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Property Rules, Liability Rules, and Uncertainty about Property Rights

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PROPERTY RULES, LIABILITY RULES, AND UNCERTAINTY ABOUT PROPERTY RIGHTS

Stewart E. Sterk*

Clarity can be a considerable virtue in property rights. But even when property rights are defined clearly in the abstract, ascertaining the scope of those rights in concrete situations often entails significant cost. In some instances, the cost of acquiring information about the scope of property rights will exceed the social value of that information. In those circumstances, further search for information about the scope of rights is inefficient; the social harm avoided by further search does not justify the costs of the search.

Potential resource users, however, make decisions based on private costs and benefits, not social costs and benefits. Legal rules can create incentives to search for information even when the search would be inefficient. In particular, "property rule" protection often gives leverage to right holders disproportionate to the harm those right holders would suffer from intrusion on their rights. That leverage, in turn, gives potential resource users private incentives to expend time and money on search even when search will generate minimal social benefit. "Liability rule" protection, by contrast, limits incentives to conduct inefficient search for the scope of property rights.

Property doctrine reflects this insight in a number of contexts. Thus, high search costs can explain the unwillingness of courts to award injunctive relief in cases of "innocent" boundary encroachments, as well as the Supreme Court's recent limitations on the routine award of injunctive relief in patent and copyright cases.

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INTRODUCTION

The scope of many property rights is not self-evident. A potential user of resources will often be less than completely certain whether use of those resources infringes on the rights of a property owner. Obtaining the information necessary to resolve that uncertainty comes at a cost.

What impact, if any, should these uncontroversial propositions have for the remedies available to a property owner when a resource user infringes on the owner's rights? That question has generated little attention in the now-voluminous literature on the remedies available to property owners against encroaching users.

Consider a simple real property law hypothetical. Bush and Clinton own adjacent land. Bush holds an easement over a strip of Clinton's land on their common boundary—but neither of them knows of the easement, which was negotiated between their predecessors thirty years ago. Clinton expands his house, and the extension encroaches onto a portion of the easement. Bush learns of the easement a year later, when he plans renovation of his house, and needs a way to get construction equipment to the back of his house. The portion of the easement on which Clinton has not built, together with space on Bush's own land, is wide enough to permit the equipment to pass. As a result, the harm to Bush amounts to, at most, a few hundred dollars, repre-

senting the loss of a few shrubs that might be trampled by construction equipment on Bush's side of the boundary line—shrubs that would not be trampled if Bush could use the easement's full width. Rebuilding Clinton's extension to avoid encroachment would cost Clinton \$50,000.

What remedy should be available to Bush for Clinton's encroachment onto the easement? Should Bush be entitled to "property rule" protection—an injunction against Clinton's encroachment? Or should Bush be limited to "liability rule" protection—an award of money damages against Clinton? Or should Bush be denied relief altogether? In addressing issues of remedy, the academic literature has focused on efficiency concerns.¹ Much of the focus has been on ex post concerns—minimizing inefficiencies once a dispute between the parties has arisen.² Recent literature, however, has shifted focus to ex ante concerns—developing a legal structure that minimizes the risk of conflict before it arises.³ From the ex ante perspective, Henry Smith has identified a significant advantage of property rules: the holder of a right protected by a property rule has more incentive to invest in producing information about productive uses of property than a right holder in a regime of liability rules.⁴ That is, concentrating rights in a single owner enables that owner to coordinate use of the "owned" resource.⁵

1. See *infra* text accompanying notes 11–43.

2. The seminal article focusing on ex post concerns is Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). Other leading examples include Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027 (1995); Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713 (1996); and A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075 (1980).

3. Jim Krier and Stewart Schwab were among the first to emphasize the effect liability rules might have on ex ante behavior of parties. James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440, 462–464 (1995). Carol Rose has noted that the emphasis on ex post concerns emerged from tort and contract scholars with a tendency to shortchange "the considerations uppermost in conventional property law—planning, effort, and investment." Carol M. Rose, *The Shadow of The Cathedral*, 106 YALE L.J. 2175, 2188 (1997). Richard Epstein has emphasized the impact of liability rules on "the security of possession and the security of exchange needed for complex commercial life and a satisfying personal one." Richard A. Epstein, *A Clear View of The Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091, 2093 (1997).

4. Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1729, 1755–64 (2004).

5. Thus, Henry Smith has noted that property rules, which give to a single owner the right to exclude others from a particular resource, provide incentives for that owner to become a clearing-house for information about the resource:

Owners are closest to their assets and will be in a position both to develop information about (and attachment to) their assets and will be the recipients of information in the form of offers from potential purchasers. Owners are likely often to be the least-cost generators of information about assets, even if this information is not verifiable to third parties. Takers will likely be closer to assets than courts, and will be able to evaluate assets currently held by owners. Under exclusion and property rule protection, people in this position have to make offers

Henry E. Smith, *Exclusion and Property Rules in the Law of Nuisance*, 90 VA. L. REV. 965, 985 (2004) (footnote omitted). By contrast, with liability rules:

The ex ante coordination advantage of property rules, however, depends critically on shared and accurate information about the boundaries of legal rights. If the scope of those rights is unclear, an "owner" cannot coordinate use of a resource until both she and potential users acquire information about the scope of her rights.⁶ Acquiring that information, however, requires search, which can be costly.

The potentially high cost of search to ascertain the scope of property rights leads to the insights explored in this Article. First, in some instances, the cost of acquiring information about the scope of property rights will exceed the social value of that information. Returning to our hypothetical, Clinton could not discover the existence or scope of Bush's easement without incurring private costs necessary to hire a lawyer (to discover the existence and terms of the easement) and a surveyor (to ascertain the location of the easement on the ground). The social costs Clinton would avoid by acquiring that information, however, are small. At most, if Clinton had learned of the easement and its location before expanding his house, he could have built in a way that would have avoided Bush's loss of a few hundred dollars in shrubbery. But even that measure overstates the social loss that additional information would prevent.

Second, even if the social cost of search is greater than its social value, the private value of search to a potential resource user may, in a property-rule regime, exceed its private cost, providing the potential resource user with excessive incentive to seek information about the scope of property rights. That is, the search for information might alter the distribution of wealth between the improver and the neighbor, and thereby generate private gains to the party incurring the search costs, while generating no comparable social gains.⁷ In concrete terms, the social cost of expanding Clinton's house without checking deeds and commissioning a survey may only be a few hundred dollars, but the potential private cost to Clinton is much higher, because Bush can compel Clinton to remove the encroaching addition to his house, giving Bush leverage in negotiations far in excess of the social cost of the encroachment. Hence, property-rule protection threatens to generate inefficient expenditures in acquiring information about the scope of legal rights.

The importance of this insight does not depend on the belief that next-door neighbors will be so calculating in their decisionmaking, or in their dealings with each other. The basic problems—uncertainty about the scope

[T]akers can use information about assets and their owners to cherry-pick those undervalued by damages rules. An owner may not be able to communicate to a court the value of a use (or nonuse) such that damages could be given to reflect it. Takers, knowing this, can then select vulnerable owners for taking or extortion. Even if a court could detect all opportunistic takings, the effort to do so is likely to be costly.

Id. at 985–86 (footnotes omitted); see also Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773, 793–96 (2001).

6. Merrill & Smith, *supra* note 5, at 793–96; Smith, *supra* note 5, at 985–86.

7. Cf. Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 602–05 (1992) (noting differences between the private and social value of obtaining legal advice).

of property rights and disparity between the social and private cost of acquiring information about those rights—also arise in commercial settings, where dollars typically count for more and preservation of neighborly relations for less. The problems are particularly pervasive in the case of intellectual property rights, where boundaries tend to be less certain and where search costs are typically higher.

The notion that expenditures made to clarify legal rights can be inefficient is counterintuitive to lawyers, who often earn their living clarifying legal rights for their clients. My claim here, however, is a narrow one—not that *all* expenditures made to clarify property rights are inefficient, but that at some point, the marginal cost of additional clarity in the scope of property rights exceeds the value of that clarity.⁸ Moreover, I do not contend that courts should invariably eschew property-rule protection in those cases where an encroacher's level of investigation into the scope of property rights was inefficient. Determining which investigations are efficient is no easy matter, even with the benefit of hindsight, and countervailing considerations—such as preserving personal autonomy and avoiding the difficulty of determining and accounting for subjective harm—often militate in favor of property-rule protection.

As a normative matter, however, the cost and social value of acquiring additional information about the scope of property rights should be relevant to a court in deciding between property-rule protection and liability-rule protection. As a descriptive matter, courts have *sub silentio* accounted for the cost and value of acquiring additional information in fashioning rights and remedies in a variety of legal contexts ranging from innocent border encroachments⁹ to copyright and patent doctrines that give courts discretion to deny injunctive relief against certain classes of infringers.¹⁰

I. THE REMEDIES LITERATURE

Much of the scholarly literature on property remedies starts with the premise that information can be costly to obtain. The literature has focused principally on the difficulty of obtaining information about the value of property rights to potential users, resulting in potential inefficient use of resources. Liability rules might reduce the need for, and increase the quality of, information about values, limiting the potential for inefficient use. At the same time, property rules create an incentive for a single party, the owner, to invest in generating information about potential uses of the resource—an incentive that no single party enjoys in a liability-rule regime. In focusing on the costs of ascertaining uses and values of resources, the literature has

8. As Tom Merrill has noted, "[e]ntitlement-determination costs . . . are 'real' costs and should not be incurred unless they are justified by the expected returns." Thomas W. Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13, 25 n.47 (1985).

9. See *infra* Section III.D.

10. See *infra* Sections IV.B–C.

largely ignored the costs associated with determining the scope of property rights. These costs serve as the focus for the succeeding section.

*A. The Impact of Information Costs on Ex Post Resolution
of Property Disputes*

In their pathbreaking article on the comparative efficiency of property and liability rules,¹¹ Calabresi and Melamed developed what has now become the conventional wisdom: property rules are efficient in cases of low transaction costs, while liability rules are preferable in cases of high transaction costs, typically defined as cases in which multiple parties generate the potential for holdouts and freeriders.¹²

Calabresi and Melamed did not ignore information costs in their pathbreaking analysis, but those costs were not their focus. Others, however, have focused on information costs in evaluating the efficiency advantages of injunctive relief and money damages.¹³ Until recently, the focus of this scholarship has largely been on ex post concerns: once a concrete dispute between parties has arisen, which remedy is more likely to lead to efficient resolution of the dispute? The scholarly literature has undermined, to a considerable degree, both tenets of the conventional wisdom that emerged from Calabresi and Melamed: that liability rules generate more efficient use in high-transaction-cost cases, and that property rules generate more efficient use in low-transaction-cost cases.

1. Multiple Parties and High Transaction Costs

Information costs—particularly errors in damage assessment—can generate inefficient results when courts use liability rules to deal with the transaction costs associated with multiple-party negotiations.¹⁴ Although Calabresi and Melamed focused on liability rules as a way to overcome holdout problems, Mitchell Polinsky has noted that the same holdout problems will obstruct negotiations after a court awards damages to the victim.¹⁵ For instance, in a pollution dispute, if the court awards damages that exceed actual harm, the polluter will stop polluting even though it would be efficient for the polluter to continue,¹⁶ while if actual harm exceeds the damages awarded, the polluter will continue to pollute even though the pollution is

11. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

12. See *id.* at 1118 (noting that when transaction costs are low, property rules enable efficient results because even when entitlements are set inefficiently, transactions would cure any errors); *id.* at 1106–10 (noting that liability rules can overcome holdout and freerider problems in cases when privately-negotiated solutions are impractical).

13. See Ayres & Talley, *supra* note 2; Kaplow & Shavell, *supra* note 2; Polinsky, *supra* note 2.

14. See, e.g., Krier & Schwab, *supra* note 3, at 453–57; Polinsky, *supra* note 2, at 1104–05.

15. Polinsky, *supra* note 2, at 1108–09.

16. *Id.* at 1093–94.

inefficient.¹⁷ As a result, a liability rule guarantees efficient results only when damages are equal to actual harm.¹⁸ Courts, however, do not always have reliable information on which to base their assessments of actual harm.

The practical question, of course, is not whether a liability rule guarantees efficient results in cases of high transaction costs; no rule does that. The relevant comparison, as Jim Krier and Stewart Schwab have formulated it, is between the ability of judges to overcome assessment cost problems and the ability of the parties to overcome transaction cost problems.¹⁹ Krier and Schwab have argued that in multiple-party cases, the very facts that create high transaction costs also generate high assessment costs, making both property rules and liability rules problematic from an efficiency standpoint.²⁰

2. Two Parties and Low Transaction Costs

Information costs have also played a central role in two arguments for using liability rules rather than property rules, even to resolve disputes between two parties. First, litigated cases will more often generate efficient results if courts use liability rules. Second, liability rules are more likely to overcome strategic bargaining, and therefore reduce the need for litigation. Both arguments focus on information: the first on the information available to courts adjudicating disputes over property rights, and the second on the flow of information between the disputing parties.

a. Liability Rules and Reduced Assessment Costs

Suppose parties litigate a dispute over property rights. If the court wants to promote efficient use of the rights, but concludes that strategic bargaining will prevent negotiations between the parties, the court must assess the value of the parties' competing uses.²¹ If the court is limited to property rules, the court has two choices: enjoin the defendant's behavior, or deny relief to the plaintiff. Only one of those two alternatives leads to efficient use, and the court cannot know which one without determining the value of both uses.

Louis Kaplow and Steven Shavell have highlighted an important advantage of liability rules—they generate efficient results so long as a court can

17. *Id.* at 1094 n.39.

18. *See id.* at 1094. Polinsky analyzed a situation in which each additional unit of factory production generated fewer returns for the factory and more harm to neighbors, rather than a more simple model in which the factory either operates, producing harm, or shuts down, producing no harm. As a result, in his model, no strategic behavior, and hence no inefficiency, would occur "if liability is less than or equal to actual damages up to the efficient output (and greater than or equal to actual damages beyond the efficient output)." *Id.* But the basic point remains: damages cannot guarantee efficient results unless the court knows how much harm each unit of production generates.

19. Krier & Schwab, *supra* note 3, at 459.

20. *Id.* at 460–64.

21. As Kaplow and Shavell put it, "[i]f parties do not bargain with each other, the legal rule will directly determine whether or not harm occurs." Kaplow & Shavell, *supra* note 2, at 724.

assess the value of one of the competing uses, rather than the value of both.²² Thus, if a court can accurately assess the harm the defendant's use would cause to the plaintiff, and applies a liability rule that permits the defendant to engage in its proposed use so long as the defendant pays damages equal to the harm caused, the court will assure efficient use even if it is ignorant of the benefits generated by the defendant's use. If, after judgment, the defendant's use is more valuable than the harm it causes, the defendant will pay damages and pursue its use. If the defendant's use is less valuable, the defendant will withdraw and plaintiff will not suffer harm.²³ As Kaplow and Shavell put it, liability rules permit the state to "harness the information that the injurer naturally possesses about his prevention cost."²⁴ The Kaplow/Shavell argument for liability rules focuses on reducing the information necessary for courts to assemble in order to guarantee efficient decisions in those cases where strategic bargaining prevents parties from negotiating to efficient solutions.

b. Liability Rules as an Antidote for Strategic Bargaining

Another argument for liability rules focuses on their alleged advantages in generating information that might overcome strategic bargaining. In particular, Ian Ayres and Eric Talley have argued that liability rules can induce parties to reveal information that they might withhold under a property-rule regime, increasing the likelihood that efficient bargains will be brought to fruition.²⁵ The thrust of their argument is that when entitlements are divided, as they are with liability rules, each party is uncertain whether he will emerge as a buyer or a seller.²⁶ This reduces each party's incentive to misrepresent the value he attaches to the entitlement.²⁷ Property rules, by contrast, allocate the entire entitlement to a single person, so that each party knows whether he will be a seller or a buyer, creating an incentive for misrepresentation.²⁸

B. Information Coordination: The Ex Ante Advantage of Property Rules

The most prominent arguments for liability-rule protection focus on the ex post information advantages generated in resolving existing disputes. But what effect, if any, do liability rules have on the behavior of property owners and potential infringers ex ante? Henry Smith has demonstrated that liability rules reduce the incentive to collect information about productive uses of

22. *Id.* at 725.

23. *See id.*

24. *Id.* (emphasis omitted). Kaplow and Shavell limited their analysis to cases involving externalities, reaching the opposite conclusion with respect to "things." *Id.* at 760-63.

25. Ayres & Talley, *supra* note 2, at 1030.

26. *Id.*

27. *Id.* at 1030-31.

