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TRESPASS, NUISANCE, AND THE COSTS OF DETERMINING PROPERTY RIGHTS

THOMAS W. MERRILL*

THE right to exclude intrusions by others, we have it on high authority, is “one of the most essential sticks in the bundle of rights that are commonly characterized as property.”¹ Yet the right to exclude is not one right; it is itself a collection or “bundle” of rights. With respect to property in land, for example, the right to exclude depends to a large extent on whether the intrusion in question is subject to the common law of trespass or of nuisance.² Generally speaking, when the intrusion is governed by trespass, then there is no exception for de minimis harms, a rule of strict liability applies, and the landholder can obtain an injunction to prevent future invasions. When the intrusion is governed by nuisance, however, then there will be no liability absent a showing of substantial harm, as a rule the landholder must show that the costs of the intrusion outweigh its benefits, and even then the party subject to the interference may be awarded only damages rather than an injunction for future harms. Thus, the right of a landholder to exclude means one thing with respect to certain intrusions—those subject to the law of trespass—but something altogether different with respect to others—those subject to the law of nuisance.

* Northwestern University School of Law. I would like to thank Anthony D’Amato, Frank Easterbrook, Victor Goldberg, Carol Rose, Marshall Shapo, and the participants in a Northwestern University School of Law Faculty Workshop for their helpful comments on earlier drafts.

¹ *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979); see also *Pruneyard Shopping Center v. Robins*, 447 U.S. 74, 82 (1979).

² These are not the only legal doctrines that define a landholder’s right to exclude. For example, the action for ejectment serves as an important supplement to the action for trespass—allowing one who holds title to land to sue for possession even after he has been dispossessed by the defendant. In addition, there are numerous constitutional, statutory, and common-law doctrines that supplement and qualify these actions—some of which will be considered in Section IV *infra*.

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How do we account for the use of these different legal standards in defining a landholder's right to exclude intrusions by others? And how do we explain the legal system's differentiation between those intrusions subject to the rule of trespass and those subject to nuisance? In this article, I will apply a simple economic model in an effort to answer these questions. The central thesis is that when the costs of transacting are low, the legal system will gravitate toward rules that determine entitlements at a low cost—such as the strict liability rule of trespass. The combination of low transaction costs and low entitlement-determination costs will maximize the extent to which conflicts between competing uses of land can be resolved by market transactions. In contrast, when the costs of transacting are apt to be high, the legal system will incline toward rules for the determination of entitlements that are more expensive—such as the balancing or cost-benefit approach of nuisance. When market mechanisms fail, these more expensive entitlement-determination rules are necessary in order to give judges the needed discretion to adopt what they perceive as the best “compromise” solution (the efficient solution) to land use disputes.

Although I will use this economic model primarily to explain the differences between trespass and nuisance and the sorts of intrusions covered by each action, the model has the potential for broader application. In Section IV, I will survey some other issues involving the rights to exclude, use, and transfer property and will suggest that the relationship between transaction costs and entitlement-determination costs can account for some of the legal doctrine in these areas. Finally, although the main thrust of the article is positive in its orientation, in Section V I will raise some normative issues for those who believe that the legal system should be concerned, at least in part, with the maximization of social utility or wealth. Here, I argue that low-cost mechanical entitlement-determination rules play an important role in facilitating the exchange and modification of property rights—a role often overlooked by commentators who view them simply as decisional rules to be applied in litigation.

I. TRESPASS AND NUISANCE

Although trespass and nuisance are both concerned with the right to exclude intrusions by others, they govern different sorts of physical phenomena. Trespass applies to relatively gross invasions by tangible objects—persons, cars, buildings and the like.³ Nuisance applies to more indirect and intangible interferences—noise, odor, smoke, funeral homes,

³ See Section III *infra*.

and so forth.⁴ For the moment, we need not consider the exact line of demarcation between the underlying phenomena or the rationale for that line. I will return to this issue and discuss it at length in Section III. It is first necessary to understand the legal consequences of classifying a given interference as being subject to the rule of either trespass or nuisance.

For this purpose, it is useful to refer to some simple examples drawn from recent cases. Suppose A and B are adjacent landholders. In case 1,⁵ B has a long driveway which runs along his common border with A. At the end of this driveway, B has a loading dock. In order for B's trucks to turn around and unload at the loading dock, B's agents must drive onto and back off from A's property. An intrusion of this sort—the repeated driving of trucks on and off a neighbor's property—is the sort of gross, tangible invasion that is governed by the law of trespass. In case 2,⁶ B has a factory which makes a great deal of noise when in operation; A has a family residence. For many years, B operates only one eight-hour shift, which does not unduly disturb A. Subsequently, in an effort to increase production, B starts operating three shifts around the clock. As a consequence, A can no longer sleep at night. This kind of intrusion—the repeated invasion of a neighbor's peace and quiet by sound waves—is governed by the law of nuisance.⁷

In terms of both substantive and remedial doctrine, there are major differences in the law that will be applied in case 1 and case 2. Substantively, the principal distinction⁸ is the standard of care that courts apply in determining whether the interference is actionable; that is, whether A's property interest includes the right to exclude B's offending intrusion or B's property interest includes the right to engage in the offending intrusion free of any exclusion from A. These disparities are most pronounced

⁴ See Section III *infra*.

⁵ *Warsaw v. Chicago Metallic Ceilings, Inc.*, 35 Cal. 3d 564, 199 Cal. Rptr. 773, 676 P.2d 584 (1984). No question was presented as to whether the intrusions were a trespass, but only whether the intruder had, because of the passage of the statute of limitations, acquired a prescriptive easement.

⁶ *Wilson v. Interlake Steel Co.*, 32 Cal. 3d 229, 185 Cal. Rptr. 280, 649 P.2d 922 (1982).

⁷ *Id.*

⁸ Two other differences should be briefly noted. First, there is a traditional distinction in terms of who has "standing" to bring an action to exclude an interference with land. Trespass can be brought only by a possessor of land. Restatement (Second) of Torts §§ 157, 158 (1965). Nuisance, on the other hand, can be brought either by a possessor or by one who has a nonpossessory ownership interest (a reversion or remainder, for example) that is "detrimentally affected" by an interference with land. *Id.* § 821E (1979). Second, the statute of limitations for trespass is typically longer than the statute of limitations for nuisance. See, for example, *Martin v. Reynolds Metals Co.*, 221 Or. 86, 342 P.2d 790 (1959), cert. denied, 362 U.S. 918 (1960); *Fairview Farms, Inc. v. Reynolds Metals Co.*, 176 F. Supp. 178 (D. Or. 1959).

with respect to intentional intrusions—a category which includes not only actions in which B specifically intends to interfere with A's interest in land, but also actions undertaken by B which B *knows* will interfere with A's interest.⁹ Thus, if B directs his agents to back up their trucks to the loading dock, knowing that they must drive on A's property to do so, B will be chargeable with an intentional intrusion, even though he harbors no specific intent to injure A. Similarly, if B knows that his factory makes enough noise to disturb sleeping neighbors, his decision to operate the factory at night constitutes an intentional interference, even though he has no specific intent to disturb anyone's sleep.¹⁰

Intentional intrusions subject to the rule of trespass are governed by a standard of care which is "exceptionally simple and exceptionally rigorous."¹¹ In order to establish an actionable trespass, all that A need show is that B is responsible for an invasion of the column of space that defines A's possessory interest under the *ad coelum* rule.¹² No weighing or balancing of costs and benefits is involved. Thus, one who commits an act which qualifies as an intentional trespass is subject to liability whether or not the benefits of the interfering act—either to B or to the community at large—are greater than the harm imposed on A.¹³ Indeed, according to the Restatement of Torts, B will be subject to liability "irrespective of whether he thereby causes harm to any legally protected interest of the other."¹⁴ Therefore, in case 1 the action of B's agents in driving on and off A's driveway will be considered an actionable trespass, even if these invasions are shown to be only "trifling inconveniences" that do not interfere with A's use and enjoyment of his property.¹⁵

⁹ See Restatement (Second) of Torts § 158, comment 1 (1965) (intentional trespass); *id.*, § 825 (1979) (intentional nuisance).

¹⁰ See *id.* § 825, comment d, illustrations 2 and 4. This is not to say that there is no judicial confusion about what constitutes an "intentional" intrusion. See *Copart Industries v. Consolidated Edison Co.*, 41 N.Y.2d 564, 362 N.E.2d 968, 394 N.Y.S.2d 169 (1977), upholding a jury instruction referring to "negligence"—which would be appropriate only if the interference were unintentional—in the context of what was clearly an intentional nuisance, as defined by the Restatement.

¹¹ William L. Prosser, *Handbook of the Law of Torts* 63 (4th ed. 1971), quoting 1 Thomas A. Street, *Foundations of Legal Liability* 19 (1906).

¹² The complete maxim is "*cuius est solum eius usque ad coelum et usque ad inferos*" (he who owns the soil owns up to the heavens and down to the depths). See generally Charles Donahue, Jr., Thomas E. Kauper, & Peter W. Martin, *Cases and Materials on Property: An Introduction to the Concept and the Institution*, ch. 3 (2d ed. 1983).

¹³ According to the Restatement, liability is imposed for trespass if one intentionally "(a) enters land in the possession of the other, or causes a thing or a third person to do so, or (b) remains on the land, or (c) fails to remove from the land a thing which he is under a duty to remove." Restatement (Second) of Torts § 158 (1965).

¹⁴ *Id.*

¹⁵ Prosser, *supra* note 11, at 66.

Intentional harms subject to the law of nuisance, in contrast, are governed by a standard of care that is neither so simple nor so rigorous. Indeed, some commentators have despairingly described the legal doctrine surrounding the concept of nuisance as an "impenetrable jungle."¹⁶ Nevertheless, the description of the standard of care set forth in the Restatement of Torts, which is widely followed by American courts,¹⁷ provides at least an appropriate reference point for comparison to the law of trespass. According to the Restatement, "[t]here is liability for a nuisance only to those to whom it causes significant harm, of a kind that would be suffered by a normal person in the community or by property in normal condition and used for a normal purpose."¹⁸ Clearly, then, a mere "trifling inconvenience" is not actionable.¹⁹ In addition, an intentional nuisance will result in liability only if it is "unreasonable." The primary definition of "unreasonable," again according to the Restatement, is that "the gravity of the harm outweighs the utility of the actor's conduct."²⁰ Following the Restatement in case 2, therefore, A will have to show not only that the loss of sleep would represent a "significant harm" to a

¹⁶ *Id.* at 571.

¹⁷ See, for example, *Birchwood Lakes Colony Club v. Medford Lakes*, 179 N.J. Super. 409, 432 A.2d 525, 538 (1981), judgment modified, 90 N.J. 582, 449 A.2d 472 (1982).

¹⁸ Restatement (Second) of Torts § 821F (1979).

¹⁹ See Joel Franklin Brenner, *Nuisance Law and the Industrial Revolution*, 3 J. Legal Stud. 403, 415–20 (1974).

