point of purchase. A regular price cartridge without these terms is available.

Id. at 577.

¹⁰³ *Id.* at 585.

received both high and low price options. The district court quoted Kieff's argument in favor of contractual freedom,¹⁰⁴ only to adopt a position whose long-term effect is to reduce consumer choice to one form of transaction, as no firm will offer the lower price if the restriction on use is not respected. The court also finessed a contract formation argument, noting that the state law claim may survive assuming using the a shrinkwrap transaction did not render the limitation unenforceable,¹⁰⁵ without resolving that issue one way or the other.¹⁰⁶ Finally, it relied on the decision *Bloomer v. McQuewan*,¹⁰⁷ which dealt with the question of a patent extension on previous licensees that the patentee made for the manufacture of its Woodworm planing machine. The Supreme Court took the position that ordinary sales were not covered by that patent extension, which makes sense given that ordinary resales during the original patent period were not caught by the original patent. But with respect to a license to produce the good during the initial period, the result was different because no fresh consideration was paid for the additional period for exercising that was not included in the original grant, and which, as a business matter, could not have been included. There is no reason why a licensee should be asked to pay to produce a product outside the period for which the original license is valid. (There may, of course, be cases where the royalties are so extended, but only in exchange for a reduction in royalties during the period). The sensible inference is that a fresh agreement should be negotiated just as if the patent had been issued for the first time. In essence, therefore, *Bloomer* supports *Mallinckrodt* because it shows the salience between ordinary consumer sales and complex business transactions among various producers of the patented product. In sum, nothing in the *Quanta* line of cases casts any doubt on the normative strength of the

¹⁰⁴ *Id.* at 578.

¹⁰⁵ *Id.* at 587.

¹⁰⁶ The extensive debate on these contracts continues to swirl around. *See, e.g.*, ProCD, Inc. v Zeidenberg, 908 F. Supp. 640 (W.D. Wis. 1996), *rev'd*, 86 F.3d 1447 (7th Cir. 1996) (Easterbrook, J.) (defending these contracts). For the empirical evidence in support of the Easterbrook position, see Florencia Marotta-Wurgler, *Are "Pay Now, Terms Later" Contracts Worse for Buyers? Evidence from Software License Agreements*, 38 J. LEGAL STUD. 309 (2009) (delayed disclosure results in no consumer harm). For my defense of the Easterbrook position, see Richard A. Epstein, ProCD, Inc. v. Zeidenberg: *Do Doctrine and Function Mix*, in CONTRACT STORIES 94 (Douglas Baird ed., 2006).

¹⁰⁷ 55 U.S. 539 (1853).

carryover thesis, which works as well for licenses as it does for the right of exclusion in the law of patents and copyrights. Once again, the effort to create a unique set of efficacious rules patent rules fails.

CONCLUSION: THE CASE FOR CARRYOVER

In this paper I have pressed forward with the long-term project of showing how the law of intangible property can be integrated with the property law that governs various forms of natural resources. In undertaking this inquiry, I do not seek to prove that there are no critical differences in the law that governs these intangible interests. Quite the opposite, any full accounting of the overall property system requires a systematic explanation of differences as well as similarities. However, I do wish to contest strongly the proposition that each area of law is to some extent “special” such that it needs special consideration.¹⁰⁸ Claims for special rules have led to the introduction of price controls in agriculture and rent control in residential real estate markets. The background presumption should be against ad hoc claims of uniqueness. The differences that are inevitably found as the law moves from field to field are, at best, of little consequence and, at worst, can lead analysts far astray. With that mission in mind I have shown ways in which the law of intangible property avoids many of the difficulties that are found with tangible property—ways that afford full respect to the basic axioms of exclusion and disposition that do (or at least should) work in connection with such vital resources as land and chattels. The illustrations that I have chosen come from the law as it relates to the Internet, the spectrum, copyright and patents for all different kinds of goods and products. I have sought to document the mischief that arises when courts introduce ad hoc rules in connection with these issues that ignore the fundamental gains from systems that make the right distinctions between private and common property. The long-term agenda is to return the law as it relates to all of these areas to its sound theoretical foundations. The payoff is a system-wide improvement in the rules governing property that work for the benefit of us all in both the long and the short run.

¹⁰⁸ I have pushed hard on this point in virtually every area in which I write. *See, e.g.*, Richard A. Epstein, *Why is Health Care Special?*, 40 U. KAN. L. REV. 307 (1992).

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