

The Shadow of *The Cathedral*

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*One View of the Cathedral*¹ is now so much a part of the legal canon that it is widely known simply by the joined names of its two authors, “Calabresi and Melamed.” In turn, “Calabresi and Melamed” has become a shorthand name for the article’s most famous legacy: the distinction between “property rules” and “liability rules” as means of protecting entitlements.

Although *The Cathedral* has been widely cited over its venerable history,² academic interest in its basic analytic categories has come and gone in waves.³ As this classic piece now approaches its twenty-fifth anniversary, however, a number of new articles have reignited the scholarly discussion of “property rules” and “liability rules” as analytic categories.⁴ In several of these scholarly ventures, beginning with *The Cathedral* itself, a particular explanatory example looms in the foreground: It is an instance of environmental pollution, grounded on a classic nuisance case, *Boomer v. Atlantic Cement Co.*,⁵ in which a

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

2. See James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440, 440 n.4 (1995) (describing citations in legal database).

3. An early exploration was Robert C. Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681 (1973), which described how *The Cathedral*’s categories could be used in neighborhood land use disputes. Another one-man wave came a few years later with A. Mitchell Polinsky’s series of three related articles: A. Mitchell Polinsky, *Controlling Externalities and Protecting Entitlements: Property Right, Liability Rule, and Tax-Subsidy Approaches*, 8 J. LEGAL STUD. 1 (1979) [hereinafter Polinsky, *Controlling Externalities*]; A. Mitchell Polinsky, *On the Choice Between Property Rules and Liability Rules*, 18 ECON. INQUIRY 233 (1980) [hereinafter Polinsky, *Choice*]; and A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075 (1980) [hereinafter Polinsky, *Resolving Nuisance Disputes*]. In the mid-1980s, a third wave picked up the somewhat less-discussed “inalienability rules” that Calabresi and Melamed also had raised: Margaret Jane Radin, *Market-Inalienability*, 100 HARV L. REV. 1849 (1987), and Susan Rose-Ackerman, *Inalienability and the Theory of Property Rights*, 85 COLUM. L. REV. 931 (1985). Other general commentaries include Jules L. Coleman & Jody Kraus, *Rethinking the Theory of Legal Rights*, 95 YALE L.J. 1335 (1986); and Madeline Morris, *The Structure of Entitlements*, 78 CORNELL L. REV. 822 (1993).

4. See Ian Ayres & J.M. Balkin, *Legal Entitlements as Auctions: Property Rules, Liability Rules, and Beyond*, 106 YALE L.J. 703 (1996); Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027 (1995); Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV L. REV. 713 (1996); Krier & Schwab, *supra* note 2; Morris, *supra* note 3.

5. 257 N.E.2d 870 (N.Y. 1970).

cement factory polluted the air so as to damage a number of nearby residential properties.⁶

This Essay explores the choice of *Boomer*-like examples in Calabresi and Melamed's *The Cathedral*. More precisely, it focuses on an odd disjunct between foreground examples like *Boomer* and the background intuitions that actually seem to motivate the distinction between property rules and liability rules. In spite of *Boomer*'s quite visible appearance in *The Cathedral*, a rather different example lurks in the shadows—something I will call a “shadow example”—that actually drives the analysis. Part I of this Essay will argue that the driving example in *The Cathedral* is not environmental nuisance at all, but rather the law of accidents, an example that barely makes an appearance in the article itself.

Interestingly enough, this same rhetorical pattern quite strikingly recurs in two of the most recent intellectual progeny of Calabresi and Melamed's famous article: Ian Ayres and Eric Talley's *Solomonic Bargaining*,⁷ and Louis Kaplow and Steven Shavell's *Property Rules Versus Liability Rules*.⁸ Although each substantially revised the original analysis of Calabresi and Melamed, each nevertheless continues the pattern of shadow example: Each work showcases property examples, notably the ever-handly *Boomer*, while relegating to the shadows the quite different paradigm that actually dominates the analysis. Parts II and III of this Essay respectively will argue, in the case of Ayres and Talley, that the shadow example is contract law; and in the case of Kaplow and Shavell, that the shadow example returns to the law of accidents.

The shadow example is an intriguing rhetorical turn—intriguing in that it appears in *The Cathedral*, and even more intriguing in that it reemerges in these two important recent contributions to the scholarship of property rules and liability rules. To some degree the rhetorical pattern emerges from the very ambitiousness of the subject that all these writers address. Despite the becoming modesty of their title (“one view”), Calabresi and Melamed put forth a synoptic view of common law entitlements arguably not seen since Wesley Newcomb Hohfeld's turn-of-the-century general categorization of legal rights.⁹

6. *Boomer* appeared to illustrate nicely the distinction between property rules and liability rules: The majority of the court recognized the factory's pollution as a nuisance but awarded only a damage remedy, i.e., a “liability rule” award, while the dissent argued strongly that traditional nuisance law called for an injunction, effectively taking the “property rule” approach. Cf. Louise A. Halper, *Nuisance, Courts and Markets in the New York Court of Appeals, 1850–1915*, 54 ALB. L. REV. 301, 303–06, 337–49 (1990) (arguing that New York courts had invented *Boomer*-like damage remedies as early as turn of century); see also Krier & Schwab, *supra* note 2, at 442 (describing environmental pollution as “the stock example” in property rule/liability rule literature).

7. Ayres & Talley, *supra* note 4.

8. Kaplow & Shavell, *supra* note 4.

9. See Wesley Newcomb Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16, 28 (1913) (describing pairs of reciprocal and opposite “jural relations”). For an interesting reassessment of Hohfeld's categories, see Morris, *supra* note 3, at 827–31, 833–38, which describes categories and criticizes their inadequacies with respect to transfers of entitlements, including

In turn, Ayres and Talley, as well as Kaplow and Shavell, are ambitious and able scholars in their own right, and they are interested in reconceptualizing these same large legal problems. It is not just any doctrine that all of these authors attack; it is the Cathedral, the structure of entitlements throughout the entire common law. If any of these authors' respective comprehensive analyses of property rules and liability rules are correct, then presumably the choice of specific examples should not matter: Property rules and liability rules should cut through them all.

But the position of this Essay is that the choice of examples does matter after all, and indeed it matters most in the very enterprise that Calabresi and Melamed so imaginatively opened up: delineating the underlying structure of common law entitlements. In the Conclusion of this Essay, I will argue that by inattentiveness to the examples they used, these authors not only claimed too much but also blurred what may be the distinctive characteristics of the various parts of our common law regimes. I will suggest that a closer attention to examples could lead to a deeper understanding of the common law—one in which the conventional categories of tort, contract, and property reveal quite different dominating concerns.

I. CALABRESI AND MELAMED'S LIABILITY RULE "PROTECTIONS": THE SHADOW OF ACCIDENTS

In their analysis of property rules and liability rules, Calabresi and Melamed made at least two widely cited analytical contributions. The first was to illustrate a pattern of entitlement enforcement that might be dubbed "bilateral symmetry." That is, in a legal conflict, *no matter which party wins*, the prevailing party's entitlement may be vindicated in one of two ways, either through a "property rule" or through a "liability rule."¹⁰ Calabresi and Melamed's chief example of these remedies and their symmetric relation came from nuisance law, notably a simplified variation on the *Boomer* case, in which they cast a single residence owner in confrontation with the polluting factory.¹¹ On their account, the example generates four "rules," two favoring the residence owner and two favoring the factory. If the homeowner has the entitlement to be free of pollution, [Property] Rule 1 permits her to enjoin the factory's pollution; but if her right is protected only by [Liability] Rule 2, she has to endure pollution so long as the factory pays damages. On the other hand, if the factory owner has the entitlement to pollute, protection through

liability rules.

10. For a four-box chart mapping this symmetric relation, see Krier & Schwab, *supra* note 2, at 444. For a discussion of other possible remedies, see Saul Levmore, *Unifying Remedies: Property Rules, Liability Rules, and Startling Rules*, 106 YALE L.J. 2149, 2153-60 (1997).