²⁰ Restatement (Second) of Torts § 826 (1979). The balancing approach of the Restatement can be traced to the notion that only "unreasonable" interferences are actionable, and that in determining what is unreasonable "the time, locality, and all the circumstances should be taken into account." *St. Helens Smelting Co. v. Tipping* (1863) 4 B. & S. 608, 616, 11 H. L. C. 642, 11 Eng. Rep. 1483. Richard Epstein argues that, properly understood, "reasonable" in this context simply means "insubstantial." Richard A. Epstein, *Nuisance Law: Corrective Justice and Its Utilitarian Constraints*, 8 J. Legal Stud. 49, 85 (1979). However this may be as a matter of original exegesis, many American courts have interpreted the reasonableness requirement as authorizing a kind of general utilitarian calculus in resolving nuisance disputes. See, for example, *Riblet v. Spokane-Portland Cement Co.*, 41 Wash. 2d 249, 248 P.2d 380 (1952); *De Blois v. Bowers*, 44 F.2d 621 (D. Mass. 1930). The rule is, however, not uniform. See *Jost v. Dairyland Power Cooperative*, 45 Wis. 2d 164, 172 N.W.2d 647 (1969). In 1979, the draftsmen of the Restatement added a second definition of "unreasonable," providing that an intentional interference would be unreasonable if "the harm caused by the conduct is serious and the financial burden of compensating for this and similar harm to others would not make the continuation of the conduct not feasible." Restatement (Second) of Torts § 826 (b) (1979). The purpose of the new provision, apparently, was to facilitate damage awards in cases such as *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970), where the court finds a nuisance, but declines to order injunctive relief. See Edward Rabin, *Nuisance Law: Rethinking Fundamental Assumptions*, 63 Va. L. Rev. 1299, 1317–18 (1977). Interestingly, even this limited form of strict liability in damages has encountered judicial resistance. See *Copart Industries v. Consolidated Edison Co.*, 41 N.Y.2d 564, 362 N.E.2d 968, 394 N.Y.S.2d 169 (1977), where the New York Court of Appeals declined to apply a tentative draft of § 826 (b), upholding instead a jury verdict that there was no nuisance.

person of normal sensitivities, but also that the harm to A and similarly situated neighbors is greater than the benefits that accrue to B and society generally from increased production and employment at the factory.²¹

In addition, trespass and nuisance differ in terms of the remedies available once an actionable interference is established. Here, perhaps the most important distinction involves the standards for issuance of an injunction. With respect to intentional trespasses, courts will generally issue an injunction against recurring invasions without engaging in any "balancing of equities"—a weighing of the relative strength of A's interest, B's interest, and other possible societal interests—before granting the requested relief.²² With respect to intentional nuisances, however, almost all courts will engage in some such balancing exercise before issuing an injunction against future interferences.²³ While they may not refer to the process as "balancing the equities," the weighing process nearly always takes place just the same.²⁴

Once an injunction is ruled out, either because the intrusion is a non-recurring one or because of an unfavorable balance of equities, still differences persist, though perhaps less significant, in the standards governing the award of damages. Where the intrusion is a trespass, and A cannot show actual damages, courts generally award the plaintiff at least nominal damages.²⁵ Failure to show actual damages in nuisance, in contrast, usually results in the denial of all relief (because of the failure to satisfy the "substantial harm" requirement for liability). Moreover, whether or not actual damages are incurred, punitive damages are more likely to be awarded for an intentional trespass than they are for an intentional nuisance.²⁶

²¹ Under a purely economic cost-benefit approach, the relevant question would be what combination of inputs and activity levels would either maximize the joint profits of the parties or minimize their joint costs. Thus the court should not only inquire into the damages suffered by A and similarly situated persons, and the value of increased production to B and allied interests, but also should ask what abatement techniques are available to B at what cost, and what avoidance techniques (such as soundproofing) are available to A and similarly situated persons and at what cost. It can easily be seen that to do such an analysis correctly, even in a simple case such as *Wilson v. Interlake Steel Co.*, *supra* note 6, would be extraordinarily expensive.

²² See Annot., 60 A.L.R.2d 310 (1958).

²³ Donahue, Kauper, & Martin, *supra* note 12, at 1046; Annot., 40 A.L.R.3d 601, 612 (1971).

²⁴ See *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970).

²⁵ Prosser, *supra* note 11, at 66.

²⁶ Many jurisdictions provide by statute for multiple damages for intentional or knowing trespass. See Annot., 111 A.L.R. 79 (1937). For a recent decision discussing the award of punitive damages for activity that would traditionally be considered a nuisance, see *Orchard View Farms, Inc. v. Martin Marietta Alum., Inc.*, 500 F. Supp. 984 (D. Or. 1980).

Given these differences, how should we characterize the distinction between trespass and nuisance? The distinction does not really correspond to that drawn by Calabresi and Melamed between “property rules” and “liability rules.”²⁷ To be sure, in its remedial dimension the law of intentional trespass approximates a property rule—injunctive relief more or less follows automatically from liability, at least where the intrusion is a recurring one. But the law of intentional nuisance is neither a property rule nor a liability rule, but sometimes one and sometimes the other—depending on how the court comes out in its “balancing of equities.” Moreover, the property rule/liability rule distinction goes only to the question of remedies to protect substantive rights. As we have just seen, however, trespass and nuisance differ not only in terms of remedies but also in terms of the standards applied to establish substantive rights—whether or not A has the right to exclude intrusions by B in the first place.

A more central theme running through the differences between trespass and nuisance concerns the degree of discretion given to courts when resolving questions that involve both substantive and remedial entitlements. Indeed, entitlement-determination rules can be viewed as falling on a spectrum ranging from “mechanical” rules—those which afford little discretion to courts in the establishment of entitlements—to “judgmental” rules—those which afford very broad discretion to courts in determining entitlements.²⁸ From this perspective, trespass would have to be regarded as the quintessential mechanical entitlement-determination rule. If an interference with an interest in land potentially qualifies as a trespass, all A must show to obtain an injunction barring B from future interference is that B is responsible for recurring invasions of the imaginary column of space which defines A’s possessory interest. Once the prescribed invasions are shown, both the substantive right and the remedy follow mechanically—with little room for judicial discretion.

The law of nuisance, in contrast, reflects a judgmental entitlement-determination rule. If interferences with an interest in land potentially qualify as a nuisance, then in order to obtain an injunction barring future invasions, A must (at least if we follow the Restatement account) satisfy a court (1) that he has sustained substantial harm from the interference; (2)

²⁷ Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 Harv. L. Rev. 1089, 1092 (1972).

²⁸ The distinction between mechanical rules and judgmental rules is similar to the more commonly encountered distinction between rules and standards or rules and principles. See Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. Legal Stud. 257 (1974); Douglas G. Baird & Robert Weisberg, *Rules, Standards, and the Battle of the Forms: A Reassessment of § 2-207*, 68 Va. L. Rev. 1217 (1982). I use the judgmental/mechanical terminology, however, in order to avoid any implication that mechanical rules necessarily derive from, or are otherwise logically related to, judgmental rules.

that the harm to A and similarly situated persons outweighs the benefit to B and society generally if B is allowed to interfere; and (3) that an injunction against future interference by B is consistent with the balance of equities. These factors, especially factors (2) and (3), are highly judgmental; accordingly, they entail the exercise of a considerable degree of discretion on the part of the court. Moreover, even if the court does not follow the cost-benefit approach of the Restatement in determining the question of substantive entitlement, nuisance still falls at the judgmental end of the spectrum, in part because inquiries (1) and (3)—especially (3)—still involve a significant degree of discretion. In addition, even aside from the cost-benefit calculus espoused by the Restatement, the substantive law of nuisance contains a bewildering array of Latin maxims,²⁹ conflicting formulations of the standard of care,³⁰ and defenses and quasi defenses.³¹ All of these, taken together, confer a very broad discretion on courts as to how they come out in particular controversies.

If the mechanical/judgmental distinction accurately captures the core contrast between trespass and nuisance, then the question becomes, Why would a common-law system develop two sets of rules—one mechanical and the other judgmental—for determining the right of a landholder to exclude interference by others? In the next section, I will consider whether economic analysis can supply a hypothesis that would account for this phenomenon.

II. TRANSACTION COSTS AND ENTITLEMENT-DETERMINATION COSTS

The economic significance of the contrast between mechanical and judgmental entitlement-determination rules can be developed in terms of the familiar Coase theorem.³² That theorem posits that under certain

²⁹ For example, "sic utere tuo ut alienum non laedes" (every person is bound to use his property so as not to injure that of another), see *Fontainebleau Hotel v. Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357, 359 (Fla. 1959); and the distinction between nuisance per se and nuisance per accidens, see *Morgan v. High Penn Oil Co.*, 238 N.C. 185, 190, 77 S.E.2d 682, 687 (1953).

³⁰ Compare *Copart Industries v. Consolidated Edison Co.*, 41 N.Y.2d 564, 362 N.E.2d 968, 394 N.Y.S.2d 169 (1977) (upholding jury instruction based on negligence) with *Reynolds Metals Co. v. Yturbide*, 258 F.2d 321 (9th Cir.), cert. denied, 358 U.S. 840 (1958) (applying *res ipsa loquitur*), with *Jost v. Dairyland Power Cooperative*, 45 Wis. 2d 164, 172 N.W.2d 647 (1969) (applying strict liability).

³¹ For example, whether or not the plaintiff came to the nuisance, see *Spur Industries v. Del E. Webb Development Co.*, 108 Ariz. 178, 184–85, 494 P.2d 700, 706–07 (1972); Annot., 42 A.L.R.3d 344 (1972); and whether or not the plaintiff is more than ordinarily sensitive to the intrusion in question, see *Amphitheaters, Inc. v. Portland Meadows*, 184 Or. 336, 349–52, 198 P.2d 847, 852–53 (1948).

³² R. H. Coase, *The Problem of Social Cost*, 3 J. Law & Econ. 1 (1960).

rigorous assumptions—which include zero transaction costs, clearly delineated property rights, perfect information about production and consumption functions, no wealth effects, and maximizing behavior by all parties³³—the assignment of property rights will not affect decisions about the use and consumption of resources. Regardless of who is initially assigned the property right, the parties will exchange or modify those rights until they achieve the allocation of resources which maximizes their joint welfare. This conclusion can be generalized to any operation of explicit markets. If the assumptions underlying the Coase theorem are all satisfied, voluntary rearrangements of property rights will maximize the aggregate welfare of all market participants.³⁴

In the real world, of course, the assumptions underlying the Coase theorem are never realized. Nevertheless, in order to explore the significance of entitlement-determination rules, I will assume that all conditions necessary for an “ideal” allocation of resources are satisfied save two: the assumption of zero transaction costs, and the assumption of clearly delineated property rights—which I will refer to as the assumption of zero entitlement-determination costs. (If it is costless to determine legal entitlements, then the delineation of property rights should always be clear.)³⁵ Given the potential ambiguity of these concepts,³⁶ a brief word is in order about how they will be used here.

Transaction costs, as I will use the term, consist of the resources that must be expended in order to enter into and enforce contracts for the exchange or modification of property rights. As Coase put it, they are the resources that must be expended “to discover who it is that one wishes to deal with . . . and on what terms, to conduct negotiations leading up to a bargain, to draw up the contract, to undertake the inspection needed to make sure that the terms of the contract are being observed, and so on.”³⁷

³³ For a succinct discussion of the various assumptions underlying the Coase theorem, see Elizabeth Hoffman & Matthew Spitzer, *The Coase Theorem: Some Experimental Tests*, 25 J. Law & Econ. 73, 73–77 (1982). See also Robert Cooter, *The Cost of Coase*, 11 J. Legal Stud. 1 (1982).

³⁴ See Guido Calabresi, *Transaction Costs, Resource Allocation and Liability Rules—A Comment*, 11 J. Law & Econ. 67, 68 (1968).

³⁵ Thus Hoffman & Spitzer, *supra* note 33, at 73, refer to the assumption of clearly delineated property rights as one of a “costless court system.”

