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Essays

What Happened to Property in Law and Economics?

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I. INTRODUCTION

Property has fallen out of fashion. Although people are as concerned as ever with acquiring and defending their material possessions, in the academic world there is little interest in understanding property. To some extent, this indifference reflects a more general skepticism about the value of conceptual analysis, as opposed to functional assessment of institutions. There is, however, a deeper reason for the indifference to property. It is a commonplace of academic discourse that property is simply a “bundle of rights,” and that any distribution of rights and privileges among persons with respect to things can be dignified with the (almost meaningless) label “property.”¹ By and large, this view has become conventional wisdom among legal scholars: Property is a composite of legal relations that holds

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1. See, e.g., Edward L. Rubin, *Due Process and the Administrative State*, 72 CAL. L. REV. 1044, 1086 (1984) (“[P]roperty is simply a label for whatever ‘bundle of sticks’ the individual has been granted.”); Joan Williams, *The Rhetoric of Property*, 83 IOWA L. REV. 277, 297 (1998) (“Labeling something as property does not predetermine what rights an owner does or does not have in it.”).

between persons and only secondarily or incidentally involves a "thing."² Someone who believes that property is a right to a thing is assumed to suffer from a childlike lack of sophistication—or worse.³

One might think that law and economics scholars would take property more seriously, and at first glance this appears to be true. Analysis of the law from an economic standpoint abounds with talk of "property rights" and "property rules." But upon closer inspection, all this property-talk among legal economists is not about any distinctive type of right. To perhaps a greater extent than even the legal scholars, modern economists assume that property consists of an ad hoc collection of rights in resources.⁴ Indeed, there is a tendency among economists to use the term property "to describe virtually every device—public or private, common-law or regulatory, contractual or governmental, formal or informal—by which divergences between private and social costs or benefits are reduced."⁵

In other times and places, a very different conception of property has prevailed. In this alternative conception, property is a distinctive type of right to a thing, good against the world. This understanding of the in rem character of the right of property is a dominant theme of the civil law's "law of things."⁶ For Anglo-American lawyers and legal economists,

2. BRUCE A. ACKERMAN, PRIVATE PROPERTY AND THE CONSTITUTION 26-29 (1977) (reporting that the bundle-of-rights conception of property is so pervasive that "even the dimmest law student can be counted upon to parrot the ritual phrases on command").

3. *Id.* at 26-31, 97-103 (contrasting the "scientific" perspective about the meaning of property as a bundle of rights with the "layman's" perspective that persists in thinking of property as rights to things).

4. For an influential definition among economists, see Armen A. Alchian, *Some Economics of Property Rights*, 30 IL POLITICO 816, 818 (1965), reprinted in ARMEN A. ALCHIAN, ECONOMIC FORCES AT WORK 127, 130 (1977) ("By a system of property rights I mean a method of assigning to particular individuals the 'authority' to select, for specific goods, any use from a nonprohibited class of uses."). See also YORAM BARZEL, ECONOMIC ANALYSIS OF PROPERTY RIGHTS 3 (2d ed. 1997) (defining property as "the individual's ability, in expected terms, to consume the good (or the services of the asset) directly or to consume it indirectly through exchange") (emphases omitted); THÉRÁINN EGGERTSSON, ECONOMIC BEHAVIOR AND INSTITUTIONS 33 (1990) (stating that "[w]e refer to the rights of individuals to use resources as *property rights*" and quoting Alchian's definition); Steven N.S. Cheung, *The Structure of a Contract and the Theory of a Non-Exclusive Resource*, 13 J.L. & ECON. 49, 67 (1970) ("An exclusive property right grants its owner a *limited* authority to make decision[s] on resource use so as to derive income therefrom."); Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. PAPERS & PROC. 347, 347 (1967) ("An owner expects the community to prevent others from interfering with his actions, provided that these actions are not prohibited in the specifications of his rights.").

5. RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 53 (5th ed. 1998).

6. See, e.g., THOMAS GLYN WATKIN, AN HISTORICAL INTRODUCTION TO MODERN CIVIL LAW 219-24, 282 (1999) (tracing the development of property as a right in rem in the civil-law tradition and contrasting it with the law of obligations dealing with in personam rights to choses in action arising out of contractual, delictual, or quasi-delictual circumstances); A.M. Honoré, *Rights of Exclusion and Immunities Against Diving*, 34 TUL. L. REV. 453, 454 (1960) (discussing a similar civil-law distinction between absolute and relative rights); see also HIROSHI ODA, JAPANESE LAW 158-61 (1992) (stating that registration is not required to create a right but is required for in rem treatment under Japanese law); 3 MAURICE PICARD, TRAITÉ PRATIQUE DE DROIT CIVIL FRANÇAIS: LES BIENS 46-48 (Marcel Planiol & Georges Ripert eds., 2d ed. 1952) (discussing the "fundamental" distinction between in rem or absolute rights and in personam or

however, such talk of a special category of rights related to things presumably illustrates the grip of conceptualism on the civilian mind and a slavish devotion to the gods of Roman law.

Or does it? In related work, we have argued that, far from being a quaint aspect of the Roman or feudal past, the *in rem* character of property and its consequences are vital to an understanding of property as a legal and economic institution.⁷ Because core property rights attach to persons only through the intermediary of some thing, they have an impersonality and generality that is absent from rights and privileges that attach to persons directly. When we encounter a thing that is marked in the conventional manner as being owned, we know that we are subject to certain negative duties of abstention with respect to that thing—not to enter upon it, not to use it, not to take it, etc. And we know all this without having any idea who the owner of the thing actually is. In effect, these universal duties are broadcast to the world from the thing itself.

Because property rights create duties that attach to “everyone else,” they provide a basis of security that permits people to develop resources and plan for the future. By the same token, however, this feature of property imposes an informational burden on large numbers of people, a burden that goes far beyond the need for nonparties to a contract to understand the rights and duties of contractual partners. As a consequence, property is required to come in standardized packages that the layperson can understand at low cost. This feature of property—that it comes in a fixed, mandatory menu of forms, in contrast to contracts that are far more customizable—constitutes a deep design principle of the law that is rarely articulated explicitly. The fact that the *in rem* aspect of property has largely disappeared from academic discourse has made this latent design principle all the easier to overlook.

This Essay will trace the decline of the conception of property as a distinctive *in rem* right in Anglo-American thought, and the rise of the view among modern legal economists that property is simply a list of use rights in particular resources. As is the case with law and economics more generally, this view of property finds its roots in Ronald Coase’s seminal article, *The Problem of Social Cost*.⁸ Coase implied that property has no

relative rights); Jürgen Kohler, *The Law of Rights In Rem*, in INTRODUCTION TO GERMAN LAW 227, 230 (Werner F. Ebke & Matthew W. Finkin eds., 1996) (discussing *in rem* rights). On the Roman law background, see, for example, FRITZ SCHULTZ, CLASSICAL ROMAN LAW 32-34, 334-35, 456 (1951). Schultz notes that Roman law did not have the modern distinction between rights *in rem* and *in personam* and that the Roman law distinction between actions *in rem* and *in personam* does not exactly correspond to actions that protect these types of rights.

7. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1 (2000) [hereinafter Merrill & Smith, Numerus Clausus]; Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773 (2001) [hereinafter Merrill & Smith, *Interface*].

8. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

function other than to serve as the baseline for contracting or for collectively imposing use rights in resources, and he modeled conflicts over the use of resources exclusively in terms of bipolar disputes between *A* and *B*. Wittingly or not, this gave rise to a conception of property as a cluster of in personam rights and hastened the demise of the in rem conception of property.

In order to appreciate Coase's impact on the modern understanding of property rights, we begin, in Part II, with a brief overview of the traditional conception of property and the legal realists' advocacy of the alternative "bundle of rights" conception. Once the stage is set, we then turn, in Part III, to Coase's work, where we take a fresh look at his classic article and a companion piece in an effort to uncover the implicit conception of property rights that animates his theory. We conclude that Coase adopts an extreme version of the bundle-of-rights conception of property favored by the legal realists; in effect, Coase conceives of property in terms of a list of permitted and prohibited uses of particular resources. This is followed, in Part IV, by a selective review of post-Coasean treatments of property in law and economics scholarship, where we find the list-of-uses conception carried forward in a variety of guises. In Part V, we briefly consider some areas in which an explicit recognition of the in rem dimension of property would enrich the understanding of property issues by law and economics scholars. Part VI concludes.

II. THE TRADITIONAL CONCEPTION OF PROPERTY RIGHTS

We will not attempt in this Essay to provide anything like a comprehensive survey of the history of the concept of property. Instead, we stress a single point: Property rights historically have been regarded as in rem. In other words, property rights attach to persons insofar as they have a particular relationship to some thing and confer on those persons the right to exclude a large and indefinite class of other persons ("the world") from the thing. In this sense, property rights are different from in personam rights, such as those created by contracts or by judicial judgments. In personam rights attach to persons as persons and obtain against one or a small number of other identified persons.⁹

A number of historically significant property theorists have recognized the in rem nature of property rights and have perceived that this feature is key because it establishes a base of security against a wide range of interferences by others. William Blackstone, for example, famously defined property as "that sole and despotic dominion which one man claims and

9. For further elaboration on the distinction between rights in rem and rights in personam, see Merrill & Smith, *Interface*, *supra* note 7, at 780-89, and sources cited therein.

exercises over the external things of the world, in total exclusion of the right of any other individual in the universe.”¹⁰ Modern commentators have justifiably criticized the suggestion here that property rights are absolute—that they entail a “sole and despotic dominion” over some thing “in total exclusion” of other claims.¹¹ But it may be of greater significance that Blackstone recognized the *in rem* nature of property. Property, he said, is a right of a person with respect to some thing (a right “which one man claims and exercises over the external things of the world”) that avails against a large and indefinite number of other persons (“any other individual in the universe”). Blackstone’s talk about property being a “sole and despotic dominion” was clearly a bit of hyperbole and is inconsistent with the balance of his treatment of property, not to mention with the complexities of modern property law.¹² But the hyperbole should not obscure the fact that, at bottom, Blackstone conceived of property as being a right *in rem*.

Blackstone’s understanding that property rights are *in rem* also supplies the connection between his definition and the functional justification he offered for property as an institution. Echoing Hobbes’s famous argument, Blackstone perceived that property rights are important because they establish a basis of security of expectation regarding the future use and enjoyment of particular resources.¹³ By establishing a right to resources that holds against all the world, property provides a guarantee that persons will be able to reap what they have sown. As Blackstone put it, “[i]t was clear that the earth would not produce her fruits in sufficient quantities, without the assistance of tillage: but who would be at the pains of tilling it, if another might watch an opportunity to seize upon and enjoy the product of

10. 2 WILLIAM BLACKSTONE, COMMENTARIES *2. Among those influenced by Blackstone’s definition was James Madison, who quoted it in his 1792 essay, *Property*, as reflecting the correct understanding of “property” in the sense that includes “a man’s land, or merchandise, or money.” James Madison, *Property*, NAT’L GAZETTE, Mar. 29, 1792, at 174-75, reprinted in THE MIND OF THE FOUNDER 186, 186 (Marvin Meyers ed., 1981).

11. See, e.g., C.B. Macpherson, *Liberal-Democracy and Property*, in PROPERTY 199, 201 (C.B. Macpherson ed., 1978); Joseph William Singer, *The Reliance Interest in Property*, 40 STAN. L. REV. 611, 622 (1988).

12. See Robert P. Burns, *Blackstone’s Theory of the “Absolute” Rights of Property*, 54 U. CIN. L. REV. 67 (1985) (arguing that this passage is inconsistent with the balance of Blackstone’s treatment of property); Carol M. Rose, *Canons of Property Talk, or, Blackstone’s Anxiety*, 108 YALE L.J. 601, 604 (1998) (describing Blackstone’s talk of an exclusive right to property as “a rhetorical figure describing an extreme or ideal type rather than reality”).

13. BLACKSTONE, *supra* note 10, at *7. Hobbes and Hume, among others, anticipated Blackstone’s insight. See THOMAS HOBBS, LEVIATHAN 88-89 (Richard Tuck ed., Cambridge Univ. Press 1991) (1651) (discussing the war of everyone against everyone in which “there is no place for Industry; because the fruit thereof is uncertain: and consequently no Culture of the Earth” or other accomplishments, making “the life of man . . . solitary, poore, nasty, brutish, and short”); DAVID HUME, A TREATISE OF HUMAN NATURE 490 (L.A. Selby-Bigge ed., Oxford Univ. Press 1978) (1739) (arguing that property does not rest on a promise but rather on “a general sense of common interest; which sense all the members of the society express to one another, and which induces them to regulate their conduct by certain rules”).

his industry, art, and labour?"¹⁴ In other words, property is important because it gives legal sanction to the efforts of the owner of a thing to exclude an indefinite and anonymous class of marauders, pilferers, and thieves, thereby encouraging development of the thing.