11. See Calabresi & Melamed, *supra* note 1, at 1116 n.55; *id.* at 1116 n.54 (citing two other nuisance cases).

[Property] Rule 3 would allow him to do so freely. Finally, by the famous and hitherto unexplored [Liability] Rule 4, Calabresi and Melamed opined that the factory may be entitled to pollute, but the entitlement may be protected only by a liability rule—so that the pollution entitlement can be bought by the resident at some measure of just compensation. Calabresi and Melamed's novel discussion of Rule 4 completed their bilaterally symmetric analysis of two Property Rules and two Liability Rules; indeed, it seemed even more significant when an Arizona judge arrived at a close approximation of Rule 4, just as *The Cathedral* was appearing.¹²

The Cathedral's second and more normative contribution has been a constant refrain in subsequent legal literature.¹³ This is Calabresi and Melamed's claim about the appropriate deployment of the different rules. Liability rules, they argued, are best applied in situations with high transaction costs, where the parties cannot easily find or bargain with one another. Property rules, on the other hand, are best applied in situations where rights and rights-holders are known and transactions costs are low, so that the parties can presumably organize a trade for themselves.¹⁴

For all its richly deserved fame, however, *The Cathedral* presents a few rhetorical puzzles. One of these occurs in a peculiar choice of language about the ways that the different rules "protect" entitlements. The protection of entitlements through "property rules" seems intuitively obvious, and hence this choice of language strikes a reader as unproblematic. But the phrase that sounds strange is that of an entitlement "protected by" a liability rule.¹⁵

Consider the example for the liability rule's "protection" of an entitlement. In the garden-variety liability rule case, Calabresi and Melamed's Rule 2, the factory owner receives the right to pollute the nearby resident's air, but must pay damages. Yet in this case, an observer might not think that the resident has an "entitlement protected by a liability rule" at all. Instead, she might think that the liability rule simply divides the entitlement differently and that the liability rule yields a different and diminished entitlement for the homeowner. Compare the liability rule regime with either property rule: In the latter, the

12. See *Spur Indus., Inc. v. Del E. Webb Dev. Co.*, 494 P.2d 700 (Ariz. 1972); see also Krier & Schwab, *supra* note 2, at 444–45 (describing intellectual history of Rule 4).

13. See, e.g., RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 62 (1986); see also Krier & Schwab, *supra* note 2, at 450 (describing Calabresi and Melamed's transaction cost prescription as "conventional answer").

14. See Calabresi & Melamed, *supra* note 1, at 1108–10. Krier and Schwab point out that courts may do a poor job of assessing damages when transaction costs are high. See Krier & Schwab, *supra* note 2, at 450–51; see also POSNER, *supra* note 13, at 62 n.5 (arguing that injunctive remedies may be preferable where courts cannot assess damages accurately); cf. Kaplow & Shavell, *supra* note 4, at 750–51 (arguing that injunctive remedies pose even greater assessment problems for courts).

15. See Morris, *supra* note 3, at 842 (noting oddity of using language of "protection" where right may be subject to forced sale). Morris cites Coleman & Kraus, *supra* note 3, at 1338–39, who note that liability rule "protection" seems incompatible with the view of rights as spheres of liberty or autonomy. Coleman and Kraus conclude, however, that liability rules can "protect" rights by making their violation more costly. See *id.* at 1370–71.

entitlement holder has the whole meatball, so to speak, and the other party has nothing—one has property, the other has zip. Under either of the two liability rules, on the other hand, the meatball gets split: The factory has an option to pollute (or once exercised, an easement), while the homeowner has a property right subject to an option (or easement). For the sake of simplicity, I will refer to this latter kind of right as a PRSTO (or PRSTE), for “property right subject to an option (or easement).”

Thus the choice of rules affects the *content* of entitlements, a point that scholars have noticed for some time.¹⁶ Mitchell Polinsky has remarked on the reasons why the PRSTO is not the same or as capacious as the property rule entitlement: When the option is exercised, the PRSTO holder receives none of the gains from trade.¹⁷ In Ayres and Talley’s more recent analysis, the authors simply assume that liability rules split the whole meatball into an option and what I am calling a PRSTO.¹⁸

Why, then, did Calabresi and Melamed use this peculiar elocution of entitlements “protected by a liability rule,” instead of just noting the different division of the meatball into alternative classes of entitlements? I think the answer lies in a shadow example, but the reason becomes clearer when one considers a second rhetorical puzzle in *The Cathedral*. This puzzle is about the famous Rule 4. Rule 4 seemed quite novel in *The Cathedral*, but once one looks at liability rules simply as dividing rights differently—moving from the all-or-nothing, property/zip combination to the PRSTO/option combination—then Rule 4 no longer looks in the least bit odd, or really very different from Rule 2. Looking at these arrangements as redefined entitlements, each of the liability rules delineates a combination of: (a) an option in one party; and (b) a PRSTO in the other.

This scheme is especially clear in the case that became famous for confirming Rule 4, *Spur Industries v. Del E. Webb Development Co.*¹⁹ Here, through the operation of the “coming to the nuisance” doctrine, a large feedlot effectively acquired an easement to pollute the neighboring properties with fumes and odors.²⁰ An easement is of course a property right, but this easement was only “protected by a liability rule”: *Spur Industries* allowed a subdivider, acting on behalf of the neighboring residents, to buy the easement with the buyout price fixed at the feedlot operation’s moving costs. However

16. See, e.g., Coleman & Kraus, *supra* note 3, at 1346

17. See Polinsky, *Choice*, *supra* note 3, at 234; Polinsky, *Resolving Nuisance Disputes*, *supra* note 3, at 1091.

18. See Ayres & Talley, *supra* note 4, at 1041; cf. Coleman & Kraus, *supra* note 3, at 1357, 1370–71 (arguing that liability rules do not normally convey entitlement or justify nonconsensual takings)

19. 494 P.2d 700 (Ariz. 1972).

20. The “coming to the nuisance” doctrine accords some protection to nuisance activities established prior to uses that complain about them. The doctrine itself is not without problems. See Richard A. Epstein, *A Clear View of The Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091, 2104–05 (1997) (arguing that “coming to the nuisance” should be interpreted in light of statutes of limitations)

much *Spur Industries* has been much discussed as an example of Rule 4, it looks like just another Rule 2: A single entitlement, here the pollution easement, is divided into an option on the one side and a PRSTO on the other.²¹ No wonder this solution showed up in an ordinary land use conflict!²² So what was the fuss about Rule 4? Here, too, I think the answer lies in a shadow example, an understated paradigm that actually motivated the famous Rule 4.

One can find this shadow example by reconstructing a factual rather than a conceptual difference between Rules 2 and 4. The basic factual scenario for the ordinary liability rule (Rule 2) is more similar to the real-life *Boomer* case than to the simplified example in *The Cathedral*: One person or entity (the factory) exercises a forced sale option over rights held by many other people (the residents). Rule 4, on the other hand, involves many people (the people in the subdivision in *Spur Industries*), who exercise a forced sale option over a right held by a single individual or entity.²³

Viewed in the light of numbers of people on the different sides of the transaction, the real example for Rule 4—the shadow example—is eminent domain, the legal power of the public to condemn properties needed for public uses. In eminent domain, as in *Spur Industries*'s application of Rule 4, large numbers of people (usually represented by a public authority, but by a developer in *Spur Industries*) force the sale of a right that is held by a single individual or entity. Seen as eminent domain, a doctrine well known in property law, Rule 4 does not look so unusual after all. Calabresi and Melamed did mention eminent domain, in a very interesting and now somewhat neglected brief discussion of institutional competence.²⁴ As they pointed out, the Rule 4 scenario (many property owners forcing a sale from one) is not normally a judicial decision; instead, it is a legislative decision.²⁵ But that does not make Rule 4 something unknown. Indeed, if Calabresi and Melamed had discussed the property doctrine of eminent domain more prominently in their discussion of Rule 4, instead of simply alluding to the connection between eminent domain and Rule 4, then Rule 4 would have looked rather commonplace.²⁶ More importantly, such a discussion would have invited an inquiry into the doctrinal and institutional constraints that do in fact cabin the use of eminent domain in property law, limiting its disruptive

21. A rule that is actually the conceptual opposite of Rule 2 would be a "put" option: a liability rule giving the winning party the right to force the opposite party to buy the entitlement at some established price. See Ayres & Balkin, *supra* note 4, at 731–33; Morris, *supra* note 3, at 854–56.

22. See Krier & Schwab, *supra* note 2, at 444–45 (describing *Spur Industries* ruling).

23. In *Spur Industries*, the right that was bought was the feedlot's effective easement to pollute. See 494 P.2d at 704.

24. See Calabresi & Melamed, *supra* note 1, at 1122.

25. See *id.*

26. See Krier & Schwab, *supra* note 2, at 476 (noting that Rule 4 becomes "quite tractable" when one considers judicial and administrative solutions).

impact on normal property rights.²⁷

Calabresi and Melamed's neglect of the property law aspects of Rule 4 allows us to return with new insight to the odd terminology of "entitlements protected by liability rules," and to discern in this language an even more central instance of the shadow example. In this peculiar rhetorical choice, Calabresi and Melamed really seem to have been thinking of the law of accidents—or most likely, of *The Costs of Accidents*,²⁸ which Guido Calabresi had recently published.

When some unidentified person accidentally smashes your car and pays you damages in compensation, you do not think that this person has an "option" while you have a PRSTO. You think that you and she are caught in a muddle, where rights have suddenly and accidentally gotten all confused. A liability rule is the best that you can do after your car is wrecked. Your property in the car has turned into a PRSTO, not because anybody thinks it is a good idea to define it that way, but because nobody can do anything better for you now that it is ruined.