³⁶ For example, it has been noted that the concept of transaction costs is poorly defined in the literature and can be used either narrowly to refer to the costs of negotiating, drafting, and enforcing contracts, or broadly to refer to virtually any factor which causes a market economy to diverge from perfect efficiency. See Victor P. Goldberg, *Production Functions, Transaction Costs and the New Institutionalism*, in *Issues in Contemporary Microeconomics* (George Feiwel ed. 1984); Carl Dahlman, *The Problem of Externality*, 22 J. Law & Econ. 141 (1979). I use the term in the narrow sense.

³⁷ Coase, *supra* note 32, at 15. In this sense, transaction costs are distinguishable from

For present purposes, the magnitude of transaction costs can be seen as primarily a function of several variables largely independent of the nature of the legal regime:³⁸ the difficulty of identifying the parties who may wish to exchange or modify property rights; the number of parties who will have to enter into the contract in order to make it effective; whether the relationship between the parties is "discrete" (one shot) or "relational" (long term); and whether one of the parties who wishes to sell or acquire property rights is in the position of a monopolist vis-à-vis the others.³⁹ The more difficult it is to identify the parties to the exchange, the higher the search costs that must be incurred before entering into a contract. The larger the number of parties, the more complicated the contract must be, and the more likely it becomes that free-rider or holdout problems will develop.⁴⁰ The more relational the situation between the parties, the more likely it becomes that the parties must provide for long-term monitoring, enforcement, or adjustment mechanisms, and the more likely it becomes that one or more parties will bargain strategically in order to influence the future course of dealings. Finally, if one of the parties is in the position of a monopolist vis-à-vis the others, the more likely it becomes that this party will hold out or otherwise bargain strategically in order to obtain a disproportionate share of the gains from trade.⁴¹

other costs that may interfere with the exchange or modification of property rights, such as the costs of gathering information about production or consumption functions and the costs of determining entitlements.

³⁸ This is not to say that legal rules such as the law of contracts will not affect transaction costs. For example, I surmise that mechanical rules of contract law—such as the mirror image rule of offer and acceptance, the doctrine of consideration, the Statute of Frauds, and the parol evidence rule—will tend to lower transaction costs, whereas judgmental rules of contract law—such as implied warranties of merchantability, the doctrine of unconscionability and the like—will tend to raise transaction costs. See Baird & Weisberg, *supra* note 28, at 1229–31. However, consideration of how the mechanical/judgmental distinction may bear on transaction costs (as opposed to entitlement-determination costs) is beyond the scope of the present paper.

³⁹ For a somewhat similar analysis of transaction costs see Thomas Crocker, *Externalities, Property Rights, and Transaction Costs: An Empirical Study*, 14 J. Law & Econ. 451, 461–64 (1971) (emphasizing "informational" [identification], "contractual" [negotiating], and "policing" [enforcement] costs). For a sampling of works that emphasize the significance of "relational" exchange to the magnitude of transaction costs, see Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J. Law & Econ. 233 (1979); Victor P. Goldberg, *Regulation and Administered Contracts*, 7 Bell J. Econ. 426 (1976); Ian R. Macneil, *The Many Futures of Contracts*, 47 S. Cal. L. Rev. 691 (1974).

⁴⁰ See, for example, A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 Stan. L. Rev. 1075, 1107 (1980); Calabresi & Melamed, *supra* note 27, at 1106–09.

⁴¹ See William M. Landes & Richard A. Posner, *Salvors, Finders, Good Samaritans, and Other Rescuers: An Economic Study of Law and Altruism*, 7 J. Legal Stud. 83, 91 (1978).

Entitlement-determination costs, in contrast to transaction costs, are the resources that must be expended in order to establish who has the property right that is the subject of the exchange. A simple illustration of entitlement-determination costs is provided by the sale of the proverbial Blackacre in fee simple. B can purchase Blackacre from A only if A has something called "title." In order to establish that A has title to the property, some trained expert—a lawyer or the employee of an abstract or title insurance company—must examine A's deed (if any) and the chain of title, and then pass judgment on whether A has marketable title to Blackacre. If the title examination process reveals a "cloud" on A's title, A (or B) may have to go to court and litigate the question whether A has title. The costs incurred in the process of satisfying B (or B's lender) that A has title to Blackacre are entitlement-determination costs.

For present purposes, the magnitude of entitlement-determination costs can be seen as primarily a function of whether the rules for determining property rights are mechanical or judgmental.⁴² Mechanical rules—such as the law of intentional trespass—are predictable and relatively inexpensive to apply: generally speaking, they can be applied by laymen with little or no input from lawyers or judges. (This is probably the principal reason why the tax code, which relies on large-scale compliance by individuals not trained in the law, consists largely of mechanical rules.⁴³) In contrast, judgmental rules—such as the law of intentional

⁴² Other factors are also clearly relevant, such as whether esoteric factual information must be developed; whether a government certificate or license must be obtained; and whether the rules are simple or complex (see note 43 *infra*). In the title search context, for instance, the applicable rules—the first-in-time principle as modified by recording statutes and various rules of construction—are largely mechanical. However, the title search process requires the gathering of esoteric information (contained in the public records office or in a title plant) and the rules involved, although mechanical, are in their totality fairly complex. Thus, laymen must usually incur the expense of hiring a lawyer or an abstract or title insurance company to determine the question of title. Nevertheless, it is striking how rarely the system leads to litigation: virtually all problems that arise can be resolved by purchasing title insurance or by renegotiating the terms of sale to give account to uninsurable risks. Thus, although positive entitlement-determination costs are involved, they are kept low by the mechanical nature of the rules, and hence they do not appreciably interfere with a functioning real estate market.

⁴³ This is not to say that the tax code consists of *simple* rules. Indeed, it is a familiar complaint that the tax system has grown too complex to be self-administering, and should be simplified. The mechanical/judgmental distinction, however, is different from (and indeed cuts across) the simple/complex distinction. Moreover, I would argue that whether a rule is mechanical or judgmental is more critical to the magnitude of entitlement-determination costs than whether it is simple or complex (although obviously simple-mechanical rules would be the cheapest and complex-judgmental would be the most expensive). For example, even though the tax system may be too complex for many laymen to understand, it is still sufficiently mechanical that accountants and bookkeepers can (and do) fill out many tax

nuisance—are unpredictable and relatively expensive to apply. Judgmental rules require a large input of legal advice and possibly even a judicial trial (or legislative or administrative action) before the assignment of property rights can be established. There is, however, another side to the distinction between these rules. Mechanical rules, being rigid and inflexible, may often produce results that, unless subsequently modified by the affected parties, are perceived as being unjust, unfair, or inefficient. On the other hand, although judgmental rules are more expensive, they are also inherently flexible, and thus can be manipulated by courts to achieve results which are “just,” “fair,” or “efficient.”⁴⁴

The reasons why transaction costs must be zero in order to achieve the Coasian ideal of universal market solutions to resource use disputes should be fairly obvious. The gains from trade obtainable from any exchange or modification of property rights are limited. If the costs of identifying the affected parties, bargaining to an agreement, drafting a contract, and providing for enforcement of the contract are greater than the expected gains, then no exchange of property rights will take place.

The reasons why entitlement-determination costs must be zero for the Coase theorem to hold are analogous, and they are essentially the same as those given to explain why all litigation is not settled out of court.⁴⁵ To be sure, uncertainty about who holds the property right is not invariably fatal to an agreement. If the parties share the same estimate of the probability of who holds the right, and the same preference for risk, then positive entitlement-determination costs should not matter—in theory, the 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. However, if the parties differ in their estimate of the probability of who holds the right, or in their preference for risk, then there may be no range of bid and asked prices within which they can agree on an exchange.⁴⁶ In these circumstances, if there is to be any exchange or

returns and can (and do) provide a great deal of tax advice. This is a far cry from the situation which would exist under a simple judgmental rule, such as a rule requiring each taxpayer to pay a “fair” or a “reasonable” portion of his income to the government as a tax. Such a rule would bring on the lawyers in droves.

⁴⁴ For a similar analysis, advanced in the context of a consideration of per se rules and rules of reason in antitrust law, see Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 *Yale L. J.* 213, 240–42 (1979).

⁴⁵ See Richard A. Posner, *Economic Analysis of Law* 434–41 (2d ed. 1977); Patricia Munch Danzon & Lee A. Lillard, *Settlement Out of Court: The Disposition of Medical Malpractice Claims*, 12 *J. Legal Stud.* 345 (1983) (citing additional sources).

⁴⁶ In particular, the defendant’s estimate of the expected award must be smaller than the plaintiff’s estimate of the expected award. If the defendant’s estimate of the expected award

modification of property rights, the parties must expend resources on litigation (or other forms of collective resolution, such as political lobbying) to reduce the disparity between their assessments of the assignment of property rights. The very need to expend these resources, however, will mean that certain potentially optimizing agreements will never be reached, because the gains from trade will be less than the costs of litigation (or other forms of collective resolution). In other words, even in a situation where transaction costs are low relative to the gains from trade, high entitlement-determination costs may independently frustrate the achievement of an ideal allocation of resources.⁴⁷

Putting these two analytically distinct categories of costs together, one can easily determine the pattern that should emerge from a common-law system that (we may assume by hypothesis) seeks to fashion legal rules promoting economic efficiency.⁴⁸ First, one would predict that when transaction costs are low, such a legal system would tend to adopt mechanical entitlement-determination rules. Mechanical rules entail lower entitlement-determination costs than judgmental rules, and coupling low transaction costs with low entitlement-determination costs should maximize mutually beneficial exchange or modification of property rights. But when transaction costs are high, market exchange is unlikely to take place, regardless of the choice of entitlement-determination rule. In these circumstances, the economically efficient choice will depend on a comparison of two variables: the increase in entitlement-determination costs entailed by a shift from a mechanical to a judgmental rule versus the potential efficiency gains from allowing the court (or some other collective decision maker) to exercise discretion in resolving the dispute, rather

is *larger* than the plaintiff's, an out-of-court settlement will be reached rather quickly. See Posner, *supra* note 45, at 436.

⁴⁷ Of course, simply because positive entitlement-determination costs prevent certain potentially advantageous agreements from being negotiated, this does not mean that the decision to forgo litigation in favor of the status quo is inefficient. Entitlement-determination costs, like transaction costs, are "real" costs and should not be incurred unless they are justified by the expected returns. Compare Harold Demsetz, *The Exchange and Enforcement of Property Rights*, 7 J. Law & Econ. 11 (1964) (making a similar point with regard to transaction costs).

⁴⁸ For a partial anticipation of the general thesis advanced here, see Posner, *supra* note 45, at 39–40 (contrasting "unqualified" right to exclude trespasses and "qualified" right to exclude other intrusions such as engine sparks and suggesting that transaction costs explain the difference in the law's treatment of these cases). More generally, many authors have stressed the relationship between clear baseline rules and the facilitation of consensual exchange and modification of property rights. See, for example, Richard A. Epstein, *Notice and Freedom of Contract in the Law of Servitudes*, 55 S. Cal. L. Rev. 1353 (1982); James M. Buchanan, *Politics, Property, and the Law: An Alternative Interpretation of Miller et al. v. Schoene*, 15 J. Law & Econ. 439, 452 (1972).

than adhering to whatever solution is dictated by a mechanical rule. If the magnitude of the latter is larger than that of the former (which in many situations I suspect it would be), then in high-transaction-cost situations it will be economically efficient for a legal system to adopt judgmental entitlement-determination rules.

In principle, these considerations are easy to apply to the law of trespass and nuisance. Trespass is clearly a mechanical entitlement-determination rule, and thus one would expect the law of trespass to apply to disputes with low transaction costs. Nuisance, under either the Restatement formulation or the doctrinal obscurantism and inconsistency of the cases generally, is clearly a judgmental entitlement-determination rule. Hence, one would expect the law of nuisance to apply to disputes characterized by high transaction costs.