Around the same time, Adam Smith was delivering his lectures on jurisprudence at the University of Glasgow, in which he was even more explicit than Blackstone about the in rem nature of property.¹⁵ Smith's subject was justice or rights and their protection, and he introduced an elaborate scheme of classification. Borrowing from the civil-law approach, he relied heavily on the distinction between real (or in rem) and personal (or in personam) rights, noting that "[w]e may observe that not only property but all other exclusive rights are real rights."¹⁶ Interestingly, he gives intellectual property rights—"the property one has in a book he has written or a machine he has invented"—as the paradigmatic example of real rights, because they can be vindicated against anyone in the world who prints the book or copies the machine during the term of the copyright or patent.¹⁷ Moreover, like Blackstone, Smith explains the development of in rem rights in evolutionary and functional terms.¹⁸ Although outside of the intellectual property context Smith is less explicit about the effects of protecting an owner's security of expectation,¹⁹ he sees property as serving both as a foundation for exchange and as a vindication of the owner's legitimate expectations.²⁰

14. 2 BLACKSTONE, *supra* note 10, at *7. Writing at about the same time, Edmund Burke offered a similar functional assessment of the significance of property. Edmund Burke, *Fragments of a Tract Relative to the Laws Against Popery in Ireland* (1765), in 9 THE WRITINGS AND SPEECHES OF EDMUND BURKE 434, 476-78 (R.B. McDowell ed., 1991).

15. ADAM SMITH, LECTURES ON JURISPRUDENCE 9-86 (R.L. Meek et al. eds., 1978) [hereinafter SMITH, JURISPRUDENCE]. At the very end of his work, *The Theory of Moral Sentiments*, Smith expresses his intention of setting forth his views on jurisprudence, presumably in treatise form. ADAM SMITH, THE THEORY OF MORAL SENTIMENTS 412 (D.D. Raphael & A.L. MacFie eds., Clarendon Press 1976) (1759). Smith did not live long enough to carry out this plan.

16. SMITH, JURISPRUDENCE, *supra* note 15, at 11. Smith explicitly considered the civilians' method of treating government first and property second when deciding how to organize his lectures. *See id.* at 401.

17. *Id.* at 11.

18. Smith argued that in rem rights became more important as society moved from the age of hunters to the age of shepherds to the age of agriculture to the age of commerce. *Id.* at 14-18. His method was not the "deductive" one of later economists, and even embraced inferences from "conjectural history." Henry J. Bitterman, *Adam Smith's Empiricism and the Law of Nature I*, 48 J. POL. ECON. 487, 504 (1940).

19. SMITH, JURISPRUDENCE, *supra* note 15, at 83 ("The law has however granted [an author] an exclusive privileged for 14 years, as an encouragement to the labours of learned men.").

20. *Id.* at 1, 17, 22-23. In *The Wealth of Nations*, Smith focuses on division of labor rather than property. References to property in *The Wealth of Nations* are thus few and are not central to his main argument. *See* ADAM SMITH, 1 AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 385-88 (R.H. Campbell et al. eds., Clarendon Press 1976) (1776) (arguing both that large proprietors have little incentive to improve and that slaves, because they cannot own property, have no reason to work other than to avoid punishment). Although it falls outside the scope of this Essay, it is possible that in *The Wealth of Nations*, Smith does not present property as an in rem right securing to owners the freedom to select uses because Smith, unlike

The classical utilitarian writers who followed in the footsteps of Blackstone and Smith also recognized the in rem dimension of property, and they were even more insistent that the functional importance of property is the security of expectation it created with respect to the future control of particular resources. Jeremy Bentham, a critical student of Blackstone and the founder of modern utilitarianism, described in detail the in rem nature of property rights.²¹ And to an even greater extent than Blackstone and Smith, he emphasized property's role in securing "the expectation of deriving certain advantages from a thing . . . in consequence of the relation in which we stand towards it."²² Among the principal evils associated with attacks upon property, Bentham noted, is the "Destruction of Industry: If I despair of enjoying the fruits of my labour, I shall only think of living from day to day: I shall not undertake labours which will only benefit my enemies."²³ Building on this insight, Bentham provided an extensive defense of property in terms of the stimulus to industry and cultivation that it affords,²⁴ stressed that the benefits of property accrue both to persons of wealth and to those living at the margin of existence,²⁵ and extolled the legislator who, above all else, protects the security of property rights.²⁶

The intellectual descendants of Blackstone, Smith, and Bentham elaborated on these themes in various ways. Those inclined toward conceptual analysis sought to unpack the meaning of in rem rights in order better to understand the unique nature of property.²⁷ Those attuned more to functional analysis focused on the role of property in providing a source of

his predecessors and many of his followers, adopted an objective theory of value. See Terence Hutchison, *Adam Smith and The Wealth of Nations*, 19 J.L. & ECON. 507, 519-20 (1976) (discussing Smith's theory of value).

21. JEREMY BENTHAM, *THE LIMITS OF JURISPRUDENCE DEFINED* 164 (Charles Warren Everett ed., 1945) (noting that "[t]o give a man a property" in a thing, there must be "a mandate prohibiting persons at large from meddling with it"); see also Jeremy Bentham, *Idea of a Complete Law* (1782), in *OF LAWS IN GENERAL* 156, 177-78 (H.L.A. Hart ed., 1970) (noting that law creating property in a field may be expressed as a command: "'Let no one, Rusticus excepted' (so we will call the proprietor) 'and those whom he allows meddle with such or such a field'").

22. JEREMY BENTHAM, *THE THEORY OF LEGISLATION* 109-22 (C.K. Ogden ed., Kegan Paul, Trench, Trubner & Co. 1931) (1802).

23. JEREMY BENTHAM, *Principles of the Civil Code*, in *THE WORKS OF JEREMY BENTHAM* 297, 310 (John Bowring ed., Edinburgh, William Tait 1843); see BENTHAM, *supra* note 22, at 116.

24. BENTHAM, *supra* note 22, at 116-19.

25. *Id.* at 101-02, 113-14.

26. *Id.* at 113.

27. See, e.g., 2 JOHN AUSTIN, *LECTURES ON JURISPRUDENCE OR THE PHILOSOPHY OF POSITIVE LAW* 795-99 (Robert Campbell ed., London, J. Murray 1885); Felix S. Cohen, *Dialogue on Private Property*, 9 RUTGERS L. REV. 357, 374 (1954); Albert Kocourek, *Rights in Rem*, 68 U. PA. L. REV. 322 (1920).

security against a range of interfering forces in society at large.²⁸ In contrast, the role of property emphasized in modern economic discussions—providing a baseline for contractual exchange and a mechanism for resolving disputes over conflicting uses of resources—was at most of secondary importance in these traditional accounts.

We take special note of one of these intellectual descendants of Blackstone, Smith, and Bentham, who happened to be more interested in conceptual analysis. Early in the twentieth century, Wesley Hohfeld provided an account of legal relations that proved to be especially influential in transforming the underlying assumptions about property rights in Anglo-American scholarship. Hohfeld is known today primarily for his theory of jural opposites (and correlatives) in which rights, privileges, powers, and immunities are paired with no-rights, duties, disabilities, and liabilities.²⁹ It is less well known that Hohfeld also wrote an important article on the distinction between in rem and in personam rights.³⁰ Hohfeld noted in this second article that in personam rights are unique rights residing in a person and availing against one or a few definite persons; in rem rights, in contrast, reside in a person and avail against “persons constituting a very large and indefinite class of people.”³¹

Significantly, however, Hohfeld failed to perceive that in rem property rights are qualitatively different in that they attach to persons insofar as they have a certain relationship to some thing. Rather, Hohfeld suggested that in personam and in rem rights consist of exactly the same types of rights, privileges, duties, and so forth, and differ only in the indefiniteness and the number of the persons who are bound by these relations.³² To use a modern expression, Hohfeld thought that in rem relations could be “cashed out”

28. See, e.g., 1 RICHARD T. ELY, *PROPERTY AND CONTRACT IN THEIR RELATIONS TO THE DISTRIBUTION OF WEALTH* 101, 132-56 (1914) (defining property as an exclusive right to control a thing and distinguishing exclusivity from absoluteness); 1 F.A. HAYEK, *LAW, LEGISLATION AND LIBERTY* 107 (1973) (arguing that a well-ordered liberal society must designate “ranges of objects over which only particular individuals are allowed to dispose and from the control of which all others are excluded”); JOHN STUART MILL, *PRINCIPLES OF POLITICAL ECONOMY* 37-38 (Jonathan Riley ed., Oxford Univ. Press 1994) (1848) (arguing that the use of land in agriculture must for the time being be exclusive because one who sows must be permitted to reap); Morris R. Cohen, *Property and Sovereignty*, 13 CORNELL L.Q. 8 (1927) (emphasizing that property rights create a form of private power over the external world); Charles A. Reich, *The New Property*, 73 YALE L.J. 733 (1964) (stressing the function of property in providing the security needed to promote individual autonomy).

29. Wesley Newcomb Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16 (1913).

30. Wesley Newcomb Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 26 YALE L.J. 710 (1917).

31. *Id.* at 718.

32. *Id.* at 718-33.

into the same clusters of rights, duties, privileges, liabilities, etc., as are constitutive of in personam relations.³³

Hohfeld did not use the metaphor "bundle of rights" to describe property. But his theory of jural opposites and correlatives, together with his effort to reduce in rem rights to clusters of in personam rights, provided the intellectual justification for this metaphor, which became popular among the legal realists in the 1920s and 1930s.³⁴ Different writers influenced by realism took the metaphor to different extremes. For some, the bundle-of-rights concept simply meant that property could be reduced to recognizable collections of functional attributes, such as the right to exclude, to use, to transfer, or to inherit particular resources.³⁵ For others, property had no inherent meaning at all. As one pair of writers put it, the concept of property is nothing more than "a euphonious collocation of letters which serves as a general term for the miscellany of equities that persons hold in the commonwealth."³⁶

Notwithstanding these variations, the motivation behind the realists' fascination with the bundle-of-rights conception was mainly political. They sought to undermine the notion that property is a natural right, and thereby smooth the way for activist state intervention in regulating and redistributing property.³⁷ If property has no fixed core of meaning, but is just a variable collection of interests established by social convention, then there is no good reason why the state should not freely expand or, better yet, contract the list of interests in the name of the general welfare. The realist program of dethroning property was on the whole quite successful. The conception of property as an infinitely variable collection of rights, powers, and duties has today become a kind of orthodoxy.³⁸ Not coincidentally, state intervention in economic matters greatly increased in the middle decades of the twentieth century, and the constitutional rights of property owners generally receded.

33. For a critique of this feature of Hohfeld's account of in rem rights, see Merrill & Smith, *Interface*, *supra* note 7, at 780-89, and sources cited therein.

34. See, e.g., Arthur Linton Corbin, *Taxation of Seats on the Stock Exchange*, 31 YALE L.J. 429, 429 (1922) ("Our concept of property has shifted . . . '[P]roperty' has ceased to describe any *res*, or object of sense, at all, and has become merely a bundle of legal relations—rights, powers, privileges, immunities."); see also Max Radin, *A Restatement of Hohfeld*, 51 HARV. L. REV. 1141 (1938) (interpreting the Hohfeldian scheme from a legal realist's point of view).

35. See, e.g., Cohen, *supra* note 27.

36. Walton H. Hamilton & Irene Till, *Property*, in 12 ENCYCLOPAEDIA OF THE SOCIAL SCIENCES 528, 528 (Edwin R.A. Seligman ed., 1934).

37. See, e.g., BARBARA H. FRIED, *THE PROGRESSIVE ASSAULT ON LAISSEZ FAIRE* (1998); Thomas C. Grey, *The Disintegration of Property*, in NOMOS XXII: PROPERTY 69 (J. Roland Pennock & John W. Chapman eds., 1980).

38. For a discussion, see Thomas W. Merrill, *Property and the Right To Exclude*, 77 NEB. L. REV. 730, 737-39 (1998); J.E. Penner, *The "Bundle of Rights" Picture of Property*, 43 UCLA L. REV. 711, 733-38 (1996); and sources cited therein.