28. *Id.*

property, decreasing the likelihood that property will be put to its most productive use.²⁹ Smith argues persuasively that the holder of a right protected by a property rule has more incentive to invest in producing information about productive uses of the resource than does any actor (owner, taker, or court) in a liability-rule regime.³⁰ As Smith points out, in a property regime, “[o]wnership concentrates on the owner the benefits of information developed about—and bets placed on—the value of the asset.”³¹ This coordination advantage of property rules is apparent, as Smith makes clear, in many real property situations.³² Real property tends to be rivalrous in nature: two cannot plow the same furrow. But the coordination advantage of property rules has also been trumpeted as a justification for expansive legal protection of nonrivalrous goods—particularly through patents and copyrights.³³

Liability rules, on the other hand, inhibit coordination of resource use. If resource rights were protected only by liability rules, no “owner” would be in a position to coordinate resource use. Any potential user could interfere with coordination by simply using the resource and offering to pay court-determined damages. Competition among potential users could ultimately prove unresolvable by the coordinating owner, and, instead, might be resolved only through litigation.

In more general terms, Smith and Tom Merrill have argued that property rules are optimal for allocating resources when the potential users of the resource are unidentified and large in number.³⁴ Property rules concentrate in a single person a set of well-defined rights to use a particular resource, putting the world on notice of the duties they owe to the “owner” of the resource without requiring investigation into the owner’s identity or preferences. Merrill and Smith argue that the property-rule approach is optimal when information costs would make it infeasible to allocate resources by

29. Smith, *supra* note 4, at 1729.

30. *Id.* at 1729, 1755–64.

31. *Id.* at 1729.

32. Smith notes:

[I]f someone believes that a rock formation on Blackacre will be a tourist site twenty years from now, one can buy Blackacre, become its Owner, and wait. If, in the meantime, someone (Taker) takes Blackacre and only has to pay damages, Owner will either have to convince a court that the rock formation is going to be valuable or will have to bribe Taker. Under some quite ordinary conditions, this situation will lead to social loss.

Id.

33. The seminal work is Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977). Kitch argues that propertization of patent rights would enable a single owner to coordinate efficient development of patented works. *Id.* at 276; see also William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 354–57 (1989) (justifying copyright protection for derivative works as necessary to avoid inefficient delays in release of original work).

34. Property rules reflect what Merrill and Smith call an “exclusion strategy,” which allocates resources by giving a single owner a broad right to exclude, rather than creating finely tuned governance rules. Merrill & Smith, *supra* note 5, at 793–94.

contract among the many interested parties.³⁵ Property rules reduce information costs by permitting the single owner to coordinate use of each resource.

The information cost advantages of property rules increase with the number of potential users of the contested right.³⁶ When the number of potential contestants for a right is high, contract solutions are impractical because any single claimant's incentive to negotiate with other claimants is low; whatever agreement they reach would be subverted by the appearance of yet another claimant.³⁷ By contrast, when a resource has only two potential users, allocation by agreement is more feasible, and property rules that give owners a broad right to exclude are less necessary.³⁸

Merrill and Smith recognize that, to coordinate resource use efficiently, property rules must be uniform, easily identified, and understood by all.³⁹ Rules that are complex or detailed require potential claimants to process too much information, dissipating the advantages of a system that gives a single owner the right to exclude.⁴⁰ We will return to that constraint in the next Section.

Property-rule protection also provides an incentive for potential users—whether one or many—to inform the right holder of the conflicts created by the potential use, thereby setting the stage for negotiated solutions. Recent law and economics literature has attacked the argument that property rules promote efficiency by providing potential infringers with an incentive to negotiate, emphasizing that any legal rule provides some party with an incentive to negotiate.⁴¹ That critique assumes, however, that the parties share

35. *Id.*

36. Moreover, the importance of providing incentives to produce information is greatest when the number of potential *uses*—as opposed to users—is high. For instance, the nature and timing of efficient development requires less information production when the property in question is a lot in a well-established, single-family subdivision than when the property is a large parcel in an undeveloped area or an area in transition. When development conditions have been constrained by law or by prior investment, even an owner in a property-rule regime is unlikely to make significant investments in information because those investments are unlikely to generate significant return. As a result, information production furnishes a less powerful reason for property rules.

37. Kaplow and Shavell have demonstrated that a liability-rule regime does not always give owners an adequate incentive to pay infringers to stop infringing because the payment does not stop subsequent infringers from conducting the same activity. Kaplow & Shavell, *supra* note 2, at 765–66. For instance, suppose an owner values the right to be free of trespass at \$100, and a court would apply a liability rule that entitles the owner to \$90 in damages against a trespasser, who values the right to trespass at \$95. The owner, armed with \$90 in damages, would not pay the trespasser \$95 to give up the right to trespass because another trespasser could arrive the next day, requiring repetition of the same process. Hence, even though the owner values the right to be free of trespass more than any trespasser values the right to trespass, no agreement will be reached.

38. Merrill & Smith, *supra* note 5, at 793 (finding no need to create rights of exclusion when the only occupants of an island are Robinson Crusoe and Friday).

39. *Id.* at 794.

40. *Id.* at 795.

41. See, e.g., Richard Craswell, *Instrumental Theories of Compensation: A Survey*, 40 SAN DIEGO L. REV. 1135, 1172 (2003); Kaplow & Shavell, *supra* note 2, at 764–65. Indeed, Ayres and Talley go further as they emphasize that liability rules can sometimes “cause more forthright and efficient bargaining” than property rules. Ian Ayres & Eric Talley, *Distinguishing Between Consensual and Nonconsensual Advantages of Liability Rules*, 105 YALE L.J. 235, 237 (1995). For a

information about potential conflicts. But a party unaware of potential competing uses is unlikely to initiate negotiations to eliminate conflicts. Typically, it is the encroacher or infringer who is in the best position to anticipate conflict. Rules that induce the encroacher or infringer to disclose conflict at the earliest moment are more likely to generate efficient settlements.

Consider, for instance, a landowner who seeks to expand her house in a way that encroaches significantly on her neighbor's lot—or even requires bulldozing of her neighbor's house. The neighbor is unlikely to be aware of the landowner's plans until after they have been formulated and perhaps executed. A property rule provides maximum incentive for the landowner to negotiate before expending money in planning and executing the house expansion, thus assuring that the value of the expansion exceeds the harm to her neighbor. While a liability rule could theoretically provide greater incentive for the neighbor to negotiate, the neighbor is far less likely to initiate negotiations before the landowner has expended money on the encroachment because the neighbor is not in a position to anticipate the conflict.

The existing literature, thus, suggests that whatever advantages liability rules might have in overcoming ex post strategic bargaining are generally overwhelmed by the ex ante advantages that property rules generate. Property rules enable the "owner" of a resource to serve as a clearinghouse for information about the values potential users attach to that resource.⁴² Because property rules require all potential users of a resource to buy rights from that owner, property rules enable the owner to accumulate information about potential bidders and the values those bidders attach to those rights.⁴³ As a result, property rules enable resource owners to channel those resources to the bidders who value them most—promoting efficient use of those resources.

II. THE SEARCH COST PROBLEM

An assumption underlying the information cost analysis discussed in Part I is that property rules are relatively clear—unlike, for instance, tort rules, which are generally assumed to be muddy.⁴⁴ That is, the discussion

statement of the conventional position that property rules encourage negotiation where transaction costs are low, see RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 57 (4th ed. 1992) ("[T]he law should require the parties to transact in the market; it can do this by making the present owner's property right absolute (or nearly so), so that anyone who thinks the property is worth more has to negotiate with the owner.").

42. See Smith, *supra* note 4, at 1728–29.

43. See *id.* at 1763–64 (noting that property rules make the owner a "broker" of rights across time); *id.* at 1776 (discussing how property rules delegate to owners decisions about how much information is optimal).

44. For the classic discussion, see Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577 (1988). Merrill and Smith note that "[t]he unique advantage of in rem rights . . . is that they conserve on information costs relative to in personam rights in situations where the number of potential claimants to resources is large, and the resource in question can be defined at relatively low cost." Merrill & Smith, *supra* note 5, at 793 (emphasis added); cf. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus*

assumed the absence of search costs—the costs of obtaining information about where and whether to acquire legal rights to use particular resource. Only if potential resource users know that use of the resource would intrude on someone else's property right, and can readily identify the owner of that right, will they approach the owner, enabling the owner to act as an information clearinghouse.⁴⁵ Clarity in property rights makes it possible to structure a market that efficiently allocates resources.⁴⁶

In practice, however, property rules are often unclear—at least to the universe of potential resource users. It may be costly for a potential resource user to discover the need to negotiate with a right holder, or to discover the right holder's identity. These costs arise even when rules are, from an abstract legal perspective, crystal clear. The process of applying clear rules to concrete problems often entails significant search costs. A cynic might note that these costs are the bread and butter of many law practices, but in fact the costs extend beyond legal bills. Scholarly analysis of property and liability rules, however, has not accounted for these search costs.⁴⁷

My objective in this Part is to demonstrate that search costs are often high. Part III demonstrates that in cases of high search costs, property rules sometimes generate excessive incentives to search. These insights require qualification of the emerging consensus that, from an *ex ante* perspective, property rules are superior to liability rules.

A. Real Property

Real property law is often treated as a refuge for clear legal rights, free from the need to balance competing interests.⁴⁸ To take the most basic example, I have a right to prevent my neighbor from trespassing or encroaching on my land, and my neighbor has a correlative duty not to trespass or encroach.⁴⁹ This clear property rule puts my neighbor on notice that she must deal with me if she wants to use “my” land.

Principle, 110 YALE L.J. 1, 26–34 (2000) (discussing standardization of property rights as means to reduce cost of determining property rights).

45. Cf. Smith, *supra* note 4, at 1782 (noting that property rules minimize the need for dutyholders to acquire information because they need to know only to “keep off”—a burden that is small only if rights are clear).

46. See Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?*, 111 YALE L.J. 357, 387 (2001) (noting an intolerable burden on potential dutyholders if scope of rights required too much investigation—a burden that would defeat benefits of security, investment, and planning).

47. In an early article, Tom Merrill explored the circumstances in which it might be efficient for the legal system to develop judgmental rather than mechanical rules, despite the higher “entitlement-determination costs” of judgmental rules. Merrill, *supra* note 8, at 25–26. His focus, however, was on judicial determination of legal rights, not on search by private parties.

48. See Rose, *supra* note 44.

49. The conception of property as a set of correlative rights and duties emerged from Wesley Newcomb Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16, 28–59 (1913).

But how does my neighbor know when she is trespassing or encroaching on my land? However clear the legal rule is, it does not lay down markers on the boundary of my land with a sign that says “keep off.”⁵⁰ Instead, my neighbor may need to commission a survey to determine whether the uses she wants to undertake will, in fact, intrude on land that belongs to me.⁵¹ Moreover, although property lawyers immediately recognize that a neighbor needs to consult a surveyor before building near a property line, a neighbor may not realize this unless she consults a lawyer—introducing an additional search cost into the process.

To take another example, consider a homeowner who has been using a pathway across neighboring land to reach a public street. The homeowner intends to build an additional apartment to accommodate aging parents. Will the homeowner know to investigate whether her parents will be entitled to use the path? Even if the homeowner knows to investigate, how would she find an answer to her question? She could hire a lawyer to examine her deed to determine whether she has an express easement to use the pathway, and to determine the easement’s scope. But if the deed says nothing about an easement, or is silent about the easement’s scope, the homeowner, or her lawyer, will have to investigate further. The lawyer will have to uncover the origins of the pathway’s use to determine whether the homeowner has acquired an implied easement, and if so, what its scope is.

In both of these situations, and in many others that arise in the context of real property, a potential resource user will not immediately know who owns the rights the user covets. Indeed, in these situations, the user might believe that she owns those rights. To discover whether someone else owns the rights she wants to use requires search and expenditure of resources—even where legal doctrines are crystal clear.

B. Intellectual Property

Search costs may be even more significant in copyright and patent law.⁵² First, some areas of copyright law are inherently fuzzy even to lawyers with expertise in the area, let alone to lay users of prior works.⁵³ Users can

50. For a discussion of the practical problems of determining land boundaries, even with modern technology, see Jeffrey Evans Stake, *The Uneasy Case for Adverse Possession*, 89 GEO. L.J. 2419, 2447–48 (2001).

51. Cf. Lee Anne Fennell, *Efficient Trespass: The Case for “Bad Faith” Adverse Possession*, 100 NW. U. L. REV. 1037, 1071 (2006) (noting that encroachers will make at least an implicit calculation on “the question of whether it is worth becoming educated about the true state of ownership”). Fennell goes on to note that the calculation “depends, in part, on the costs associated with being wrong.” *Id.* Jeffrey Stake has observed that although the technology has reduced the cost of surveys in recent years, “low-cost surveys are still not a practical reality.” Stake, *supra* note 50, at 2447.

52. See Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 483–84 (2004).

53. As Henry Smith has put it, with intellectual property, “‘keeping off’ is not as easy as in the case of tangible property.” Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1782 (2007).

appropriate non-copyrightable ideas but not copyrighted expression; however, the line between the two is not clear.⁵⁴ Even when one appropriates expression, determining whether the appropriation constitutes "fair use" requires multi-factored analysis.⁵⁵

Second, even when copyright law provides clear doctrinal answers, a prospective user of copyrightable work will still face significant search costs. For example, a user needs to know the date of publication to know whether the work is still protected by copyright.⁵⁶ Additionally, a prospective user needs to identify the current holder of the copyright—not always an easy matter. Identifying the "author" of a musical composition, or a television program may require investigation.⁵⁷ Even when one identifies the original author, tracing potential assignments of the copyright requires additional search.⁵⁸

These problems are exacerbated when the potential user of the resource is not the author of the potentially infringing work. For instance, even if the author of a novel or a song knows that his composition uses elements of earlier works, the author has no reason to inform his publisher of the borrowing, and may in fact indicate that the work does not infringe.⁵⁹ The publisher will often find it difficult or impossible to conduct an independent investigation to determine whether the author's work infringed some aspect of a copyrighted work. The problem becomes even more pronounced with vicarious infringers—the bookstore that sells copies of an infringing novel, or the movie theater that shows a movie that infringes on an earlier work.⁶⁰

Patent law creates its own set of search costs. By contrast to copyright, independent creation is not a defense to patent infringement. As a result, a person who uses an invention or process that might have been patented must conduct a search to guard against patent infringement claims.⁶¹ Because of

54. See 17 U.S.C. § 102(b) (2000) (providing that copyright does not extend to "any idea, procedure, process, system, method of operation, concept, principle, or discovery"). For criticism of the idea/expression doctrine as incoherent, see John Shepard Wiley, Jr., *Copyright at the School of Patent*, 58 U. CHI. L. REV. 119, 121–29 (1991).

55. See 17 U.S.C. § 107 (2000) (enumerating four fair-use factors).

56. The current copyright statute protects works for a period measured by the life of the author plus 70 years, unless the work is anonymous, pseudonymous, or a work made for hire, in which case the work is protected for 95 years from first publication or 120 years from creation, whichever expires first. *Id.* § 302(a), (c). For works produced before 1978, see *id.* § 303.

57. *Id.* § 201. Section 201 provides for joint works and works made for hire, terms defined in section 101, but without sufficient precision to avoid controversies about ownership. *Id.*

58. *Id.* § 201(d). Section 201(d) permits transfer of ownership of a copyright (and section 205 provides a recording system for transfers), but section 203 permits the author (or persons who hold the author's termination interest) to terminate any transfer during a statutory five-year window period.

59. Reliance on the author's assurances will not insulate the publisher from liability. See *De Acosta v. Brown*, 146 F.2d 408, 411 (2d Cir. 1944) (holding publisher liable for infringement even if it erroneously relied on assurances of author).

60. Cf. *Fonovisa, Inc. v. Cherry Auction, Inc.*, 76 F.3d 259 (9th Cir. 1996) (holding operator of a flea market liable for infringement by vendors participating at flea market).

61. See *infra* notes 181–183 and accompanying text.

the notorious difficulty in assessing the breadth and coverage of patent claims, patent searches can be difficult and expensive. Moreover, because issuance of a patent by the patent office does not establish the validity of the patent, even an exhaustive search of patent office records will not definitively establish whether use of an invention constitutes infringement.⁶²

C. Search Costs and Efficiency

What attitude should the legal system take toward search costs? First, it is not always efficient for potential users to engage in a search that definitively establishes the existence and scope of the owner's legal rights.⁶³ Even if we start with the premise that certainty about legal rights has positive value, increased certainty, like other economic goods, has diminishing marginal utility. So long as achieving additional certainty is not cost free, there will inevitably come a point at which it is inefficient to seek additional certainty.

Second, certainty about legal rights often has limited positive value. Merrill and Smith have emphasized that clear legal rules are particularly valuable when contract is not feasible as a mechanism for allocating resources.⁶⁴ But when a potential dispute affects only two parties, contract is available as an allocation mechanism, and parties can and do bargain in the face of uncertainty.⁶⁵ In a Coaseian world, if two parties value the same resource, one would expect them, by private bargain, to allocate that resource to the person who values it most, even if neither party knows who has the legal right to that resource.⁶⁶

Consider the problem in a concrete, albeit somewhat stylized, real property context. An improver contemplates expanding the building that houses her business to an area near her boundary line. Let us assume that neither the improver nor the neighbor knows whether the boundary-line improvement would actually encroach on the neighbor's parcel, and that the parties' relationship is entirely at arm's length. The expansion reduces the value of the neighboring parcel. The improver could relocate the improvement away from the boundary line in a way that avoids any conflict with the neighbor.