Testing this predicted relationship is another matter, however. It will not do simply to compare reported cases involving trespass and nuisance to see whether they involve high or low transaction costs. If low-transaction-cost trespasses are more likely to be settled than high-transaction-cost trespasses (as the theory would suggest), then reported trespass decisions should contain a disproportionate number of high-transaction-cost cases. On the other hand, if low transaction costs make it easier not only to settle cases but also to engage in litigation (for example, because of the collective-action problems of assembling large numbers of plaintiffs or defendants, even with devices such as class actions), then reported nuisance cases should contain a disproportionate number involving low transaction costs—especially since judgmental entitlement-determination rules will tend to frustrate the settlement of low-transaction-cost disputes. Thus, an examination of reported trespass and nuisance decisions probably would not accurately reflect the underlying sample of controversies.

Given this state of affairs, there may be only one way of testing the predicted relationship, short of devising some method of sampling the underlying universe of disputes directly. This is to examine the common-law rules for determining the respective spheres of trespass and nuisance. If these “threshold rules” differentiate, at least crudely, between high-transaction-cost and low-transaction-cost situations, then they provide at least partial corroboration of the model. How then do common-law courts decide whether a particular intrusion is subject to the law of trespass or of nuisance?

III. COMMON-LAW THRESHOLD TESTS

Four distinct threshold tests applied by common-law courts to delimit the sphere of trespass from that of nuisance can be identified. Although

each test has emerged at a different time in history, once having emerged none has been completely supplanted by its successors. Indeed, all four of these tests are still being invoked, either alone or in combination, in modern judicial decisions.⁴⁹

The first efforts to distinguish between trespass and nuisance date from the time of the Year Books. There were then three primary forms of recourse for intrusions on land:⁵⁰ the various real actions, most prominently the assize of novel disseisin; trespass *quare clausum fregit*,⁵¹ a variant of trespass *vi et armis*; and the assize of nuisance. The distinction between trespass and nuisance depended on where the act giving rise to the intrusion occurred. If the defendant's act (short of physical ouster amounting to disseisin) occurred on the plaintiff's land, then the appropriate action was in trespass. If, however, the defendant's act occurred on the defendant's own land, then the proper action was in nuisance. "Thus, to go on the plaintiff's land and demolish a weir was a trespass which gave rise to the action of trespass: to stay on your own land and demolish a weir to the hurt of the plaintiff was a nuisance for which the assize of nuisance was the proper remedy. Nuisance could never be committed on the plaintiff's land: an act done on the plaintiff's land would be disseisin or trespass according to the circumstances."⁵²

After the assize of nuisance fell into disuse and was, for all practical purposes, replaced by the action on the case for nuisance, a second test for differentiating between trespass and nuisance arose.⁵³ This was based on the distinction understood to characterize the difference between trespass *vi et armis* and trespass on the case generally: that between "direct" and "indirect" harms. As one eighteenth-century case put it: ". . . the one must be brought for a wrong done immediately to the person or his possession, the other for a consequential damage. . . . If logs are laid in the highway by which any person is hurt, he must bring case; but if the

⁴⁹ For example, in *Southport Corp. v. Esso Petroleum Co.*, [1954] 3 W.L.R. 200, 209, Lord Denning appeared to invoke the earliest of the common-law tests, asserting that "[i]n order to support an action for trespass to land the act done by the defendant must be a physical act done by him directly on to the plaintiff's land." In an article published in 1931, one commentator had stated, obviously prematurely, that "we hear no more of" this distinction in the reports after the seventeenth century. P. H. Winfield, *Nuisance as a Tort*, 4 Cambridge L. J. 189, 202 (1931).

⁵⁰ For a concise summary of the development of all three forms of recourse, see James Barr Ames, *Lectures on Legal History and Miscellaneous Essays* 19 (1913). See also A. W. B. Simpson, *An Introduction to the History of the Land Law*, ch. 2 (1961) (history of real actions); J. H. Baker, *An Introduction to English Legal History*, ch. 20 (2d ed. 1979) (history of nuisance).

⁵¹ Trespass "because he broke the close."

⁵² F. H. Newark, *The Boundaries of Nuisance*, 65 Law Q. Rev. 480, 481-82 (1949).

⁵³ Winfield, *supra* note 49, at 201-2.

hurt is by logs thrown at the person, he must bring trespass *vi et armis*."⁵⁴ Under this test, it was no longer true that the plaintiff could sue only in nuisance for any act performed on the defendant's own property. For example, if the defendant, while not leaving his own land, caused "filth and stinking water" to flow onto the plaintiff's land, this could be considered a direct injury, and hence a trespass rather than a nuisance.⁵⁵

The distinction between direct and indirect harms continues to play a role, at least verbally, in differentiating trespass and nuisance in English law, as well as in many American jurisdictions. But taken literally, the test has difficulty accounting for the judicial system's actual categorization of intrusions. Take, for instance, interference in the form of noise. The generation of excessive noise is universally regarded as subject to the law of nuisance rather than trespass,⁵⁶ yet it is hard to see how this result follows from the direct versus indirect criterion. If pouring "stinking water" onto the plaintiff's land is a direct injury, then why is propelling sound waves at the plaintiff's land not a direct injury? The same can be said about shining light. Complaints about intrusions in the form of unwanted light are thought to give rise to an action for nuisance,⁵⁷ but why is the hurling of electromagnetic waves at the plaintiff's land not a direct rather than an indirect injury?

The difficulty of squaring the direct versus indirect harm distinction with the actual categorization of intrusions eventually gave rise, at least in many American jurisdictions, to a third threshold test: one based on the physical dimensions of the agency or thing that invades the plaintiff's property. According to this test, "[t]respass comprehends an actual physical invasion by tangible matter. An invasion which constitutes a nuisance is usually by intangible substances, such as noise or odors."⁵⁸ This dimensional test seems to reflect the actual categorization of intrusions better than the direct versus indirect harm criterion. If the defendant blasts rocks onto the plaintiff's land, or fires a shotgun across the plaintiff's land, this would constitute a trespass under the dimensional test: rocks and shotgun pellets are particles which, at least once they come to rest, are visible to the naked eye. In fact, these sorts of invasions are generally

⁵⁴ *Reynolds v. Clerk* (1725) 8 Mod. 272, 276; 88 Eng. Rep. 193, 196 (Fortescue, J.).

⁵⁵ *Preston v. Mercer* (1656) 145 Eng. Rep. 380 (Ex.). The report says that the court allowed the action in trespass only "after great wavering in opinion and arguings pro & con." *Id.* at 381.

⁵⁶ See, for example, *Wilson v. Interlake Steel Co.*, 22 Cal. 3d 229; 185 Cal. Rptr. 280; 649 P.2d 922 (1982).

⁵⁷ See *Amphitheaters, Inc. v. Portland Meadows*, 184 Or. 336, 198 P.2d 847 (1948).

⁵⁸ *Ryan v. City of Emmetsburg*, 232 Iowa 600, 603 N.W.2d 435 (1982); see generally *Fowler V. Harper & Fleming James, Jr.*, 1 The Law of Torts § 1.23 at 67 (1956).

regarded as trespasses, at least by American courts.⁵⁹ However, smoke, noise, odors, shining light, aesthetic blight, funeral homes, halfway houses, and so forth would be actionable only as nuisances, because they do not involve the invasion of particles which are visible to the naked eye. Here again, the decided cases are usually in accord with what the dimensional test would suggest.⁶⁰ The dimensional test also receives semiofficial recognition in the standard definitions of trespass and nuisance. Trespass is typically said to be an interference with the "exclusive possession" of land; nuisance an interference with its "use and enjoyment."⁶¹ An intrusion that displaces the plaintiff from exclusive possession of his land is almost invariably a tangible thing; less visible particles, while they may interfere with use and enjoyment, will not, in any literal sense, physically displace the plaintiff from occupying "his" space.

Despite an apparent capacity to explain the actual categorization of intrusions, and its tacit recognition in the popular definitions of trespass and nuisance, there are signs of judicial dissatisfaction with the dimensional test.⁶² Perhaps this derives from a belief, consistent with the general run of much modern tort doctrine, that a strict liability standard such as trespass should be reserved for "serious" harms and a balancing or cost-benefit approach such as nuisance limited to less serious harms. Given our understanding of the effects of chemical or radiological exposure, a court which assumes that strict liability should be reserved for serious harms is apt to be impatient with a doctrine that treats a neighbor who cuts across the lawn more severely than one who emits toxic gases or radiation. Another and more cynical explanation—but one that actually finds considerable support in the facts of the decided cases⁶³—is that courts confronted with sympathetic plaintiffs have bent the traditional definitions of trespass to give them the benefit of a longer statute of limitations.

⁵⁹ See *Ashville Const. Co. v. Southern R. Co.*, 19 F.2d 32, 34 (4th Cir. 1927) (rocks blasted onto plaintiff's land); *Herrin v. Sutherland*, 74 Mont. 587, 241 P. 328 (1925) (shotgun fired over surface of plaintiff's land); *Digirolamo v. Philadelphia Gun Club*, 371 Pa. 40, 89 A.2d 357 (1952) (shotgun fired at plaintiff's land).

⁶⁰ The classic illustration of this is provided by blasting cases holding that injuries caused by rocks thrown by the concussion give rise to liability for trespass, whereas injuries caused by vibrations from the concussion do not. See *Gossett v. Southern Ry. Co.*, 115 Tenn. 376, 89 S.W. 737 (1905); *Booth v. Rome, W. & O.T. R. Co.*, 140 N.Y. 267, 35 N.E. 592 (1893); *Benner v. Atlantic Dredging Co.*, 134 N.Y. 156, 31 N.E. 328 (1892).

⁶¹ See Restatement (Second) of Torts § 821D, comment d. (1979); Donahue, Kauper, & Martin, *supra* note 12, at 288.

⁶² For a collection of recent decisions, see Annot., 2 A.L.R.4th 1055 (1980).

⁶³ This was the situation both in the leading Oregon case, *Martin v. Reynolds Metals Co.*, 221 Or. 86 (1959), 342 P.2d 790 (1959), cert. denied, 362 U.S. 918 (1960), and in a prominent Alabama case, *Borland v. Sanders Lead Co.*, 369 So. 2d 523 (Ala. 1979).