The law and economics movement that emerged in the 1960s and 1970s was, on the whole, much more skeptical about government intervention in economic affairs. Significantly, however, although early law and economics scholars questioned the realists' faith in government, they did not question the realists' conception of property as a contingent bundle of rights. Indeed, as we shall see, the new generation of economic scholars adopted a conception of property similar to that embraced by the most extreme of the legal realists. For the economists, property consists of nothing more than the authoritative list of permitted uses of a resource—posted, as it were, by the state for each object of scarcity. Although he almost certainly did not have this objective in mind, the key figure in popularizing this hyper-realist conception of property was Ronald Coase.

III. COASE ON PROPERTY RIGHTS

Blackstone, Smith, Bentham, and their successors conceived of property as a distinctive right in a thing good against the world that promotes security of expectations about the use and enjoyment of particular resources. The legal realists succeeded in promoting a rival conception—that of property as a bundle of legal relations. Coase took the realists one step further, implicitly conceiving of property as a list of particularized use rights that individuals have in resources. This can be gleaned from a close reading of his 1960 article, *The Problem of Social Cost*, which is the starting point of most modern discussions of the economics of property rights.³⁹ Similar conclusions, however, can also be drawn from his study of broadcasting rights,⁴⁰ published one year earlier, out of which the more famous article grew.

Our objective is not to rehash the ideas for which Coase was to become justly famous, such as the role of transaction costs in analyzing legal rules and the importance of comparative institutional analysis in assessing responses to problems involving harmful spillovers.⁴¹ Rather, we are

39. Coase himself has briefly mentioned the affinity of his approach in *The Problem of Social Cost* and *The Federal Communications Commission* to the lawyers' conception of "what is bought and sold as consisting of a bundle of rights." R.H. COASE, *THE FIRM, THE MARKET, AND THE LAW* 11 (1988).

40. R.H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959).

41. The influence of *The Problem of Social Cost* is hard to overstate. It is almost certainly the most-cited article in law and possibly in economics, an assertion that has been documented with respect to law by Fred R. Shapiro. Fred R. Shapiro, *The Most-Cited Law Review Articles Revisited*, 71 CHI.-KENT L. REV. 751, 759 (1996) (describing Coase's article as the "runaway citation champion," cited almost twice as often as the next-most-cited law-related article); see also ACKERMAN, *supra* note 2, at 169 (describing the Coase Theorem as having a foundational role for today's generation of scholars akin to the role that *Erie Railroad v. Tomkins*, 304 U.S. 64 (1938), played for a previous generation); Daniel A. Farber, *Parody Lost/Pragmatism Regained: The Ironic History of the Coase Theorem*, 83 VA. L. REV. 397, 398-400 (1997) (discussing the reception of the Coase Theorem).

interested in taking a fresh look at this work in an effort to uncover the background assumptions about property rights that animate the analysis.

A. The Problem of Social Cost

Coase's purpose in writing his article on social cost was to explore the "influence of the law on the working of the economic system."⁴² Thus, he was not interested, as were later law and economics scholars, in using economics to explain the structure of the law itself. This may perhaps explain why he never saw the need to define property, even though it forms a critical backdrop to his analysis. Coase comes closest to spelling out his understanding of property in a seldom-noticed passage on the last page of the article. He observes:

The rights of a land-owner are not unlimited. It is not even always possible for him to remove the land to another place, for instance, by quarrying it. And although it may be possible for him to exclude some people from using "his" land, this may not be true of others. For example, some people may have the right to cross the land. Furthermore, it may or may not be possible to erect certain types of buildings or to grow certain crops or to use particular drainage systems on the land. This does not come about simply because of Government regulation. It would be equally true under the common law. In fact it would be true under any system of law. A system in which the rights of individuals were unlimited would be one in which there were no rights to acquire.⁴³

The conclusion Coase draws from these observations is quite striking: "We may speak of a person owning land and using it as a factor of production *but what the land-owner in fact possesses is the right to carry out a circumscribed list of actions.*"⁴⁴ In other words, Coase understood property not as any distinctive right to a thing good against the world, but rather as a bundle or collection of rights to carry out certain actions with respect to resources.

That this list-of-uses approach to property is no mere rhetorical flourish can be discerned from the structure of Coase's article, which is divided roughly into two halves. The first half sets forth Coase's analysis of social costs, i.e., spillover effects or externalities, in the hypothetical world of zero transaction costs. The second half turns to the problem in the real world of

42. COASE, *supra* note 39, at 10; *see also* Coase, *supra* note 8, at 16 (noting that where transactions are not costless, "the initial delimitation of legal rights does have an effect on the efficiency with which the economic system operates").

43. Coase, *supra* note 8, at 44.

44. *Id.* (emphasis added).

positive transaction costs. In the first half, where contractual exchange is key, property rights serve as baselines from which the process of contractual rearrangement of use rights proceeds. In the second half, where contractual exchange is not feasible, property rights serve as authoritative allocations of use rights that ideally should duplicate the allocation of use rights that would result if contractual exchange were possible. In both roles, however, property rights are essentially viewed as collections of use rights.

Consider the first part of the article, in which, as a thought experiment, transaction costs are assumed to be zero. Coase begins by showing that if there were no transaction costs, the assignment of liability for social costs would have no effect on the use of resources (or at least on the efficient allocation of resources).⁴⁵ Given the assumption of zero transaction costs in this part of the article, it is not surprising that property rights play only a small role in imagining solutions to the problems considered. Coase argues that the assignment of rights must be clearly established in order to achieve the value-maximizing result.⁴⁶ But as long as the rules of the legal system generate clear assignments of rights, the substantive content of those rules is irrelevant.

To illustrate this proposition, Coase chooses examples that focus on conflicts over two incompatible uses of a resource by two individuals. Coase first sets out a hypothetical conflict between a farmer and a rancher,⁴⁷ and then discusses various nineteenth-century English nuisance cases

45. The proposition that in a zero-transaction-cost world, the assignment of rights has no effect on the use of resources is sometimes termed the "invariance version" of the Coase Theorem, as opposed to the weaker version according to which the assignment of entitlements does not affect the allocation of existing resources, but may affect the pattern of asset use and output over time. Whether the stronger, invariance version holds—even putting aside wealth effects and strategic bargaining—has been very controversial. See Clifford G. Holderness, *The Assignment of Rights, Entry Effects, and the Allocation of Resources*, 18 J. LEGAL STUD. 181 (1989). Holderness proposes that the invariance version holds only for entitlements given to closed classes, whereas those given to open classes invite entry. *Id.* at 183-84. If transaction costs were truly zero, however, bargaining could costlessly close all classes. Henry E. Smith, *Two Dimensions of Property Rights* (Mar. 31, 2001) (unpublished manuscript, on file with authors). It should be remembered that the novel and remarkable aspect of Coase's work was the emphasis on the lack of any guarantee of efficiency in the positive transaction cost case. See Deirdre McCloskey, *Other Things Equal: The So-Called Coase Theorem*, 24 E. ECON. J. 367 (1998).

46. Coase, *supra* note 8, at 8. Subsequent writers, most prominently Steven Cheung, have questioned whether it is necessary for rights to be clearly delimited in a zero-transaction-cost world. See Steven N.S. Cheung, *The Transaction Costs Paradigm*, 36 ECON. INQUIRY 514, 518-20 (1998). Coase has agreed in principle with this observation. COASE, *supra* note 39, at 14-15. At bottom, of course, this is simply a debate about the proper domain of the concept of "transaction costs." See Smith, *supra* note 45, at 48-50 (discussing the irrelevance of governance versus exclusion in a zero-transaction-cost world). See generally Douglas W. Allen, *Transaction Costs*, in 1 ENCYCLOPEDIA OF LAW AND ECONOMICS 893 (Boudewijn Bouckaert & Gerrit de Geest eds., 2000) (distinguishing the broad notion of transaction costs as costs of defining and enforcing property rights from the narrow neoclassical cost-of-transacting view).

47. Coase, *supra* note 8, at 2-8.

involving disputes between two adjacent landowners.⁴⁸ In each case, Coase makes it clear that the relevant delimitation of rights comes from the decision by the courts as to which of the two contesting parties is entitled to use a given resource in a particular way. Because in each case there are only two parties involved in the dispute, the relevant conception of legal rights is at least implicitly in personam—a particularized use right residing in one person and availing against another—rather than in rem.⁴⁹

In this part of the article, Coase appears to regard the legal rules for assigning use rights as being fairly arbitrary. He describes the reasoning of the judges in resolving nuisance cases as frequently resting on factors that seem “strange to an economist,” such as the doctrine of the lost grant, which he says is “about as relevant as the colour of the judge’s eyes.”⁵⁰ Given the small role that property rights play in the zero-transaction-cost world and Coase’s disparaging remarks about nineteenth-century nuisance doctrine, the reader who breaks off at this point might leave with the impression that property rights are simply delimitations of use rights, conjured up out of legal hocus pocus, whose sole function is to serve as the starting point for contracts that rearrange such rights in a more economically sensible fashion.

The second half of the article turns to the real world, where of course the costs of rearranging legal rights will often exceed the gains from such transactions. But here, too, the focus is on the resolution of discrete use conflicts, and property rights have no significance other than as collections of use rights resulting from judicial resolutions of such conflicts. In this world of positive transaction costs, Coase notes, “the initial delimitation of legal rights does have an effect on the efficiency with which the economic system operates.”⁵¹ From this observation, Coase derives the normative proposition “that the courts should understand the economic consequences of their decisions and should, insofar as this is possible without creating too much uncertainty about the legal position itself, take these consequences into account when making their decisions.”⁵²

48. *Id.* at 8-10 (discussing *Sturges v. Bridgman*, 11 Ch. D. 852 (Ch. App. 1879) (involving a confectioner and a doctor)); *id.* at 10-11 (discussing *Cooke v. Forbes*, 5 L.R.-Eq. 166 (V.C. 1867) (involving a mat weaver and an ammonia manufacturer)); *id.* at 11-13 (discussing *Bryant v. Lefever*, 4 C.P.D. 172 (Ch. App. 1879) (involving the owner of a house with timber stacked on the roof and the owner of an adjacent house with a smoky chimney)); *id.* at 14-15 (discussing *Bass v. Gregory*, 25 Q.B.D. 481 (Q.B. 1890) (involving the owners of a public house with a brewing vat and the owner of some cottages with a well that served as a ventilating shaft for the vat)).

49. See *supra* note 9 and accompanying text (discussing the definition of in rem and in personam rights).

50. Coase, *supra* note 8, at 15. The doctrine of the lost grant was a legal fiction used by English judges in cases involving prescriptive easements. ROBERT MEGARRY & H.W.R. WADE, *THE LAW OF REAL PROPERTY* 876-78 (5th ed. 1984).

51. Coase, *supra* note 8, at 16.

52. *Id.* at 19.

In considering whether courts are capable of making efficient assignments of use rights, Coase undertakes a further review of nuisance law. Although he continues to find the reasoning in some of the judicial decisions "a little odd,"⁵³ on balance he emerges after this second review with a more optimistic assessment of the capacity of courts to make sensible assignments of rights. He detects in many of the decisions an implicit appreciation of "the reciprocal nature of the problem,"⁵⁴ that is, an understanding that each party is responsible for the external costs imposed on the other, and hence that we cannot say that one party or the other is "the cause" of the problem.⁵⁵ He also finds evidence that the courts perceive the need to weigh the costs and benefits of different activities before settling on an assignment of liability.⁵⁶ The task of the legal system, however, continues to be portrayed as one of making authoritative allocations of use rights among persons who impose conflicting demands on resources.⁵⁷

In addition to providing the analytical framework for subsequent efforts by economists to explain property rights, certain of the expository aspects of Coase's article also exerted a pervasive influence over subsequent thinkers. Coase confined his examples to two-party disputes in the form of *A v. B*: Not only the farmer and the rancher and the parties in the nineteenth-century nuisances cases, but also the railway emitting sparks and

53. *Id.* at 37. The characterization here is of *Boulston's Case*, 77 Eng. Rep. 216 (C.P. 1597), holding that a landowner who keeps "coney-burrows" cannot be held liable in nuisance when the conies, i.e., rabbits, eat a neighbor's corn, because the injury is caused by the conies, not the keeper of the burrows.

54. Coase, *supra* note 8, at 19.

55. For our discussion of the implications of the in rem aspect of property on the directionality of legal causation, see *infra* Section V.C.