Much the same can be said of the normal Rule 4 scenario, that is, eminent domain, but for different reasons. The state may have an "option" of sorts over your property, but any such option is so broadly but thinly applicable that perfectly sensible people may pay little attention to it in advance.²⁹ The legal constraints on this power rein in the occasions on which it can apply, and if your property is taken by eminent domain, it is apt to be a kind of surprise, hitting you the way an accident hits you; it is not something that you thought much about in advance. You do not start to think about the state's "option" until the government starts to figure out plans for the highway. By contrast, an ordinary option is a well-defined and specified property right, one that is normally purchased from another property owner. It is a right that people do

27. See Epstein, *supra* note 20, at 2112–20 (noting doctrinal and institutional limits on eminent domain); see also Thomas W. Merrill, *The Economics of Public Use*, 72 CORNELL L. REV. 61, 77–81, 97–102 (1986) (arguing that procedural difficulties deter use of eminent domain in "thick markets" and pattern is reinforced by judicial interpretations of "public use") Considerations akin to "public use" played a role in the *Spur Industries* case as well. See *Spur Industries*, 494 P.2d at 707–08 (discussing both immunity of public from "coming to the nuisance" doctrine and mixed public and private characteristics of case).

28. GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* (1970)

29. Eminent domain planning may occur in some contexts, for example long-term leases. See Victor P. Goldberg et al., *Bargaining in the Shadow of Eminent Domain: Valuing and Apportioning Condemnation Awards Between Landlord and Tenant*, 34 UCLA L. REV. 1083, 1088–91 (1987). It is not clear how widespread this practice is, however. As Goldberg et al. note, the low probability of eminent domain might make ex ante contingency clauses not worth the bargaining effort. See *id.* at 1108 n.57. The chief case discussed in their article, *Almota Farmers Elevator & Warehouse Co. v. United States*, 409 U.S. 470 (1973), appears to have had no such condemnation clause. See Goldberg et al., *supra*, at 1128. Some of the condemnation clauses discussed apparently stemmed from the older draconian rules that would have required the tenant to pay rent after condemnation. See *id.* at 1121–22. Several others seem rather vague, e.g., some use "wait and see" devices like arbitration, suggesting that the parties did not think it worth the effort to specify precise rights in advance. See *id.* at 1115 n.71 (describing arbitration clauses and other ex post clauses).

think about in advance. In fact, that quality of specificity is more or less what everyone *means* by a property right: It is an entitlement that is fairly well-defined, fairly well thought out, and bargained over in advance.

Accidents, then, make up the shadow example that drives Calabresi and Melamed to talk about "entitlements protected by a liability rule." Where liability rules come into play, you think (until you are surprised) that you have the whole meatball, not a mere PRSTO. Indeed, *vis-à-vis* intentional trespassers or thieves, you generally do have the whole meatball. But because the occasion for the liability rule "option" is either an accident or an emergency or a public necessity, it does not usually occur to you that the meatball is divided into your PRSTO and someone else's option.

Thus *The Cathedral's* terminology, the "entitlement protected by a liability rule" rather than the language of PRSTOs and options, flowed from Calabresi and Melamed's conception of *occasions* for liability rules. Those occasions were accidents, not admitting of claims that are well-defined or bargained over in advance. Because people do not think much about the free-floating options that are exercised in accidents, they go ahead and do the things with their property that property regimes encourage people to do: invest, plan, and work hard in the expectation of taking home the proceeds.³⁰ Owners do those things because they think, mistakenly as it sometimes turns out, that they have the whole meatball, and they only later find out that the entitlement was "protected" by a mere liability rule.

In short, then, Calabresi and Melamed's very terminology suggests that the rights established by liability rules are in a sense merely accidental rights. It is on this point that two of the recent property rules/liability rules pieces take exception. Ayres and Talley in one article,³¹ and Kaplow and Shavell in another,³² want to rescue liability rules from their accidental status, and instead use them as more consciously chosen instruments. In their work as in Calabresi and Melamed's, however, understated shadow examples play an important role in driving the analysis. And in their work, as in Calabresi and Melamed's, the pattern of shadow examples leads the authors to neglect the different roles that real-life property regimes might play.

II. AYRES AND TALLEY'S DIVIDED ENTITLEMENTS: THE SHADOW OF CONTRACTS

In Ayres and Talley's *Solomonic Bargaining*, the authors begin by clearing away the terminological lumber left over from *The Cathedral*. They explicitly discuss why entitlements "protected" by liability rules effectively divide the

30. For the classic statement, see JEREMY BENTHAM, *THE THEORY OF LEGISLATION* 109-22 (C.K. Ogden ed., 1931).

31. Ayres & Talley, *supra* note 4.

32. Kaplow & Shavell, *supra* note 4.

underlying entitlement into two different entitlements: one party holds an option while the other holds a property right subject to an option, or what I have called a PRSTO.³³ The authors argue that the entitlements defined by liability rules, both options and PRSTOs, can themselves be the subject of bargains. Indeed, their basic claim is that liability rules may induce more and better refined bargaining than property rules do.³⁴

Ayres and Talley are generally more cautious about examples than Calabresi and Melamed, and their text generally avoids identifying the “entitlements” they have in mind. Nevertheless, they open with a few references to that unmistakable example of real property, “Blackacre,”³⁵ while a polluting factory shows up at some length.³⁶ Their footnote examples are also generally about real estate: A farmer,³⁷ a mall,³⁸ and some mined land³⁹ make appearances, alongside the old standbys of *Boomer*⁴⁰ and *Spur Industries*.⁴¹

There is a reason for using these real property examples. Ayres and Talley are interested in situations in which two parties are stuck with each other, thin markets instead of “thick” ones.⁴² Neighboring landowners seem to fit that bill. Like Calabresi and Melamed, however, Ayres and Talley abstract away one critical feature from the two classic cases, *Boomer* and *Spur Industries*: They remove the large numbers of participants in those cases, and instead treat nuisances as two-party matters—one resident who receives polluting matter, and the other whose activities produce it. For Ayres and Talley, it really does not matter which party holds the option and which holds the PRSTO; the important point is that both parties can bargain over their respective rights. That is, the option holder can try to buy the PRSTO, or alternatively the PRSTO holder can try to buy the option.

Now one might think that bargaining is clearly possible when the numbers are small, because that is the scenario in which parties understand the contours of their rights. They understand which one of them has a PRSTO and which has an option, although they might call the option something else, for example, a right-of-way or a flowage right. One might also think that such parties could bargain equally well under a property rule, where one party held the whole meatball and the other held zip. Where numbers are small and rights are well-

33. See Ayres & Talley, *supra* note 4, at 1031.

34. See *id.* at 1032–33.

35. See *id.* at 1030–31, 1034.

36. See *id.* at 1078–79.

37. See *id.* at 1047 n.64.

38. See *id.* at 1031 n.9.

39. See *id.* at 1061 n.105.

40. See *id.* at 1062 n.106 (citing *Boomer v. Atlantic Cement Co.*, 257 N.E.2d 870 (N.Y. 1970)).

41. See *id.* at 1086 n.183 (citing *Spur Indus. v. Del E. Webb Dev. Co.*, 494 P.2d 700 (Ariz. 1972)); see also *id.* at 1091 (describing endangered species habitat); *id.* at 1092–94 (describing intellectual property).

42. See *id.* at 1030.

defined, it would seem to follow that transaction costs drop and the parties will bargain under any circumstances, whether under a liability rule or property rule.⁴³

Not so, say Ayres and Talley. Why not? The reason, they say, stems from a different kind of transaction cost or bargaining impediment. They do not care much about difficulties that may result from having to find and assemble numerous or indistinctly defined interested parties, the costs that come prior to bargaining altogether, which I will call Type I Transaction Costs. Ayres and Talley are interested instead in Type II Transaction Costs: the impediments that come *after* bargaining begins, from parties who are close-mouthed, poker-faced, strategically bargaining misanthropes.⁴⁴ The literature on trust suggests that suspicious people are likely to be untrustworthy, precisely because of their mistrust;⁴⁵ and Ayres and Talley's bargainers fit the picture perfectly. These doubters and suspects will never willingly give up their respective advantageous secrets, even though revealing such private information is the only thing that might facilitate mutually beneficial deals. Thus even where rights are well-defined and rights-holders well-known, if each party is stuck with the other as the only potential trading partner—the ultimate “thin” market of bilateral monopoly—they could go on jockeying forever.

That is, they could carry on that way unless the structure of entitlements induced them to do what is needed, to squeeze out that private information from one or both of them. This, say Ayres and Talley, is where the division of entitlements helps. Why? In one sense, the division between option and PRSTO helps the bargaining because less is at stake for each. Each is only dickering over the other's option (or PRSTO), but at the end of the day, either party could wind up with the whole meatball, and this pattern moderates nasty behavior.⁴⁶ Moreover, say Ayres and Talley, the option/PRSTO division forces more information onto the bargaining table. The PRSTO holder who will not dicker to stave off the option's exercise—or who even offers to sell her own interest for less than the option price—reveals her own relatively low valuation on the whole meatball; but if she does bid to hold off the option, she shows that she has a relatively high value. Thus, as Ayres and Talley put it, the liability rule option “partitions” PRSTO holders into higher- and lower-

43. This is essentially the position taken by Kaplow and Shavell with respect to situations of one injurer and one victim. See Kaplow & Shavell, *supra* note 4, at 732–33 (maintaining that where bargaining is possible and successful, choice of rule does not matter); *id.* at 734–37 (explaining that where bargaining is possible but not successful, neither rule necessarily dominates).