62. See *infra* notes 185–186 and accompanying text.

63. Kaplow and Shavell have compared the effect of negligence and strict-liability regimes on optimal provision of legal advice. Louis Kaplow & Steven Shavell, *Private versus Socially Optimal Provision of Ex Ante Legal Advice*, 8 J.L. ECON. & ORG. 306, 307 (1992) (noting the possibility of divergence between the private and social values of that legal advice).

64. Merrill & Smith, *supra* note 5, at 794 (noting that when in personam agreements become less feasible, an in rem exclusion regime conserves information by "restricting the duties to a short list of negative obligations, easily defined and understood by all").

65. See generally POSNER, *supra* note 41, at 553–557 (discussing settlement of disputes in which liability is unclear).

66. See Merrill, *supra* note 8, at 24 ("[T]he parties should negotiate to the same welfare-maximizing allocation of resources they would have agreed on if property rights were certain, discounting the price to reflect the shared perception of the probability of who should pay whom.").

In this situation, relocating the improvement away from the boundary line is efficient if the avoidance cost—the reduced value of the relocated improvement to the improver—is smaller than the reduction in value to the neighbor that would be caused by the boundary-line improvement. So long as both parties know the effect the boundary-line improvement has on the values of the respective parcels, the parties should generally bargain to the efficient result even if they do not know whether the improvement would encroach.⁶⁷ If the improver's avoidance cost is lower than the value to the neighbor, the improver has little reason to interfere with his neighbor's use, even if the improver and the neighbor are equally unsure whether the boundary-line improvement would encroach on the neighbor's rights. The amount the neighbor will be willing to pay the improver to avoid the boundary-line improvement will depend on the parties' assessment of the likelihood that the improvement encroaches—but rational bargaining should nevertheless lead the improver to avoid the boundary-line improvement.⁶⁸

Moreover, expenditures designed to increase certainty about the respective rights of the improver and the neighbor will not typically generate significant positive externalities.⁶⁹ Discovering the “true” boundary line between the parcels owned by the improver and the neighbor will not generally be of value to owners of other parcels. Search for the true boundary will, in some circumstances, be of value to successors in interest to the same parcel, but in most cases the value of information produced by the search degrades quickly.⁷⁰

In this situation, a search by the improver to determine whether the boundary-line improvement actually does encroach on the neighbor's land generates costs without social benefits. The search costs—even if they amount only to commissioning a survey—do not lead to any efficiency gains because the parties would have settled on the efficient use even without the search. This conclusion does not mean, however, that the improver

67. James Gibson has noted that in intellectual property cases, parties routinely negotiate licensing agreements even when it is entirely unclear whether the potential user of the intellectual work needs to obtain a license. James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882, 890–95 (2007). Gibson is concerned that this tendency has produced doctrinal feedback that ultimately expands the scope of intellectual property protection. *Id.* at 898–900.

68. Merrill, *supra* note 8, at 24.

69. When parties try to create entirely new property rights, they do impose external costs on potential users of those rights. As a result, legal rules constrain the categories of property rights parties may create. See Merrill & Smith, *supra* note 44, at 26–27. But expenditures to determine whether a particular use would violate an established property right are unlikely to generate comparable external effects.

70. Suppose, for instance, the potential improver's search involves consultation with a lawyer followed by the commission of a survey. If a successor in interest contemplates a similar (or different) improvement, the successor will not know of the initial improver's consultation, or of the information conveyed, and will therefore have to repeat the consultation process. The survey, by contrast, might be of some value to successors, subject to qualifications: first, as time passes, the monuments used to mark the survey on the ground (fences, trees, etc.) have a tendency to disappear, diminishing the survey's value; second, even if the survey itself does not degrade, it will have little value to a successor in interest unless that successor contemplates an improvement like that contemplated by the initial improver.

has no incentive to commission the survey. The information generated by the survey might enhance the improver's bargaining position by demonstrating that the boundary-line improvement does not, in fact, encroach on the neighbor's land. Thus, the search might generate private gains to the party incurring the search costs, while generating no comparable social gains.⁷¹

The assumption so far has been that negotiations between the parties will lead to the efficient use of resources. But negotiations will not inevitably lead to efficient use. Negotiations may fail for a number of reasons, three of which stand out. First, either party might overestimate the strength of her legal position.⁷² In this situation, bargaining might break down, and the improver might build the boundary-line improvement even though it is inefficient to do so.⁷³

Second, the potential user of a resource may not know with whom to negotiate without engaging in some measure of search. In intellectual property cases, questions about identity of the potential resource owner will typically be especially difficult to resolve. Even if a potential user can identify the original "author" or "inventor" of a particular work, this may reveal little to the user about how those rights have been assigned or divided over time.⁷⁴

Third, the assumption of an arms-length relationship between an ostensible owner and a potential improver will not always hold. In the intellectual property context, the assumption of arms-length dealing appears particularly realistic, as it does between commercial landowners. But with neighboring homeowners, preservation of neighborly relations will often be of considerable importance both to the improver and the neighboring owner.⁷⁵ Although

71. See generally Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 602–05 (1992) (noting differences between the private and social value of obtaining legal advice).

72. Merrill, *supra* note 8, at 24–25; POSNER, *supra* note 41, at 556.

73. Of course, bargaining might break down for other reasons as well. For instance, the improver might not be a rational maximizer. That is, if the improver is confident that the improvement does not encroach, the improver may simply proceed with the improvement without seeking to extract payment from the neighbor to build away from the boundary line. Additional information is not likely to have significant impact on the improver who is not a rational maximizer.

74. Indeed, in light of the termination provisions in the copyright statute, it is sometimes impossible to know whose consent will be necessary to secure the rights a potential user wants. Section 203 to title 17 of the United States Code gives an author an inalienable right to terminate any copyright assignment. 17 U.S.C. § 203 (2000). That right, however, passes to statutory successors—who will not be determined until the author's death. As a result, a user who wants to purchase a long-term right to exploit the copyrighted work may be stymied in doing so. Section 203(b)(1) does qualify the inalienability provision in one way: if a user prepares a derivative work under authority of a grant before termination, the user may continue to use the derivative work after termination. *Id.* This provision avoids the difficulty the Supreme Court faced in *Stewart v. Abend*, 495 U.S. 207 (1990), decided under the renewal provisions that preceded the current termination provisions. See R. Anthony Reese, Note, *Reflections on the Intellectual Commons: Two Perspectives on Copyright Duration and Reversion*, 47 STAN. L. REV. 707, 727–35 (1995) (explaining how the 1976 Act would prevent the result in *Stewart v. Abend*).

75. Stewart E. Sterk, *Neighbors in American Land Law*, 87 COLUM. L. REV. 55, 95 (1987) (noting that legal doctrine "suggests a conception of neighbors that includes continuing mutual dependence rather than a pattern of discrete and unrelated transactions").

any discussion about boundary-line issues is fraught with potential to rupture a cordial relationship, the problem is particularly serious when the negotiation proceeds from uncertainty about legal rights.⁷⁶ Imagine, for instance, a potential improver who approaches her neighbor with the following basic proposition:

I'd like to expand my driveway along our common boundary. I don't think the new driveway would encroach, but I can't be sure without commissioning a survey. I could just take the small risk of encroachment and build the driveway, but if the driveway might be harmful to you, pay me half the cost of a survey and I'll live with a narrower driveway.

Even if the proposition would be in the economic interest of both parties, narrowly defined, the potential improver might recognize that the offer would be perceived as insulting—and therefore not worth making.

In each of these situations, a search for information about the parties' respective legal rights could potentially avoid inefficient use of resources, but the cure should not be worse than the disease: if the problem to be avoided is inefficient harm to the resource owner, a search whose cost exceeds the harm would itself be inefficient. Indeed, even when the harm to the neighbor is inefficient, the harm overstates the measure of the inefficiency. Rather, the efficiency loss is typically the harm to the neighbor *less* the cost of avoiding that harm.

Even in cases where an improvement threatens significant harm to a resource owner, search will often be unnecessary to avoid that harm and any resulting inefficiency. As we have seen, in some percentage of cases, the parties will negotiate an efficient solution in the absence of search.⁷⁷ More important, in other cases, the prospect of legal liability, as the following illustration shows, may induce a potential resource user to take efficient action even without search. Let H represent the harm a resource user's action will cause to the ostensible resource owner. Let A represent the cost to the resource owner of avoiding that harm. If legal rules make the resource user liable for H in cases of encroachment or infringement, the resource user, absent search, will encroach or infringe whenever $A > H$. When $A > H$, that result appears efficient. But when $A < H$, a legal rule holding the potential user liable for H does not guarantee the efficient result, because the resource user, by hypothesis, is uncertain about whether she will be liable for the harm she causes. Hence, it may be worth the resource user's while to take her chances on encroachment. In a significant subset of cases in which

76. The problem is twofold. First, the neighbor may—rightly or wrongly—perceive harm from the fact of encroachment, without regard to whether the encroachment interferes with any of the neighbor's prospective uses of her parcel. Hence, the neighbor may be unwilling to evaluate any deal without knowing whether the improver's use would actually encroach. Second, the fact that the potential improver professes uncertainty may induce suspicion in the neighbor that the improver proposes. This second problem—fear of asymmetric information—is a problem even with arms-length transactions between commercial parties, but those parties will typically be in a better position to evaluate the risks involved.

77. See *supra* text accompanying notes 63–71.

$A < H$, however, legal liability will generate efficient action. Let us assume that p represents the resource user's estimate of the probability that she will be liable if she takes a particular action. Then, in cases where $A < pH$, the resource user will avoid using the resource even without searching. Hence, only in cases where $pH < A < H$ does search have the potential to avoid inefficient use of the resource.

The combination of private negotiations and legal liability, therefore, will often avoid inefficiency even when a potential resource user is uncertain about her legal rights. Hence, if $H-A$ represents the potential inefficiency generated by a resource user's encroachment on the rights of an ostensible owner of the resource, $H-A$ significantly overstates the social benefit of a search that eliminates uncertainty about the scope of legal rights and the identity of right holders. Because it is difficult to determine how often private negotiations or legal liability would generate efficient use of resources in the absence of search, it may be difficult to determine precisely when using search to clarify property rights would be efficient. But unless search generates positive externalities,⁷⁸ it is certainly inefficient when its cost is greater than $H-A$, the maximum inefficiency that search could avoid. What impact should this insight have on legal doctrine? From an efficiency standpoint, legal doctrine should encourage search only when the cost of search is lower than the expected harm—economic and emotional—that the search will prevent. Conversely, doctrine should discourage search whenever the cost of the search exceeds the expected harm that the search would prevent.

In major intellectual property or real estate development cases, with high stakes and sophisticated legal actors, one would expect the parties to respond to incentives created by the legal system. Of course, in a significant subset of cases involving uncertainty about the scope of legal rights, potential users who are ignorant about the scope of their rights will be equally ignorant of the legal sanctions applicable to their behavior. In this subset of cases, legal doctrine will be incapable of affecting the behavior of potential resource users.⁷⁹ As a result, legal rules designed to discourage inefficient

78. If search would generate significant positive externalities, search might be efficient even if the cost were greater than $H-A$. If the disputes requiring search costs were primarily cases in which abstract legal rules were unclear, the caveat might swallow up the basic thesis. In fact, however, most of the cases involving high search costs are cases involving difficulty applying legal rules to particular circumstances. Because of the particularity of the problems, search will not generate positive externalities. See *supra* note 69 (discussing search costs in boundary dispute cases).

In copyright cases where the search difficulty is locating the holder of copyright, positive externalities will be rare. Other potential users are not likely to discover prior searches, and the searcher will have little reason to publicize them. When the difficulty involves scope of copyright protection, so much will depend on the particulars of the allegedly infringing and infringed works that positive externalities are unlikely to be a significant factor. *But cf.* Gibson, *supra* note 67, at 887–906 (arguing that the incentive for potential users to negotiate rather than litigate creates a feedback loop that ultimately contracts the scope of copyright defenses).

Positive externalities may be more common in those patent cases in which search—almost inevitably through litigation—establishes the validity or invalidity of a previously issued patent. In that case, the determination itself has clear value to any potential users of the invention. See Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 87–90 (2005).

79. On legal rules' limited ability to affect behavior, see generally Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1699 (1976).

search will operate only at the margin. But even if doctrine provides limited feedback to future users, there are good reasons for limiting the liability of persons who acted reasonably when they failed to incur inefficient search costs. In particular, applying the same rule to those who would have responded to legal incentives and those who would not have responded avoids the difficulty of sorting between the two groups.⁸⁰ The next Part examines the impact of alternative remedial regimes on resource users' incentive to search.

III. PROPERTY RULES, LIABILITY RULES, AND SEARCH COSTS

Search to determine the scope of one's legal rights has the potential to produce both social gains and private gains. The social gains, as the preceding Section explains, arise because search can prevent a bargaining breakdown, which would lead to inefficient use of resources. There is no guarantee, however, that a resource user who commissions a search will be able to capture all of the social gains the search might generate; some will inevitably redound to the benefit of the resource "owner."

Private gains are the benefits search generates for the party who commissions the search. Some of those gains arise from the inefficiencies avoided by the search, but the resource user who conducts a search may also be able to use the search results to extract concessions from the ostensible owner of the resource. That is, search may reveal weaknesses in the owner's claim, which will strengthen the bargaining position of the potential resource user.

From an economic standpoint, however, the objective should be to maximize *social* gains associated with search. Search is efficient only when the expected social gains from the search exceed the cost of the search. Potential resource users, however, are not motivated by a desire to maximize social gains, but, generally, only by a desire to maximize their private gains. Hence, the closer the legal regime comes to equating the private gains from search with the social gains, the more effective the regime will be at generating the efficient level of search.⁸¹ The succeeding Sections examine the private incentives to search under two alternative regimes—a liability-rule regime and a property-rule regime. The analysis demonstrates that, compared with a liability-rule regime, a property-rule regime creates excessive incentives to search even when search costs are high, the probability of encroachment is relatively low, and the likely harm to the property owner is low. These are the very circumstances in which search is most likely to be inefficient.

80. See POSNER, *supra* note 41, at 167–68 (discussing the administrative costs of sorting among groups of potential tortfeasors as a reason for embracing the "reasonable man" standard in tort law).

81. Cf. Steven Shavell, *The Fundamental Divergence between the Private and the Social Motive to Use the Legal System*, 26 J. LEGAL STUD. 575 (1997) (discussing inefficiencies resulting from divergence of the private and social benefits of engaging in litigation).

A. Liability Rules

Consider three alternatives available to a potential resource user unsure about the scope of her right to use the resource: (1) she can use the resource without further inquiry, (2) she can avoid using the resource, or (3) she can conduct further search before deciding what course to pursue.⁸² One might reasonably assume that the potential user would pursue the alternative that yields the most favorable expected return.⁸³

Each alternative has a cost. Assume that the user estimates the probability that using the resource will generate liability as p . In a liability-rule regime, if the user simply uses the resource and is found to have infringed, she will be held liable for H , the dollar value of the harm to the resource owner.⁸⁴ Hence, the expected cost of the first alternative, using the resource without further inquiry, is pH .⁸⁵ The resource user's second alternative—avoiding use of the resource—also comes at a cost. Assuming use of the resource is more attractive to the user than the next best alternative, the user will incur an avoidance cost, A . Absent search, the owner will avoid use of the resource if $A < pH$, and will use the resource if $A > pH$. The total cost associated with the search alternative is more complex. Search is not a substitute for using the resource or avoiding use of the resource. Once the potential user searches, the potential user will have to choose between the two alternatives. But the results of search may reduce the cost to the potential user of the two other alternatives.

Search has the potential to reveal information with strategic value to the potential resource user. For instance, search may reveal that the use does not infringe on any right of the ostensible owner. In that event, the potential user will at a minimum be able to escape any avoidance costs. Beyond that, however, the potential user, armed with the results of the search, might be able to induce the ostensible owner—who, it turns out, is not an owner after all—to pay the resource user *not* to use the resource.

The resource user will search when the expected private benefits of search exceed the cost of the search. Put in other terms, the resource user

82. In fact, the potential user faces a fourth alternative: negotiate with the ostensible owner without engaging in any search to discover the scope of their respective legal rights. For clarity of exposition, that alternative is discussed in Section III.C, *infra*.

83. The analysis assumes risk-neutral potential users. Risk-averse users would be less likely to use without searching.

84. The analysis assumes that the potential resource user can arrive at an estimate of H without incurring significant search costs. For discussion of incentives to obtain legal advice about how courts will determine the amount of harm suffered by a victim, see Kaplow & Shavell, *supra* note 63, at 306–20.