For whatever reason, there is an emerging fourth threshold test for the division between trespass and nuisance, one based on a distinction between a "mere" interference with use and enjoyment—which is governed by nuisance—and an interference with use and enjoyment so severe that it amounts to a "constructive" interference with exclusive possession—which is governed by trespass.⁶⁴ For example, in *Martin v. Reynolds Metals Co.*,⁶⁵ the court held that the plaintiff, forced to abandon his farm because of the invasion of invisible toxic gases, could maintain an action in trespass. The court explained: "If, then, we must look to the character of the instrumentality which is used in making an intrusion upon another's land, we prefer to emphasize the object's energy or force rather than its size. Viewed in this way we may define trespass as any intrusion which invades the possessor's interest in exclusive possession, whether that intrusion is by visible or invisible pieces of matter or by energy which can be measured only by the mathematical language of the physicist."⁶⁶

This fourth threshold test is difficult to square with the traditional substantive law of trespass. First, as courts applying this approach have recognized, an intrusion that does not literally deprive the plaintiff of exclusive possession can be said to do so constructively only if it does substantial damage to the property.⁶⁷ Thus, the "modern theory of trespass," as one court called it,⁶⁸ requires a showing of substantial harm, much like the law of nuisance. Second, as the *Martin* court conceded,

⁶⁴ The development of the fourth test for distinguishing between trespass and nuisance is thus reminiscent of the development of the doctrine of constructive eviction in landlord-tenant law. At common law, a tenant had an implied covenant of "quiet enjoyment," but did not have an implied warranty of habitability. Quiet enjoyment was originally understood to mean that the landlord could not physically oust the tenant during the term of the lease. See 1 American Law of Property § 3.53 (A. James Casner ed. 1952). Gradually, however, courts expanded this notion, holding that when the landlord committed acts that seriously interfered with the value of the leasehold, then the tenant would be deemed to have been "constructively evicted" in violation of the implied covenant of quiet enjoyment. See *Bruckner v. Helfaer*, 197 Wis. 582, 222 N.W. 790 (1929); *Phyfe v. Dale*, 72 Misc. 383, 130 N.Y.S. 231 (App. Term 1911). The notion that interference with the value of a leasehold, if sufficiently severe, can amount to an interference with a covenant of quiet enjoyment is analogous to the notion that interference with the use and enjoyment of land, if sufficiently severe, can amount to a trespass. There is one sense, however, in which the analogy is incomplete. In order to invoke the doctrine of constructive eviction, the tenant typically must vacate the leasehold. See R. Schoshinski, American Law of Landlord and Tenant § 3.5 (1980). The courts that have held that interference with use and enjoyment can amount to a "constructive" trespass have not, however, required that the plaintiff vacate the premises in order to maintain the action. See *Borland v. Sanders Lead Co.*, 369 So. 2d 523 (Ala. 1979).

⁶⁵ 221 Or. 86, 342 P.2d 790 (1959), cert. denied, 362 U.S. 918 (1960).

⁶⁶ 221 Or. at 94, 342 P.2d at 794.

⁶⁷ *Borland v. Sanders Lead Co.*, 369 So. 2d 523, 527 (Ala. 1979).

⁶⁸ *Id.*

deciding what kinds of interferences amount to a constructive denial of possession entails a “weighing process, similar to that involved in the law of nuisance.”⁶⁹ In other words, the fourth test appears to introduce, through the threshold definition of what constitutes a trespass, a judgmental standard very much like the rule of nuisance.

If this portrayal is accurate, then those courts which accept the fourth test are faced with a dilemma. On the one hand, they can maintain a distinction between “traditional” forms of trespass and “modern trespass.” The former would require no showing of harm and would be governed by a rule of strict liability; the latter would require a showing of substantial harm and would be governed by a weighing approach similar to the law of nuisance. On the other hand, these courts could simply dispense altogether with the traditional trespass doctrine, thereby subjecting all forms of interference to a judgmental rule like nuisance. So far, the courts adopting the fourth test have opted for the first alternative.⁷⁰ Yet having done so, they now must come up with some *new* threshold test to distinguish between those sorts of intrusions governed by the mechanical standard of traditional trespass and those governed by the judgmental standard of modern trespass. Thus, the extension of the traditional definition of trespass to include constructive interference with exclusive possession simply poses again the original question how we distinguish between trespass and nuisance. In the final analysis, the change of labels does not modify the boundary between mechanical and judgmental rules for determining a landholder’s right to exclude intrusions by others.⁷¹

To what extent do these various common-law threshold rules differentiate between situations characterized by low or high transaction costs? I think that all three of the traditional tests tend to isolate, at least crudely, disputes characterized by low transaction costs. To be sure, the tests do not directly inquire into transaction costs, nor do they inevitably differentiate intrusions along transaction-cost lines. But the transaction-cost/entitlement-determination-cost model does not demand that the common law embrace a rule that always governs intrusions by trespass when market transactions are feasible and by nuisance when they are not. Such a

⁶⁹ 221 Or. at 96, 342 P.2d at 795.

⁷⁰ See *Reter v. Talent Irrigation District*, 258 Or. 140, 482 P.2d 170, 172 (1971) (refusing to apply the balancing test of *Martin* to a case falling within “the traditional pattern of trespass”); *Borland v. Sanders Lead Co.*, 369 So. 2d 523 (Ala. 1979) (dictum) (“direct” invasions still subject to liability regardless of whether there is substantial harm).

⁷¹ This is especially apparent in *Borland*, where the court stated that for direct invasions “actual damages need not be shown” and, if the invasion is intentional, strict liability applies; whereas for indirect invasions there must be “substantial damages to the res” and an invasion that affects an interest in the exclusive possession of property. 369 So. 2d at 529.

rule would itself dramatically increase entitlement-determination costs, because of the judgmental character of deciding case by case whether market transactions are feasible. On the contrary, the model suggests that, in order to preserve the advantages of a mechanical entitlement-determination rule, the law would gravitate toward a *mechanical* threshold test for deciding whether to apply trespass or nuisance. The model further suggests that the price of a mechanical threshold test will be a somewhat imperfect fit between the choice of entitlement-determination rule and the magnitude of transaction costs.

The earliest rule, based on where the defendant's act occurs, is highly mechanical and delineates a category of controversies usually characterized by low transaction costs: those arising when the defendant personally enters onto the plaintiff's land. In this sort of situation, it should not be hard to identify the parties to the dispute. Certainly, identification should be easy where the dispute is between neighboring landholders. Although it may be difficult for the landholder to make an identification where the intruder is a stranger,⁷² it should not be that difficult for the intruder to identify with whom he must deal—the person in possession, the landholder. Since the law gives the landholder an unqualified right to exclude, the intruder should know that he will have to initiate negotiations with the landholder or face virtual certainty of legal expulsion. In addition, the number of parties is apt to be small. Generally speaking, there will be only one or at most a few possessors of land, and the possessor can deal with intruders or potential intruders one at a time.⁷³ Finally, any actual entry by an intruder poses few problems of monitoring, so that legal enforcement should not, as a rule, be difficult.⁷⁴ Unfortunately, the

⁷² In the context of discussing decisions involving the use of spring guns to protect property from intruders, Richard Posner has stated that "the cost of transacting is normally prohibitive. It is not feasible for the landowner to contract with the potential trespasser or the potential trespasser with the landowner." Richard A. Posner, *Killing or Wounding to Protect a Property Interest*, 14 J. Law & Econ. 201, 224 (1971). Granted, it may be prohibitive for the landholder to negotiate with strangers intent on trespassing on his or her land. But it should not be that difficult for putative trespassers to initiate negotiations with the landholder, as suggested by the relative ease with which hunters can obtain the permission of farmers to hunt on their land. Compare Posner, *supra* note 45 (recognizing low transaction costs when a neighbor trespasses on the land of another).

⁷³ In this connection, it is significant that the action for trespass is limited to possessors of land rather than those with nonpossessory interests. See note 8 *supra*. A potential trespasser will usually have little difficulty identifying the possessor of land: the possessor is the occupant or the one who has the right to occupy the land as against all others. See Restatement (Second) of Torts § 157 (1965). Thus, limiting the action of trespass to possessors helps to minimize the difficulty of identifying the parties to the dispute and hence to minimize transaction costs.

⁷⁴ See John Umbeck, *A Theory of Contract Choice and the California Gold Rush*, 20 J. Law & Econ. 421, 424 (1977).

test is underinclusive, for it omits a large range of intrusions where, while there is no personal entry by the defendant, the transaction costs of reaching a negotiated solution should be small.

The second threshold test, based on the distinction between direct and indirect injury, also appears on its face to invoke a mechanical standard. In practice, however, the notion of "directness" has proven to be quite slippery. The firing of bullets and blasting of rocks onto the plaintiff's property have been held to constitute direct injuries, but the shining of light or blaring of noise have been deemed to be indirect injuries. The concept of "directness" seems therefore to incorporate an unstated judgmental gloss. The direct/indirect distinction also does fairly well in capturing low-transaction-cost situations, but again has its limitations. Insofar as many direct injuries will involve a personal invasion by the defendant onto the plaintiff's property, the distinction covers the same ground as the first test. In addition, the directness test will capture certain interferences originating outside the plaintiff's property—such as intentional flooding or blasting—that also probably entail low transaction costs. Yet if we take the direct-interference criterion literally, it would extend to such phenomena as vibrations, noise, and shining light—interferences that, at least in populated areas, are apt to involve the difficulties typical of high transaction-cost settings: problems of identification, multiple parties, and the need for long-term monitoring or enforcement mechanisms. Thus, the threshold test either breaks down into a judgmental rule or is overinclusive.

The third common-law threshold test, that based on the dimension of the particles involved in the intrusion, may actually do the best job of mechanically singling out interferences characterized by low transaction costs. To be sure, if the dimensional test were understood to mean that the invading material must satisfy some vague standards such as "substantiality," it would degenerate into indeterminacy. (Must it be bigger than a cannonball? Bigger than a bullet?) But the implicit understanding seems to have been that trespass is reserved for substances which, when stationary, are visible to the naked eye.⁷⁵ This is a highly mechanical standard which can almost always be applied without recourse to litigation. Invasion by rocks is clearly a trespass; invasion by colorless gas is clearly not. The only borderline cases would involve dense smoke containing particulate matter such as soot, which may or may not contain individual particles visible to the eye.

In terms of singling out interferences characterized by low transaction

⁷⁵ See *Martin v. Reynolds Metals Co.*, 221 Or. 86, 93, 342 P. 2d 790, 793 (1959), cert. denied, 362 U.S. 918 (1960).

costs, the virtues of the dimensional test reside, first of all, in reducing uncertainties about the identity of the parties to the dispute. The source of things large enough to be visible to the naked eye—buildings, cars, boulders, flooding, and so forth—is relatively easy to trace, and hence both the party responsible for the intrusion and the parcels subject to the intrusion should be easy to match. Moreover, since visible things are generally not carried for long distances, disputes over such intrusions are likely to involve smaller numbers of parties—typically adjacent landholders. Finally, in contrast to interferences involving invisible agents—gas, noise, halfway houses, and so forth—interferences involving visible things are probably more likely to involve problems that can be solved without the need for some long-term monitoring or enforcement mechanism. Admittedly, the dimensional test is somewhat underinclusive—it is easy to think of cases involving intangible invasions that would not entail difficulties or identification, large numbers, or problems of contractual enforcement. But the lack of fit may be less severe here than it is in the case of the two earlier common-law standards.

The only threshold test that does not differentiate between high- and low-transaction-cost situations with any degree of success is the “modern theory” espoused by *Martin v. Reynolds Metals Co.* and the decisions following it. The distinction between a constructive interference with exclusive possession and an interference with mere use and enjoyment of property is a judgmental rather than a mechanical test, and thus from the outset it tends to frustrate the objective of facilitating the exchange and modification of property rights. Moreover, there would seem to be no correlation between invasions which constructively interfere with exclusive possession and low transaction costs. Air pollution—such as the fluoride gas involved in *Martin*—may constructively “oust” the plaintiff from possession, but may also involve large numbers of people; can present difficult problems in identifying those who are the source or who are affected by it; and may well require as part of its resolution some long-term monitoring or enforcement mechanism.⁷⁶

In sum, the common-law threshold tests for determining the respective spheres of trespass and nuisance provide at least some corroboration for the transaction-cost/entitlement-determination-cost model. The dimensional test probably does the best job of differentiating between high- and low-transaction-cost situations, while preserving the character of trespass as a highly mechanical entitlement-determination rule. Significantly, without ever formally renouncing earlier tests, the common law has tended to

⁷⁶ See *Boomer v. Atlantic Cement Co.*, 26 N.Y.2d 219, 225–26, 257 N.E.2d 870, 873, 309 N.Y.S.2d 312, 316–17 (1970).

evolve in the direction of the dimensional standard. Certain modern decisions, which purport to modify the dimensional test in favor of the idea of interference with constructive exclusive possession, are not inconsistent with this conclusion. In practice, these decisions require a new threshold test to differentiate between "traditional" and "modern" trespass, and there is authority to the effect that courts will adopt one of the three traditional common-law tests to perform this function.⁷⁷ Thus, even though there have been expressions of dissatisfaction with the mechanical threshold tests, they continue to determine the dividing line between mechanical and judgmental standards for establishing the landholder's right to exclude. The seemingly arbitrary character of the rule has persistent features that render it both desirable and attractive.