44. See Ayres & Talley, *supra* note 4, at 1029–30, 1035–36. Dale Nance believes that a misanthropic view of human nature was already present in the original *Cathedral's* analysis. See Dale A. Nance, *Guidance Rules and Enforcement Rules: A Better View of the Cathedral* 18–19 (Feb. 1, 1997) (unpublished manuscript, on file with author).

45. See Carol M. Rose, *Trust in the Mirror of Betrayal*, 75 B.U. L. REV. 531, 540–41 (1995).

46. Ayres and Talley refer to the uncertainty of the outcome as an “identity crisis” that reduces the bargainers' incentives to lie about their valuations. See Ayres & Talley, *supra* note 4, at 1027.

value bidders, signaling the opposite party about their otherwise private valuations, and thus greasing the wheels of bargaining.⁴⁷

Notice that Ayres and Talley's parties are really only bargaining about property rights. To be sure, in the first instance, ordinary usage no doubt associates "property" with the whole meatball, the combined entitlement; but this usage is no more than what Ayres has called a "default" position, i.e., a fallback position that can be changed in actual transactions.⁴⁸ When the features of an option are described, it is clearly a property right. So is the PRSTO, although defined as it is as the subject of a "liability rule," it can be taken for a payment. In standard real estate markets, both entitlements would be known entities, held by known persons, and both rights would have market values; indeed, they might both be purchasable by third parties. Those elements generally include all that anyone *means* by a property right: an entitlement of which the basic features are known, the holders are identifiable, and about which people can bargain. That is, there are no serious Type I transaction costs.

Thus an interesting feature of Ayres and Talley's analysis is the message of its overall approach: It makes explicit the point that liability rules need not apply only in scenarios of the classic Type I transaction costs so central to liability rules for Calabresi and Melamed—where entitlements are only vaguely understood, or where there are so many interested parties that bargaining can scarcely get underway. Instead, even where rights are defined and parties can bargain, liability rules can redefine the entitlements and become a part of a new bargaining process. In this role, in Ayres and Talley's analysis, liability rules can soften the next layer of transaction costs, the Type II costs of strategic bargaining after the parties sit down.

But here is a puzzle: If the divided rights of liability rules are so advantageous, why do we so seldom observe such divisions in the chief domain where the article gives us examples, that is, real estate?⁴⁹ If Ayres

47. See *id.* at 1044. They point out, however, that option holders can still misrepresent their private valuations. See *id.* at 1047.

In a comment, Kaplow and Shavell indicate some problems with Ayres and Talley's analysis, stemming from Kaplow and Shavell's argument that liability rules would have been superior to property rules even without the subsequent bargaining. See Louis Kaplow & Steven Shavell, *Do Liability Rules Facilitate Bargaining?: A Reply to Ayres and Talley*, 105 YALE L.J. 221 (1995). This caused Ayres and Talley to modify their original position. See Ian Ayres & Eric Talley, *Distinguishing Between Consensual and Nonconsensual Advantages of Liability Rules*, 105 YALE L.J. 235 (1995) (modifying their position to factor in litigation costs).

48. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989).

49. In contracts for the purchase and sale of real estate, one might characterize the buyer's right to buy (and the seller's right to sell or "put") as an "option," but the sale contract is ordinarily only a preliminary for the transfer of the entire estate, and not a device creating an ongoing division of entitlements. Moreover, since both buyer and seller can normally enforce real estate contracts through specific performance, what one might call their respective "options" are enforced through property rules rather than liability rules. See RESTATEMENT (SECOND) OF CONTRACTS § 360 cmt. c (1981) (describing general pattern of specific performance in real estate contracts). This pattern is reflected in the traditional

and Talley are right that the PRSTO/option combination makes transactions smoother, we certainly could expect to see such arrangements organized through voluntary transactions in the real estate market. Anything that greases deals should make a property more valuable, and surely some real estate moguls ought to notice. After all, there are many dealers in real estate, and they have figured out ways to make a profit from devices that divide rights in vastly more complex ways than options—condominiums and time-shares, for example. So why do we not see the PRSTO/option arrangement more often? The answer is that the PRSTO/option arrangement is not as unproblematically advantageous as Ayres and Talley suggest. Indeed, Ayres and Talley finesse a number of rather curious features of the bargains between PRSTO-holders and option-holders.

For starters, look at the oddity of these parties' bargaining: What are they bargaining about? The option-holder is bargaining for the other party's PRSTO, and the PRSTO-holder is bargaining for the other's option. Ultimately, the option and the PRSTO are united. At the end of the day, then, these parties' whole object is to move from two shared entitlements with two entitlement-holders, right back to the plain old property/zip scenario, where only one party has the whole meatball. Now, why would they do this? Why move from a smooth-transaction, divided-rights situation, back to the bumpy single-ownership arrangement, where the grumpiness, secretiveness, and suspiciousness of the parties gains full sway? It seems that somehow, the divided interests of PRSTO and option are only advantageous when the respective owners are trying to shed the underlying division, to get back to the one-owner, single meatball, property/zip arrangement. Something is amiss here.

Something else is amiss too, something even bigger. Where did the PRSTO/option arrangement come from, anyway? It is not a default rule in ordinary property law, except in the context of unexpected events like accidents and eminent domain, where liability rules do govern. Quite the contrary, the usual default rule for property is that the whole meatball is transmitted from one whole owner to the next whole owner. If we take that very ordinary default rule as a given for the moment, then an entitlement would only be divided into an option and a PRSTO if some earlier transaction had done the dividing, a preliminary transaction that Ayres and Talley do not discuss at all. Ayres and Talley bring us into the middle of this two-step process, where one party or the other is attempting to reunite the option and the PRSTO. But these parties are not at the first step; they are already at the second step. Thus Ayres and Talley are comparing the bad old property/zip

doctrine of "equitable conversion," through which the buyer is characterized as the equitable owner of the property from the time of executing the sale contract, effectively eliminating any "option" in the sense of a choice between purchase and damages. See RICHARD R. POWELL & PATRICK J. ROHAN, *POWELL ON REAL PROPERTY* ¶ 881, § 1 (1996) (describing "equitable conversion" and linking doctrine to specific performance of real estate contracts).

bargains to only *half* of a two-step process that first divides and then reunites the PRSTO with the option. No wonder, then, that the PRSTO/option bargain looks like a comparatively neat transaction; it is only the second half of two necessary transactions. Compared to two transactions instead of one, the grumpy old property/zip bargain might not look so bad.

This of course leads to the question why property/zip seems to be the default rule in most property arrangements. It may be that in the bulk of property transactions, the advantages of property rules simply swamp whatever disadvantages they carry. The usual roles of property rules—defining rights and identifying rights-holders—not only counteract Type I transaction costs in deals, but also encourage individual investment, planning, and effort, because actors have a clearer sense of what they are getting. Perhaps in the legal areas commonly designated as “property,” including that most common of property examples, real estate, the importance of these functions simply dwarfs any problems that arise when property rules exacerbate strategic bargaining—the Type II transaction costs that so interest Ayres and Talley.⁵⁰

This raises the issue of the shadow example, the off-scene paradigm case that drives the analysis: Ayres and Talley are not really thinking about real estate. Those footnote references to *Boomer* and *Spur Industries* are essentially a smokescreen. No, Ayres and Talley are thinking about contracts. Contractual rights are the perfect example of the bargaining that Ayres and Talley want to discuss. The contractual relationship has only a discrete number of parties—paradigmatically two—who (a) presumably know what they are doing, and (b) are stuck with each other. In fact, they are engaged in a kind of small and very specialized joint enterprise, and their bargaining difficulties are not those of the old-fashioned Type I transaction costs, i.e., large numbers or indefinite rights. Instead, the contracting parties are plagued only by Type II strategic bargaining, where information-forcing is essential, and where the partitioning effect of a liability rule might have some real use.

More importantly, in contract law, liability rules, not property rules, do indeed constitute the background default rule: The parties are supposed to perform, but except in particular circumstances (mostly real estate!) they have the option of defaulting and paying damages instead of performing. That is to say, Party A can “take” Party B’s contractual right under a liability rule.⁵¹

50. Ayres in particular has recognized a tradeoff between the concerns of effort (“moral hazard”) and strategic bargaining (“adverse selection”). See *infra* notes 99–101 and accompanying text. His work with Balkin denies that property eases bargaining, but he does not distinguish between the different kind of bargaining problems that arise with Type I and Type II transaction costs. See Ayres & Balkin, *supra* note 4, at 714–15. My own view is that property rules can enhance bargaining by overcoming Type I costs (finding parties, clarifying rights), but may at the same time exacerbate Type II costs (strategic bargaining), at least in conditions of bilateral monopoly.