56. Coase, *supra* note 8, at 27-28.

57. Putting the two halves of the article together, Coase's analysis generates implications about the desirable features of a system of property rights that are in considerable tension. With no (or low) transaction costs, what matters most is that rights be clearly assigned. This suggests that use rights should be defined by formalistic legal rules that are relatively indifferent to the costs and benefits of individual disputes. With positive (especially high) transaction costs, Coase wants courts to assign use rights in such a way as to maximize the value of production. This, in turn, requires that the courts have discretion to assign rights in accordance with the shifting costs and benefits of particular disputes. Coase thus suggests both that clear rules are desirable (to promote bargaining) and that flexible standards are desirable (when bargaining breaks down). Coase obliquely acknowledges this conflict when he says that rights should be assigned with economic efficiency in mind, "insofar as this is possible without creating too much uncertainty about the legal position itself." *Id.* at 19. But he offers no suggestion as to how to achieve both flexibility and legal certainty in an area of law such as nuisance. Although it is outside the scope of this Essay, one solution may be to use rules in some areas of the law and standards in others. See Thomas W. Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13 (1985); see also Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992) (analyzing factors bearing on ex ante definition of obligations through rules versus ex post determination through standards); cf. Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713 (1996) (urging the use of property rules with respect to "proprietary" rights and liability rules with respect to disputes over externalities).

the owner of an adjacent woodlot,⁵⁸ and the keeper of coney-burrows and the farmer.⁵⁹ Limiting the examples to two-party disputes was not required by Coase's analytical framework; it was done for ease of illustration.⁶⁰ But by focusing exclusively on two-party disputes, Coase necessarily abstracted away from the "indefinite and numerous" feature of in rem rights and implicitly modeled property rights as a collection of in personam rights. Insofar as the two-party model was to become the norm for subsequent law and economics treatments of property rights, this made it all the easier to overlook the differences between in personam and in rem rights.

B. The Federal Communications Commission

One might quarrel with this interpretation of Coase's conception of property rights by noting that *The Problem of Social Cost* is primarily concerned with nuisance disputes, a notoriously murky issue that belongs as much to tort as to property law. Perhaps Coase would adopt a different understanding of property if he directed his attention in a more straightforward fashion to the requirements for establishing a system of private property rights to govern the allocation of resources. In fact, Coase had addressed just this problem one year earlier in *The Federal Communications Commission*, a less-cited article but one that has also taken on iconic significance for law and economics scholars.⁶¹ Coase was directly concerned in this earlier article with making the case for establishing a system of property rights to allocate the broadcast spectrum, as opposed to doing so through government regulation. The nature of property rights was thus front and center in a way that is not true of the more influential article on social cost published the next year. The *FCC* article confirms that Coase embraced the conception of property that we have argued is implicit in the seminal article on social cost—property as a list of use rights in particular resources.

The central point of the *FCC* article is that the pricing system is (usually) a superior method for allocating resources than government regulation. Hence, giving broadcasters private property rights that can be bought and sold in a secondary market would produce a more efficient

58. Coase, *supra* note 8, at 29-34 (borrowing the example from A.C. Pigou, whose account of external costs was the main target of Coase's criticism).

59. *Id.* at 36-38 (discussing Boulton's Case, 77 Eng. Rep. 216 (C.P. 1597)).

60. *But see* Varouj A. Aivazian & Jeffrey L. Callen, *The Coase Theorem and the Empty Core*, 24 J.L. & ECON. 175 (1981) (arguing that, for certain assumed values, the Coase Theorem does not hold when three parties contest the use of a resource and coalitions are permitted). For Coase's reply, see R.H. Coase, *The Coase Theorem and the Empty Core: A Comment*, 24 J.L. & ECON. 183 (1981). Coase argues that binding contracts can prevent cycling through coalitions.

61. *See* Dean Lueck, *The Rule of First Possession and the Design of the Law*, 38 J.L. & ECON. 393, 419 (1995) ("The broadcast spectrum holds a special, almost holy, place in the economic analysis of law and the economics of property rights.").

allocation of the broadcast spectrum than could be achieved by using a regulatory commission to determine what uses are in the "public interest, necessity or convenience."⁶² Here, as elsewhere, Coase was well ahead of his time; his policy proposals, after a considerable passage of time, have been largely adopted in recent legislative and regulatory changes.⁶³

In making the case for privatization of broadcast rights, Coase had to confront a variety of arguments to the effect that private property rights in the electromagnetic spectrum are too difficult to define and enforce, given the invisible nature of the resource and our limited understanding of the circumstances in which one type of broadcast activity will interfere with another.⁶⁴ Coase sought to rebut these arguments by suggesting that privatization should proceed not by defining exclusive rights in a portion of the "ether" or in particular broadcast frequencies, but rather by specifying certain use rights in broadcasting equipment. As he summarized his position:

What does not seem to have been understood is that what is being allocated by the Federal Communications Commission, or, if there were a market, what would be sold, is the *right to use a piece of equipment to transmit signals in a particular way*. Once the question is looked at in this way, it is unnecessary to think in terms of ownership of frequencies or the ether.⁶⁵

Lest there be any ambiguity about Coase's preference for defining the proposed property rights in terms of permitted uses, he turned immediately to certain suggestions that rights to broadcast spectrum could be determined by analogy to air rights over land. Coase thought that this way of thinking of the problem "tends to obscure the question that is being decided."⁶⁶ He continued: "[W]hether we have the right to shoot over another man's land has been thought of as depending on who owns the airspace over the land. *It would be simpler to discuss what we should be allowed to do with a gun.*"⁶⁷ Coase's preference for defining property rights in terms of permitted uses was here revealed in the starkest possible terms. Coase thought it was unduly complicated to try to describe a landowner's rights in

62. Coase, *supra* note 40, at 6 (quoting the Radio Act of 1927, ch. 169, 44 Stat. 1162).

63. Thomas W. Hazlett, *Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?*, 41 J.L. & ECON. 529, 530, 538, 560-68 (1998) (noting the influence of Coase's critique of licensing and his advocacy of auctions and discussing the recent adoption of auctions).

64. Thomas W. Hazlett, *The Rationality of U.S. Regulation of the Broadcast Spectrum*, 33 J.L. & ECON. 133, 135-39 (1990) (describing the "interference rationale" for licensing of the broadcast spectrum and Coase's rebuttal).

65. Coase, *supra* note 40, at 33 (emphasis added).

66. *Id.* at 34.

67. *Id.* (emphasis added).

terms of a general rule about the right of the owner to exclude intrusions by strangers from a delimited space—the traditional in rem approach. Far better to draw up a list of permissible uses of a gun.⁶⁸

Coase's conception of property as a list of use rights had important implications for how he imagined that a system of property rights in the broadcasting industry would operate. Unlike later commentators, Coase showed no interest in considering whether rights to a discrete segment of the spectrum would be established by protecting the "first occupant" of a particular band of frequency.⁶⁹ Instead, he assumed that the rights to use particular broadcasting equipment in a particular way would have to be initially established by regulation.⁷⁰ One consequence of this conception of property rights is that it would make it difficult, if not impossible, to

68. There is one passage in the *FCC* article that appears to draw closer to the traditional in rem conception of property. In seeking to explain why the broadcast industry was thought to have fallen into a state of "chaos" prior to the enactment of the Radio Act of 1927, Coase invokes the analogy of what would happen if there were no property rights in land:

[I]f no property rights were created in land, so that everyone could use a tract of land, it is clear that there would be considerable confusion and that the price mechanism could not work because there would not be any property rights that could be acquired. If one person could use a piece of land for growing a crop, and then another person could come along and build a house on the land used for the crop, and then another could come along, tear down the house, and use the space as a parking lot, it would no doubt be accurate to describe the resulting situation as chaos. But it would be wrong to blame this on private enterprise and the competitive system. A private-enterprise system cannot function unless property rights are created in resources, and, when this is done, someone wishing to use a resource has to pay the owner to obtain it. Chaos disappears; and so does the government except that a legal system to define property rights and to arbitrate disputes is, of course, necessary.

Id. at 14.

Notice what Coase does and does not say in this passage. What he says is that property rights are necessary in order to have contracts in which resources are bought and sold. Without property there will be too much chaos for contracting to take place. What he does *not* say is what Blackstone, Smith, and Bentham would have said: Without property in land, that is, without the right to exclude strangers from the land, no one would plant a crop or build a house in the first place, because there would be no security of possession protecting investments in land against future seizures by strangers. To be sure, there is no evidence that Coase would disagree with the Blackstone-Smith-Bentham analysis. But it is interesting that when he describes a situation in which the in rem feature of property is most prominent, the only virtue of property Coase mentions is that it facilitates the ability to enter into contracts.

69. *Cf.* PETER HUBER, *LAW AND DISORDER IN CYBERSPACE* 29 (1997) (arguing that common-law courts, if left unimpeded by legislation, would have created "property rights in the ether, much as the common law had created property rights in the land beneath it—rules of trespass, easement, nuisance, and the like that define the bounds of ownership in real estate"); Hazlett, *supra* note 64, at 148-52 (discussing with approval a 1926 Illinois case using common-law principles to define and enforce property rights in the radio spectrum).

70. Coase was rather vague about the exact role of regulation versus contract in establishing initial use rights:

The problem confronting the radio industry is that signals transmitted by one person may interfere with those transmitted by another. It can be solved by delimiting the rights which various persons possess. How far this delimitation of rights should come about as a result of a strict regulation and how far as a result of transactions on the market is a question that can be answered only on the basis of practical experience.

Coase, *supra* note 40, at 34.

transfer these rights to persons who intended to use the spectrum for purposes other than broadcasting, such as two-way radio (or later, cellular telephony or paging services). Changing the permitted uses of equipment to engage in something other than broadcasting would presumably require further regulatory intervention. Under the *in rem* conception of property, in contrast, the owner of an asset has broad discretion to redeploy it to different uses, as long as they are not specifically prohibited. Prior regulatory approval is generally not required.

More generally, because Coase considered property rights solely in terms of their function in creating a foundation for bilateral transactions, he assumed that, as the number of affected parties increased, it would be necessary to turn to public regulation to resolve disputes over broadcasting rights. As he wrote:

The fact that actions might have harmful effects on others has been shown to be no obstacle to the introduction of property rights. But it was possible to reach this unequivocal result because the conflicts of interest were between individuals. *When large numbers of people are involved, the argument for the institution of property rights is weakened and that for general regulations becomes stronger . . .* [I]f many people are harmed and there are several sources of pollution, it is more difficult to reach a satisfactory solution through the market.⁷¹

Here we see clear evidence of the limiting effect of conceiving of property as a collection of essentially *in personam* use rights. As Blackstone, Smith, and Bentham recognized, the tried-and-true method of handling potential conflicts over resources among large numbers of claimants is to create *in rem* property rights—rights that give one person (the owner) the ability to exclude all other claimants to the resource and thereby determine its use.⁷² The list-of-uses conception can explain how conflicts can be resolved by contract when small numbers of claimants are involved. But when the number gets too large, this conception has no solution to the coordination problem other than to call upon public regulation.

71. *Id.* at 29 (emphasis added).

72. For a discussion of the spectrum of strategies for defining rights to resources, running from exclusion of access to governance of use, see Smith, *supra* note 45, and for an extended treatment of the information-cost implications of these strategies, see Merrill & Smith, *Interface*, *supra* note 7. Coase in the *FCC* article (and implicitly in *The Problem of Social Cost*) treats all rights as belonging to a system of governance of use.

* * *

Before turning to the influence that Coase's view of property has had on later commentators, it is worth considering why Coase proceeded in the way he did. As mentioned at the outset of this Part, Coase was primarily concerned with the legal system's influence on the working of the economic system. In particular, he was concerned with loosening the assumptions of neoclassical economics that foreclosed any such inquiry. If competition is perfect—with costless transactions and perfectly defined property rights, among other things—the impact of the legal system is left out of the picture. To focus on the legal system's influence on the economic system, a first pass at the problem might usefully abstract away from the details of the legal system itself. Thus, Coase's two-party model makes sense as a theoretical simplification in some contexts. But when other scholars sought to draw upon Coase's insights in an effort to explain the nature of the legal system itself, the two-party model and the conception of property as a collection of in personam use rights was more troubling. The simplifying assumptions introduce blind spots that can limit the ability of law and economics scholars to explain the institution of property.

IV. POST-COASEAN ECONOMIC THEORIES

Those following in Coase's footsteps carried forward the view of property as a collection of use rights. Simplifying greatly, we can divide post-Coasean economic theories of property into three general categories, each of which draws its inspiration from different parts of *The Problem of Social Cost*. A first school of thought has been called the "new institutional economics" and is united by its concern with transaction costs in understanding economic phenomena, including the institution of property. Building on the analysis in the first part of Coase's seminal article, this school tends to portray property rights in essentially contractarian terms. A second school draws its inspiration from the second half of Coase's article and focuses on property as a device for adopting collectively imposed solutions to disputes over resource uses. This school tends to treat property as if it were a branch of tort law. Finally, a third school builds on Calabresi and Melamed's important article distinguishing between "property rules" and "liability rules."⁷³ This school lumps all collectively allocated use rights together under the blanket term "entitlements," and introduces forced exchange as the preferred option for dealing with large-number problems where contractual exchange of use rights is infeasible. We offer

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

only selective illustrations of the work of scholars in these three traditions and make no attempt to be comprehensive. Our central point is that all three share with Coase a focus on property as a device for allocating use rights rather than as an in rem right to a thing.