85. The assumption here is that the potential user derives no value from preservation of a harmonious relationship with the ostensible owner, and therefore is not harmed by actions that threaten that relationship. If the model incorporated harm to the relationship, the analysis would be similar if we assume that the potential user would suffer harm to the relationship only if her actions would actually intrude upon a right of the ostensible owner. On that assumption, pH would capture the harm to the potential user so long as H were defined to include harm to the relationship. If, however, the potential user's actions would harm the relationship regardless of whether those actions interfere with the ostensible owner's legal rights, the analysis would become more complicated.

will search when the out-of-pocket costs of the search, together with the expected costs associated with the outcomes revealed by the search, are smaller than the lesser of pH and A .⁸⁶

In a liability-rule regime, this calculus presents potential users with a considerable incentive to search. Consider first the situation in which $pH < A < H$. In this situation, search has the potential to generate social benefit: search might cause the potential user to incur avoidance cost, A , rather than using without search. Because a liability rule presents the resource user with a risk of liability for H if the user does not search, the liability rule encourages the user to search when the cost of search is low relative to the probability of liability and the inefficiency avoided by search.

Consider the private calculus of a potential owner considering a search. Let S reflect the out-of-pocket cost to a potential user of the search necessary to clarify her legal position. The user knows that if she conducts the search, she will face avoidance costs, A , with probability p , but no costs with probability $1-p$. Moreover, if search reveals no liability, the user faces potential gains from trade with the ostensible owner, who will want to avoid harm, H . We can reasonably assume that, on average, the parties will divide those gains from trade equally.⁸⁷

In that event, the total cost is captured by the following:

$$S + pA - (1-p)(1/2)(H-A)$$

The resource user will undertake this cost when it is smaller than the cost of her next best alternative—using the resource without further investigation—which, by hypothesis, has a cost of pH . Hence the user will search only if

$$S + pA - (1-p)(1/2)(H-A) < pH$$

which reduces to

$$S < (1/2)(1+p)(H-A).$$

If the only three alternatives available to the potential user were to harm without search, to avoid harm, and to search, this inequality would suggest that a liability rule generates too few incentives to search. When $H-A > S > (1/2)(1+p)(H-A)$, the potential user would harm without search even though search would generally lead to avoidance, a more efficient alternative. But this analysis ignores a fourth alternative available to the potential improver:

86. The baseline assumption of the model is that the potential user has an unquestioned right to use the resource without incurring any liability to the ostensible owner. Against that baseline, each alternative—search, use without search, and avoidance—leaves the user worse off. The model, therefore, considers how much worse off the potential user would be with each alternative. Each alternative presents different costs. It would, of course, be possible to use a different baseline without changing the comparative advantages of the alternatives open to the potential user.

87. John Nash developed a model predicting equal division of gains from trade in cases where each party would receive nothing in the absence of agreement. See John F. Nash, Jr., *The Bargaining Problem*, 18 *ECONOMETRICA* 155, 157–62 (1950). For a more recent discussion, see Gideon Parchomovsky et al., *Of Equal Wrongs and Half Rights*, 82 *N.Y.U. L. REV.* 738, 761–63 (2007).

negotiation with the ostensible owner against a background of uncertainty. When $S > (1/2)(1+p)(H-A)$, this fourth alternative will often generate more private benefit for the potential resource user than will the other three alternatives, and, at the same time, entail fewer social costs than will search.⁸⁸ The negotiation alternative, then, significantly mitigates the possibility that liability rules create too few incentives for efficient search, because its availability reduces the number of circumstances in which search would be efficient.⁸⁹

Liability rules are more likely to result in inefficient searches when $A < pH$. In this situation, any search would be inefficient because the search will generate no social benefit. Absent search, the potential resource user will avoid using the resource rather than take the chance of incurring liability because avoidance is cheaper than the expected liability. Hence, the socially optimal result would be achieved without search. Nevertheless, if search is sufficiently inexpensive, the resource user in a liability-rule regime will conduct a search because the search might generate private benefits: it might reveal that the resource user's prospective use does not infringe, giving the resource user leverage to extract payment from the ostensible owner.⁹⁰

88. This is especially true when the parties share a common understanding of H and A , and where the parties share a common estimate of p . In that situation, the parties both have an incentive to divide the gains from trade, with payment running from ostensible owner to potential user in order to defray the user's avoidance costs.

89. At the same time, in circumstances under which the potential user's estimate of p is lower than she expects the ostensible owner's estimate to be, the potential user in a liability-rule regime may derive strategic advantages from searching even when negotiations without search would be a more efficient alternative.

Thus, the potential user who believes the owner is overestimating his prospect of success may conduct a search to persuade the owner to make a larger payment than the owner would otherwise be inclined to make. For instance, suppose $H = 16$, $A = 10$, and the resource user's estimate of p is .4, but the owner's estimate is .5. In that circumstance, the ostensible owner believes that the resource user's use of the resource will inflict an expected harm of 8, considering a 50% likelihood that the owner would receive compensation (.5 x 16). Although the ostensible owner would be willing to pay up to 8 to persuade the user to avoid that harm, the owner would probably not want to see the resource user reap all of the gains from trade, and would therefore expect to pay an amount closer to 5, which would evenly divide the gains from trade as a result of avoidance. In this situation, if search costs are relatively low, the resource user will find it worthwhile to search as a means of increasing the ostensible owner's offer.

90. Consider the calculus facing a resource user contemplating search as an option where $A = \$300$, $H = \$500$, and $p = .8$. Search in this situation may be inefficient: If the user in this situation conducts a search, she will incur the cost of the search S . If the user searches, the .8 probability of liability will clarify into either 0% or 100% chance of liability. If the search confirms the existence and identity of an owner with a right to the disputed resource, the resource user will then incur the avoidance cost of \$300 because it is cheaper than the certain liability of \$500. If, on the other hand, the search reveals that the resource user can use the resource without incurring liability, she could use the resource and avoid further cost. Additionally, the resource user will often—but not always—be able to offset some of the cost of the search by extracting payment from the ostensible owner. The user could approach the ostensible owner—who would suffer \$500 harm upon use of the resource by the user—and agree to avoid using the resource in return for a payment of between \$300 and \$500. The ostensible owner, confronted with proof that she cannot hold the resource user liable for using the resource, will find it in her interest to pay in order to avoid \$500 in harm.

Let us assume that the user and the ostensible owner would split these gains from trade evenly so that the ostensible owner would pay \$400 if the user agrees to avoid using the resource. In that event, so long as search costs are lower than \$80, the potential user has an incentive to search. If the user pays, for instance, \$50, the user will face an 80% chance that the search will generate liability,

That liability rules sometimes generate incentives to conduct inefficient searches is not critical to my thesis; in similar circumstances, property rules will also generate inefficient searches. The more important point is that in an important class of cases—those where $A > H$ —liability rules avoid incentives to conduct inefficient searches.

When avoidance costs are greater than the harm to the ostensible owner, search about the scope of the user's rights will never generate social benefits, because the efficient result is for the user to use the resource—precisely the course the user will take if the user does not conduct a search. The search, then, adds no social value.

In a liability-rule regime, the user has no incentive to search in this situation. The user's best alternative to search is simply to use the resource, which costs the user pH . The user will only search if the search alternative will generate a total cost less than pH . *The only cost the user avoids by searching is pH , so the user would have no reason to invest more than pH in the search process.* But the expected cost to the user of the search alternative is $S + pH$. That is, if the user decides to search, the user will incur the out-of-pocket cost of search, S , and then will face two alternatives, depending on what the search reveals. With probability p , the search will reveal that the prospective use infringes. Because $A > H$, the user's best alternative is to use the resource anyway, which would generate damages of H . If the search reveals that the prospective use does not infringe, the user will incur no further costs, but will also derive no benefits from negotiating with the owner, because using the right will not cause enough harm to the owner to make it worth the owner's right to pay avoidance costs. Hence, the user will search only when $S + pH < pH$, or, put in other terms, where $S < 0$. As a result, search costs will never be worth undertaking—the efficient result.

B. Property Rules

The preceding Section demonstrates that a liability-rule regime creates more than adequate private incentives for search. Now let us turn to the impact of a property-rule regime on incentives to search.

The potential resource user in a property-rule regime faces the same alternatives the user would face in a liability-rule regime: (1) use the resource without investigating ownership rights, (2) avoid using the resource, or (3) search for information about ownership rights. Using the resource without search, however, is much less attractive in a property-rule regime because the cost to the resource user will be much higher if it turns out that the user has infringed. Moreover, in a property-rule regime, that cost is not necessarily related to actual harm. Instead the user's cost is capped only by the cost

in which case the user will pay the avoidance costs, and a 20% chance of no liability, in which case the user would receive a benefit of \$100—the difference between the \$400 payment from the ostensible owner and the \$300 avoidance cost. As a result, the total expected cost for the owner who searches would be $\$50 + (.8 \times \$300) - (.2 \times \$100) = \270 . That total is less than the \$300 in avoidance cost, which represents the user's next best alternative. Hence, the user will search, in this case, even though the cost of the search exceeds its social benefit.

of undoing the infringement—which can be extraordinarily high, particularly in complex intellectual property cases. As a result, the potential user has a greater incentive to choose one of the other alternatives: avoidance or search. As the following analysis demonstrates, in a significant number of cases, the potential user's best choice will be to engage in inefficient searches that would be avoided in a liability-rule regime.

In a liability-rule regime, the cost of using the resource without investigating the parties' respective rights is pH . By contrast, in a property-rule regime, the user must worry about the prospect of an injunction that requires her to remove any encroachment or infringement. A more modest assumption—consistent with the assumptions made so far—is that the owner would not actually force removal of the encroachment in those cases where the cost of removal is greater than the harm to the owner, but would use the leverage of injunctive relief to extract a sum from the user that is higher than is the harm actually suffered by the owner. Assume, as before, that the parties will divide gains from trade equally. On that assumption, the maximum cost facing the user is $p(H + (1/2)(R-H))$ where R is the cost of removal. Simplifying, the cost facing the user is $(1/2)p(R+H)$, which is always higher than pH , and which becomes significantly higher as R rises.

In those situations where $A < pH$, substituting a property rule for a liability rule will have no impact on the potential resource user's calculations. In either regime, the potential user will balance the costs and benefits of search against avoidance cost, because avoidance is the user's next best alternative. As previously discussed, the user will search whenever $S + pA - (1-p)(1/2)(H-A) < A$. None of these factors change with transition from a liability-rule regime to a property-rule regime.

In other situations, however, property rules create incentives to conduct inefficient searches that potential resource users would not conduct in a liability-rule regime. Where $pH < A < H$, a potential resource user in a liability-rule regime would balance the costs and benefits of search against pH because using without further search would be the user's next best alternative. In a property-rule regime, however, pH is irrelevant to the user. If the user uses without search, the user's expected cost is $(1/2)p(R + H)$. Hence, the user will balance the costs and benefits of search against the lesser of A and $(1/2)p(R + H)$. This shift in calculus will generate significantly more searches. Moreover, those searches are likely to be inefficient, because the increased impetus to search will have no relationship to the harm caused by using the resource. Instead, the increased impetus to search will be generated entirely by the fear of removal costs.⁹¹

Suppose, for instance, that use of a resource will harm the ostensible owner of the resource by \$500, and that the probability of liability to that owner is forty percent. Suppose further that the user's avoidance costs are

91. The shift in calculus will, however, generate one efficiency advantage unrelated to search: it will increase the number of cases in which the user's default position—the position in case of bargaining breakdown—will be avoidance rather than using the resource without further search. Because, by hypothesis, $A < H$, the result will be fewer inefficient uses of the resource. The significance of this advantage depends on the expected frequency of bargaining breakdown.

\$300, and that the user's removal costs after using without permission would be \$900. The search will reveal one of two outcomes: either the ostensible owner owns the resource, in which case the user will bear a cost of A , or the ostensible owner does not own the resource, in which case the user will have the opportunity to extract payment in exchange for a promise not to cause harm to the ostensible owner.⁹² Hence, the total cost associated with the search alternative is $S + pA - (1/2)(1-p)(H-A)$. In the hypothetical, the cost associated with the search alternative is, therefore $S + 60$. In the liability-rule regime, then, the user will search only when $S + 60 < 200$ (because $pH = 200$). But in a property-rule regime, the user will search whenever $S + 60 < 280$ (because $(1/2)p(R + H) = 280$). Hence, in a property-rule regime, the user will search when $S < \$220$, while in a liability-rule regime, the user would search much less frequently, only when $S < \$140$. The problem from a social efficiency standpoint is that the user's incentive to search increases as R increases, even though R has no relationship to the efficiency of the resource's use.

Finally, consider the situation where $A > H$. As we have seen, in a liability-rule regime, the potential user of a resource has no incentive to search in this case, because search will generate no relevant information: whatever the result of the search, the user's best alternative is to use the resource—the efficient result. In a property-rule regime, by contrast, the user does have an incentive to search, because even if $A > H$, avoidance may still be the cheapest alternative to search if $A < (1/2)p(R + H)$. This will be especially likely when removal costs are high.⁹³

92. This type of transaction is typically available when the potential users of the resource are limited in number, as is typically the case in real property situations involving boundary disputes or easement scope. The parties could structure the transaction to transfer rights—either a fee interest or a servitude—from the lower-valuing user to the higher-valuing user in return for a payment of money.

As Kaplow and Shavell have noted, transactions like these will be more problematic when the number of potential users is high. Kaplow & Shavell, *supra* note 2, at 765–66. In those cases, the high-valuing user will be reluctant to part with money because another potential user could instantly begin to cause the same harm.

Thus, in some, but not all, intellectual property transactions, negotiations like these will be difficult to arrange. For instance, if a potential user's search were to reveal that the invention the user wants to use was never patented, or that the patent was invalid, the initial inventor would find it unwise to pay the potential user not to use the invention—even if the inventor is the highest-valuing user—because another potential user might come along and make precisely the same use, causing the same harm.

On the other hand, if the question is not whether the original inventor (or author) held a property right in the work, but rather whether the user's work constitutes infringement, there is more room for negotiation. In that case, the user may acquire patent or copyright protection in the user's invention or work of authorship, and the original inventor might then take an assignment of that patent or copyright—providing protection against similar uses by other potential users.

When the number of potential users makes structuring an arrangement difficult, search will have less potential value to the parties.

93. By contrast, when $A > (1/2)p(R + H)$, search will not present any advantage to the potential user, because use without search will remain the best alternative for the user regardless of the results of the search. No information revealed by the search will induce the owner to pay the user to avoid rather than cause harm.

As a result, the potential user will balance search costs against avoidance costs. Because the consequences of using without search can be so draconian, the user will often be willing to undertake an expensive search even when the probability of liability is very low. The potential user, therefore, will search whenever $S + pA < A$, or in other terms, whenever $S < (1-p)A$. Thus, the basic point is that adoption of a property-rule regime generates inefficient searches in this situation—searches that would be avoided in a liability-rule regime.⁹⁴

C. The Impact of Pre-Search Negotiations

In exploring the incentives for inefficient search generated by a property rules regime, the analysis so far has assumed that the potential resource user faces three alternatives: use without further inquiry, avoidance, and search. In fact, however, the user sometimes has a fourth alternative: negotiation with the ostensible owner before conducting a search for clarity about the scope of her legal rights. This section demonstrates that the negotiation alternative operates to reduce, but not eliminate, the incentive to inefficient search generated by a property-rule regime. First, the option to negotiate without search will be unavailable in those cases where search is necessary to identify the persons with whom the potential user would need to negotiate.⁹⁵ Hence, the alternative of negotiation without search is feasible only when the uncertainty pertains to the scope of the parties' rights, not the identity of the right holder. But even when the uncertainty involves the scope of rights, and negotiation is at least theoretically plausible, the strategic positions of the parties will often make negotiation a less attractive alternative than inefficient search. For clarity, this section considers separately situations in which $A < H$ and those in which $H < A$.

1. $A < H$

Recall that the user's alternatives—other than search and negotiation—are to avoid use of the resource or to use the resource without permission. Suppose avoidance is the more attractive of these two alternatives; that is, suppose $A < (1/2)p(R + H)$. We then have two alternatives: either $A < H < (1/2)p(R + H)$ or $A < (1/2)p(R + H) < H$. If $A < H < (1/2)p(R + H)$, the potential user is better off avoiding than using without search. The ostensible owner, by contrast, is better off if the user uses without search. The potential user, therefore, cannot credibly threaten to use if the ostensible owner does not pay the user to avoid because the ostensible owner would be delighted if

94. Moreover, in this situation, adoption of a property-rule regime creates another inefficiency independent of search costs: it ensures that in cases of bargaining breakdown, the user's default position is to avoid use rather than employ the more efficient alternative of using the resource regardless of permission.

95. See *supra* text accompanying note 74.

the user followed through on the threat.⁹⁶ As a result, there is no room for negotiation. If $A < (1/2)p(R + H) < H$, there is some room for negotiation, but not much. The potential user could threaten to use without search, which would make the ostensible owner worse off than if the user avoided using the resource. But the owner would have to believe that threat, which would make the potential user worse off than if the user simply avoided. Assuming the parties do not have repeated dealings with one another, there is considerable risk that the owner will not regard the threat as credible, making negotiations unsuccessful. Furthermore, if the prospect of successful negotiations is small, the user will not find it worthwhile to incur the cost of negotiation rather than simply avoiding use of the resource. Especially if the difference between A and $(1/2)p(R + H)$ is significant, negotiation is not likely to displace avoidance or search as the potential user's preferred alternative.