51. See ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 289–92 (1988) (describing liability as preferred rule in contract law and explaining preference as fostering efficient breach). The dominance of liability rules in contract has been challenged, however. See Daniel Friedmann, *The Efficient Breach Fallacy*, 18 J. LEGAL STUD. 1, 1–8 (1989) (describing contractual rights as property of promisee); Alan

Because liability is indeed the background rule in contract, no two-step process is needed to establish an option and a PRSTO; contract's background law gives them this division right from the get-go.

Ayres and Talley do talk briefly about the shadow example of contract, and when they do, they make some important and well-illustrated points.⁵² But why not stick with contracts, instead of talking of "entitlements" more generally? Perhaps the contracts questions taken alone seemed too limited. All the same, there would have been interesting issues to explore simply about contract law, and about the ways that liability rules might bear on postcontractual bargaining between contract partners.⁵³ Ian Ayres's most recent contribution to this subject (with Jack Balkin) takes up even further partitioning effects of liability rules, but it is encouraging to see that this latest contribution moves at least some moderate distance—though perhaps not far enough—toward an explicit discussion of contracts.⁵⁴

In Ayres and Talley, then, as in Calabresi and Melamed, property examples front for an analysis that would more cogently apply in a different legal area. Once again, in this very provocative work, the pattern of shadow examples unfortunately deflects attention from the considerations uppermost in conventional property law—planning, effort, and investment.⁵⁵

III. KAPLOW AND SHAVELL'S ENVIRONMENTAL DAMAGES: THE SHADOW OF ACCIDENTS (AGAIN)

Kaplow and Shavell's wide-ranging article, *Property Rules Versus Liability Rules*,⁵⁶ echoes Ayres and Talley's *Solomonic Bargaining* in expanding the claims for liability rules under certain circumstances. That expansion will be the focus of the discussion here, because it continues the pattern of the shadow example, showcasing *Boomer's* environmental pollution while actually using a quite different driving paradigm. Kaplow and Shavell also make a very interesting set of defenses of property rules under some other circumstances, defenses that I will describe briefly.

Schwartz, *The Case for Specific Performance*, 89 YALE L.J. 271 (1979) (explaining why specific performance is preferable to liability remedies in contract).

52. See Ayres & Talley, *supra* note 4, at 1094–96 (discussing usefulness of liability rules in contracts' circumstances of idiosyncratic gains from trade, or relation-specific investments).

53. For example, historic doctrines *curtailed* postcontractual renegotiations, presumably to restrain contractual parties from taking advantage of each other when conditions change. See, e.g., *Alaska Packers' Ass'n v. Domenico*, 117 F. 99 (9th Cir. 1902) (forbidding employees on distant fishing expedition from demanding higher wages than initially agreed upon). Such doctrines could have been compared to the more lenient position of modern courts on such renegotiations. See RESTATEMENT (SECOND) OF CONTRACTS § 89 (1981) (permitting contractual modifications under unanticipated circumstances).

54. See Ayres & Balkin, *supra* note 4, at 745–47 (using contract example).

55. See *supra* text accompanying note 30.

56. Kaplow & Shavell, *supra* note 4.

Kaplow and Shavell divide the world of entitlements into a kind of four-square box: A major vertical slice, as it were, divides entitlements that they call "externalities" from entitlements that they call "possessory."⁵⁷ To illustrate the difference, they cite among other things air pollution and noise (including the ubiquitous *Boomer*) as examples of negative "externalities,"⁵⁸ and laptop computers as their principal example of "possessory things."⁵⁹ Then across these two major domains, they take a horizontal slice that separates scenarios in which the parties can bargain from those in which bargaining is impeded.⁶⁰ This results in four quartiles, two in the "externality" domain and two in the "possessory" domain. Kaplow and Shavell's effort then is to identify the quartiles in which liability rules are superior to property rules, and vice versa.

Briefly, their conclusion is that property rules are superior with respect to both of the two "possessory" quartiles. One very ingenious reason is that with respect to this kind of right, liability rules might be a two-way street. That is, to use Kaplow and Shavell's example, if the laptop computer may be taken at some fixed damage amount, the owner may simply take it back at the same fixed amount, leading to an infinite round of reciprocal takes and take-backs.⁶¹ Third parties may enter the fray as well, adding another whole dimension of mutual takings.⁶² Thus with what Kaplow and Shavell call "possessory" rights, they conclude that liability rules are inferior, because liability takings destabilize rights in an undesirable fashion.⁶³

The "externality" quartiles present a more mixed picture. Here Kaplow and Shavell say that in the quartile where the parties can bargain successfully, liability rules and property rules come out a wash; neither rule is superior.⁶⁴ This conclusion differs from Ayres and Talley's analysis, but it may not strike the reader as intuitively surprising. As we saw with Ayres and Talley, it would seem that the bargainable rights under liability rules are really only options and PRSTOs, or perhaps easements and PRSTEs; they are simply different divisions of property rights. Thus it hardly seems surprising that property rules and liability rules come out a wash in this quartile; if the parties can bargain, *all* the rights are in a sense property rights, giving opportunities for mutually beneficial trades without the bother of Type I transaction costs. Indeed, the greater surprise is that Kaplow and Shavell refer to any of these rights as

57. See *id.* at 715–23, 757.

58. See *id.* at 717 n.4.

59. See *id.* at 761.

60. See *id.* at 723–24, 732, 759, 763.

61. This analysis creates certain difficulties for the Ayres and Talley analysis of liability rules. In his new article with Jack Balkin, Ian Ayres discusses a system of graduated liability charges, in part to overcome this mutual takings problem. See Ayres & Balkin, *supra* note 4, at 707–11.

62. See Kaplow & Shavell, *supra* note 4, at 765–67.

63. See *id.* at 767–68.

64. See *id.* at 732–37.

“externalities” at all, given that such bargainable rights should internalize any externalities.⁶⁵

The remaining quartile, however, that of externalities over which the parties cannot bargain, is the location in which Kaplow and Shavell find liability rules to be decisively superior. Here again, readers may find the claims for liability rules unsurprising in this nonbargaining quartile, because that conclusion squares with Calabresi and Melamed’s claim of a quarter of a century ago. Kaplow and Shavell argue, however, that their reasons are different from Calabresi and Melamed’s and also more cogent, and that their reasoning has more direct application to modern regulatory choices, especially environmental management.⁶⁶

Why do Kaplow and Shavell find liability rules so superior in this quartile? Their reasoning draws on an insight from one of Mitchell Polinsky’s early-1980s trio of articles about property rules and liability rules.⁶⁷ The argument, very roughly, is the following: Where the parties cannot bargain easily to allocate rights—say, a right to intrude, like pollution—that allocation has to fall to some *deus ex machina*, which Kaplow and Shavell call “the court” or “the state.”⁶⁸ If the court were to use a property rule, it would optimally allocate the right to intrude to the intruder if the cost of prevention is higher than the damage to the intruded-upon person(s), and to the victims if their damage is greater than the prevention cost of the intruder.⁶⁹

65. See Steven N.S. Cheung, *The Structure of a Contract and the Theory of a Non-Exclusive Resource*, 13 J.L. & ECON. 49, 50–51 (1970) (attributing “externality” to incomplete contracting). The “externality” designation is nevertheless used by others as well even where parties can bargain. See, e.g., Polinsky, *Controlling Externalities*, *supra* note 3, at 5. My own view is that “externality” is a misleading term for what Kaplow and Shavell have in mind. Kaplow and Shavell seem to intend a use that intrudes onto another property. Such a use may be held as of right, of course, as in an easement, just as a “possessory” laptop computer is held as of right. However, all users of laptop computers, as Kaplow and Shavell point out, are likely to use the computer in the same way: They have a “common value” for it. By contrast, the easement holder normally uses the easement differently from the way in which the servient tenement owner would use it. For example, a back lot resident might have a driveway easement across a front lot, but if the front lot owner reacquires this easement, she might devote the space to a garden, since she does not care about getting to the back lot. That is, the two users would have “independent values” for their respective uses of the easement right. Similarly, the factory would use a pollution easement to pollute, whereas the resident would use the reacquired easement to curtail pollution. The difference in the parties’ respective uses or values suggests one reason why, in practice, liability rules for “common value” things might be subject to the reciprocal taking problem, while liability rules for intrusion rights, which have independent values to the parties, would be more likely to “stick” as one-way streets, or as what Ayres and Balkin would describe as “first-order” liability rules. See Ayres & Balkin, *supra* note 4, at 710.