A. *The Contractarian Perspective*

For modern economists, property rights are primarily regarded as a prerequisite for exchange.⁷⁴ Among the many scholars who follow Coase in questioning the neoclassical assumption of perfectly delineated property rights, those who explore the economics of property from a contractarian perspective are often called the new institutional school.⁷⁵ We take as our illustration the work of Yoram Barzel, who explicitly seeks to develop an economic understanding of the institution of property.⁷⁶

The world as envisioned by Barzel consists of a multitude of assets, each of which has multiple attributes. Some of these attributes are the subject of specific contracts. But because of positive transaction costs, the attributes of assets will never be fully reflected in contracts. For example, in a wage contract, incomplete specification of duties and imperfect monitoring of performance—both results of positive transaction costs—will leave some of the value of the employee's labor up for grabs; the employee can capture this value by shirking.⁷⁷ Barzel describes attributes not captured by contracts as being in the "public domain."

Barzel treats someone who has the ability to capture attributes of assets in the public domain as a type of residual claimant.⁷⁸ Barzel argues that, in general, an actor will have more of a residual claim to the extent that the actor can affect the value of attributes of a resource. One way an actor can

74. A particularly explicit example is given by Richard and Peggy Musgrave:

The market can function only in a situation where the "exclusion principle" applies, i.e., where A's consumption is made contingent on A's paying the price, while B, who does not pay, is excluded. Exchange cannot occur without property rights, and property rights require exclusion. Given such exclusion, the market can function as an auction system.

RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, *PUBLIC FINANCE IN THEORY AND PRACTICE* 55 (3d ed. 1980).

75. See, e.g., EGGERTSSON, *supra* note 4; GARY D. LIBECAP, *CONTRACTING FOR PROPERTY RIGHTS* (1989); DOUGLASS C. NORTH, *STRUCTURE AND CHANGE IN ECONOMIC HISTORY* (1981); OLIVER E. WILLIAMSON, *THE MECHANISMS OF GOVERNANCE* 54-87 (1996).

76. BARZEL, *supra* note 4.

77. *Id.* at 16-32, 97.

78. A residual claimant is someone who bears exogenous risk (as well as variability due to his own efforts), and thus is in a position to claim the value that remains after specifically metered contractual claims have been paid. E.g., Eugene F. Fama & Michael C. Jensen, *Agency Problems and Residual Claims*, 27 J.L. & ECON. 327, 328 (1983) (defining "residual claim"). For another example of work that associates the idea of residual claimancy with the concept of property, this time in the context of the firm, see Oliver D. Hart, *Incomplete Contracts and the Theory of the Firm*, 4 J.L. ECON. & ORG. 119, 123-24 (1988).

affect these values is through effort, and so the more difficult it is to monitor an actor's effort, the more the payment to that actor will take the form of a residual claim; managers whose functions are very difficult to monitor are the paradigm case of the residual claimant.⁷⁹ As another example, a farmer who leases land at a fixed rent is a residual claimant of the attributes of the land over the period of the lease; the greater the farmer's ability to affect the long-term value of the land, the more likely lease terms will be longer (or that full ownership will be transferred).⁸⁰ Barzel indicates that he regards the economic concept of property rights to be roughly synonymous with being a residual claimant.⁸¹

At the end of the day, therefore, the fundamental unit of analysis for Barzel is not property but contract. As Barzel puts it, "[a]t the heart of the study of property rights lies the study of contracts."⁸² In particular, one cannot understand the role of property without understanding contracts and the transaction-cost constraints that preclude the complete assignment of all elements of economic value by contract. In effect, Barzel inverts the relationship between "property" and "contract" found in Coase's 1960 article. Coase believes that it is necessary to start with an assignment of property rights, and that contractual exchange follows. Barzel starts with contractual exchange and then defines "property" as those attributes left over after all maximizing contracts that are possible within transaction-cost constraints have been exploited. Property is not a baseline but a residuum of value.

Of course, one cannot enter into contracts over the use of resources without some baseline to determine who contracts with whom. Barzel says little about how this baseline is established, other than to note that the delineation of rights is costly for the government—usually more so than for private parties—and therefore the rights explicitly delineated by the state are necessarily small in number, incomplete, and subject to further private

79. Yoram Barzel, *The Entrepreneur's Reward for Self-Policing*, 25 *ECON. INQUIRY* 103 (1987).

80. Douglas W. Allen & Dean Lueck, *The Control of Assets: Ownership and Contracting in Agriculture* (Mar. 2000) (unpublished manuscript, on file with authors); cf. BARZEL, *supra* note 4, at 33-54 (discussing the scope of rights and duties under farming contracts in light of parties' margins of adjustment).

81. As Barzel puts it, the notion of rights "is closely related to that of residual claimancy," and the notion of property rights "is closely related to that of transaction costs," because the residual claimant enjoys attributes of assets that cannot be captured in contracts due to transaction costs. BARZEL, *supra* note 4, at 3-4. Joseph Sax independently developed a similar idea in writing about the Takings Clause. According to Sax, "[p]roperty is the end result of a process of competition among inconsistent and contending economic values. . . . [It is] the value which each owner has left after the inconsistencies between the two competing owners have been resolved." Joseph L. Sax, *Takings and the Police Power*, 74 *YALE L.J.* 36, 61 (1964).

82. BARZEL, *supra* note 4, at 33. Barzel here is following Steven Cheung. See Cheung, *supra* note 4, at 50, 54, 67.

contracting.⁸³ This is true as far as it goes, but it makes the problem facing the state in setting up the core of property law simply an extreme version of the transaction-cost constraints facing individual contractors.

By focusing exclusively on the possibilities and limitations of contractual exchange, Barzel ends up with a theory of property in which the in rem dimension is entirely missing. Barzel develops a powerful framework for analyzing issues that arise between buyers and sellers of property or between co-owners of property—relations that are essentially in personam.⁸⁴ Outside these contexts, however, property recedes into the background as a stand-in for the assignment of use rights that is employed only when the possibilities for contracting run out.

B. *The Tort Perspective*

A second and less well-defined (although not necessarily less influential) school of thought draws its inspiration from the second half of Coase's article, where he suggests that courts and other institutions should resolve conflicts over the use of resources by adopting value-maximizing collective solutions. The outcome of these determinations is a list of use rights, and what we call the "tort perspective" sees property as this resulting list. We take as our illustration of this school an article by Robert Cooter, which seeks to develop a unified theory of the common law, including property rights.⁸⁵

Cooter adopts as his principal example (borrowed from Pigou via Coase) a railroad that sometimes emits sparks that set fire to an adjacent cornfield.⁸⁶ This he describes as a problem in tort law. He also considers examples drawn from breach of a construction contract, government takings of property, and nuisance law. With respect to each illustration, Cooter argues that the efficient allocation of resources is realized only if courts adopt or enforce legal rules that provide incentives for both parties to the dispute to take efficient precautions to minimize social costs—what Cooter calls "double responsibility at the margin."⁸⁷

83. BARZEL, *supra* note 4, at 90-91.

84. Barzel's book tends to focus on small-numbers interactions, including contract choice, divided ownership, slavery, and the firm.

85. Robert Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 CAL. L. REV. 1 (1985). A preoccupation with how to determine the correct, collectively determined, allocation of use rights in situations where transaction costs preclude voluntary exchange is also characteristic of Polinsky's work on nuisance disputes. See A. Mitchell Polinsky, *Controlling Externalities and Protecting Entitlements: Property Right, Liability Rule, and Tax-Subsidy Approaches*, 8 J. LEGAL STUD. 1, 4 (1979); A. Mitchell Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075, 1076 (1980) [hereinafter Polinsky, *Controlling Externalities*].

86. Cooter, *supra* note 85, at 5-11.

87. *Id.* at 4.

The focus, as in the second half of Coase's article, is on collectively imposed solutions to social cost problems. Cooter is aware of market exchange as an alternative to collectively imposed solutions and, in considering nuisance law, he briefly discusses the possibility of Coasean exchange of rights. But he regards this solution as one that obtains only in small-numbers cases with no strategic bargaining.⁸⁸ The central contribution of the article is to elaborate how courts should go about framing collective solutions to establish use rights in a way that promotes efficiency—the task outlined in the second half of Coase's article.

Our concern here is not with the details or the merits of Cooter's argument but with the underlying assumptions about the nature of property rights. That conception, not surprisingly, is similar to the conception implicit in the second half of Coase's article: Property is the collectively imposed allocation of use rights with respect to any particular resource. Even with respect to the property law examples he considers—government takings and nuisance disputes—Cooter implicitly regards as "property" the allocation of use rights that emerges after a court has adjudicated a dispute and imposed the rule designed to elicit an efficient response from both parties. In other words, property is the bundle of use rights imposed by a court resolving a particular resource-use dispute.

As in the case of the new institutional school, the tort perspective leads to an incomplete picture of property. From the tort perspective, each use conflict is regarded as a stand-alone problem, and the resolution of each problem results in a new and different stick being inserted into or removed from the bundle of use rights. As we shall see, this picture fails to account for many of the key features of the system of property rights, which has far less varied and fine-grained distinctions than we would expect from the tort perspective. Only by bringing the in rem aspect of property back into the picture can we achieve a more accurate account of property as an institution.⁸⁹

C. *The Entitlement Perspective*

In their famous *Cathedral* article,⁹⁰ Guido Calabresi and Douglas Melamed (C&M) develop a richer, two-stage model for understanding the law of property and tort, but one that again overlooks the in rem nature of property rights. Coase's new institutional followers focus on contractual exchange as the central aspect of property regimes; scholars pursuing the tort perspective focus on collective assignment of use rights as the key.

88. *Id.* at 26-27.

89. *See infra* Part V.

90. Calabresi & Melamed, *supra* note 73.

C&M in effect synthesized both perspectives, offering a theory that presents collective assignment of entitlements and contractual exchange as different steps in the analysis, and adding to the discussion the possibility of forced exchange (with compensation) as an alternative to contractual exchange.⁹¹ Their article is probably second only to Coase's 1960 article in terms of its influence in shaping modern economic conceptions of property rights. But one consequence of their popular framework—again probably unintended—has been to push the understanding of property even further away from the root notion of a right of a person in a thing that is good against the world.

The first step in the C&M model—fixing the allocation of “entitlements”—gives a distinctive name to the conception of property that is implicit in Coase, Barzel, and Cooter.⁹² As C&M make explicit, “entitlement” means the collectively imposed assignment of use rights as between rival claimants. C&M espouse a set of variables for assigning entitlements that is even more nuanced and context-specific than Coase suggested in the second half of his article. In addition to economic efficiency, they urge that “distributional goals” and “other justice reasons” be taken into account.⁹³ In effect, the court looks at each dispute and each set of parties and asks itself: Taking into account economic efficiency goals, distributional goals, and other justice reasons, what is the allocation of use rights that will provide the correct baseline against which the process of contractual exchange can proceed, or against which we can decide who must compensate whom in the event that forced exchange is appropriate?

The discussion suggests that this bundle of use rights is infinitely plastic and infinitely customizable to each context or situation. In particular, C&M's entitlements bear none of the distinguishing characteristics of in rem property rights. There is no mention of any “thing” that serves as the focal point for the right. And there is no suggestion that these entitlements bind a large and indefinite class of dutyholders. Rather, “[r]ights are defined by reference to what their holders may do as compared to other

91. Under the familiar C&M framework, the first step is to allocate the “entitlement” as between the contending parties. The second is to fix a rule for protecting and regulating this entitlement. The relevant menu of options consists of “property rules,” which require the consent of the entitlement holder before the entitlement can be taken; “liability rules,” which permit the entitlement to be taken without consent upon the payment of objectively determined compensation; and “inalienability rules,” which permit no transfer of the entitlement. *Id.* at 1090-93.

92. The term “entitlement” was in vogue at the time Calabresi and Melamed wrote their article and was the term the Supreme Court had adopted to describe the expanded conception of “property” held to be protected as a matter of due process in decisions like *Goldberg v. Kelly*, 397 U.S. 254 (1970), and *Board of Regents v. Roth*, 408 U.S. 564 (1972). Thomas W. Merrill, *The Landscape of Constitutional Property*, 86 VA. L. REV. 885, 921-22, 961-64 (2000). Many of the entitlements deemed to be constitutional property in these decisions were contract rights or other in personam rights against the government. *Id.* at 990-95.