IV. OTHER APPLICATIONS

Even if the transaction-cost/entitlement-determination-cost model can account for the respective spheres of trespass and nuisance, it does not necessarily follow that it offers the only explanation for the persistence of these two different types of rules for the determination of property rights.⁷⁸ Clearly, the model's plausibility would be enhanced if it helped explain other issues involving the determination of property rights. In this section, I will attempt to suggest some other ways in which the potential for contractual exchange or modification of property rights may help to account for the nature of entitlement-determination rules.

The right to exclude suggests several situations where the mechanical standard of trespass seems to be required, but in fact the law adopts a judgmental rule. Airplane overflights provide a particular striking illustration of this sort of "exception" to the ordinary rules. Under a literal

⁷⁷ *Borland v. Sanders Lead Co.*, 369 So. 2d 523 (Ala. 1979) (direct versus indirect test).

⁷⁸ An alternative explanation, suggested to me by readers of this paper, is based on a distinction between acts of pure expropriation of resources (which are or should be subject to trespass) and acts in which resources are taken as a byproduct or spillover from some other form of productive activity (which are or should be governed by nuisance). However, whatever attractions this distinction may have as a normative matter, I am not convinced that it provides an adequate account of the division established by the common law. Take for instance the two decisions cited as examples in Section I *supra*. The case where the landowner's agents repeatedly drive trucks on the neighbor's property could be described just as easily as a "spillover" from a form of productive activity as it could be described as a form of expropriation, and yet it is clearly governed by trespass. On the other hand, the case where the factory owner decides to operate at night, even though he knows this will disturb the sleep of others, could be described as an expropriation of a resource (peace and quiet) belonging to others just as easily as a spillover, and yet it is clearly governed by nuisance. Thus the distinction between "thievery" and "mere external effects" is too indeterminate to account for the dividing line established in practice.

application of the *ad coelum* rule, an overflight would constitute a trespass under any of the three traditional threshold tests: it involves an actual, direct, and visible entry into the column of space belonging to the surface owner.⁷⁹ Acquisition of the appropriate easements to permit an overflight, however, would obviously entail monumental transaction costs. The owner of the airplane would have great difficulty identifying the various parcels of property traversed by the flight path; the number of parties with which agreements would have to be negotiated would be immense; and the parties would face formidable difficulty detecting and proving violations. The model clearly suggests that the mechanical entitlement-determination rule of trespass is inappropriate in this context.

The common law could have solved the problem of overflights by simply tinkering with the *ad coelum* rule. Trespass (unlike nuisance) is available only to one who is a "possessor" (as opposed to merely a nonpossessing owner) of land, and courts could have held that although the holder of the surface rights "owns" up to the heavens, he does not possess any more of the column of space than he has occupied (for example, by building a skyscraper).⁸⁰ Thus, the surface owner would be left with an action for nuisance, which would ultimately fail because of the absence of significant harm. For whatever reason, the common law did not tend to adopt this neat solution, preferring instead an *ad hoc* exception for overflights. As the Restatement dutifully notes: "Flight by aircraft in the air space above the land of another is a trespass if, but only if, (a) it enters into the immediate reaches of the air space next to the land, and (b) it interferes *substantially* with the other's *use and enjoyment* of his land."⁸¹ Predictably, in a high-transaction-cost situation, the mechanical entitlement-determination rule of trespass has been replaced by a judgmental standard that looks very much like the law of nuisance.

Another exception, again consistent with the model, involves unintentional trespasses. Suppose A and B are driving cars that collide on a public highway, and the force of the collision propels B's car onto C's land, damaging the lawn and bushes. This, like most problems involving traffic accidents, is a high-transaction-cost situation. Advance negotiations between B and C are out of the question, since the costs to B of identifying and negotiating with all possessors of land onto which he may

⁷⁹ See *Burnham v. Beverly Airways*, 311 Mass. 628, 42 N.E.2d 575 (1942). Compare *United States v. Causby*, 328 U.S. 256, 260-61 (1946) (seeking to avoid this conclusion by declaring that the *usque ad coelum* doctrine "has no place in the modern world").

⁸⁰ See *Hinman v. Pacific Air Transport*, 84 F.2d 755, 758 (9th Cir. 1936); Epstein, *supra* note 20, at 81.

⁸¹ Restatement (Second) of Torts § 159 (2) (1965) (emphasis added).

some day be forced to drive his car would be prohibitive.⁸² Thus in this situation, the model would predict that the law would apply a judgmental rather than a mechanical entitlement-determination rule.

In fact, the modern trend has been to reject a mechanical rule when the intrusion is neither intended nor known to be substantially certain to follow from the defendant's act, even though historically all trespasses were governed by one standard.⁸³ According to the Restatement, for example, an unintentional trespass is actionable only if the invasion causes "harm" and only if the defendant acted "recklessly or negligently, or as a result of an abnormally dangerous activity."⁸⁴ Standards like "recklessness" and "negligence" (or "abnormally dangerous activity" for that matter) involve judgmental rather than mechanical entitlement-determination rules. Hence, as the model would predict, trespasses that tend to involve high transaction costs are governed by judgmental entitlement-determination rules.⁸⁵

The converse situation also exists: cases in which one might assume that a judgmental entitlement-determination rule would apply, yet which are in fact governed by a mechanical standard such as strict liability. One illustration of this is innocent building encroachments—cases in which the defendant erects a structure in the belief that it is on his own land, but it turns out to be on someone else's. At the time of construction, the encroachment is not intentional, and hence one might suppose that the intrusion would be subjected to the judgmental rule of unintentional trespass. Nevertheless, both the case law⁸⁶ and the Restatement⁸⁷ are quite clear in treating innocent building encroachments as an intentional trespass, subject to a rule of strict liability.

⁸² Likewise, the costs to C of identifying and negotiating with all drivers who might someday drive on his land would be prohibitive.

⁸³ Restatement (Second) of Torts § 165 (1965); Prosser, *supra* note 11, at 63–65.

⁸⁴ Restatement (Second) of Torts § 165 (1965).

⁸⁵ Other "exceptions" to the standard mechanical rule of trespass can be explained in terms of the potential for strategic bargaining created when one or more parties stand in a monopoly or near-monopoly position relative to other parties. I would include within this category such diverse things as the qualified privilege for entry under circumstances of emergency, see *Ploof v. Putnam*, 81 Vt. 471, 71 A. 188 (1908); the privilege for entry by government service workers into migrant labor camps, see *State v. Shack*, 58 N.J. 297; 277 A.2d 369 (1971); the doctrine of easement by necessity or implication, for example, *Adams v. Cullen*, 44 Wash. 2d 502, 268 P.2d 451 (1954); and the grant of the power of eminent domain to private entrepreneurs to allow them to assemble large tracts of land, *Poletown Neighborhood Council v. City of Detroit*, 410 Mich. 616, 304 N.W.2d 455 (1981).

⁸⁶ See *Geragosian v. Union Realty Co.*, 289 Mass. 104, 193 N.E. 726 (1935); *Pile v. Pedrick*, 167 Pa. 296, 31 A. 646 (1895).

⁸⁷ Restatement (Second) of Torts § 164 (1965).

This is consistent with the model. Unlike other sorts of unintentional trespass, building encroachments involve low transaction costs, at least when viewed *ex ante*—before the encroachment takes place. If the builder needs to purchase an additional strip of land from a neighbor, the costs of identification, coordination, and enforcement should all be low. Nor would we expect to find insuperable problems of strategic bargaining here, given that the builder has the options of redesigning or relocating the building or moving elsewhere. Of course, if we view the situation *ex post*, after the encroaching structure is built, there is an obvious potential for strategic bargaining: the neighbor now has a monopoly on something the builder desperately needs—title to the land on which the building sits. But it makes sense to adopt an entitlement-determination rule keyed to the *ex ante* situation. The costs to the builder of acquiring the necessary information to avoid an encroachment are almost certainly quite low relative to the value of the building itself: all he has to do is commission a lot survey before construction begins. Thus, adopting an entitlement-determination rule that treats the builder as if he had knowledge creates a powerful incentive for the builder to make sure he *does* have knowledge. A mechanical rule of strict liability therefore performs two functions here: it has an *in terrorem* effect that induces the builder to find out whether he needs to negotiate with a neighbor, and it provides a baseline principle from which those negotiations can take place.⁸⁸

Another illustration is provided by the common-law doctrine related to straying livestock. The common law did not treat straying livestock as a simple case of intentional trespass, perhaps because the wandering of livestock did not fit neatly within the direct versus indirect threshold test traditionally favored by English courts. Nevertheless, the common law was quite firm in subjecting straying cases to a rule of strict liability similar to the law of intentional trespass.⁸⁹ In fact, the law here was, if anything, more mechanical than ordinary trespass, given the availability of the self-help remedy of distress damage feasant, which allows a landholder to hold intruding animals as security for compensation.⁹⁰ Application of mechanical rules here is predictable, given the nature of disputes

⁸⁸ Although innocent encroachments are uniformly subject to a rule of strict liability, there is a discernible trend toward applying the “balancing of equities” before enjoining the builder to remove the structure. See Annot., 28 A.L.R.2d 679, 705 (1953). To the extent courts follow this approach, they dilute the incentive effects created by a property rule, and increase entitlement determination costs, because of the difficulty of distinguishing between wilful and innocent encroachments.

⁸⁹ Prosser, *supra* note 11, at 496–97.

⁹⁰ See Richard A. Epstein, Charles Gregory, & Harry Kalven, *Cases and Materials on Torts* 567 (4th ed. 1984).

involving straying livestock. Domestic animals such as cattle and sheep are unlikely to stray very far, and identification of the possessory interests with which they are likely to interfere should not be difficult. Moreover, contractual solutions to straying problems (such as an informal agreement to fence) are unlikely to require elaborate enforcement mechanisms. Thus, the use of mechanical entitlement-determination rules renders a common "spillover" problem virtually self-regulating.

To be sure, the fact that a mechanical entitlement-determination rule is appropriate in this context does not resolve the question of which party should have the entitlement. Interestingly, there has been a split in positions, with England and most eastern states adopting a fencing-in rule and many western states adopting a fencing-out rule. The difference can be explained in terms of which baseline rule is likely to require the fewest contractual modifications. Thus, where there are many farmers and few ranchers, a fencing-in rule is appropriate; conversely, when there are many ranchers and few farmers, a fencing-out rule makes more sense.⁹¹ Indeed, as western states have become more cultivated, many have enacted legislation returning to the English rule.⁹²

The extension of the straying livestock cases to other "escaping" substances in *Rylands v. Fletcher*⁹³ provides yet another illustration. *Rylands* has generally been confined to serious, nonrecurring accidents that interfere with interests in land. Ordinarily, these sorts of accidents would be governed by a judgmental rule such as negligence.⁹⁴ However, the doctrine of *Rylands*, at least as it has been applied in England, provides that when such an accident is caused by a "nonnatural" use of land by an adjacent landowner, strict liability governs.⁹⁵ The impulse to apply strict liability in these circumstances may be explained by the model. The fact that *Rylands* cases involve, for the most part, adjacent landowners, limits the problems of identifying parties and the number of disputants and thus normally results in low transaction costs. The requirement that the source

⁹¹ See Donald Wittman, Liability for Harm or Restitution for Benefit? 13 J. Legal Stud. 57, 58 n.3 (1984).