66. See Kaplow & Shavell, *supra* note 4, at 717–18 (distinguishing their own views from those in other liability rule literature and noting importance for environmental regulation); *id.* at 748–52 (applying their theory to environmental regulation).

67. See Polinsky, *Resolving Nuisance Disputes*, *supra* note 3, at 1100–02, cited in Kaplow & Shavell, *supra* note 4, at 725 n.35.

68. See Kaplow & Shavell, *supra* note 4, at 719 (referring to decisionmaker as “court”); *id.* at 724–28 (referring to decisionmaker as “the state”).

69. See *id.* at 724–25 (describing allocation of property right with perfect information). With perfect information, of course, the court could also use a liability rule, setting damages at the level of harm. See *id.*

Here is the Polinsky insight, upon which Kaplow and Shavell build: If the court decides under a property rule, allocating a full property right to one side or the other, it must know both the damage costs to the victims and the prevention costs to the intruder.⁷⁰ Yet the situation is different if the court uses liability rules: In that case, the court only needs to know the damages to the victim, because the intruder herself will decide whether those damages outweigh her prevention costs.⁷¹ If the prevention costs are greater, she will continue to intrude and pay the damages; if not, she will pay for prevention and thus stop intruding. Liability rules therefore allow the court to economize on information.⁷² According to Kaplow and Shavell, this economizing factor, rather than Calabresi and Melamed's explanation that transaction costs are simply too high for private bargains, is the reason why liability rules are preferable to property rules in nonbargaining "externalities" situations.⁷³

The opening examples for such externalities once again come largely from environmental nuisances such as smoke.⁷⁴ Indeed in these instances, *Boomer* would be perfect: one big polluting factory surrounded by many little pollution victims. The court assesses the total cost to the victims, tells the *Boomer* factory manager that this is the price of continued pollution; the manager assesses her own prevention costs and decides whether to pay those prevention costs or, alternatively, to continue polluting while paying the assessed smoke damage. A liability rule thus allows the court to minimize administrative costs, because it only has to determine one side of the prevention/damage equation while the better-informed polluter herself determines the other side.⁷⁵ This is unlike a property approach, which forces the court to establish information on both sides.

The next step is an application to the real world, and here is where the problems begin—including, as we shall see, another shadow example problem. The liability rule solution, say Kaplow and Shavell, should be generalized to environmental law, because it is cheaper than any property solution.⁷⁶ Like many modern commentators on environmental legislation, Kaplow and Shavell

70. See *id.* at 725–27; Polinsky, *Resolving Nuisance Disputes*, *supra* note 3, at 1100–02. More than Kaplow and Shavell, however, Polinsky stresses that the court must make a correct assessment of damages, because Polinsky thinks strategic bargaining impedes further refinements by the parties. See Polinsky, *Resolving Nuisance Disputes*, *supra* note 3, at 1102.

71. See Kaplow & Shavell, *supra* note 4, at 725–27; Polinsky, *Resolving Nuisance Disputes*, *supra* note 3, at 1100–02.

72. See Kaplow & Shavell, *supra* note 4, at 719, 726–27.

73. There is a glimpse of this argument in Calabresi and Melamed as well, however. See Calabresi & Melamed, *supra* note 1, at 1097 n.19. *But see* Krier & Schwab, *supra* note 2, at 459–64, 467–68, 474 (criticizing liability rules on ground that very reasons that private parties cannot bargain are same reasons why courts may be poor assessors of damages and arguing further that judicial decisionmaking may undermine private bargaining).

74. See Kaplow & Shavell, *supra* note 4, at 716–17, 723.

75. See *id.* at 725 n.36, 751 n.122 (maintaining that polluter's information about prevention costs is better than state's).

76. See *id.* at 748–52.

have little use for direct command-and-control environmental rules, the rules that say that you must have this or that type of scrubber at the end of your smokestack.⁷⁷ Kaplow and Shavell dub these “property rule” solutions,⁷⁸ but this seems a bit of a gratuitous slap at property rules. In the original Calabresi and Melamed classification, command-and-control rules seem to fit most easily as “inalienability” rules.⁷⁹ Indeed, insofar as the punishment for violation is a fixed fine, command-and-control regimes look rather like liability rules.⁸⁰

In any event, that is not the kind of property rule that anyone in modern environmental discussions cares about. As Kaplow and Shavell are aware, the property-like rules that are now on every tongue are tradeable emission rights.⁸¹ These rights derive from the following process: First, the decisionmaker establishes a tolerable overall quantity of pollution; second, she divides that total allowable quantity of pollution into small individual emission allotments or entitlements; third, she allocates those small emission entitlements to entities that want them (in the best case by auction, but any allocation will do); and finally, she lets the owners trade these entitlements until the limited pollution rights come to rest in the hands of those who value them most.⁸² Although the primary goal of this scheme is to limit pollution damage, the method has some advantages for polluters. Those who can prevent at low cost can avoid the expense of buying pollution rights, and they can even sell their pollution entitlements to others; those who have higher prevention costs must buy their pollution rights, but they can do so from those with lower prevention costs. Because pollution control becomes a valuable activity for which there is a market, all these polluters will have appropriate incentives to figure out least-cost ways to reduce total pollution, which once again redounds to the benefit of pollution victims.

77. See *id.* at 748–57; see also Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1334–39 (1985) (describing direct technology-based, command-and-control standards as inefficient); Daniel J. Dudek & John Palmisano, *Emissions Trading: Why Is This Thoroughbred Hobbled?*, 13 COLUM. J. ENVTL. L. 217, 219–22 (1988) (same); Note, *Technology-Based Emission and Effluent Standards and the Achievement of Ambient Environmental Objectives*, 91 YALE L.J. 792, 793 (1982) (same).

78. See Kaplow & Shavell, *supra* note 4, at 748 (describing “direct regulation” as “property rule”).

79. See Calabresi & Melamed, *supra* note 1, at 1092–93.

80. See Kaplow & Shavell, *supra* note 4, at 753, who make this point with respect to fines for traffic violations.

81. See, e.g., Deborah M. Mostaghel, *State Reactions to the Trading of Emissions Allowances Under Title IV of the Clean Air Act Amendments of 1990*, 22 B.C. ENVTL. AFF. L. REV. 201 (1995) (describing state regulatory impediments to current tradeable emission rights approaches); Richard B. Stewart, *United States Environmental Regulation: A Failing Paradigm*, 15 J.L. & COM. 585, 591–94 (proposing tradeable emission rights along with emission fees as antidote to command-and-control regulations); David Sohn & Madeline Cohen, Note, *From Smokestacks to Species: Extending the Tradable Permit Approach from Air Pollution to Habitat Conservation*, 15 STAN. ENVTL. L.J. 405 (1996) (discussing extensions of tradeable emissions approaches to other environmental areas).

82. See, e.g., J.H. DALES, *POLLUTION, PROPERTY AND PRICES* 93–97 (1968) (describing tradeable pollution rights schemes); Ackerman & Stewart, *supra* note 77, at 1341–51 (same).

But Kaplow and Shavell are not fans of this property-like solution. They say that the critical step is the first one, in which the decisionmaker sets the overall quantity. In setting that quantity, Kaplow and Shavell argue, the decisionmaker has to know both the environmental damage and the costs of prevention.⁸³ It is better to use a liability rule: Let the court simply determine the average damage caused by pollution, set that damage as a cost of pollution, and watch as the polluters themselves determine their own prevention costs and arrive at optimal pollution rates. That is the way to economize on information costs.

There is a great deal of force in this argument. In the environmental context, however, there are two important caveats, and together they make the property rights approaches relatively more attractive, and the liability rules approaches less so. The first caveat is that pollution harms are more than simply linearly additive. The marginal cost of an additional dose of pollution is very likely to be higher than the marginal cost of the preceding dose.⁸⁴ Two gidgets of pollution may cause no damage (like a tiny drop of iodine), whereas twenty gidgets can kill you (like a teaspoon of iodine). Indeed, in a typical environmental nuisance case, a small dose of pollution is not likely to cause a lot of harm. Air currents will disperse fumes, and small amounts of, say, sulphur dioxide, will not cause much if any damage to anything.⁸⁵ But when ten factories start emitting sulphur dioxide, and when the amount of pollution rises proportionately, the damage rises *more* than proportionately.