93. Calabresi & Melamed, *supra* note 73, at 1098-1105.

people, and entitlements designate what action may be taken with respect to claims of other people.”⁹⁴

Other aspects of the C&M article reinforce the conception of entitlements as collections of ad hoc use rights. Consider their discussion of “property rules,” i.e., rules that permit transfers of entitlements only with the holder’s consent. The underlying idea is related to the doctrines of specific performance and injunctive relief, remedies that have a long association with common-law property rights.⁹⁵ This association, and the very name “property rule,” might suggest that this mode of protection of entitlements would incorporate a consideration of the in rem nature of property rights. But C&M offer no such account. Indeed, there is no separate analysis of the nature and rationale for property rules; they are discussed in a single subsection along with liability rules, where the bulk of the analysis is devoted to the rationale for using liability rules in situations of high transaction costs.⁹⁶ Throughout the article, the function of so-called property rules is described almost entirely in terms of their role in facilitating contractual exchange.⁹⁷ By adopting the label “property” in this fashion to describe the mode of protection or remedy that attaches to entitlements—whether those entitlements are property rights or contract rights—C&M inadvertently drove a further wedge between modern economic discourse and the understanding that property rights have a distinctive in rem dimension.

It is also instructive to consider how C&M handle problems that involve large numbers of persons. In contrast to Coase, who limited his examples to two-party conflicts and appeared to assume that regulation would be needed to deal with large numbers of affected persons,⁹⁸ C&M attempt to accommodate cases involving large numbers of claimants directly into their analysis. For example, they discuss the difficulties of reaching voluntary agreement among 1000 owners to transfer their property for use as a park,⁹⁹ the impossibility of reaching agreements in advance between the perpetrators and victims of accidents,¹⁰⁰ and the problem of

94. Donald H. Gjerdingen, *The Coase Theorem and the Psychology of Common-Law Thought*, 56 S. CAL. L. REV. 711, 724-25 (1983).

95. See, e.g., Daniel Friedmann, *The Efficient Breach Fallacy*, 18 J. LEGAL STUD. 1 (1989); Anthony T. Kronman, *Specific Performance*, 45 U. CHI. L. REV. 351 (1978); Alan Schwartz, *The Case for Specific Performance*, 89 YALE L.J. 271 (1979). Alternatively, what C&M call “property rules” and “liability rules” can be regarded as part of the content of a right. See Jules L. Coleman & Jody Kraus, *Rethinking the Theory of Legal Rights*, 95 YALE L.J. 1335 (1986).

96. Calabresi & Melamed, *supra* note 73, at 1106-10.

97. For example, the authors describe a world of pure property rules as one in which society “would need only to protect and enforce the initial entitlements from all attacks, perhaps through criminal sanctions, and to enforce voluntary contracts for their transfer.” *Id.* at 1106.

98. See *supra* note 71 and accompanying text.

99. Calabresi & Melamed, *supra* note 73, at 1106-08.

100. *Id.* at 1108-10.

pollution that affects large masses of people.¹⁰¹ But these large-numbers cases do not lead to any discussion of the in rem nature of property rights. To the contrary, C&M use these cases to illustrate the need for "liability rules," i.e., a mode of protection of entitlements that permits forced exchange in return for the payment of just compensation. The presence of large numbers of affected individuals is the occasion for shifting from voluntary exchange to forced exchange of in personam entitlements, not for shifting the analysis from in personam to in rem rights.¹⁰²

Perhaps most revealing of all is C&M's discussion of criminal liability. Criminal laws against trespass and assault would seem to be prime examples of the enforcement of in rem rights of property and bodily security. But C&M treat as a puzzle from the perspective of their framework why we have criminal sanctions, at least why we have sanctions that go beyond eliminating the gain to the criminal discounted by the probability of apprehension.¹⁰³ As a solution to this puzzle, they suggest that criminal sanctions exist in order to preserve the integrity of the transaction structure; in other words, "we impose criminal sanctions as a means of deterring future attempts to convert property rules into liability rules."¹⁰⁴ Criminal laws designed to protect general interests in property and bodily security are thus explained by the need to preserve the possibility of engaging in contractual exchange.¹⁰⁵

C&M's article, like Coase's, has inspired a large and valuable literature that seeks further to explicate the analytical structure they develop.¹⁰⁶ We

101. *Id.* at 1115-24.

102. For recognition of this point from an analytical perspective very different from our own, see Jeanne L. Schroeder, *Three's a Crowd: A Feminist Critique of Calabresi and Melamed's One View of the Cathedral*, 84 CORNELL L. REV. 394, 406 (1999) (noting that "the analysis of this immediate two party relationship of exchange both ignores and cannot account for the existence of third parties who are potential rival claimants for the forgotten object of desire"); see also J.E. PENNER, *THE IDEA OF PROPERTY IN LAW* 67 (1997) (noting that under the C&M framework "there is no basis upon which an entitlement holder can regard this entitlement as his property *per se*").

103. Calabresi & Melamed, *supra* note 73, at 1125-27.

104. *Id.* at 1126.

105. This aspect of C&M alone has generated a large literature. See, e.g., JULES L. COLEMAN, *MARKETS, MORALS AND THE LAW* 153 (1988); David D. Haddock et al., *An Ordinary Economic Rationale for Extraordinary Legal Sanctions*, 78 CAL. L. REV. 1, 2-9 (1990); Alvin Klevorick, *The Economic Analysis of Crime*, in NOMOS XXVII: CRIMINAL JUSTICE 289 (J. Roland Pennock & John W. Chapman eds., 1985); see also Fred S. McChesney, *Tortious Interference with Contract Versus "Efficient" Breach: Theory and Empirical Evidence*, 28 J. LEGAL STUD. 131, 154-55 (1999) (making an analogous point about tort liability for inducing breach of contract).

106. In addition to the sources cited in note 105, see, for example, 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); Kaplow & Shavell, *supra* note 57; James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440 (1995); Dale A. Nance, *Guidance Rules and Enforcement Rules: A Better View of the Cathedral*, 83 VA. L. REV. 837 (1997); Polinsky, *Controlling Externalities*,

make no effort to summarize this literature here. We would only note that one very prominent theme of these studies is the way in which property rules and liability rules affect the dynamics of contractual exchange of entitlements.¹⁰⁷ As Carol Rose has observed, the “off-scene paradigm case” that drives much of the C&M-inspired analysis is the law of contracts, not the law of property.¹⁰⁸ Although this work is often valuable and provocative, it “unfortunately deflects attention from the considerations uppermost in conventional property law—planning, effort, and investment.”¹⁰⁹ To put the matter in our terminology, post-C&M scholarship continues to operate with a conception of entitlements as a bundle of in personam rights and ignores the in rem features of property.

D. *Vestiges of the Traditional Understanding*

We do not mean to imply that the traditional understanding of property as a right against the world that enhances security in the use and enjoyment of discrete resources is wholly absent from modern writings about property. Some contemporary economists offer definitions of property that invoke (albeit without elaboration) the in rem understanding of property rights.¹¹⁰

supra note 85, at 1075; and Symposium, Property Rules, Liability Rules, and Inalienability: A Twenty-Five Year Retrospective, 106 YALE L.J. 2081 (1997). The authors have also contributed to this literature. See, e.g., Thomas W. Merrill, *The Constitution and the Cathedral: Prohibiting, Purchasing, and Possibly Condemning Tobacco Advertising*, 93 NW. U. L. REV. 1143 (1999); Thomas W. Merrill, *The Economics of Public Use*, 72 CORNELL L. REV. 61 (1986); Thomas W. Merrill, *Property Rules, Liability Rules, and Adverse Possession*, 79 NW. U. L. REV. 1122 (1985); Henry E. Smith, *Ambiguous Quality Changes from Taxes and Legal Rules*, 67 U. CHI. L. REV. 647, 679-702, 706 (2000).

107. See, e.g., Ayres & Balkin, *supra* note 106, at 736-41 (discussing the effects of second-order liability rules where bargaining is possible); Ayres & Talley, *supra* note 106, at 1036-72 (arguing that liability rules facilitate bargaining); Ian Ayres & Eric Talley, *Distinguishing Between Consensual and Nonconsensual Advantages of Liability Rules*, 105 YALE L.J. 235 (1995) (same); Louis Kaplow & Steven Shavell, *Do Liability Rules Facilitate Bargaining? A Reply to Ayres and Talley*, 105 YALE L.J. 221 (1995) (questioning the conclusions of Ayres and Talley); see also Robert Cooter, *The Cost of Coase*, 11 J. LEGAL STUD. 1 (1982) (discussing strategic bargaining); Rachel Croson & Jason Scott Johnston, *Experimental Results on Bargaining Under Alternative Property Rights Regimes*, 16 J.L. ECON. & ORG. 50 (2000) (presenting results of experiments in which the choice of ex ante versus ex post entitlement determination impacts bargaining behavior); Jason Scott Johnston, *Bargaining Under Rules Versus Standards*, 11 J.L. ECON. & ORG. 256 (1995) (showing that under certain conditions, ex post error-prone judicial balancing could induce an earlier agreement than would ex ante certain entitlement).

108. Carol M. Rose, *The Shadow of The Cathedral*, 106 YALE L.J. 2175, 2187 (1997).

109. *Id.* at 2188.

110. E.g., DAVID D. FRIEDMAN, LAW'S ORDER 109 (2000) (noting that “[t]he most striking difference between contract law and property law is that while a contract right is good only against the other party to the contract, a property right is good against the world”); WERNER Z. HIRSCH, LAW AND ECONOMICS 18 (1979) (“The right to property is the power to exclude others from or give them access to a benefit or use of the particular object.”); Oliver Hart & John Moore, *Property Rights and the Nature of the Firm*, 98 J. POL. ECON. 1119, 1121 (1990) (defining property as the “right . . . to exclude others from the use of [an] asset”); see also POSNER, *supra* note 5, at 74 (“A property right excludes (in the limit) the whole rest of the world from the use of

And some scholars trained in law observe (albeit in passing) that granting legal protection to property encourages investment in resources because of the greater security that the owner will have in reaping the rewards of that investment.¹¹¹ But these themes, once dominant, are now but a faint echo of what they were before Coase transformed economic discourse about property rights.

There are, to be sure, signs of dissatisfaction with the dominant conception of property as a formless bundle of use rights. As Michael Heller has recently written:

While the modern bundle-of-legal relations metaphor reflects well the possibility of complex relational fragmentation, it gives a weak sense of the "thingness" of private property. Conflating the economic language of entitlements with the language of property rights causes theorists to collapse inadvertently the boundaries of private property. As long as theorists and the Court rely on the bundle-of-legal-relations metaphor, they need some analytical tool to distinguish things from fragments, bundles from rights, and private from nonprivate property.¹¹²

To date, however, this incipient dissatisfaction with the bundle-of-rights metaphor has not caused law and economics scholars to consider anew the possibility that property consists of rights to things good against the world.

a thing except on the owner's terms. A contract right excludes only the other party to the contract.").

111. *E.g.*, POSNER, *supra* note 5, at 36, 74 (noting that the incentive to sow from the ability to reap is provided by a property right); Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1368-71 (1993) (arguing that the ability to reap provided by perpetual land ownership encourages investment); Rose, *supra* note 108, at 2187 ("The usual roles of property rules—defining rights and identifying rights-holders—not only counteract [strategic bargaining costs] in deals, but also encourage individual investment, planning, and effort, because actors have a clearer sense of what they are getting."); Cass R. Sunstein, *On Property and Constitutionalism*, 14 CARDOZO L. REV. 907, 911-13 (1993) (describing the functions of property rights in terms of promoting stability of expectations and creating incentives for the development of resources).

112. Michael A. Heller, *The Boundaries of Private Property*, 108 YALE L.J. 1163, 1193-94 (1999). Others have also expressed impatience with the received wisdom. *See, e.g.*, Emily Sherwin, *Two- and Three-Dimensional Property Rights*, 29 ARIZ. ST. L.J. 1075, 1086 (1997) (arguing that "without a preestablished legal connection between person and thing, relations between people in regard to things dissolve into questions of what is best in each case"); *see also* Penner, *supra* note 38, at 739-44, 767-79 (arguing against two versions of the bundle-of-rights view of property); J.E. Penner, *Hohfeldian Use-Rights in Property*, in PROPERTY PROBLEMS 164, 171-74 (J.W. Harris ed., 1997) (noting that the bundle-of-rights view of property presupposes a list of canonical uses, which law does not provide).