By contrast, there is more incentive for the potential user to negotiate when using the resource without permission is a better alternative than avoiding use, that is, when $H > A > (1/2)p(R + H)$. In this situation, because injunctive relief is not likely to be draconian, the potential user would be better off using the resource, and inflicting harm on the owner, unless the user receives payment equal to at least $A - (1/2)p(R + H)$. The owner, on the other hand, will find it worthwhile to make a payment of up to $H - (1/2)p(R + H)$, leaving room for negotiation between the parties. Of course, if the potential user searches and discovers that the ostensible owner has no right to the disputed resource, the potential user might be able to negotiate an even more favorable deal. Whether search or negotiation is the more attractive alternative is a function of the cost of search, the cost of negotiation, the probability of liability, and the relative values of A , H , and R . But there will remain cases in which a search, though socially inefficient, nevertheless yields the potential user a better private return than avoidance, use without search, or negotiation.

2. $A > H$

In this situation, too, the potential resource user might seek to negotiate without search. Here, the user might seek to buy the right to harm the neighbor, because the harm to the neighbor is smaller than the potential user's avoidance cost (which, by hypothesis, is smaller than the expected cost of using the resource without search or negotiation). Assuming the parties evenly split the gains from trade, the cost to the potential user will be $(1/2)(A + H)$, an alternative that is superior to incurring the cost of avoidance when $A > H$.⁹⁷ Indeed, this result is rampant in intellectual property

96. Conversely, the ostensible owner will not sell the right to use the resource to the user because the right to use the resource is only worth A to the user, while use of the resource would cause harm H to the ostensible owner. Because, by hypothesis, $H > A$, no bargain would be struck.

97. Note that in this situation, the probability of liability does not affect the amount the user will pay in negotiations. Cf. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*,

cases, where prospective users negotiate licenses even though their use may not infringe on any right held by the ostensible owner.⁹⁸

Thus, when $A > H$, the negotiation alternative reduces, but does not eliminate, the potential for inefficient search created by the property-rule regime. The relative advantage of the two alternatives varies with the cost of search and the probability of liability without search. But when the probability of liability is low, the user is likely to find search more attractive than negotiation.⁹⁹

D. Liability Rules for "Innocent" Encroachers

Although, compared with a property-rule regime, a pure liability-rule regime reduces incentives to conduct inefficient searches, that advantage comes at a high price: loss of all protection for subjective value, together with increased need for judicial assessment of damages in every encroachment case. A critical question, then, is how best to combine the search cost advantages of a liability-rule regime with the other efficiencies associated with property rules.

Consider, then, a regime that applies a liability rule only when encroachment is "innocent." Assessing such a regime first requires a definition of innocence. If innocence means absence of actual knowledge, a rule subjecting innocent encroachers to liability rules while non-innocent encroachers remain subject to property rules would embroil courts in difficult assessments about the user's actual knowledge,¹⁰⁰ while simultaneously creating perverse incentives not to search—even when search costs are low.

Defining an innocent encroacher as one who encroaches when search would have been unreasonable avoids this problem of perverse incentives. But this definition, too, generates problems. First, should reasonable searches be equated with efficient searches? Even if the answer were yes, whether a search would be efficient is not always clear.¹⁰¹ Second, a rule that

85 TEX. L. REV. 1991, 2004–05 (2007) (reaching a similar conclusion about pre-infringement negotiations in the patent context).

98. See Gibson, *supra* note 67, at 887.

99. The expected cost of search to the potential user will be $S + pA$, while the expected cost of negotiation without search (if we ignore the cost of negotiation) will be $(1/2)(A + H)$. Hence, the potential user will search rather than negotiating when $S + pA < (1/2)(A + H)$ or when $S < (1/2)(A + H) - pA$. As p rises, the inequality becomes less likely to hold. Similarly, as S rises, the inequality becomes less likely to hold.

100. For discussion of the difficulties of a rule that focuses on actual knowledge in the recording act context, see Dan S. Schechter, *Judicial Lien Creditors Versus Prior Unrecorded Transferees of Real Property: Rethinking the Goals of the Recording System and Their Consequences*, 62 S. CAL. L. REV. 105, 164–68 (1988). The difficulty of proving state of mind also arises in discussion of adverse possession standards. See, e.g., R.H. Helmholz, *Adverse Possession and Subjective Intent*, 61 WASH. U. L.Q. 331, 339 (1983). And in patent litigation, where a finding of willful infringement can lead to treble damages, one recent empirical study concludes that more than ninety percent of infringement claims include allegations of willfulness. Kimberly A. Moore, *Empirical Statistics on Willful Patent Infringement*, 14 FED. CIR. B.J. 227, 232 (2004). Moreover, these claims are never decided on summary judgment motions. *Id.* at 234.

101. See *supra* text accompanying notes 64–71.

requires courts to evaluate the reasonableness of a decision not to search creates judicial-determination costs unnecessary in a pure liability-rule regime or in a property-rule regime. Third, because a reasonableness regime introduces a new element of uncertainty into the calculus facing the potential user, the user has to incorporate into her calculations the possibility that she will face injunctive relief if she encroaches—generating incentives to search absent in a pure liability-rule regime.

The more clarity courts can give to reasonableness, the more a potential user's incentives in a qualified liability-rule regime would approximate those described in a pure liability-rule regime. But even a relatively muddy reasonableness rule would reduce the expected cost to a potential user of using a resource without search, and would therefore reduce, to some degree, the incidence of inefficient searches.

E. Property Rules and Liability Rules: Impact on Owner Behavior

The preceding Sections establish that property rules encourage potential resource users to search for information about the scope of property rights in some cases where liability rules would, instead, encourage those users to make decisions without incurring the same expenditures on information. The analysis also suggests that the additional incentives to search will not generate efficiency gains commensurate with the costs of search.

The choice between liability rules and property rules, has the potential to affect not only the behavior of potential resource users, but also the behavior of resource owners. In particular, in a regime of liability rules, owners might increase the expenditures they make to demarcate their rights in a way that protects against encroachment.¹⁰² For instance, in the case of real property, owners might expend money on surveying and fencing off their boundaries. In the case of intellectual property, owners might make additional efforts to publicize their rights and identity to potential users. Would these additional expenditures on "marking off" negate any efficiency gains generated by the smaller number of searches potential resource users would make in a regime of liability rules? The answer is no. If, even after marking off, the owner were limited to liability-rule protection, then the owner would have no reason to expend resources marking off. But even if an owner who effectively marks off her rights becomes entitled to property-rule protection against encroachers, owners will have incentives to mark off only when marking off generates efficiency gains.¹⁰³

In a liability-rule regime, an owner has no incentive to mark off her property unless she attaches subjective value to the property which exceeds the cost of marking off. Liability rules will assure her of the market value of

102. Cf. Smith, *supra* note 4, at 1785–90 (discussing the potential that liability rules will induce owners to engage in inefficient self-help).

103. An owner who marks off would certainly be entitled to property-rule protection in a regime that applies liability rules only to innocent encroachers. See *supra* Section III.D. In such a regime, a potential user who encroaches after the owner has marked off a right will have acted unreasonably, disqualifying the user from application of liability rules.

any property on which a potential user encroaches.¹⁰⁴ And marking off will have no strategic value. Suppose an owner who marks off her rights would be entitled to enjoin encroaching users. If a user did encroach, the owner would then be entitled to extract removal costs—which might be higher than the owner's subjective value. But the very act of marking off signals to the potential user that the user will be subject to injunctive relief—which, in turn, will eliminate the incentive to encroach. In other words, unlike potential users who may have strategic incentives to search even when the cost of search exceeds the social value generated by the search, owners have no incentive to mark off unless the subjective value the owner attaches to the property exceeds the cost of marking off.

The remaining question is whether the social value protected by marking off—the subjective value the owner attaches to her property rights—would be protected more cheaply by embracing a property rule that creates incentives for potential users to search. There are two strong reasons to believe, however, that the owner—not the potential user—will be the cheapest cost avoider when search costs are high even if the costs of marking off are also high.

First, an owner who marks off property rights provides information to the universe of potential users. For instance, if marking off constitutes earlier public notice of a patent claim, all potential users benefit from that notice. By contrast, a potential user who searches to determine the scope of property rights benefits only herself and has little incentive to reveal that information to other potential users of the resource. As a result, the information generated by a search is likely to be of considerably less value than the information generated by marking off.

Second, in contrast to a liability-rule regime where owners will only mark off rights in those cases where they actually attach subjective value to their rights, a property-rule regime generates increased incentives for all users to search. The incentives do not depend on the existence of subjective value because the potential user will not typically know whether a particular owner attaches subjective value to her right. The potential user in a property-rule regime responds not to actual subjective value, but to the potential for injunctive relief, which will provide leverage even to owners who attach little or no subjective value to their rights. As a result, a regime that

104. Indeed, even when subjective value exceeds the cost of marking off, it is far from certain that the owner will expend resources marking off.

First, marking off will be feasible only if the owner knows, or can ascertain at relatively low cost, the scope of her own property rights with respect to potential users. Suppose, for instance, the owner's subjective value is SV and the marking off costs are M . If search costs approach $SV-M$, the owner will not find it worthwhile to search or mark off, because the owner will only be able to obtain SV by expending both search costs and marking off costs.

Second, there is some probability that even if the owner does not mark off, no one will encroach because the prospect of money damages will be sufficient to prevent encroachment. As a result, even when $SV > M$ and search costs are low, the owner may find it worthwhile to take the risk of encroachment—and consequent loss of subjective value—when the probability of encroachment is significantly less than one.

encourages owners to mark off is likely to protect subjective value at lower cost than a regime that provides incentives for potential users to search.

F. A “No-Liability” Rule

The discussion of property rules and liability rules has ignored a third alternative: impose no liability against an improver who encroached on a property right after “reasonably” deciding not to search. This approach encounters an immediate disadvantage in that it appears inconsistent with any notion of property rights because it leaves an “owner” with no recourse against an encroacher.

But the approach is not without legal foundation. In fact, it serves as the basis for negligence liability in tort law. If a person’s actions cause harm to another’s bodily integrity or personal property, but the person did not cause that harm intentionally or negligently, the person is not liable—regardless of the severity of the harm. That is the implication of the famous Learned Hand formula: “if the probability be called P ; the injury, L ; and the burden, B ; liability depends on whether B is less than L multiplied by P : i.e., whether $B < PL$.”¹⁰⁵

Debate over the relative efficiencies of a negligence regime and a strict liability regime is ongoing in tort law scholarship. By contrast, neither property doctrine nor property scholarship has ever seriously considered implementing a negligence-based regime.¹⁰⁶

Consider the impact of a negligence-like approach to the encroachment problem. Suppose a property owner were entitled to damages, or even injunctive relief, in cases where failure to search led to encroachment, but only when encroachment without search was “unreasonable.” The reasonableness principle embodied in the Learned Hand formula is that an actor who engages in efficient behavior should not be liable for injury caused by that behavior. In the encroachment context, imagine the principle’s most appealing application: a rule that absolves an encroacher of liability when the encroacher can prove that the harm she caused was smaller than first, the cost of avoiding that harm, and second, the cost of search necessary to determine the existence and identity of a property owner entitled to prevent the harm.

As we have seen, when these two conditions, $H < A$ and $H < S$, are satisfied, property-rule protection of the property owner has the potential to generate inefficient search, while liability-rule protection will tend to generate efficient resource use. But a rule of no liability also leads to efficient resource use because it would prompt potential users to use without search

105. United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947) (emphasis added).

106. Intellectual property scholarship, however, has begun to engage in debate about whether liability should be imposed on nonwillful infringers. See, e.g., Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525 (2007); R. Anthony Reese, *Innocent Infringement in U.S. Copyright Law: A History*, 30 COLUM. J.L. & ARTS 133 (2007); Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475 (2006).

or avoidance when that is clearly the efficient result, without having any impact on the user's incentives when the two conditions are not met.¹⁰⁷

There are, nevertheless, reasons to prefer a liability rule to a rule of no liability. First, a no-liability rule would require courts to determine the user's avoidance costs and search costs—computations that would be unnecessary in a regime of liability rules.¹⁰⁸ But the judicial burdens of making those determinations would be partially offset by the fact that in a no-liability regime, courts would not have to answer one potentially difficult question: did the user's actions encroach on the owner's property rights? In a regime of no liability, ownership would play a subordinate role to the principal determination of reasonableness.

Subordination of the ownership determination, however, may be the principal weakness of a no-liability regime. Reducing the importance of ownership threatens to generate at least two related inefficiencies. First, a no-liability rule creates incentives for the owner to engage in wasteful expenditures designed to monitor her property, or to mark off her property in order to protect against encroachment.¹⁰⁹ By contrast to a liability-rule regime,¹¹⁰ in a no-liability regime, an owner has an incentive to mark off the property even when marking off generates no social benefit. In a no-liability regime, failure to mark off would result not merely in the owner's loss of subjective value, but also in a transfer of market value from the owner to the encroaching user. As a result, the owner in a no-liability regime would have an incentive to mark off to avoid that redistribution to the potential user—even when the redistribution would generate no efficiency gains.¹¹¹

107. Cf. Alvin K. Klevorick, *Legal Theory and the Economic Analysis of Torts and Crimes*, 85 COLUM. L. REV. 905, 914 (1985) (noting that both strict liability and negligence would induce efficient behavior on assumptions analogous to those applicable here). Professors Kaplow and Shavell have identified the incentive to obtain information about the appropriate level of care a potential actor should take as an inefficiency of a negligence regime. Kaplow & Shavell, *supra* note 63, at 316. But a rule that absolves an actor from liability when the actor fails to conduct an inefficient search for information is hardly likely to induce actors to seek additional information.

108. It is true, however, that courts might have to determine search costs in a regime that provided liability-rule protection when search costs are higher than *H-A*, but property-rule protection in other cases.

109. Cf. Smith, *supra* note 4, at 1730 (noting incentive of owners to engage in costly self-help, including erection of fences, when legal rules provide inadequate protections).

110. See *supra* text accompanying note 131.

111. The tort literature has long recognized that a rule absolving an actor of liability creates an incentive for potential victims to take precautions against harm the actor might cause. See, e.g., POSNER, *supra* note 41, at 169–70; Guido Calabresi & Jon T. Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 YALE L.J. 1055, 1058 (1972). But the potential tort victim who takes precautions does not interfere with the efficiency-promoting activity of the harm-producing actor. Consider a permutation of the example used by Posner (and derived from Coase) where a railroad could avoid \$100 in damage to a farmer's crops by expending \$150 in greater care. POSNER, *supra* note 41, at 49–50; see also R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960). The Learned Hand formula would absolve the railroad from liability and shift to the farmer the incentive to take precautions against harm—perhaps by planting flame-resistant crops. Note, however, that any expenditure on flame-resistant crops that generates private benefit to the farmer also generates social benefit in the form of more undamaged crops; the expenditure does not prevent the railroad from operating in a way that generates more benefit than cost.

A second inefficiency generated by a no-liability rule is the reduced incentive to invest in a resource whose ownership is uncertain. Property rights concentrate the costs and benefits of decisions about a resource in the owner.¹¹² Liability-rule regimes reduce that concentration to some degree, but a no-liability regime introduces elements of a rule of capture, with its attendant inefficiencies.¹¹³

Even if a liability rule and a no-liability rule were equally effective in reducing the incidence of inefficient search, there are still strong reasons to reject a no-liability rule, even when the potential user of the resource acted reasonably in using the resource without first ascertaining the scope of her legal rights.

G. Implications

The analysis strongly suggests that a property-rule regime is likely to generate inefficient searches that may be avoided in a liability-rule regime. That is, in a property-rule regime, more potential users will engage in searches when the social benefits of search do not justify their cost.

This conclusion, however, does not justify jettisoning property rules. The advantages of property rules are often compelling in the common case in which search costs are low, or are not an issue at all. Moreover, even in cases where search costs might be significant—the focus of my analysis—I have assumed that the harm that resource use would cause for the ostensible owner is known to the resource user. That assumption is often unrealistic. Determinations of subjective harm tend to be unreliable. One of the prime advantages of a property-rule regime is that it induces potential resource users to account for the subjective harm to the owner—a factor almost necessarily ignored in a liability-rule regime.¹¹⁴

These obvious advantages of property-rule regimes should not, however, obscure two basic facts: first, the search for legal clarity is often inefficient; second, legal rules—and particularly property rules—have the potential to

By contrast, in the typical encroachment case—whether in the real property context or in the intellectual property context—monitoring or “fencing in” expenditures would not only protect the owner, but would increase the cost to a potential user seeking to engage in value-enhancing behavior. Lee Anne Fennell has made a similar point in explaining why the law does not absolutely prohibit landowners from taking actions that have negative impact on neighboring land:

Each time the law decides to enjoin an activity with extra-boundary impacts, it drains away a property owner’s privilege to engage in the activity in question. As more and more uses are drained away from a given parcel of property, the less use-content remains that would give ownership of that parcel value.