Those ten factories raise the second caveat, and it is again linked to a misplaced choice of examples. Put briefly, the environmental context is not the *Boomer*-like nuisance, where one polluting factory confronts many pollution victims. The typical environmental context includes not only many pollution victims, but also many polluting factories. This combination—increasing marginal pollution damage, together with multiple polluters—has serious implications for a liability rule in which the decisionmaker sets the costs at the average damage. The average is too high for the first polluter, and too low for

83. See Kaplow & Shavell, *supra* note 4, at 750–51.

84. See, e.g., Benjamin G. Ferris, Jr., *Sulfur Dioxide: A Scientist's View*, in *THE SCIENTIFIC BASIS OF HEALTH AND SAFETY REGULATION* 253, 257–59 (Robert W. Crandall & Lester B. Lave eds., 1981) (reporting studies of progressively increasing health effects from increasing levels of air pollutants). The presumption of the Clean Air Act is that for the major pollutants subject to "primary standards," there are no significant health effects below certain levels. See Lester B. Lave, *Sulfur Dioxide: An Economist's View*, in *THE SCIENTIFIC BASIS OF HEALTH AND SAFETY REGULATION*, *supra*, at 267, 267–68. Precise calculation of dose-response is extremely complex, however, particularly at low levels. See, e.g., Bert P. Krages II, *Rats in the Courtroom: The Admissibility of Animal Studies in Toxic Tort Cases*, 2 *J. ENVTL. L. & LITIG.* 229, 241–44 (1987) (describing uncertainties about low-level exposure extrapolated from high dosages in animal experimentations). For a summary of some controversies concerning dose-response patterns, particularly relating to carcinogens, see EDWARD J. CALABRESE, *PRINCIPLES OF ANIMAL EXTRAPOLATION* 529–36 (1983).

85. For this reason, for example, the Clean Air Act gives limited credit for dispersal techniques such as tall stacks, discussed in *Sierra Club v. Environmental Protection Agency*, 719 F.2d 436, 439–43 (D.C. Cir. 1983).

the second, because marginal prices rise for each successive polluter; average damages do not capture this fact.

In fact, the disparity between average costs and marginal costs, in a large number context, is the scenario for the common pool problem often called the "tragedy of the commons."⁸⁶ The tragedy originally was framed over the issue of fishing: When a fisher decides to join other fishers at a particular fishing ground, he calculates that his costs will be the average of all the other fishers. In reality, his arrival causes everyone a little more than the previous average cost, because the arrival of one more competitor requires each fisher to work a little harder to catch the now-scarcer fish.⁸⁷ In this sense, each fisher imposes an externality on the others: His arrival makes their efforts more costly, but he never "internalizes" the costs that he imposes. Similarly, under an average-damage charge for air pollution, when a new factory owner begins to pollute the air, she pays the average cost of all her predecessors. Yet after her factory joins the others, the marginal damage of pollution rises, and now all the factories are undercharged.

There is a solution, of course: Reset the "average" charge of pollution next year, so that it more closely approximates the actual marginal costs from the prior year, given all the polluting factories. But that "average" is a moving target. The average pollution damage from one cement factory is less than the average pollution damage of two, or of ten. Ten factories' pollution results in more than ten times the number of respiratory ailments and dead trees. Thus the decisionmaker cannot set an appropriate "average" damage per unit without knowing the total quantity of pollution. In fact, this is not really setting an average at all; this is trying to approximate a marginal cost. That is much trickier, because to guess the appropriate charge, pollution quantities must be approximated as well.

Moreover, those quantities are destabilized by the very operation of an average-charge liability approach. Under this approach, the *Boomer* factory's average costs rise or fall depending on neighboring factories' activities. In effect, the factory in *Boomer* is in competition with the neighboring plants; if they did not pollute so much, the *Boomer* factory would have to pay less in average pollution damages.⁸⁸ The liability regime gives these factories no way to come to grips with the externalities they impose on one another. Quite the contrary, the average-charge approach invites freeloading among the polluters themselves: The new polluter can move in, pay this year's average costs (now an undercharge), and even pay next year's somewhat higher average costs, because she knows that once the charges are adjusted, she will be sharing that

86. See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

87. See H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124, 129-32 (1954).

88. All are like the fishermen or herdsmen in the classic tragedy of the commons: Each faces a higher charge because of the entry of other actors.

higher average with all the other factories. She neither bears the full cost of her added pollution, nor by parallel reasoning would she take the full gains from polluting less, since some of those gains redound to the other factories, which now share in the lowered average damages.⁸⁹

Notice that under these circumstances, the relative disadvantage of an average-charge liability rule can be understood through Kaplow and Shavell's own ingenious defense of property rules for "possessory things" like laptop computers. Because added pollution raises the average charges for all polluters, these polluters, vis-à-vis one another, are all in competition for the very same resources. As among themselves, pollution has what Kaplow and Shavell call a "common value"; and as with Kaplow and Shavell's example of the laptop computers, a liability rule ushers in a destabilizing series of new entries and reciprocal takes and take-backs, in a competition that has no resolution.

Indeed, this situation—multiple resource users and rising marginal costs—is one that most commentators think cries out for property rights solutions.⁹⁰ The tradeable emission rights solution is precisely the same as one of the classic solutions to the tragedy of the commons: Determine the amount of total use that the resource—say, air—can sustain as a whole, divide the total into mini-rights, and let those who want the rights bid against one another. In that way, their competition can be contained; those with higher-value uses (or higher prevention costs) will buy the rights of lower-value users and lower-cost preventers; actors can plan and invest in the appropriate pollution control entitlements; and total resource use is contained, while the externalities of each party's use are internalized through the operation of property rights.⁹¹

Having said all that, a property rule regime like tradeable emission rights is not easy, and it is not cheap. Such a regime's expenses include the upstream cost of a potshot guess at polluter prevention costs. As Kaplow and Shavell rightly point out, this is an administrative cost that may well be cheaper under liability rules. In addition, just as a liability rule would require downstream readjustment of pollution damage costs (in the light of total quantity), the property rule solution is also very likely to require downstream readjustments of total quantities (in the light of pollution rights costs). All of these respective

89. At some higher point it may be worthwhile for a factory to prevent rather than to pay average damages, but here too, free riding would play a role: Each factory would wait for someone else to pay the prevention costs, lowering average damages for all the remaining polluters

90. See, e.g., Harold Demsetz, *Toward a Theory of Property Rights*, AM ECON REV, May 1967, at 347–48, 350–58 (describing development of property rights as response to common pool resource uses)

91. The closest that Kaplow and Shavell come to this point is to note that property rules may be superior where damage costs and prevention costs are not independent, that is, where the higher-damage use also has higher prevention costs. See Kaplow & Shavell, *supra* note 4, at 727 n 43, app at 777. An unexplored reason for this superiority, however, is that with property rights, the higher-value users can buy some cheap prevention from others.

administrative costs have to be considered in assessing the relative merits of emission rights versus liability systems.

But the other element to be considered is the one major function that the property rule solution serves that the liability rule solution does not: The property rule solution allows the polluters to channel their competition vis-à-vis one another. Property rules make these common pool resource users bid against one other and thus confront the costs they impose upon one another—not just compete on the unmediated field of an average-charge “commons.”

This is an advantage that Kaplow and Shavell simply do not consider. Why not? Once again, I think the choice of examples is the root of the problem. For much of the quartile of unbargainable externalities, Kaplow and Shavell seem to be discussing an example based on that old standby, *Boomer*; but they never give *Boomer*'s cement factory any neighboring cement factories, although to do so would clearly raise the problem of the well-known average cost/marginal cost divergence in common pool resources, a divergence so typical of environmental harms.

On the other hand, there is a much better example than any environmental problem for Kaplow and Shavell's proposed liability regime. For the average-cost liability rule, the right example is the automobile accident. Kaplow and Shavell do indeed take up accidents as a secondary example, and very interestingly, too.⁹² But accidents should be front and center for an average-cost liability rule. The reason is that in the usual case, the costs of one auto accident are entirely separable from the costs of another. My crash at Fourth and Main results in a great deal of damage, but that damage is utterly unaffected by your crash at Twenty-Second and Central.

These accidents fit the Kaplow and Shavell mold perfectly. First, they fall into the quartile of unbargainable externalities: They occur in the presence of what I have been calling Type I transaction costs, as drivers and victims cannot discuss precautions beforehand. Second, the costs of accidents, by and large, are linear, not exponential; neither accident victim will be affected by the damage suffered by the other. Here, average damage charges to tortfeasors will work just fine, because the damages in question are unrelated.⁹³

Once again, then, the perfect example for the authors' approach is an example that indeed makes an appearance, but only secondarily, in the shadows. Their showcase example conceals the common pool issues so commonly encountered in environmental law, where the costs of resource uses are indeed interrelated. This analysis blurs the classic advantages of property regimes: In situations of competition for scarce resources, property rights allow

92. See *id.* at 752–54.

93. A possible exception might occur if Third and Main is a dangerous corner with multiple crashes; then costs could rise exponentially insofar as they include the rising anxieties of nearby residents.

disparate parties to find each other, to bargain, to trade, and to leave the bargaining table with stable entitlements that allow them to plan for their future investments and efforts.

CONCLUSION

In some ways it seems quite natural that Calabresi and Melamed's shadow examples would focus on accidents. After all, when *The Cathedral* was published, Calabresi had just completed *The Costs of Accidents*. It seems equally natural that Ayres and Talley would be thinking about contracts; Ayres is one of the eminent contracts scholars of his generation, and Talley seems well on the way to joining him. It is natural too that Kaplow and Shavell would have accidents in mind; while both these prodigious polymaths are to some degree unclassifiable, Shavell has made major contributions to the field of torts (and Kaplow to that quintessential liability rule regime, tax). Finally, it is perhaps entirely to be expected that property scholars like myself, or like James Krier,⁹⁴ would come chugging along to defend property rules from this onslaught of liability rule expertise.