* * *

In short, modern economic theorists tend to regard the institution of property through the lens of in personam rather than in rem rights. In this respect, the economists are simply following the path blazed by Hohfeld, who also thought that in rem rights were simply aggregations of in personam rights. But although Hohfeld wound up minimizing the qualitative distinction between in personam and in rem rights, he at least treated in personam and in rem rights as quantitatively distinct. Most modern economic accounts endow property with no distinctive character at all. Property rights are simply "entitlements," little empty boxes filled with a miscellany of use rights that operate in the background of a world consisting of nothing but in personam obligations. As Emily Sherwin has observed, "from Hohfeld and Coase it is an easy step to say that property rights are simply rights, to which the term 'property' adds nothing at all."¹¹³

For many purposes, a two-party or in personam model of property rights makes sense. When trying to demonstrate the importance of transaction costs or certain incentive effects of different rights structures, a two-party model functions as a satisfactory first approximation. But when it comes to explaining the shape of legal entitlements themselves, and in particular the very different informational regimes implied by in rem and in personam rights, such models must be supplemented to capture the in rem nature of property.

V. THE COSTS OF COASEAN PROPERTY

What are the consequences of an economic analysis that ignores the in rem nature of property rights? Without seeking in any way to be comprehensive, we suggest four areas of inquiry where a more explicit focus on the in rem dimension of property might yield insights that have so far largely eluded law and economics scholars.

A. *The Mystery of the Numerus Clausus*

All modern property systems limit the forms of ownership and standardize property along many dimensions.¹¹⁴ In civil-law jurisdictions, this principle is explicitly recognized under some name such as *numerus clausus*, which means "closed number."¹¹⁵ In common-law systems, the principle is not explicitly recognized and exists in a somewhat weakened

113. Sherwin, *supra* note 112, at 1078.

114. Merrill & Smith, *Numerus Clausus*, *supra* note 7, at 4.

115. *Id.*

form as an unstated design principle.¹¹⁶ In either system, however, property comes in a fixed and closed menu of forms (think of the fixed and highly standardized system of estates in land), and even in areas such as intellectual property, courts are highly reluctant to innovate. When confronted with parties who evidently intend to create a novel form of property, such as a new type of estate in land or a new type of intellectual property, the courts will force the interest into one of the pigeonholes on the menu.¹¹⁷ This pigeonholing exercise stands in sharp contrast to the high (although of course not complete) degree of customization allowed in the law of contracts.

Anglo-American commentators operating in the law and economics tradition have generally been oblivious to the *numerus clausus* feature of property rights. When they have focused on it, the reaction has often been one of mystification. For example, Bernard Rudden, a British comparativist familiar with law and economics arguments, has surveyed a variety of possible explanations for the *numerus clausus*, but ultimately finds the doctrine inexplicable.¹¹⁸ The key problem, as Rudden sees it, is that parties can achieve virtually any idiosyncratic use of resources they want by contract, and thus he finds that standardizing property makes little sense.¹¹⁹ More recently, Michael Heller has argued that the *numerus clausus* may be one of many devices in the law of property that discourage excessive fragmentation of ownership, which leads to too many people having the right to exclude (and thus veto) use or transfer of a resource.¹²⁰ But the *numerus clausus* limits the *types* of property interests and standardizes them.¹²¹ It does little to limit the number of *claimants*, which is the problem that gives rise to the concerns associated with fragmentation. Moreover, many applications of the *numerus clausus*—for example, construing a lease for life as a life estate—do nothing to limit the fragmentation of property rights.

As we have argued more fully elsewhere,¹²² the mystery of the *numerus clausus* is readily solved once we recognize the in rem nature of property rights, and the information-cost burden on third parties that is created by

116. *Id.* at 20.

117. *Id.* at 20-23.

118. Bernard Rudden, *Economic Theory v. Property Law: The Numerus Clausus Problem*, in 3 OXFORD ESSAYS IN JURISPRUDENCE 239, 261 (John Eekelaar & John Bell eds., 1987).

119. *Id.* at 253-54. We have termed this the "irrelevance" argument against the *numerus clausus*, to which we responded in our earlier article. Merrill & Smith, *Numerus Clausus*, *supra* note 7, at 54-58.

120. Heller, *supra* note 112, at 1176-78. Similarly, Holderness argues that some of the same doctrines discussed by Heller serve to promote alienability by closing the class of entitlement holders. Clifford G. Holderness, *A Legal Foundation for Exchange*, 14 J. LEGAL STUD. 321, 334-43 (1985).

121. Merrill & Smith, *Numerus Clausus*, *supra* note 7, at 51-54.

122. *Id.* at 24-42.

any system of in rem rights. If core property interests—real estate, personal property, and intellectual property—are good against all the world, then any system of property rights presents a massive coordination problem. To avoid violating property rights, a large and indefinite class of dutyholders must know what constraints on their behavior such rights impose. If the legal system allowed in rem rights to exist in a large variety of forms, then dutyholders would have to acquire and process more information whenever they encountered something that is protected by an in rem right. If in rem rights were freely customizable—in the way in personam contract rights are—then the information-cost burden would quickly become intolerable.¹²³ Each dutyholder would either incur great costs in informing herself, or would be forced to violate property rights wholesale, defeating the benefits of security, investment, and planning that these rights were meant to secure.

The *numerus clausus* is best seen as a device to standardize property rights, and thereby reduce the widespread information-gathering and processing costs imposed on third parties by any system of in rem rights.¹²⁴ Standardization by the government (in this case through the reluctance of courts to recognize new forms of property) is necessary because we cannot be sure that the right degree of standardization will occur spontaneously. Some property-rights creators, such as designers of securities, will be so concerned with marketability that they will have more than enough incentive to adhere to standards. But other creators of property rights may wish, for example, to build in restrictions to keep property within a close-knit group. If such persons were allowed to create novel forms of property rights, the result would be general confusion; others with whom these creators deal would have more inquiring to do in order to avoid violating these novel rights. Furthermore, even those purchasing (or avoiding violations of) rights in other objects of the same type and anxious to avoid any novel form of ownership would have to assure themselves that the object was not infected with unwanted novelty, or would have to tolerate the risk of surprise if such idiosyncrasies were not foreseeable and discoverable at reasonable cost.

123. This coordination problem has been recognized by those scholars with a more philosophical perspective. See, e.g., ACKERMAN, *supra* note 2, at 116 ("Most of the time Layman negotiates his way through the complex web of property relationships that structures his social universe without even perceiving the need for expert guidance."); PENNER, *supra* note 102, at 30 ("Norms *in rem* establish the general, impersonal practices upon which modern societies largely depend. They allow strangers to interact with each other in a rule-governed way, though their dealings are not personal in any significant respect. Grasping this point is absolutely vital to grasping legally recognized practices like property."); JEREMY WALDRON, *THE RIGHT TO PRIVATE PROPERTY* 42 (1988) (noting that if rules governing the allocation of resources were based only on utility or prosperity instead of property, and if society is at all complex, "then citizens would have great difficulty following the rules. Everyone would need to become a legal expert").

124. The discussion in this paragraph is based on our earlier argument in Merrill & Smith, *Numerus Clausus*, *supra* note 7, at 24-58.

Understanding that property rights are in rem thus allows us to perceive a critical feature of property rights—legal standardization of property forms, or the *numerus clausus*—that remains obscured as long as property is regarded as simply a cluster of in personam rights. The in rem nature of property also yields an explanation for this feature, in the form of the information costs that in rem rights impose on a large and indefinite number of third parties.

B. *Law Versus Norms*

Law and economics has recently branched out to encompass the study of norms.¹²⁵ This literature has emphasized that norms may accord with, conflict with, complement, or substitute for legal rules. A well-known example focused on property rights is Robert Ellickson's study of cattle trespass in Shasta County, California.¹²⁶ Ellickson found that the norms of neighborliness operate independently of the prevailing legal rule. Regardless of whether an area is closed range, in which ranchers are legally responsible for damage to crops by straying cattle, or open range, in which farmers are legally responsible for fencing cattle out, the norm is the same: Owners of cattle in Shasta County are responsible for the damage they cause to crops.¹²⁷ When such damage occurs, the rancher is expected to retrieve the animal, to commit to not letting it happen again, and to help repair the damage.¹²⁸ If the trespass is repeated, a victim will feel entitled to move to higher levels of sanction, most often some type of self-help.¹²⁹ To Ellickson's surprise, these norms are uniform throughout the county and are not influenced by the legal rule at all. Not only do informal norms of fencing in versus fencing out fail to correlate with the legal rule, the norm is always fencing in, regardless of differences in the legal rule or in local conditions.

From the perspective of post-Coasean law and economics, the uniformity of the fencing-in norm is puzzling. It is doubtful that fencing in is always efficient, especially in locations where ranchers far outnumber farmers. If norms are efficient and emerge through a kind of implicit bargaining process among neighbors in close-knit communities—as Ellickson argues—then one would expect the efficient norm to reflect either

125. See, e.g., ERIC A. POSNER, *LAW AND SOCIAL NORMS* (2000); Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338 (1997). For an overview, see Robert C. Ellickson, *The Market for Social Norms*, 3 AM. L. & ECON. REV. 1 (2001).

126. ROBERT C. ELICKSON, *ORDER WITHOUT LAW* 52-81 (1991).

127. *Id.* at 52-53, 72-76.

128. *Id.* at 53, 61.

129. *Id.* at 56-64 (documenting the escalating scale of self-help and the rarity of monetary claims, with legal claims almost unknown).

fencing in or fencing out, depending on the relative costs and benefits of cattle versus crops in any given locale.¹³⁰

The mystery of why the norm is always fencing in can perhaps be explained, however, once we realize that the norms Ellickson is considering apply to large numbers of actors all across the county. If gathering and processing information about rights were costless, then each conflict over land use could be governed by a special norm that would apply to that conflict and to no other. Each conflict would present a separate question, and the affected parties would have to inform themselves about the relevant norm by consulting the list of conflicts and their associated norms. This list-of-uses approach, of course, is the conception of property implicit in Coase's stylized world of two-party conflicts.

Where information about rights is costly to acquire and process, however, the list approach is often neither practical nor desirable. Instead, property rights tend to be delineated in such a way that uses are often bunched together under the control of a single "owner": Saying that someone has the right to exclude is shorthand for the proposition that property rights are being defined by a rough proxy—like the boundary lines that define the column of space under the *ad coelum* rule¹³¹—that sweeps many uses within the control of the "owner."¹³² The right to exclude allows the owner to control, plan, and invest, and permits this to happen with a minimum of information costs to others. People generally do not need to consult lists of use-conflict resolutions (or specific right-duty pairs) when they approach a piece of property they do not own. Instead, they know that, unless special regulations or private contracts carve out some specific use rights, the bright-line rules of trespass apply.¹³³

130. See, e.g., POSNER, *supra* note 5, at 60 (explaining the preference for fencing in versus fencing out in terms of the ratio of cattle to crops). One possible efficiency explanation for the uniform norm of fencing in, suggested by Ellickson himself, is the advent of motor vehicles. Today, with vehicular traffic throughout the county, wandering cattle pose a danger to people in cars as well as to the crops of neighboring farmers. Car-cattle interactions could be handled separately—under the official legal standard they are uniformly governed by a negligence standard—but Ellickson notes that whether an accident happens in an open or closed range may influence the likelihood of a finding of negligence. See ELLICKSON, *supra* note 126, at 92-93. When this third-party effect is added to the picture, fencing in may be superior on pure cost-benefit grounds without regard to the ratio of cattle to crops in any area. See *id.* at 187-88. In this scenario, too, we find, as expected, that a more widespread and anonymous interaction among the parties is associated with more pressure to assimilate the norms governing use conflicts into a small and easily communicated set.

131. The full statement of the maxim is *cujus est solum, ejus est usque ad coelum et ad inferos* (he who owns the soil owns also to the sky and to the depths). The maxim is routinely followed in resolving issues about ownership of air rights, building encroachments, overhanging tree limbs, mineral rights, and so forth, and is subject to certain limited exceptions, such as for airplane overflights. See, e.g., *Brown v. United States*, 73 F.3d 1100, 1103-04 (Fed. Cir. 1996); Merrill, *supra* note 57, at 26-35.