Lee Anne Fennell, *Property and Half-Torts*, 116 YALE L.J. 1400, 1440 (2007).

112. For the seminal statement of this point, see Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 354–55 (1967); see also Smith, *supra* note 4, at 1754–56.

113. A rule of capture creates, in effect, a race to use valuable rights, which tends toward inefficiency because various contestants may expend resources during the race, but only the winner of the race derives any benefit from those expenditures. See generally Terry L. Anderson & Peter J. Hill, *The Race for Property Rights*, 33 J.L. & ECON. 177 (1990).

114. See Calabresi & Melamed, *supra* note 2, at 1092.

create incentives for inefficient search for greater legal clarity. Moreover, when property law rules create incentives for inefficient search, they simultaneously impose sanctions on persons who, correctly, abstain from engaging in socially inefficient searches.

The challenge for legal doctrine, then, is to determine how to reduce incentives for inefficient search without undermining the advantages of property law rules. Search is likely to be inefficient where search costs are high, where the probability of encroachment is significantly less than one, and where the harm to the property owner is low (and hence, any inefficiency avoided by search is likely to be low). When those conditions are met, doctrine can and should consider substituting liability rules for property rules in order to reduce the incentive to search, and to mitigate the sanctions associated with inefficient search. The next Part demonstrates that, as a descriptive matter, doctrinal rules often operate—although rarely explicitly—to account for the inefficiencies of excessive search.

IV. DOCTRINAL TREATMENT OF SEARCH COSTS

When copyright and patent infringement were matters of “simple piracy,” injunctive relief was understandably the norm.¹¹⁵ In recent decades, however, statutory and technological developments have made it more difficult for potential users of intellectual property to determine whether their uses infringe, and often to locate the person whose rights would be infringed. At the same time, because infringement now frequently arises in a setting where the infringer has incorporated the infringed work into a much larger and more complex work, removal costs are increasingly high. In this environment, it should not be surprising that courts would reject automatic award of injunctive relief for copyright and patent infringement. Review of recent doctrine establishes that courts, led by the Supreme Court, have increasingly turned away from routine award of injunctive relief, especially in cases where search costs and removal costs are high. But to lay the foundation before turning to intellectual property cases, I analyze real property doctrine to demonstrate that courts have exhibited the same tendency in the most traditional of settings—disputes over boundaries and servitude scope.

A. Real Property

Although real property law is often celebrated (or condemned) as a domain in which clear, precise rules are prevalent, in practice, no matter how clear those rules are “on the books,” their *scope* is not self-evident “on the ground.” Generating clarity often requires investigation. At the same time, real property law is generally marked by a preference for property rules rather than liability rules. Despite the general preference, however, courts in

115. Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1132–34 (1990) (distinguishing between cases of simple piracy, in which injunctive relief is routinely awarded, and fair-use cases, in which Judge Leval concluded that more careful analysis of remedy is required).

a number of areas have been hesitant to award injunctive relief to a party who has made significant expenditures in the mistaken belief that he had the right to make those expenditures—in other words, a party who might have avoided encroachment by searching more extensively, but who did not search.¹¹⁶ In these cases, if the cost of search had been low relative to the potential harm caused by failure to search, one would expect courts to label failure to discover the encroachment unreasonable; because courts label the encroacher's action reasonable and deny the usual property-law remedy, the inference is strong that they have implicitly concluded that the cost of search was high relative to the expected benefit of the search.

1. *Boundary-Dispute Cases*

Consider an improver who builds a building on what she mistakenly believes to be her own land. The improver could have avoided the mistaken encroachment by commissioning a survey, or, just to be sure, by commissioning a second survey (because, of course, the first survey might prove inaccurate).¹¹⁷ When the owner of the land discovers the encroachment, she might seek injunctive relief in one of a number of forms.¹¹⁸ Protecting the owner with a property rule would suggest that she should be entitled to injunctive relief.¹¹⁹

Nevertheless, a number of common law courts addressing the problem of mistaken encroachment have limited the true owner to money damages or to other relief short of permanent injunction or its equivalent.¹²⁰ These courts explicitly or implicitly label the improver's mistake "innocent" and the improver's decision to build without further investigation "reasonable." In effect, then, these courts are suggesting further search would have been too much to expect.

116. Cf. Smith, *supra* note 53, at 1818 (discussing the movement of courts toward damage awards, in part to avoid inefficient ex ante costs such as surveys).

117. E.g., *D'Andrea v. Pringle*, 52 Cal. Rptr. 606, 608 (1966) (involving three conflicting surveys over a three-month period); *Amkco, Co. v. Welborn*, 21 P.3d 24 (N.M. 2001) (finding that landowner's gasoline station encroached by fifty-eight feet because surveyors made a mistaken assumption about property's boundary); *Zerr v. Heceta Lodge No. 111*, 523 P.2d 1018 (Or. 1974) (noting that encroachment arises when a party conveys a strip of land on which a building is located in reliance on an erroneous survey); *Howard v. Kunto*, 477 P.2d 210 (Wash. 1970) (finding that an inaccurate survey resulted in fifty-foot discrepancies in a series of deeds); *Somerville v. Jacobs*, 170 S.E.2d 805, 812 (W. Va. 1969) (noting that landowners built in mistaken reliance on an erroneous surveyor's report).

118. The landowner might seek removal of the improvement, see, e.g., *Mannillo v. Gorski*, 255 A.2d 258, 258 (N.J. 1969), or, when none of the improvement is on the improver's land, the landowner might claim to the entire building, see, e.g., *Somerville*, 170 S.E.2d at 812.

119. Some courts have granted injunctive relief, concluding that failure to conduct a proper survey precludes the improver from contending that the encroachment was the result of an innocent mistake. E.g., *Sheehan v. Kaden*, No. 75292, 1999 WL 166025, at *4 (Ohio Ct. App. Mar. 25, 1999).

120. For academic discussion of these cases, see Kelvin H. Dickinson, *Mistaken Improvers of Real Estate*, 64 N.C. L. REV. 37 (1985); Carol M. Rose, *Property and Expropriation: Themes and Variations in American Law*, 2000 UTAH L. REV. 1, 9–10; and Sterk, *supra* note 75, at 61–62.

In *Mannillo v. Gorski*,¹²¹ for instance, the improver built steps and a concrete walkway that encroached fifteen inches onto a neighbor's twenty-five-foot-wide lot. The court held that even if the improver could not establish title to the strip by adverse possession, the owner might be required to convey the strip to the improver for fair value, thus substituting a liability rule for a property rule. The court emphasized that a rule protecting a true owner who does not know of the encroachment "may in some cases result in undue hardship to the adverse possessor who *under an innocent and mistaken belief of title* has undertaken an extensive improvement which to some extent encroaches on an adjoining property."¹²²

Similarly, in *Somerville v. Jacobs*,¹²³ the court was confronted with an improver who, in apparent reliance on an inaccurate survey, built an entire building on a lot owned by an adjoining owner. In rejecting the adjoining owner's claim to the building, the court held as follows:

[A]n improver of land owned by another, who *through a reasonable mistake of fact and in good faith* erects a building entirely upon the land of the owner, with reasonable belief that such land was owned by the improver, is entitled to recover the value of the improvements . . . or, in the alternative, to purchase the land so improved upon payment to the landowner of the value of the land¹²⁴

One might be tempted to view these cases—and others like them¹²⁵—as cases in which the court struggled to avoid a loss of investment to the improver and a windfall to the owner. But in cases that involve the same loss and the same windfall—and *knowing* encroachment by the improver—the owner is almost invariably entitled to injunctive relief without regard to the hardship injunctive relief would work on the encroacher.¹²⁶ The distinction

121. 255 A.2d 258 (N.J. 1969), *remanding for trial* 241 A.2d 276 (N.J. Super. Ct. Ch. Div. 1968).

122. *Mannillo*, 255 A.2d at 264 (emphasis added).

123. 170 S.E.2d 805 (W. Va. 1969).

124. *Somerville*, 170 S.E.2d at 813 (emphasis added).

125. See, e.g., *Stuttgart Elec. Co. v. Riceland Seed Co.*, 802 S.W.2d 484 (Ark. Ct. App. 1991); *Hirshfield v. Schwartz*, 110 Cal. Rptr. 2d 861 (2001) (applying relative hardship doctrine to deny injunctive relief); *Dundalk Holding Co. v. Easter*, 137 A.2d 667, 671 (Md. 1958) (denying injunction requiring expenditure of \$60,000 to tear down wall on land worth no more than \$500, stating doctrine of comparative hardship applicable "if the mistake is innocent and . . . the invasion and the benefit to the injured owner are slight"); *Kratze v. Indep. Order of Oddfellows*, Garden City Codge No. 11, 500 N.W.2d 115 (Mich. 1993); *Szymczak v. LaFerrara*, 655 A.2d 76 (N.J. Super. Ct. App. Div. 1995) (applying "relative hardship" doctrine to limit landowner to money damages when inaccurate survey led neighbor to encroach); *Amkco, Ltd. v. Welborn*, 21 P.3d 24 (N.M. 2001) (applying the relative hardship doctrine to deny injunction requiring removal of encroaching gas station); *Zerr v. Heceta Lodge No. 111, Indep. Order of Oddfellows*, 523 P.2d 1018 (Or. 1974) (applying relative hardship doctrine to deny injunction to tear down encroaching building).

126. E.g., *Hollifield v. Monte Vista Biblical Gardens*, 553 S.E.2d 662 (Ga. Ct. App. 2001); *McConnell v. Stivers*, Nos. 2004-CA-001835-MR, 2004-CA-001894-MR, 2004-CA-002302-MR, & 2004-CA-002213-MR, 2007 WL 80897 (Ky. Ct. App. Jan. 12, 2007). Even when the improver knows that the owner believes the improvement will encroach, courts have held that the owner is entitled to injunctive relief. E.g., *Goulding v. Cook*, 661 N.E.2d 1322, 1325 (Mass. 1996) (awarding injunction when improvers, who were warned to proceed at their own peril, went ahead with their

between innocent encroachers and those who encroach knowingly has also been ratified by statutes in states that protect “good faith” improvers against routine injunctive relief.¹²⁷

Why should the improver’s knowledge matter? One answer is that the knowing encroacher did not face a search cost problem: either her neighbor’s legal rights were clear, or the encroacher absorbed the cost of search and then ignored the results of the search.¹²⁸ By contrast, in cases like *Mannillo* and *Somerville*, the court’s view that the improver was not to blame for the encroachment, even though further investigation might have avoided the encroachment, suggests strongly a belief that the improver should not have had to search—that search was, in effect, inefficient.¹²⁹ If the court had awarded injunctive relief, it would have increased the incentive for future persons in the same position to expend additional money on more extensive, and at times inefficient, investigation into their legal rights.

Judicial concern with providing the right incentives and rewards for search also helps to explain another doctrinal tendency: when the stakes increase, failure to search becomes less reasonable and more negligent.¹³⁰ As the apparent harm the encroachment inflicts on the owner increases, so does the likelihood that a court will award injunctive relief to the owner—even if the harm to the encroacher of complying with the injunction would still be

plans while the matter was still being litigated); *Renaissance Dev. Corp. v. Universal Props. Group, Inc.*, 821 A.2d 233 (R.I. 2003) (noting that owner had instructed improver not to build); *Bach v. Sarich*, 445 P.2d 648, 652 (Wash. 1968) (noting that improvers built “with full knowledge that their right to do so was contested”).

127. See, e.g., CAL. CIV. PROC. CODE §§ 871.1–7 (West 2007) (providing protection for good faith improvers who build on land that turns out not to be their own). By its terms, the statute does not apply when the landowner builds in part on its own land, apparently because the legislature deemed common law doctrine adequate to deal with that problem. See *id.* § 871.6. Where the statute is applicable, “the degree of negligence of the good faith improver should be taken into account by the court in determining whether the improver acted in good faith and in determining the relief, if any, that is consistent with substantial justice to the parties under the circumstances of the particular case.” *Id.* § 871.3(b) (emphasis added). In *Raab v. Casper*, 124 Cal. Rptr. 590 (Cal. Ct. App. 1975), the court remanded because the trial court had made no finding on negligence, emphasizing the critical role negligence plays in application of the statute.

128. Professor Lee Anne Fennell has argued that, after the passage of time, the adverse possession doctrine should extend greater protection to knowing encroachers than to innocent encroachers. Fennell, *supra* note 51. But she reaches that conclusion in part because other doctrines provide more effective protection to innocent encroachers. *Id.* at 1072 (noting that doctrines requiring innocent encroachers to pay for owners’ losses “roughly align incentives to avoid mistakes with the cost those mistakes impose on others”).

129. The inefficiency of search costs also provides an answer to a puzzle Professor Fennell explores: why should legal doctrine protect innocent encroachers? Professor Fennell finds no “positive correlation between ignorance about the trespass and the social value of the trespass.” *Id.* at 1066–67. She adds that “[t]here is no reason to think that people who are making *honest* mistakes are necessarily also making *efficient* mistakes.” *Id.* at 1067. But innocent encroachment may, in fact, reflect a calculation that the potential cost of encroachment is smaller than the cost of search. Indeed, Professor Fennell herself suggests as much. *Id.* at 1071.

130. As Professor Fennell has put it, “[e]ncouraging (or failing to discourage) ignorance about boundaries generates inefficiencies, at least where the costs of obtaining knowledge are relatively low and the social costs of building beyond one’s boundaries are relatively high.” *Id.* at 1071 (emphasis added).

greater.¹³¹ When the encroacher should recognize the potential harm her actions might cause, she bears responsibility for addressing the issue, either by search or by negotiation.

Boundary dispute doctrine implicitly takes search costs into account not only when fashioning remedies, as in *Mannillo* and *Somerville*, but also when fashioning legal rights. Suppose, for instance, that an owner makes erroneous representations to a neighbor about the location of the boundary line, and the neighbor relies on those representations in making improvements. Courts are likely to hold that the owner is estopped from asserting the “true” boundary line.¹³² In effect, courts are holding that the information furnished by the true owner—either about the location of the boundary, or about the low value the true owner attaches to the land on the other side of the apparent boundary line—would make it unreasonable for the improver to undertake further search costs. The improver, then, should not suffer for failure to conduct additional search.

2. Servitudes

The existence of a servitude also engenders search costs because the scope of the servitude will not be self-evident. Thus, an improver may act under the erroneous belief that a servitude entitles her to make an improvement, or that the improvement does not interfere with a servitude held by a neighbor. In neither case would the improver be able to resolve uncertainty about the scope of legal rights without expending resources on lawyers, surveyors, or both. Courts have, in both cases, applied liability rules to protect improvers from removal costs where the cost of search would appear high relative to the harm caused by encroachment on a neighbor’s legal rights.

First, consider the improver who exceeds the scope of her servitude. *Brown v. Voss* is the paradigmatic case.¹³³ The improver’s predecessor acquired a parcel of land and an access easement over a neighboring parcel. After the improver bought the dominant parcel, he separately bought an adjacent parcel from another seller. The improver then began to build a house that straddled the boundary between the dominant parcel and the subsequently purchased adjacent parcel. When his neighbor, the servient owner, sought to enjoin use of the easement for non-appurtenant land, the Washington Supreme Court agreed with the servient owner that use for non-appurtenant land constituted misuse of the easement,¹³⁴ but held that the trial court had not abused its discretion in denying injunctive relief to the servient

131. See *Pahl v. Ribero*, 14 Cal. Rptr. 174 (Cal. Ct. App. 1961) (granting an injunction when removal cost would be \$5,950 and decline in market value of owner’s property would have been \$5,600).

132. See, e.g., *Grunden v. Hurley*, 736 P.2d 548 (Okla. Civ. App. 1987); *Burkey v. Baker*, 492 P.2d 563 (Wash. Ct. App. 1971). See generally Stewart E. Sterk, *Estoppel in Property Law*, 77 NEB. L. REV. 756, 788–91 (1998).

133. 715 P.2d 514 (Wash. 1986).

134. *Brown*, 715 P.2d at 517.

owner.¹³⁵ The court in *Brown* emphasized the trial court's finding that denial of the injunction would work no appreciable damage or hardship to the servient owner.¹³⁶

Consider the issue in *Brown* from a search-cost perspective: how would the improver learn that construction of his house would violate his neighbor's right? First, he was probably unfamiliar with the legal rule that limits use of an easement to appurtenant land, and might not have known enough to consult a lawyer to resolve the issue.¹³⁷ Moreover, although the house straddled the boundary between his two parcels, it was nowhere near any boundary between the improver's land and land owned by anyone else. As a result, a reasonable landowner might not have seen any reason to commission a survey. Moreover, the neighbor's failure to object while the house was being built provided the improver with additional information suggesting that the improver need not expend additional resources investigating his legal rights. In light of the facts as they presented themselves to the improver, further search would have been unreasonable, and the court's decision avoided punishing the improver for failing to conduct an unreasonable search.