⁹² Prosser, *supra* note 11, at 497.

⁹³ (1865) 3 H. & C. 774, 159 Eng. Rep. 737, rev'd, (1866) L.R. 1 Ex. 265, aff'd in *Rylands v. Fletcher* (1868) L.R. 3 H.L. 330.

⁹⁴ Trespass was thought to be inapplicable in *Rylands* because the invasion was "indirect"; nuisance was inapplicable because the interference was not a continuing one. See William Lloyd Prosser, Selected Topics on the Law of Torts 135-36 (1953). In cases where the invasion was clearly "direct," such as an exploding boiler, trespass would presumably lie, but under modern doctrine it would be an unintentional trespass (because of the absence of prior knowledge), which as we have seen is also governed by a judgmental standard.

⁹⁵ See Newark, *supra* note 52, at 488, and cases collected in W. T. S. Stallybrass, Dangerous Things and the Non-natural User of Land, 3 Cambridge L. J. 376, 393-94 (1929).

of the interference be a nonnatural use is more ambiguous, but perhaps it can be seen as confining the application of strict liability to situations presenting relatively low information costs: if "nonnatural" means something that stands out as a prominent potential hazard, then the parties—or at least the party harboring the potential hazard—should be aware of the need to reach an understanding about preventive or precautionary measures or at least some decision about who should insure against the risk.

There are two problems with the *Rylands* doctrine, however, that help to explain both its uneven reception in America⁹⁶ and its subsequent transformation into a judgmental entitlement-determination rule. First, the limitation of interferences between adjacent landowners was only implicit in the English cases,⁹⁷ and American lawyers (understandably) sought to extend the rule to other situations involving high transaction costs, with at least some success.⁹⁸ Second, even if the concept of "non-natural use"—in the sense of something which stands out as a potential hazard—could be said to delineate a clear set of phenomena against the backdrop of rural nineteenth-century England, it clearly had no easily confined meaning in the context of a rapidly industrializing America. Both of these problems have vitiated almost any utility the doctrine may have had in facilitating private solutions to land use disputes in America. In most states, therefore, the initial response was to reject the doctrine of *Rylands* in favor of the law of negligence.⁹⁹ More recently, the doctrine has grown in acceptance, but only after being transformed into something the Restatement calls liability for "abnormally dangerous activities." As defined by the Restatement, this is not a mechanical rule, but a judgmental rule somewhat along the lines of the law of nuisance.¹⁰⁰ Given that in

⁹⁶ Prosser, *supra* note 11, at 508–09.

⁹⁷ Newark, *supra* note 52, at 488. It is interesting in this regard that it did not occur to anyone in nineteenth-century England to apply the strict liability rule of *Rylands* to bursting dams or conflagrations—both of which probably involve large numbers and hence high transaction costs. See A. W. B. Simpson, Legal Liability for Bursting Reservoirs: The Historical Context of *Rylands v. Fletcher*, 13 J. Legal Stud. 209 (1984). The implicit limitation of *Rylands* to adjacent landowners finds an interesting parallel in the area of conflagrations, where some nineteenth-century courts adopted the position that a landowner would be held liable for a fire that destroyed adjacent property but not for destruction of more remote property. See *Ryan v. New York Central R.R. Co.*, 35 N.Y. 210, 91 Am. Dec. 49 (1866). This doctrine was based on the notion that the more extensive destruction was not foreseeable.

⁹⁸ For an extreme case, see *Siegler v. Kuhlman*, 81 Wash. 2d 448, 502 P.2d 1181 (1972) (applying *Rylands* to a highway accident involving exploding gasoline truck).

⁹⁹ See, for example, *Marshall v. Welwood* (1876) 38 N.J. L. Repts. 339; see generally Prosser, *supra* note 11, at 509.

¹⁰⁰ Restatement (Second) of Torts § 520 (1976). The following factors are listed as being pertinent to determining whether an activity is "abnormally dangerous": the "(a) existence

America the doctrine either was not confined to low-transaction-cost situations, or if so confined was not limited to a set of easily defined circumstances, this development is consistent with what the model would predict.

Turning to issues involving the right to consume or use property, there is also evidence of the transaction-cost/entitlement-determination-cost model at work. For example, much of the doctrine used to resolve conflicts arising when ownership of property is divided among two or more persons can be explained by the model. With respect to concurrent interests—such as tenancies in common or joint tenancies—common-law courts have long been reluctant to arbitrate disputes concerning the use or consumption of property. Instead, courts have followed the rule that any concurrent owner can, at any time and for any reason, petition for partition of the property.¹⁰¹ The partition action is a mechanical entitlement-determination rule, in that the right to obtain partition is virtually absolute—the court will generally entertain no objections or defenses from the other concurrent owners.¹⁰² This is as one would expect, given that the costs of reaching a mutual accommodation among concurrent owners (who are often members of the same family, such as husband and wife or siblings) should be low. Indeed, when the number of concurrent owners gets too large, the law of partition tends to favor the transformation of the pattern of ownership into one where the transaction costs are more manageable.

When the ownership of property is divided over time, however, the common law embraces quite different principles. For example, when ownership of a parcel is divided between a life estate and one or more remainders, the law of partition does not apply to resolve disputes over the use or consumption of the property. Instead, courts apply a judgmental entitlement-determination rule known as the law of waste.¹⁰³ Applica-

of a high degree of risk of some harm to the person, land or chattels of others; (b) likelihood that the harm that results from it will be great; (c) inability to eliminate the risk by the exercise of reasonable care; (d) extent to which the activity is not a matter of common usage; (e) inappropriateness of the activity to the place where it is carried on; and (f) extent to which its value to the community is outweighed by its dangerous attributes. . . . ”

¹⁰¹ 2 American Law of Property § 6.26 (A. James Casner ed. 1952).

¹⁰² *Id.*

¹⁰³ Originally, the law of waste was fairly mechanical in operation, forbidding any material change in the nature and character of the property by the tenant. See *Brock v. Dole*, 66 Wis. 142, 28 N.W. 334 (1886). Over time, however, it has gradually evolved into a judgmental rule, with courts looking at such factors as the duration of the present possessory interest, the remoteness of the remainder or reversionary interest, whether the surrounding area has changed, and whether (significantly) the modification by the tenant will enhance or detract from the value of the property. See, for example, *Melms v. Pabst Brewing Co.*, 104 Wis. 7, 79 N.W.W. 738 (1899).

tion of a judgmental rule when interests are divided over time is consistent with the model, because future interest holders are likely to be dispersed and numerous, and in many cases are not even born.¹⁰⁴ Thus the transaction-cost barriers involved in negotiating a settlement between holders of the life estate and the remaindermen may be prohibitive. A judgmental rule is necessary in these situations to insure an efficient solution to disputes over the use of the property.

A related pattern can be discerned in the area of promises respecting the use of land. Between the contracting parties such promises are enforceable to the same extent that any contract is enforceable.¹⁰⁵ The very existence of the contract indicates that transaction costs are low, and provided adequate notice has been given of the existence and terms of the promise, it should be enforced according to its terms.¹⁰⁶ But it is another matter when the contracting parties attempt to bind their successors to the terms of the agreement. If all we were concerned about were two-party transactions between the promisor's successors and the promisee's successors, there would be no problem: if one or both successors did not like the original agreement, either because of changed tastes or changed circumstances, they could negotiate a release. In cases involving subdivisions and similar developments of land, however, real covenants and servitudes frequently bind multiple parcels of property, and each property owner is given a veto over modifications proposed by any other. Given the potential for holding out that such a unanimity rule creates, this is a classic high-transaction-cost situation.

Not surprisingly, therefore, promises that purport to run with the land are subject to judicial scrutiny under a highly uncertain and complex set of rules concerning intent, notice, "horizontal" and "vertical" privity, whether or not the promise "touches and concerns" the land, and "changed circumstances."¹⁰⁷ The net effects of this body of law is to create a judgmental entitlement-determination rule giving courts a considerable degree of discretion as to whether to enforce any particular promise against successors. To be sure, this judgmental rule is probably overbroad, since it applies both to subdivision-type agreements and to simple two-party agreements and is not restricted to the problem of changed

¹⁰⁴ This point, and the general point about the economic significance of the law of waste, is noted in Posner, *supra* note 45, at 53.

¹⁰⁵ Richard R. Powell & Patrick J. Rohan, 5 Powell on Real Property 670[2] (1981).

¹⁰⁶ See Epstein, *supra* note 48.

¹⁰⁷ For a general discussion of these requirements see Uriel Reichman, Toward a Unified Concept of Servitudes, 55 S. Cal. L. Rev. 1177 (1982); Susan F. French, Toward a Modern Law of Servitudes: Reweaving the Ancient Strands, *id.* at 1261.

circumstances. Nevertheless, some kind of judgmental entitlement-determination rule is necessary in this context in order to overcome the collective action barriers to eliminating a promise that has outlived its usefulness.¹⁰⁸

Finally, the contrast between mechanical and judgmental entitlement-determination rules sheds light on yet another stick in the bundle of rights known as property—the right to compensation for government takings. In declaring that “[t]here is no set formula to determine where regulation ends and taking begins,”¹⁰⁹ the Supreme Court in recent years has applied a multifactorial balancing test to determine when the government has so diminished the value of property as to exact a compensable taking.¹¹⁰ This doctrine is widely acknowledged to confer a broad range of discretion on courts;¹¹¹ what we have, in other words, is a judgmental entitlement-determination rule.

Under the model proposed herein, the Supreme Court’s formula may be a response to a situation characterized by high transaction costs. And indeed, it appears that the Court’s judgmental standard has emerged in cases involving general regulations or land use ordinances where the costs of identifying affected individuals and reaching an accord on the amount of compensation are substantial. What courts really do in “inverse condemnation” suits, at least according to an economic analysis, is weigh the social costs of denying compensation against the settlement costs (transaction costs of identifying all affected property owners and reaching an agreement as to the amount of compensation) and decide whether, on balance, the government action should be deemed a taking.¹¹² Use of a judgmental entitlement-determination rule obviously facilitates this sort of calculus.

Not all takings cases involve high transaction costs, however. For example, suppose the government institutes a formal eminent domain proceeding to condemn two dozen contiguous parcels of farmland for a highway. Although a private highway-building entity might encounter in-

¹⁰⁸ See Reichman, *supra* note 107, at 1233; French, *supra* note 107 at 1314; James Krier, Book Review, 122 U. Pa. L. Rev. 1664, 1678–80 (1974). Compare Epstein, *supra* note 48 (arguing that the interests of successors will be adequately protected in this context by the original contracting parties).

¹⁰⁹ Goldblatt v. Town of Hempstead, 369 U.S. 590, 594 (1962).

¹¹⁰ Penn Central Transportation Co. v. New York City, 438 U.S. 104 (1978).

¹¹¹ See, for example, Richard A. Epstein, Not Deference, But Doctrine: The Eminent Domain Clause, 1982 Sup. Ct. Rev. 351, 354–56.