What is more a subject of bemusement is the next question: Why do these liability rule experts seem to find the examples from property so much more vivid, lively, and interesting than the shadow examples from torts, contracts, and perhaps tax? Property scholars would be tempted to say that the reason is obvious: Property, we think, is more vivid, lively, and compelling than torts, contracts, or tax.

Putting such chauvinism to one side, however, it is important to ask whether all these blithely expansive uses of property examples represent anything more than a forgivable vanity. The answer, unfortunately, is yes. By using examples that implicitly claim too much, liability rule scholars lose an important opportunity to consider that there could be genuine differences among the historic domains of tort, contract, and property. Since Calabresi and Melamed's pioneering work, it is not a great stretch to opine that the dominating issues of tort may be the externalities that accompany Type I transaction costs, which arise where large numbers of persons or vaguely specified rights impede actors from bargaining with one another directly. Perhaps more unexpectedly, it could be that in the areas of the law usually classed as contract, the dominating issues are to force the information that overcomes the Type II transaction costs, which arise where bargaining parties can locate each other and identify their respective rights, but where their deals may nevertheless falter because of strategic bargaining and "adverse selection." Finally, it could be that the dominating concerns of what we designate as

94. See generally Krier & Schwab, *supra* note 2.

property law are rather different: to create the conditions that induce people to work hard and to invest in things.

Notice, however, that if there are such differing dominating concerns in the traditional domains of tort, contract, and property, then property lies in a certain tension with both tort and contract. Consider, first, the fairly obvious tension between property and tort. Whereas the tort impulse is to overcome the externalities attendant on large numbers and indistinct rights by assessing liability to the actors after the fact of damage, the property impulse is quite different: It is to redefine and sharpen rights, so that actors can bargain for themselves and control their own investments. Kaplow and Shavell have opened our eyes to some of the special costs that a decisionmaker has in defining property rights and to the relative administrative cost advantages of using liability approaches instead. Yet their analysis loses sight of some real advantages of the property approach in actual environmental common pool scenarios, where the actors' damage-causing actions are interrelated, and where the liability approach would undermine the actors' abilities to trade and plan in containing their joint damage to pollution victims. Indeed, James Krier and Stewart Schwab have identified perhaps the most important reason why the administrative cost advantages of tort may be incompatible with the bargaining advantages of property: When decisionmakers, seeing transactions costs, jump too quickly to solve externalities problems by assessing liability, they may prevent the parties from even *learning* to bargain for themselves.⁹⁵ Of course, a first step in that bargaining process is learning how to define rights and then redefine them, shaping entitlements to meet the exigencies of the resource uses at hand.⁹⁶

Next, consider the somewhat more surprising tension between contract and property. Contract and property are often considered to be part of the same package of "cultural software,"⁹⁷ the inseparable and indispensable foundations of a private market order.⁹⁸ In part this is because the definition of property rights overcomes Type I transaction costs, and allows parties to locate each other and reach their own contractual arrangements through bargaining, rather than either resorting to force or falling back on more socially or politically determined remedies—including, of course, liability judgments.

95. See *id.* at 462–64.

96. Rights-definition is a part of property law, and property law often rewards those who make their claims clear. See Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 81–82 (1985). For the ongoing process of redefining property rights to meet resource use needs, see GARY D. LIBECAP, CONTRACTING FOR PROPERTY RIGHTS 4–9 (1989), which describes efforts to refine or alter property rights as "contracting for property rights" and then describes some impediments to these efforts.

97. See J.M. Balkin, *Ideology as Cultural Software*, 16 CARDOZO L. REV. 1221, 1225 (1995) (describing cultural software as "the associations, heuristics, metaphors, and capacities that we employ in the process of understanding and evaluation").

98. See, e.g., Duncan Kennedy & Frank Michelman, *Are Property and Contract Efficient?*, 8 HOFSTRA L. REV. 711, 749–50 (1980) (referring to private property/free contract (PPFC) as unified "property and contract regime").

But if the definition of property rights can obviate Type I transaction costs, and in that sense permit bargaining and contracting to begin, Ayres and Talley have shown how property definitions also can introduce Type II transaction costs. As these authors point out, property rules may allow parties to conceal private information, and to bargain so strategically that they miss beneficial trades.

Hence one tension between property and contract concerns the stages of the bargaining process: Sharply defined property rights may allow the process of contracting to begin, but those very rights may also impede the further course of contracting. Once inside the bargaining process, as Ayres and Talley point out, the parties may again need the liability rules characteristic of contract law to smoke out private information and thus smooth the further course of dealing.

There is a second tension between property and contract as well, and it is one that is strongly suggested by Ayres, both in his work with Talley and more recently with Balkin. Ayres has identified this tension in somewhat technical terms as a tradeoff between "adverse selection" and "moral hazard."⁹⁹ In using these terms, Ayres roughly identifies adverse selection with the withholding of private information and the strategic bargaining that follows, while he roughly identifies moral hazard with a failure to plan, invest, and manage resources carefully.¹⁰⁰ Ayres's remarks suggest that these two types of problems cannot be solved simultaneously: The liability rules that force the disclosure of private information may unfortunately come at the cost of careful management and investment in resources, because liability rules preclude the investor's capture of her investment,¹⁰¹ conversely, the property rules that encourage investment unfortunately come at the cost of permitting the investor to withhold her private information.

What Ayres and his coauthors have not done is to take the next step: to note that this tension may mark a systematic contrast between the domains that we have historically called contract (where adverse selection—i.e., information-forcing—matters most) and property (where moral hazard—i.e., incentives for investment—matters most). If Ayres is right that we cannot solve one problem without exacerbating the other, then we might expect to see contractual labels

99. See Ayres & Talley, *supra* note 4, at 1085 ("Attempts to remedy adverse selection often exacerbate moral hazard. . . . Thus, policymakers often face a trade-off in choosing legal rules to constrain the twin evils."); see also Ayres & Balkin, *supra* note 4, at 714 (referring to tradeoff between moral hazard or underinvestment and "asymmetric information").

100. See Ayres & Talley, *supra* note 4, at 1084–85. Ayres and Talley's article specifically refers to moral hazard as "the inability to control individual behavior contractually," but the examples are of underinvestment and overuse. *Id.* at 1085.

101. See Ayres & Balkin, *supra* note 4, at 714. The simple fact of having to disclose information might in itself discourage investment, particularly the investment entailed in planning, since those plans might give the other party ideas; thus planning is a version of what Anthony Kronman calls "deliberately acquired information." Anthony T. Kronman, *Mistake, Disclosure, Information, and the Law of Contracts*, 7 J. LEGAL STUD. 1, 13 (1978).

invade property law when information-sharing matters more than investment¹⁰²—and property labels invade contract law where investment and effort matter most.¹⁰³

Although Ayres and his coauthors have highlighted this extremely interesting tension, their choices of examples obscure the ways that the common law categories may reflect the very dominating concerns that pull the different sides of this tension. Ayres and Talley focus largely on the ways that liability rules can mitigate strategic bargaining, without a comparable discussion of the countervailing considerations of moral hazard. Authors are always free to choose their own subjects, of course, but by using property illustrations for their arguments about strategic bargaining, Ayres and Talley unfortunately imply that strategic bargaining is of paramount concern in property too. In fact, the conventional divisions of the common law may be considerably subtler, effectively designating as “property” those areas where planning and investment—“moral hazard”—present the more serious issues.

All this comes back to *Boomer* and to the use of property examples to illustrate points that really come from concerns dominating torts or contracts. Overreaching examples blur our vision of the distinctions and tensions among the historic domains of the common law. That is why the choice of examples, like much else in rhetoric, really does matter, and why it is important not to claim too much by showcasing examples that do not quite fit. In doing so, we may bypass the chance to delve more deeply into our most basic legal traditions.

The pattern of rhetorical blurring has been a feature of the property rules/liability rules distinction from the start. No doubt it is a mark of Calabresi and Melamed’s great intellectual force that some of their most provocative and interesting successors continue their pattern of using shadow examples. But it is high time to move out of those shadows, and to pay close attention to examples, so that we can rethink the ways that the astonishingly supple concepts of the common law may already embed the compellingly modern insights of *The Cathedral*.

102. See, e.g., JAMES E. KRIER & JESSE DUKEMINIER, PROPERTY 522 (3d ed. 1993) (describing old doctrines presuming effective contract warranty on short-term rentals of furnished rooms, unlike standard no-warranty rule then current in general landlord-tenant law).

103. See Kronman, *supra* note 101, at 13–15 (describing pattern in which contract law encourages production of information by according property rights for “deliberately acquired information” that need not be disclosed to other party).