Next, consider the improver whose action encroaches on a neighbor's servitude rights. Two situations recur. In the first, the improver's building may extend over the boundary of a neighbor's easement. The improver knows of the easement, but faces the same issue raised in boundary dispute cases: the location of the easement cannot be determined without a survey. In the second situation, a landowner whose parcel is subject to an easement may not know of the easement's existence, or even if she knows of the easement's existence, she may not have any idea that her construction is anywhere near the easement.

Vossen v. Forrester illustrates this second problem.¹³⁸ Improver obtained a permit to build a beachfront house. Although some neighbors had opposed grant of the permit on the ground that improver's lot was too small, the neighbors had not raised any easement issues. In reliance on the permit, improver built the house, not realizing that it encroached by 2.08 feet onto a neighbor's easement. In fact, a title report disclosed the existence of an easement, but described the easement only by reference to its location in the title records. By contrast, the title report described other easements with more particularity. A map that accompanied the title report did not disclose the easement's location. After the house was built, a neighbor who had stood silent during construction sought to enjoin the improver from encroaching on the easement.¹³⁹ In holding that the neighbor was not entitled to an in-

135. *Id.* at 517–18.

136. *Id.* at 518.

137. After the case was resolved, the improver indicated that he had always assumed that he had a right to use the easement to get to his house. Elizabeth J. Samuels, *Stories Out of School: Teaching the Case of Brown v. Voss*, 16 CARDOZO L. REV. 1445, 1467 (1995).

138. 963 P.2d 157 (Or. Ct. App. 1998).

139. *Vossen*, 963 P.2d at 158.

junction, the court ordered relocation of the easement, observing that even though the title report provided the improver with actual notice of the easement, the improver did not have actual knowledge that he was encroaching on the easement.¹⁴⁰ Implicit in the court's analysis is the premise that improver's failure to discover the easement's precise location was not sufficiently blameworthy to preclude application of the relative hardship doctrine.¹⁴¹

In other cases, courts have also limited the holder of a servitude to money damages when further investigation by the burdened party to determine whether its actions would violate the restriction would have been unreasonable. *Drulard v. Le Tourneau* is illustrative.¹⁴² In a subdivision with panoramic views of Mt. Hood and Mt. St. Helens, all lots were subject to a deed restriction prohibiting erection of a house "having more than one story above the level of the street upon which such building fronts."¹⁴³ Purchasers of one of the lots proposed to build a house that included a basement with "daylight windows."¹⁴⁴ The purchasers filed a complete set of plans for the house, and, even before filing the plans, met with their next-door neighbors to show them a picture and plans of the proposed house. The neighbors never made any objection until after the house had been framed and roofed, at which time the neighbors contended that the house was a two-story house in violation of the restrictive covenant. When the neighbors sought to enjoin violation of the restriction, the court denied the injunction emphasizing the purchasers' good faith belief that the house complied with the building restrictions and the neighbors' delay in raising objections—even after purchasers had furnished them with a complete set of plans.¹⁴⁵

The court in *Drulard* recognized that the purchasers faced uncertainty about their right to build the proposed house.¹⁴⁶ The only way the purchasers could have resolved that uncertainty was through litigation before construction.¹⁴⁷ Instead, they sought to assure that their neighbors would not object to

140. *Id.* at 161.

141. See *Alabama Power Co. v. Drummond*, 559 So.2d 158 (Ala. 1990) (denying injunctive relief to power company against homeowner who unintentionally built a house atop the company's flood easement when, although the easement was of record and homeowner knew of the easement's existence, she did not know that the house itself encroached). By contrast, courts invariably refuse to apply the relative hardship doctrine, which permits court to deny injunctive relief when the cost of removing an encroachment is high relative to the damage caused by the encroachment, in cases where the encroacher knew of the encroachment or "proceeded despite notice or warning." *Ariola v. Nigro*, 156 N.E.2d 536, 540 (Ill. 1959).

142. 593 P.2d 1118 (Or. 1979).

143. *Drulard*, 593 P.2d at 1119.

144. *Id.* at 1120.

145. *Id.* at 1123.

146. The court never formally determined whether the purchasers' house violated the covenant. Instead, the court noted that there was a serious question about compliance, and concluded that even if the house did violate the covenant, the neighbor was not entitled to injunctive relief (or, for that matter, to damages, because the neighbor had not adequately proved harm). *Id.* at 1123–25.

147. Perhaps the purchasers could have contracted with the neighbors in the face of uncertainty, but because the source of the uncertainty was contained in a subdivision restriction, the

the house. The court's holding in effect recognized that, in light of the minimal harm to the neighbors as a result of the building,¹⁴⁸ it would have been unreasonable and inefficient for the purchasers to investigate further especially when investigation would have required litigation.¹⁴⁹

By contrast, in those cases where a landowner knowingly violates the terms of a servitude,¹⁵⁰ or builds after his neighbor warns of a violation or initiates litigation to prevent construction,¹⁵¹ courts routinely award injunctive relief, even if the injunction threatens to impose significant and concrete costs on the infringing landowner while providing less quantifiable benefits to neighbors. In cases of knowing encroachment, the encroacher faces no uncertainty. In cases of encroachment in the face of litigation, the threat of litigation itself serves as a signal that the dominant owner attaches significant value to her servitude right, making encroachment without search a less reasonable alternative. Injunctive relief in these cases, then, is less likely to

purchasers might have faced significant holdout costs, because, in all likelihood, each of the neighbors would have had standing to enforce the restriction. As one commentator has noted,

[w]here the agreement in question is entered into pursuant to a general building plan for the subdivision, the courts uniformly hold that evidence of the existence of such a plan at the time the agreement is made will be sufficient evidence of an intention to attach the benefit to the remaining lots of the subdivider.

II AMERICAN LAW OF PROPERTY § 9.29, at 418 (A. James Casner ed., 1952).

148. The restrictive covenant unequivocally permitted the purchaser to build a one-story house twenty-four feet in height, leading the court to conclude that the measure of damages would be the difference between the value of the neighbors' house with a one-story, twenty-four-foot house next door, and the value with the purchasers' house (which did not exceed twenty-four feet in height) next door. The court noted that the neighbors had offered no evidence of damages measured by this standard. *Drulard*, 593 P.2d at 1124–25.

149. See *Holmes Harbor Water Co. v. Page*, 508 P.2d 628 (Wash. Ct. App. 1973) (denying injunctive relief for violation of height restriction when scope of prohibition was uncertain, landowner attempted to comply with restrictive covenant, neighbor delayed bringing suit until construction was complete, and cost of removal was high compared with damage to the neighbor).

150. See, e.g., *Flying Diamond Airpark, LLC v. Meienberg*, 156 P.3d 1149 (Ariz. Ct. App. 2007) (awarding injunctive relief against violation of height restriction when builder had been warned before commencing construction that proposed building would violate restriction); *Gen. Am. Realty Co. v. Greene*, 438 N.E.2d 540 (Ill. App. Ct. 1982) (granting injunctive relief requiring removal of portions of building when builder constructed building knowing that it was directly above the easement, and finding the dominant owner's failure to show harm irrelevant); *Aragon v. Brown*, 78 P.3d 913 (N.M. Ct. App. 2003) (issuing an injunction requiring removal of manufactured home in violation of restrictive covenant when landowner had actual knowledge of the covenant's prohibition).

151. See, e.g., *Sandstrom v. Larsen*, 583 P.2d 971 (Haw. 1978) (awarding injunction when landowner completed construction in violation of height restriction after neighbors had warned landowner to cease construction until issue was resolved); *Davis v. Huey*, 608 S.W.2d 944, 949 (Tex. Ct. App. 1980) (awarding injunction against improvements made in violation of covenants when landowners "deliberately and intentionally proceeded with the construction of their building . . . knowing that their right to do so was being challenged in court"); *Bauman v. Turpen*, 160 P.3d 1050 (Wash. Ct. App. 2007) (issuing an injunction that required landowner to modify the roof of an already-constructed home when landowner began construction after neighbors sought injunctive relief for violation of restrictive covenant limiting houses to one story); *Curtis v. Chinn*, No. 44408-5-I, 2000 WL 703008 (Wash. Ct. App. May 30, 2000) (issuing injunction requiring removal of addition when neighbor warned landowner that addition violated height restriction and began litigation as soon as landowner started construction).

provide incentives for inefficient searches, or to punish landowners who acted reasonably when they acted without searching.

B. Copyright

High search costs present significant problems with respect to copyright. In a number of areas, copyright doctrine is inherently fuzzy.¹⁵² Even when the doctrine is relatively clear, locating the current right holder can be difficult. Moreover, though independent creation is a defense to copyright infringement, many parties may be liable for infringement without actual knowledge of another's copying: the publisher of a book by a novelist who pirated the story line, or the producer of a movie whose director or screenplay writer has copied characters or drawings.¹⁵³

Most of these search-cost problems are of relatively recent vintage. As Anthony Reese has recently demonstrated, copyright doctrine historically provided considerable immunity to unknowing infringers.¹⁵⁴ First, copyright originally provided such limited protection that doctrinal fuzziness was not a significant problem for potential users of copyrighted work.¹⁵⁵ Second, notice and registration requirements, together with a shorter copyright period, made it easier for a potential user to ascertain whether her work would infringe, and to locate the right holder in cases where the potential use required consent of that right holder.¹⁵⁶ Third, at least one class of potential

152. For instance, copyright protects only expression, not ideas. Learned Hand remarked, in a case involving the alleged infringement of a play, that there is a point in a series of abstractions about a play "where they are no longer protected, since otherwise the playwright could prevent the use of his 'ideas,' to which, apart from their expression, his property is never extended. . . . Nobody has ever been able to fix that boundary, and nobody ever can." *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (citations omitted); see also *Reyher v. Children's Television Workshop*, 533 F.2d 87, 91 (2d Cir. 1976) (noting that copyright protects expression, but not ideas). Moreover, even when an alleged infringer uses protected expression, the multifaceted "fair-use" doctrine may authorize the appropriation. See 17 U.S.C. § 107 (2000) (enumerating fair-use factors). As a result of these problems, "[a] user may know that a particular work is copyrighted, but that knowledge gives him little sense of whether a particular use of the work is legal or not." Mark A. Lemley, Reply, *What's Different About Intellectual Property?*, 83 TEX. L. REV. 1097, 1101 (2005).

153. See, e.g., *DeAcosta v. Brown*, 146 F.2d 408 (2d Cir. 1944) (finding publisher liable for infringement even if it erroneously relied on assurances of author).

154. Reese, *supra* note 106.

155. In particular, nineteenth-century copyright law protected largely against reproduction and distribution of a copyrighted work, not against taking extracts from the work or producing derivative works. Thus, translating *Uncle Tom's Cabin* into German did not constitute infringement of Stowe's copyright. *Stowe v. Thomas*, 23 F. Cas. 201 (C.C.E.D. Pa. 1853) (No. 13,514). See generally Reese, *supra* note 106, at 140–44, 178 (describing narrow scope of early copyright protection, particularly with respect to derivative works).

156. Congress endorsed the notice requirement as late as 1976, largely to protect innocent improvers against the burdens of search. The House Report accompanying the 1976 Copyright Act enumerated the functions of the copyright notice: "(2) It informs the public as to whether a particular work is copyrighted; (3) It identifies the copyright owner; and (4) It shows the date of publication." H.R. REP. NO. 94-1476, at 143 (1976). The report went on to explain why the notice requirement should be retained:

[A] person acting in good faith and with no reason to think otherwise should ordinarily be able to assume that a work is in the public domain if there is no notice on an authorized copy or

unknowing infringers—sellers of infringing works—were liable for infringement only if they had knowledge of the infringement.¹⁵⁷

Today, by contrast, copyright protection attaches automatically to an original work of authorship as soon as it is “fixed in any tangible medium of expression.”¹⁵⁸ An author, therefore, need not take any affirmative steps to secure copyright protection. Congress also abandoned the requirement of copyright notice in 1988.¹⁵⁹ Abolition of notice and registration requirements, together with the expanded duration of copyright protection, has significantly increased search costs for potential users of works of authorship. At the same time, the expanded scope and duration of copyright protection has increased the need for potential users to investigate the scope of authorial protection and the identity of the current holder of rights in those works.

Many of the circumstances in which users of copyrighted work face high search costs are also circumstances in which infringement would generate low social harm, but high removal costs—the very constellation in which injunctive relief is most likely to lead to inefficient search. Assume that the social harm of infringement can be measured by the harm to the copyright holder minus the infringer’s avoidance cost.¹⁶⁰ The harm to the owner is often small because the copyright holder is not currently exploiting the same market as the infringer, or is not exploiting any market at all.¹⁶¹ Avoidance

phonorecord and . . . if he relies on this assumption, he should be shielded from unreasonable liability.

Id. at 148. The duration of copyright protection, initially fourteen years, Copyright Act of 1790, ch. 15, 1 Stat. 124 (repealed 1831), has gradually expanded to the current “life plus seventy years” formulation. Especially significant in expanding the number of works subject to copyright was the 1976 Act’s substitution of a unitary term from the previous practice of requiring renewal after twenty-eight years—a practice which resulted in the vast majority of copyrighted works falling into the public domain after twenty-eight years.

157. *E.g.*, Reese, *supra* note 106, at 156–60.

158. 17 U.S.C. § 102(a) (2000).

159. The Berne Convention Implementation Act of 1988 amended sections 401 and 402 of the Copyright Act to strike out the requirement that copyright notice “shall be placed on all” publicly distributed copies and phonorecords and to substitute a requirement that notice “may be placed on” those copies and phonorecords. The Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853 (codified as amended at 17 U.S.C. §§ 401–402 (2000)). The statute retained some incentive to include notice on copies by making it more difficult for an infringer to contend that his infringement was innocent, and should therefore subject him to reduced actual or statutory damages, when notice was affixed to all copies. §§ 401(d), 402(d).

160. The assumption here is that the bundle of rights the copyright statute gives to the copyright holder roughly accounts for the external benefits and costs of copyright protection. Protection generates public benefits (by providing an incentive for authors to create potentially valuable works), but also imposes costs on the public (by limiting the ability of future authors to build on those works, and by increasing the cost of public access to works in which the author enjoys copyright protection). There is no *a priori* basis for assuring that the correlation is perfect. *See* James Boyle, *Cruel, Mean, or Lavish? Economic Analysis, Price Discrimination and Digital Intellectual Property*, 53 VAND. L. REV. 2007, 2013 (2000).

161. Copyright law provides remedies for the copyright holder in this situation largely to discourage the user from bypassing the market “by stealing the copyright and forcing the owner to seek compensation from the courts.” *Taylor v. Meirick*, 712 F.2d 1112, 1120 (7th Cir. 1983) (Posner, J.).

costs may be positive, but small, because the user can avoid infringement by substituting non-infringing—but presumably inferior—material.¹⁶² By contrast, removal costs may be high because once infringement occurs, the infringer may have no practical mechanism for segregating infringing from non-infringing material.¹⁶³

Consider, for instance, George Harrison's unconscious infringement of "He's So Fine" in his composition of "My Sweet Lord."¹⁶⁴ By the time of the infringement, "He's So Fine" had little commercial value.¹⁶⁵ Yet once Harrison had composed "My Sweet Lord," he could not easily have altered the song to avoid infringement; the infringing phrase was an integral part of the song. As a result, the copyright holder of "He's So Fine," if awarded injunctive relief, would have been in a position to extract much of the commercial value of "My Sweet Lord"—in effect imposing high removal costs on Harrison. The problem is exacerbated when the infringed material represents a small fraction of the value of significant infringing work. Removal costs—the cost of recording a new version of a song, excising a scene from a big-budget movie, or republishing a novel without the infringing content—may be quite high. Those costs will be felt not merely by the infringer, but by non-infringing contributors to the infringing work.¹⁶⁶ When removal costs are high, property-rule protection—awarding injunctive relief to the copyright holder—is likely to encourage inefficient search and punish users who act efficiently.¹⁶⁷

162. Dane S. Ciolino & Erin A. Donelon, *Questioning Strict Liability in Copyright*, 54 RUTGERS L. REV. 351, 414 (2002) (noting that innocent users facing risk of liability can curtail use of copyrighted work, and ultimately reduce their level of creative activity).

163. E.g., Gibson, *supra* note 67, at 890 (noting high costs that might be engendered by injunctive relief in infringement cases).

164. Bright Tunes Music Corp. v. Harrisongs Music, Ltd., 420 F. Supp. 177 (S.D.N.Y. 1976), *aff'd sub nom.* ABKCO Music, Inc. v. Harrisongs Music, Ltd., 722 F.2d 988 (2d Cir. 1983).

165. Settlement negotiations between Harrison and the holder of the copyright in "He's So Fine" yielded an offer by Harrison of \$148,000, an offer the copyright holder's lawyer regarded as "a good one." ABKCO Music, Inc. v. Harrisongs Music, Ltd., 508 F. Supp. 798, 802 (S.D.N.Y. 1981), *modified*, 722 F.2d 988 (2d Cir. 1983). The total earnings of "My Sweet Lord," by contrast, exceeded \$2,000,000. *Id.* at 801.