¹¹² For the original exposition of this thesis see Frank Michelman, Property, Utility, and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law, 80 Harv. L. Rev. 1165, 1214–18 (1967).

superable holdout problems in this situation, the government's power of eminent domain has the ability to overcome these sorts of transaction costs. In fact, once the government has asserted its right to condemn the property, the remaining transaction costs—identification of the affected parties, negotiation of a price, and so forth—should generally be low.¹¹³ Thus, if it is possible to identify a class of government actions (analogous to formal condemnation proceedings) where transaction costs are low relative to the social costs of denying compensation, it would make sense to jettison the judgmental rule for what constitutes a taking and establish a mechanical rule. Use of a mechanical rule in these circumstances would eliminate litigation over whether the action is a compensable taking, and facilitate a negotiated settlement of the only issue between the parties—the amount of compensation owing.

The attractiveness of the mechanical rule appears to have influenced the Supreme Court's recent decision in *Loretto v. Teleprompter Manhattan CATV Corp.*¹¹⁴ The Court there held that a permanent physical occupation of property by the government should always be regarded as a taking, no matter what the multifactorial balancing standard otherwise might suggest. In other words, the Court established that permanent occupations—like formal invocations of the power of eminent domain—are to be governed by a mechanical rather than a judgmental rule. Such a ruling is consistent with the model. As the Court observed, the practical effect of a permanent occupation is similar to that of a formal taking.¹¹⁵ In addition, the transaction costs will usually be low. A permanent occupation is a traditional trespass, and hence involves few if any problems in identifying the affected parties and so forth. Consequently, a rule treating all permanent occupations as takings will eliminate possible litigation over the government's liability to pay compensation, facilitating a settlement of the issue of the amount of compensation owing.¹¹⁶

¹¹³ The few empirical studies of eminent domain suggest that approximately 85 percent of all proceedings are settled before trial. See Curtis J. Berger & Patrick J. Rohan, *The Nassau County Study: An Empirical Look into the Practices of Condemnation*, 67 Colum. L. Rev. 430, 440, 458 n.60 (1967).

¹¹⁴ 458 U.S. 419 (1982).

¹¹⁵ *Id.* at 436–37.

¹¹⁶ The principal economic justification for the power of eminent domain is that it is necessary to overcome transaction-cost barriers that might prevent the government from acquiring property in the open market. See Posner, *supra* note 45, at 40–41. Thus, when the government must assemble many adjacent parcels, or a parcel uniquely suited to some government project, it may encounter holdout or strategic bargaining problems which would drive up the costs of a negotiated purchase. However, if every exercise of the power of eminent domain were judged according to a judgmental entitlement-determination rule, the transaction-cost savings would largely be eliminated by increased entitlement-determination

No doubt there are other circumstances in which the determination of property rights may have been influenced by entitlement-determination costs.¹¹⁷ But these examples are sufficiently numerous and diverse at least to lend credibility to the model. It remains to inquire whether the foregoing analysis, which is basically positive or descriptive in nature, has any normative implications.

V. SOME NORMATIVE IMPLICATIONS

Even if the common law has taken transaction costs into account in setting entitlement-determination rules, it has not done so perfectly. Only an extreme determinist would assert that common-law rules evolve in such a way that they always reflect the best of all possible worlds. The dimensional test for differentiating between trespass and nuisance is a case in point.¹¹⁸ Although the test does fairly well in singling out a class of low-transaction-cost disputes for mechanical rules, it is underinclusive. There are clearly many nuisance disputes that must be characterized as involving low transaction costs, and yet they are handled by an extremely judgmental standard that tends to frustrate negotiated solutions.

One possible way to improve on the underinclusiveness of the dimensional test would be to generate two sets of nuisance rules—one for relatively high-transaction-cost situations, another for relatively low-transaction-cost situations. Such a bifurcation could perhaps be achieved via the ancient distinction between public and private nuisance. As interpreted today, these categories overlap to a considerable extent and are subject to doctrine that is frequently indistinguishable. Older cases, however, insist that a private nuisance is one that affects only a few parties, while a public nuisance affects the public at large.¹¹⁹ Given that the small

costs. Thus, a rule like the one announced in *Loretto* is necessary in order to complete the economizing function of the law of eminent domain.

¹¹⁷ One obvious parallel is found in the law of antitrust, with its distinction between per se rules and rules of reason. Both courts and commentators have recognized that per se rules entail lower implementation costs than rules of reason. See *Arizona v. Maricopa County Medical Society*, 457 U.S. 332, 350–51 (1982); Frank H. Easterbrook, *Predatory Strategies and Counter Strategies*, 48 U. Chi. L. Rev. 263, 333–37 (1981). One virtue of per se rules, therefore, is that they should assist in business planning by giving fairly clear signals as to what kind of behavior is and is not permissible. Other potentially fruitful areas of application include contract and commercial law, see note 38, and the law of intellectual property, see Edmund Kitch, *The Nature and Function of the Patent System*, 20 J. Law & Econ. 265 (1977).

¹¹⁸ The complex law relating to promises running with the land is another area where streamlining could undoubtedly produce efficiencies. See text at notes 105–08 *supra*.

¹¹⁹ See, for example, *The King v. Lloyd* (1802) 4 Esp. 200, 170 Eng. Rep. 691; *People v. Rubenfeld*, 254 N.Y. 245, 172 N.E. 485 (1930); *Ballenger v. City of Grand Saline*, 276 S.W.2d 874 (Tex. App. 1955).

numbers/large numbers distinction is often a good proxy for high and low transaction costs, this suggests, in turn, that the public/private-nuisance distinction could be used to achieve a bifurcation in nuisance law. To complete the transformation, private nuisance would have to be recast in more mechanical terms—perhaps by adopting something like the substantial physical invasion test that constitutes the cornerstone of Richard Epstein's restatement of English nuisance law.¹²⁰ Public nuisance could then be governed by the cost-benefit formula of the American Restatement, coupled (if one desires) with a relaxation of the standing requirements that have traditionally served as an impediment to public nuisance suits by individuals.¹²¹

The net result would be three different standards governing intrusions to property—trespass, private nuisance, and public nuisance—ranging from the highly mechanical rule of trespass at one end of the spectrum to the highly judgmental rule of public nuisance at the other, with private nuisance falling somewhere in between.¹²² These standards would also correspond to a rough continuum in terms of transaction costs, with trespass applying to visible invasions generally having low transaction costs; private nuisance to invisible invasions involving small numbers of parties, but which because of possible difficulties of identification and enforcement probably would entail somewhat higher transaction costs; and public nuisance to widespread environmental harms, where negotiated solutions are truly improbable.

More generally, the transaction-cost/entitlement-determination-cost model provides an important justification for mechanical legal rules, which have been in vague disrepute for some time. Part of the legacy of the legal realist movement is that legal rules are viewed as "policy tools," and legal scholars demand that every rule have some "policy justification."¹²³ Mechanical rules tend to fare rather badly in such an environment, particularly when viewed solely as decisional rules for use in litigation, rather than as rules designed to avoid recourse to litigation. The reason should not be hard to see. Mechanical rules—such as the

¹²⁰ Epstein, *supra* note 20.

¹²¹ The Restatement has already taken a step in this direction. See Restatement (Second) of Torts § 821C(2)(c) (1979).

¹²² Private nuisance would be more judgmental than trespass because there is a judgmental element involved in deciding what constitutes a "substantial" invasion. Also, insofar as defenses like the "live and let live" rule and the "locality" rule were recognized, see Epstein, *supra* note 20, at 82–90, this would further increase the judgmental nature of private nuisance.

¹²³ See Hans A. Linde, Judges, Critics, and the Realist Tradition, 82 Yale L. J. 227, 228–29 (1972).

dimensional test for determining the boundary between trespass and nuisance—are crude and inflexible and often seem to produce unfair (or inefficient) results in particular cases.¹²⁴ This leads commentators to question the desirability of such rules and to urge other rules—typically multifactorial balancing tests—in their place. Such “reform,” however, may only make negotiated solutions to resource use disputes harder to reach, thus undermining the general efficiency of the economic system.

Related to this is a point about the distributional consequences of mechanical and judgmental rules. Generally speaking, laymen tend to prefer mechanical rules, even if they seem silly or inefficient, whereas spokesmen for the legal community—including leading academics and judges—tend to prefer judgmental rules.¹²⁵ This is as one would predict, assuming that laymen prefer private solutions to resource disputes that minimize the demand for lawyers and litigation, whereas the legal community prefers collective solutions that increase the demand. Thus, if one believes that we have too many lawyers or too much litigation, not only should one ask that legislatures exercise restraint in replacing common-law rules with regulatory schemes; one should also demand that *courts* exercise restraint in replacing mechanical entitlement-determination rules with judgmental entitlement-determination rules.

On the other side of the ledger, judgmental rules have also recently come under criticism from legal scholars. For example, two of the areas touched upon in this paper—nuisance and takings law—are notorious for their doctrinal confusion and “ad hocery.” Academics with a more theoretical bent—those whom Bruce Ackerman calls “scientific policy-makers”¹²⁶—have been understandably frustrated by this state of affairs, and have sought to create new conceptual systems from first principles to

¹²⁴ Consider, for example, the comments of the Kentucky Court of Appeals when faced with a sympathetic defendant in a building encroachment case: “[W]hat real and reasonable difference stands between a nuisance and a continuing trespass? One is simply more visible and tangible than the other. But the tangibility or technical classification of the civil wrong has little to do with the gravity of its effect, and it cannot be the basis of any rational distinction in equity.” *Bartman v. Shobe*, 353 S.W.2d 550, 555 (Ky. 1962). For similar argument from academic commentators, see W. Page Keeton & Clarence Morris, Notes on “Balancing the Equities,” 18 Tex. L. Rev. 412 (1940).

¹²⁵ Compare Grant Gilmore, *The Ages of American Law* 17 (1977): “Within the legal profession most practicing lawyers (who are interested in winning cases or in advising their clients in such a way that they don’t have cases) prefer a formalistic approach to law. That approach holds the promise of stability, certainty, and predictability—qualities which practitioners value highly. Judges, on the other hand, are paid to decide cases. Apart from such practices as bribery and corruption (which at times become institutionalized), judges want to decide cases which come before them sensibly, wisely, even justly.”

¹²⁶ Bruce A. Ackerman, *Private Property and the Constitution* 15 (1977).

reform these areas of the law.¹²⁷ Yet these efforts, however interesting and commendable, have to a certain extent missed the point: doctrinal confusion, question-begging Latin phrases, and unpredictable balancing tests may be functional. That is, what the system builder perceives as unprincipled decision making may in fact function as a relatively inexpensive judgmental entitlement-determination rule. Why relatively inexpensive? Because doctrinal indeterminacy affords a judge the discretion to manipulate legal rules to achieve the result he intuitively feels to be most fair (or efficient), without having to articulate all the factors that go into the development of that conclusion. In contrast, an internally coherent system created from first principles—cost-benefit analysis immediately comes to mind—may permit an equally wide range of results but will likely require a time-consuming (and thus expensive) examination and articulation of the factors that go into the formulation of the result.

I do not want to be understood to be saying that unprincipled decision making is a good thing.¹²⁸ My point is simply that the persistence of unprincipled decision making should not come as a surprise. Principled decision making, like other social goods, is costly, and the more resources devoted to any one particular good, the less will be left for other ends that a rational society may desire to pursue.

¹²⁷ In the area of nuisance law, see Calabresi & Melamed, *supra* note 27; Epstein, *supra* note 20; Rabin, *supra* note 20. In the area of takings law, see Lawrence Berger, A Policy Analysis of the Taking Problem, 49 N.Y.U. L. Rev. 165 (1974); Joseph Sax, Takings, Private Property and Public Rights, 81 Yale L. J. 149 (1971); Michelman, *supra* note 112.

¹²⁸ Compare Richard A. Posner, The Meaning of Judicial Self-Restraint (1983) (unpublished manuscript) (a judge should always strive to be principled, in the sense of articulating the true grounds for the decision).