166. Not only do these high removal costs increase the potential users' incentive to search, but as suggested in Section III.C, they increase the potential users' incentive to negotiate with ostensible owners, even when ownership is uncertain. James Gibson has recently noted that licensing in the face of uncertainty has an unintended and potentially unwelcome consequence: it expands the scope of copyright protection by establishing the existence of a licensing market—a factor courts and scholars deem relevant to fair-use analysis. Gibson, *supra* note 67, at 888–98.

167. See generally Ciolino & Donelon, *supra* note 162, at 376–85 (challenging notion that potential infringer is the "cheapest cost avoider" in light of the uncertainties generated by copyright law). Mark Lemley and Philip Weiser have recently emphasized another reason to believe that injunctive relief promotes inefficiency in copyright cases: injunctions, or bargains conducted in the shadow of injunctions, can generate negative externalities. Injunctive relief effectively gives copyright holders leverage "to control a wide swath of noninfringing uses." Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 796 (2007). That is, injunctive relief can operate not merely to adjust the relative positions of the copyright holder and the infringer, but also to deprive the public of works that would otherwise be available. See Stewart E. Sterk, *Intellectualizing Property: The Tenuous Connections Between Land and Copyright*, 83 WASH. U. L.Q. 417, 460–61 (2005).

The current copyright statute does not, by its terms, require routine award of injunctive relief,¹⁶⁸ but courts have long indulged in a presumption that favors enjoining infringing behavior.¹⁶⁹ The Supreme Court has in recent years led the way in rethinking that presumption, motivated, in part, by search cost concerns. The search cost issue arose most directly in *New York Times Co. v. Tasini*.¹⁷⁰ Freelance authors who had provided articles for publication in newspapers brought suit to enjoin newspapers and electronic publishers from placing their articles onto electronic databases without the permission of the authors. The court found infringement over Justice Stevens's dissent which focused, in part, on search costs. Justice Stevens wrote that "*the difficulties of locating individual freelance authors . . . may well have the effect of forcing electronic archives to purge freelance pieces from their databases.*"¹⁷¹ The majority responded by suggesting that the search-cost issue could be addressed in considering the appropriate remedy.¹⁷²

Abend v. MCA, Inc. provides what is perhaps the clearest illustration of a court's willingness to limit a copyright holder to money damages when further search by the infringer would have been clearly inefficient.¹⁷³ In 1954, Alfred Hitchcock and Jimmy Stewart formed a production company to produce *Rear Window*, a movie based on a story by Cornell Woolrich. Woolrich had previously assigned the right to make a motion picture of the story, and had agreed with the assignee that he would renew his copyright and also assign the same motion picture rights for the twenty-eight-year copyright renewal term. The production company formed by Hitchcock and Stewart purchased the motion picture rights from Woolrich's assignee and proceeded to produce and distribute the movie. Woolrich, however, died before he could renew the copyright and assign motion picture rights to the assignee. Instead, the executor of his estate renewed the copyright, and assigned the copyright to Abend. Abend then brought a copyright infringement action against Hitchcock, Stewart, and others, alleging that rerelease of the movie infringed his copyright in the Woolrich story.¹⁷⁴

168. See 17 U.S.C. § 502(a) (2000) ("Any court having jurisdiction of a civil action arising under this title *may* . . . grant temporary and final injunctions on such terms as it may deem reasonable to prevent or restrain infringement of a copyright.") (emphasis added).

169. For example, in *Apple Computer, Inc. v. Franklin Computer Corp.*, the court wrote that "a showing of a prima facie case of copyright infringement or reasonable likelihood of success on the merits raises a presumption of irreparable harm," 714 F.2d 1240, 1254 (3d Cir. 1983)—a presumption that leads to the award of a preliminary injunction.

170. 533 U.S. 483 (2001).

171. *Tasini*, 533 U.S. at 520 (Stevens, J., dissenting) (emphasis added).

172. The Court noted that "it hardly follows from today's decision that an injunction against the inclusion of these Articles in the Databases . . . must issue," *id.* at 505 (majority opinion), and held that remedial issues were "open for initial airing and decision in the District Court," *id.* at 506.

173. 863 F.2d 1465 (9th Cir. 1988), *aff'd on other grounds*, *Stewart v. Abend*, 495 U.S. 207 (1990).

174. *Abend*, 863 F.2d at 1468.

Note the search problem facing Stewart and Hitchcock. If, as the Supreme Court had previously held, an author's assignment of renewal rights did not bind the author's statutory successor in cases where the author died before the renewal right accrued,¹⁷⁵ how could Stewart and Hitchcock have discovered the identity of the owner of those renewal rights? The owner's identity would not have been settled until Woolrich's death—which did not occur until fifteen years after they had negotiated for the rights to make *Rear Window*. Search, then, would have been inefficient in the extreme. Not surprisingly, the Ninth Circuit denied Abend injunctive relief notwithstanding their conclusion that his rights had been infringed.

Tasini and *Abend* do not stand alone as authority for the denial of injunctive relief. In *Campbell v. Acuff-Rose Music, Inc.*,¹⁷⁶ the Supreme Court denied injunctive relief in a case where the fuzzy boundaries of parody would have made it difficult—if not impossible—for the infringer to determine whether his composition constituted infringement. Although the Court ultimately decided that the parody at issue constituted fair use, the opinion went on to suggest that “courts may also wish to bear in mind that the goals of the copyright law . . . are not always best served by automatically granting injunctive relief when parodists are found to have gone beyond the bounds of fair use.”¹⁷⁷ Other courts have also denied injunctive relief in cases where search costs would have been high and injunctive relief would impose heavy removal costs. Most recently, the Supreme Court has reaffirmed its conclusion that in copyright and patent cases, injunctive relief is a discretionary equitable remedy, and not a matter of absolute right.¹⁷⁸

C. Patent Law

Unlike copyright protection, which arises without any affirmative action by an author,¹⁷⁹ patent protection requires application to the federal government.¹⁸⁰ The patent-filing process, which requires disclosure of the claimed invention, mitigates two of the search difficulties associated with copyright: discovering the identity of the copyright owner, and the potential enforcement of rights by the author of an unregistered work.

Despite these advantages, uncertainty about the scope and existence of legal rights is more pervasive in the patent realm than in the copyright realm. One significant problem arises at a basic level of patent theory—unlike copyright law, patent law does not recognize independent creation as

175. *Miller Music Corp. v. Charles N. Daniels, Inc.*, 362 U.S. 373 (1960).

176. 510 U.S. 569 (1994).

177. *Acuff-Rose*, 510 U.S. at 578 n.10.

178. *eBay, Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837 (2006).

179. Title 17, section 102(a) of the United States Code provides that copyright protection “subsists” in original works of authorship. 17 U.S.C. § 102(a) (2000).

180. Title 35, section 111 of the United States Code provides that “[a]n application for patent shall be made, or authorized to be made, by the inventor.” 35 U.S.C. § 111 (2000).

a defense to an infringement claim.¹⁸¹ Other problems are intensely practical. Conducting a patent search, for example, is not a routine matter.¹⁸² Although a dizzying array of commercial databases have developed to assist in the search process, none of these databases are comprehensive, and none dispense with the searcher's need to consider a variety of classifications that might apply to a particular invention.¹⁸³

Even if a potential user discovers a patent that has been issued, she must still determine not only whether the patent claim covers the desired use, but also whether the patent itself is even valid. Evaluating the meaning of patent claims is no easy matter.¹⁸⁴ In addition, the relatively rudimentary scrutiny that patent applications receive from the patent and trademark office¹⁸⁵ results in judicial invalidation of nearly half of the patents that are litigated to final judgment,¹⁸⁶ significantly complicating the search enterprise.

Finally, a patent applicant can make it difficult for a prospective user to obtain information about the existence and scope of the patent by filing continuation applications before the patent office issues the patent. As a result, even though a patent search will not reveal the patent, a person who uses the invention or process will nevertheless be an infringer.¹⁸⁷ Although Congress has acted to require publication of patent applications within eighteen months after filing,¹⁸⁸ theoretically ameliorating the problem of surprise,

181. For a discussion of this difference, see Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 525–33 (2004).

182. A patent search tutorial prepared by the University of Texas engineering library estimates that the average preliminary search takes between twenty-five and thirty hours, and an exhaustive search requires exploration of other avenues. McKinney Engineering Library Patent Searching Guide, <http://www.lib.utexas.edu/engin/patent-tutorial/tutorial/patenttutorialframeset.htm> (follow "Introduction" hyperlink) (last visited Jan. 28, 2008).

183. For a discussion of the various commercial databases and the difficulties of searching, see John T. Butler, *Electronic Resources for Patent Searching*, 84 LAW LIBR. J. 121 (1992).

184. A number of studies suggest that even federal district judges misunderstand the meaning of those claims about a third of the time. Christian A. Chu, *Empirical Analysis of the Federal Circuit's Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1103–04 (2001); Kimberly A. Moore, *Are District Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 2 (2001); Michael Saunders, *A Survey of Post-Phillips Claim Construction Cases*, 22 BERKELEY TECH. L.J. 215, 236 (2007).

185. Although patent applications may take two to three years to process, a patent examiner spends an average of about eighteen hours on each application. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001). Nearly eighty-five percent of patent applications in the United States result in an issued patent. Lemley & Shapiro, *supra* note 78, at 79.

186. See John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185 (1998).

187. For a description of the process of obtaining so-called submarine patents, see Steve Blount, *The Use of Delaying Tactics to Obtain Submarine Patents and Amend Around a Patent that a Competitor Has Designed Around*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 11 (1999); David B. Conrad, *Mining the Patent Thicket: The Supreme Court's Rejection of the Automatic Injunction Rule in eBay v. MercExchange*, 26 REV. LITIG. 119, 140–45 (2007); and Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1239–43 (2000).

188. 35 U.S.C. § 122(b)(1)(A) (2000).

those filings do not eliminate uncertainty, because a potential user still will not know whether the application will be granted.¹⁸⁹

While patent law presents potential users with significant uncertainty, the prospect of injunctive relief concurrently threatens the user with high removal costs. Once a product or process has been designed in a way that incorporates a patented invention, redesigning the product might require shutdown for retooling.¹⁹⁰ In addition, especially when the patented invention is a small component in the design of a complex product or process, a redesign around the patented invention may take substantial effort and require the user to acquire a different set of patent rights at considerable additional cost.¹⁹¹

In *eBay, Inc. v. MercExchange, L.L.C.*, a unanimous Supreme Court held that injunctive relief should not be automatic in patent cases, but should rather be subject to the same four-factor test historically applied by equity courts.¹⁹² There are many reasons to applaud the Court's decision. One of those reasons is that *eBay* reduces the incentive for potential users to engage in inefficient patent searches—especially those where the harm generated by infringement is smaller than the cost of additional search. Justice Kennedy's concurring opinion, joined by three other Justices, strongly suggests that money damages should suffice in those cases where uncertainty is most pervasive, and where removal costs (which give leverage to the patent holder) are high.¹⁹³ Kennedy's concurrence emphasized that where "the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement."¹⁹⁴ But those cases in which the threat of an injunction is employed simply for leverage are the cases in which infringement causes no social harm¹⁹⁵—the very

189. This uncertainty is particularly problematic with continuation applications, because the patentee can continue to change claims to track competitors until the patent is issued. See Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 88–90 (2004). Moreover, applicants for "submarine patents" can avoid the publication requirement by not filing or publishing abroad. *Id.* at 88–89.

190. See Lemley & Shapiro, *supra* note 97, at 1997 (discussing lost sales resulting from time lag caused by redesign around the patent).

191. Mark Lemley and Philip Weiser state as follows:

[I]njunctive relief against infringement of a patent covering a small component of a larger product will end up preventing the sale of all the noninfringing components of the product, at least until the defendant can redesign its product to exclude the infringing component. In the case of hardware such as semiconductors or cell phones, pulling and redesigning the product can potentially involve a year of additional research and development and tens of millions of dollars.

Lemley & Weiser, *supra* note 167, at 797–98; see also Lemley & Shapiro, *supra* note 97, at 1997 (noting that redesign costs "could be so large that redesigning the product is not commercially feasible").

192. 126 S. Ct. 1837 (2006).

193. *eBay*, 126 S. Ct. at 1842 (Kennedy, J., concurring).

194. *Id.*

195. The assumption here is that if the patent owner has suffered no losses, there is no social harm, because patent law has been properly calibrated to provide the patent holder with optimal incentives to innovate. See, e.g., *id.* at 1837 (majority opinion).

cases in which further search is likely to be inefficient. The Kennedy concurrence also suggests that the four-factor test should be applied with an eye to the “potential vagueness and suspect validity of some of these patents.”¹⁹⁶ In other words, courts should consider the high cost of determining whether use of the invention would, in fact, encroach on a patent holder’s rights.

Moreover, like real property doctrine, patent doctrine takes search costs into account when fashioning rights as well as remedies. Thus, the doctrine of prosecution laches bars infringement claims by a patent holder who re-files an application containing previously allowed claims in order to delay issuance of the patent, thereby obfuscating what is patented and what is not.¹⁹⁷ Prosecution laches—like estoppel doctrine in real property law¹⁹⁸—denies all relief to an owner whose actions induce potential users to believe that use without search is permissible.¹⁹⁹

Thus, by limiting the leverage patent owners can exercise against infringers who could not easily have discovered their infringement, patent doctrine discourages inefficient expenditures directed to increasing certainty about the scope of legal rights.²⁰⁰

CONCLUSION

“Ignorance of the law is no excuse”—an ancient maxim drawn from criminal law²⁰¹—reflects an implicit assumption in much of the academic writing about property rights and protections. Property scholarship suggests the importance of developing doctrinal rules that are clear and easily understood, and then assumes that parties who violate the rights defined by those rules should do so at their peril—which typically includes the peril of property-rule protection, injunctive relief.

196. *Id.* at 1842 (Kennedy, J., concurring).

197. *See* *Symbol Techs., Inc. v. Lemelson Med. Educ. & Research Found., LP*, 422 F.3d 1378, 1385–86 (Fed. Cir. 2005). The doctrine can be traced to two earlier Supreme Court cases, *Woodbridge v. United States*, 263 U.S. 50 (1923), and *Webster Electric Co. v. Splittorf Electrical Co.*, 264 U.S. 463 (1924).

198. *See supra* text accompanying note 132.

199. Moreover, when a patent holder does not delay in prosecuting the patent application, but instead delays in bringing actions for infringement, the Federal Circuit has held that laches may bar injunctive relief against the user of an infringing product who may have been lulled into acting in reliance on a belief that the product’s use would not generate legal liability. *See* *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1272–74 (Fed. Cir. 1999). After noting that permitting injunctive relief would permit the patent holder to extract from the infringer the cost of shifting to a noninfringing product, which might be more than a reasonable royalty, the court emphasized that such a result “would encourage patentees to adopt a strategy of ambush rather than providing fair notice.” *Id.* at 1273. That is, when the owner could have acted to reduce the user’s search costs, but didn’t, the owner may not be entitled to injunctive relief.

200. Mark Lemley has recently noted that under existing law many researchers and companies simply don’t engage in patent searches, instead taking their chances on the outcome of potential litigation. Mark A. Lemley, *Ignoring Patents* (2007) (unpublished manuscript, on file with author).

201. For application of the maxim to a modern gun control case—and discussion of limits on application of the maxim even in criminal law—see *Bryan v. United States*, 524 U.S. 184, 194–96 (1998).

The advantages of property-rule protection are many—including encouraging investment, facilitating market exchange, and protecting subjective value. Even the most fervent advocates of property rule protection, however, have recognized that context is critical. Sometimes, an exclusive focus on market ordering would lead to unacceptable inefficiencies.²⁰²

Judicial doctrine has quietly—if not silently—adapted to a set of facts largely ignored by academic commentary. Even when rules are clear on their face, expensive investigation may be necessary to determine how they apply to concrete facts. Search, in these cases, is often inefficient because the resulting social gains may be much smaller than the cost of the search. Injunctive relief threatens to impose private costs on parties who fail to search even when those private costs exceed the social benefits that would be derived from search. As a result, routine award of injunctive relief punishes actors who have acted reasonably and efficiently—and provides incentives for future actors to engage in inefficient searches.

None of these facts suggest that ignorance of the law—or of the facts—should excuse encroachment of property rights. They do suggest, however, that in cases where the cost of search would be particularly high relative to the harm caused by encroachment, the high cost of search should be a mitigating factor in determining what remedy to award the property owner.

202. Thus, Richard Epstein, a staunch defender of property rules, concedes that in cases of necessity, property rules would be inefficient:

The need to save life is so evident that the law allows the individual at risk to use someone else's property as though it were his own. . . . No one could seriously maintain that for some hidden reason the owner has greater need for his dock than the sailor who is at risk for his life. . . . Only cynics doubt that, at the critical moment, the boat owner attaches greater value to the use of the dock than the dock owner attaches to his right to exclude.

Epstein, *supra* note 3, at 2110 (1997).