132. Smith, *supra* note 45, at 4.

133. We return to trespass versus nuisance in Section V.D.

Ellickson's finding that the residents of Shasta County adopt a uniform norm of fencing in can thus be explained once we realize that the norm he investigates is in rem in nature. In rem rights impose duties on a large and indefinite class of others. In order to keep the information costs associated with such a strategy low, large numbers of exclusion rights must be bunched together and simple bright-line rules must be adopted for all physically similar resources. Thus, the norm against cattle trespass that prevails in Shasta County is a subset of the more general in rem norm that owners of real property are allowed to exclude unwanted intrusions on their land. To be sure, it may be possible to tailor in rem exclusion rights in any given community,¹³⁴ so that certain types of intrusions are removed from the general norm. For example, community norms may permit owners to exclude persons, vehicles, and large domestic animals from their land, but frown upon excluding neighborhood cats from wandering from place to place. We also know that in many parts of the West a genuine open range has prevailed, such that people expect cattle to wander, and it is the responsibility of crop-growers to fence them out.¹³⁵

There are two reasons, however, that make it very unlikely that exclusion rights with respect to cattle trespass will vary from one location to another within any given community based on underlying cost-benefit considerations that are themselves not immediately visible and are prone to change over time. First, a uniform norm conserves on information costs relative to a norm that varies from one locale to another. A single norm applicable throughout the county eliminates the need to process information about which part of the county one is in when seeking to identify the applicable norm. Second, in selecting the single norm that is most appropriate, it pays to pick the norm that can be bunched most easily with other, uncontroversial exclusion norms, thereby eliminating the need to differentiate between different kinds of physical invasions of land. Focusing on land as the "thing" anchoring the rights allows the use of a very cheap proxy measurement—stable spatial boundary lines—that simultaneously serves to manage a wide range of potential use conflicts. Because landowners generally have the right to exclude intrusions by persons,

134. In speaking of a "community" here, we refer to a collection of people who share the same norms, not to any particular geographic or legal entity. Ellickson assumes that Shasta County constitutes a single community for purposes of identifying social norms, and we proceed on the same assumption.

135. It is possible that the entire American West during the mid-nineteenth century—when the ratio of cattle to crops was very high—had a uniform norm of fencing out. See ELLICKSON, *supra* note 126, at 76. Significantly, however, it appears that this norm applied only to unintentional trespasses. See *Light v. United States*, 220 U.S. 523, 537 (1911) (noting that fencing out rules "are intended to condone trespasses by straying cattle; they have no application to cases where they are driven upon unfenced land in order that they may feed there"). Deliberate invasions of land by owners of grazing cattle were always subject to the general in rem norm that protects landowners against trespassers.

vehicles, and domestic animals, it is less burdensome in information-cost terms to select the exclusionary norm (fencing in). If fencing out were clearly the more efficient norm throughout most of the county, then perhaps the single preferred norm would be fencing out rather than fencing in.¹³⁶ But as long as the relative efficiency of the two norms is mixed or debatable, there will be an information-cost advantage in selecting the norm that coincides with the general in rem exclusion right associated with real property ownership.

A ready explanation for what Ellickson uncovered in Shasta County, therefore, is that the social norm regarding cattle trespass—fencing in throughout the county—was simply assimilated into the more general norm that says that owners have the right to exclude unwanted trespassory invasions of all types onto their land. Setting up in rem rights, whether through law or social norms, is a very common strategy for reducing the information costs associated with allocating control over scarce resources. But, as we have seen, this feature of property rights is quite alien to law and economics, including the branch concerned with social norms. Bringing the in rem dimension of property back into the picture may thus help explain certain features of social norms that otherwise remain puzzling.

C. *Causal Agnosticism*

One of the most controversial aspects of Coase's treatment of harmful spillovers is its agnosticism about causation. Coase argues that whenever two activities come into conflict, it is misleading to describe one actor as "the cause" of the problem.¹³⁷ There would be no conflict in the absence of either of the two activities; thus, it is necessary to formulate solutions that bear in mind the "reciprocal nature of the problem."¹³⁸ This aspect of the Coasean analysis has met with great resistance, especially from lawyers. Understanding that property rights are good against the world may help to eliminate the perceived tension between economic and more conventional views of causation.

Consider again Coase's (and Ellickson's) principal example, involving the rancher whose cattle tend to wander and trample the farmer's crops.¹³⁹ In the Coasean view, the crops are in the way of the cattle as much as the cattle are lethal to the crops; it makes equal sense to say that the farmer causes damage to the rancher or the rancher causes damage to the farmer.

136. It would depend on whether the efficiency gains from the better norm would be perceived by the community to exceed the additional information processing costs of having to distinguish between cattle trespasses and other types of trespasses.

137. Coase, *supra* note 8, at 2.

138. *Id.* at 2, 8-15.

139. *Id.* at 2-8.

The problem is that the proximity of cattle and crops leads to less overall production than the sum of cattle and crops if they were isolated. Coase argues that whether to place the liability on the rancher or the farmer cannot be determined by who harms whom; the activity of each interferes with, and thus harms, the other's activity. If the parties can bargain, then any assignment of rights would lead the parties to agree by contract to rearrange rights so that total production is maximized. If for some reason they cannot bargain, then a court or a government agency may have to decide how to allocate the entitlement so that value is maximized.

Post-Coasean law and economics, especially the "tort" school that considers what rules courts should apply absent bargaining,¹⁴⁰ has continued to operate on the assumption that the problem is a reciprocal one. According to these commentators, the central task is to award the entitlement to the party who values it most or can avoid losses at the least cost.¹⁴¹ Alternatively, if assignment of the right to one party can be done at a much lower administrative cost than assignment to the other, then this may form a reason to favor that party.¹⁴² Generally speaking, for these commentators, the question of how fine-grained the structure of liability rules should be depends on the administrative costs of establishing and enforcing liability rules and the residual uncertainty left after uncertainty has been cost-effectively reduced.¹⁴³

The view that causation is reciprocal has met with considerable resistance from legal scholars.¹⁴⁴ The resistance has come from all points along the ideological spectrum. Those on the left concerned with promoting respect for human dignity have pointed out that Coase's causal agnosticism provides no basis for making a priori condemnations of those who commit acts such as rape or torture.¹⁴⁵ If we are agnostic about causation, the "costly interaction" between a rapist and the woman he rapes is a function of incompatible demands of the parties on the use of the woman's body. We cannot say that the rapist "caused" the harm any more than we can say that

140. See *supra* Section IV.B.

141. Coase, *supra* note 8, at 15-28. The literature advocating market-mimicking entitlements (asking who values most) is vast. See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* 42-44 (1987) (testing the hypothesis that an efficient liability approach requires a comparison of the cost avoidance ability of both parties). On the cheapest-cost-avoider approach, see, for example, GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* 135-73 (1970); and Harold Demsetz, *When Does the Rule of Liability Matter?*, 1 J. LEGAL STUD. 13 (1972).

142. See, e.g., Donald Wittman, *Liability for Harm or Restitution for Benefit?*, 13 J. LEGAL STUD. 57, 65 (1984).

143. See, e.g., POSNER, *supra* note 5, at 58.

144. See Gjerdingen, *supra* note 94 (ascribing this resistance to psychological differences between economic and common-law conceptions of causation).

145. E.g., MARK KELMAN, *A GUIDE TO CRITICAL LEGAL STUDIES* 68-69, 118-19 (1987) (criticizing the transaction-cost analysis of an entitlement not to be raped and noting the role of the reciprocal view of causation).

the woman “caused” the harm by not giving herself up to the rapist. Determination of who should have the entitlement here should presumably be settled by comparing the costs and benefits to the rapist and the woman of having control over the woman’s body—all of which, the critics rightly maintain, is outrageous.

On the right, Richard Epstein early on advanced parallel objections to Coase’s reciprocal notion of causation, based on an analysis of everyday language bolstered by principles of corrective justice.¹⁴⁶ Both sorts of considerations point toward a unidirectional concept of causation with respect to persons and property alike. While to some extent Epstein’s view of causation is colored by his libertarian emphasis on the need to minimize state intervention in setting up entitlements,¹⁴⁷ a number of commentators have endorsed his perception that our ordinary intuitions about causation presuppose a conception of causation that is nonreciprocal.¹⁴⁸

To date, the debate over whether causation is properly regarded as reciprocal or unidirectional has been framed largely in terms of whether legal institutions should be guided by economic goals or should seek to further noneconomic goals such as human dignity or corrective justice. But once we recognize that most rights of bodily security and property are in rem, and we understand the information-cost consequences of creating rights of bodily security and things that are good against the world, it turns out that there may be no necessary incompatibility between economic and noneconomic perspectives on causation after all.

The economic explanation for why certain rights are in rem goes a long way toward explaining why causation is not reciprocal. If information costs were zero, then it would not matter whether we regarded the rancher as harming the farmer or vice versa—the two views of the matter would be functionally equivalent. But because rights are costly to communicate and process, the two possible in rem rights that reflect the two views of the costly interaction are not equivalent. A default package of rights that

146. Richard A. Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151, 152 (1973); see also RICHARD A. EPSTEIN, *TAKINGS* 115-21 (1985) (arguing against a reciprocal view of causation and discussing the police power exception to the Takings Clause); Richard A. Epstein, *Nuisance Law: Corrective Justice and Its Utilitarian Constraints*, 8 J. LEGAL STUD. 49, 53-65 (1979) [hereinafter Epstein, *Nuisance Law*] (arguing that nuisance cases should be decided with reference to principles of corrective justice).

147. Compare John Borgo, *Causal Paradigms in Tort Law*, 8 J. LEGAL STUD. 419 (1979) (arguing that Epstein’s theory of causation, while consistent with ordinary language, is inconsistent with a “legal orthodox” view of causation), Richard A. Posner, *Strict Liability: A Comment*, 2 J. LEGAL STUD. 205, 217-18 (1973) (discussing the libertarian premise behind Epstein’s arguments on Coase), and Richard W. Wright, *Causation in Tort Law*, 73 CAL. L. REV. 1735, 1750-58 (1985) (discussing Epstein’s emphasis on individual autonomy), with Richard A. Epstein, *Causation and Corrective Justice: A Reply to Two Critics*, 8 J. LEGAL STUD. 477 (1979) (responding to Borgo and Posner).

148. See, e.g., Kenneth R. Vogel, *The Coase Theorem and California Animal Trespass Law*, 16 J. LEGAL STUD. 149, 152 (1987).

includes the right to exclude a range of intrusions is easier to delineate and, importantly, cheaper to communicate than is the reverse. The common-sense intuition that the cattle cause the harm to the farmer rather than vice versa can be seen as reflecting how easy this default package of rights is to communicate and to process by a large and anonymous set of dutyholders. To be sure, this package is not absolute—surveyors, firefighters, and those acting out of necessity are not trespassers. But adopting a general presumption that physical invasions to the land are trespasses unless the owner consents to them is a low-cost rule compared to a presumption that all invasions are privileged unless the entrant has agreed to desist.

In other words, if property is a bundle of use rights—and this is the picture that underlies the economic view—then some bundles are easier to communicate than others. Since property rights are good not just for establishing the baseline for contracts between *A* and *B*, but also against strangers, the default “Blackstonian” bundle has a communicative advantage. Someone with no local knowledge will know that, in the normal case, physical invasions of the space delineated by the *ad coelum* rule give rise to liability. Whether it makes sense to base liability in a more fine-grained way depends not only on who is the cheapest cost avoider but also on whether the added cost of the added precision is worth the cost of muddying up the simple *ad coelum* rule.

In short, there is an information-cost advantage to regarding causation and liability as running from the invader of the land to the injured owner of the land, just as there is to regarding causation and liability as running from an assailant to the victim of the assault. We do not suggest that considerations of human dignity or corrective justice do not also provide reasons for adopting unidirectional notions of causation. Our point is simply that this conclusion can also be reached as a matter of information-cost economics.

D. *Trespass and Nuisance Revisited*

We return to where the law and economics approach to property rights started: the law of nuisance. As we have noted, the rules of trespass make sense in light of the information costs that an *in rem* right imposes on the world. Dutyholders simply know to keep out of whatever boundaries—physical or metaphorical—the law or social norms prescribe.¹⁴⁹ And they

149. Although a discussion of this issue goes beyond the scope of this Essay, the law of patents tends to rely on very simple and clear proxies to set up an exclusive right, and commentators have noted the parallel to land boundaries and trespass. See, e.g., Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 273-74 (1977) (comparing the patent system to the mineral claim system); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 845 (1990)

face strict liability for invasions of the right. For a device that must coordinate the actions of a large and anonymous group of people, keeping things simple is a prime consideration.

Nuisance law presents a more complicated picture. On the one hand, much of nuisance law has the flavor of trespass: In this mode, nuisance requires an invasion of the column of space defined by the *ad coelum* rule and offers automatic injunctions for substantial nuisance injuries. Many famous cases from the nineteenth and early twentieth centuries take this approach,¹⁵⁰ which has been extended by Epstein in his theory of nuisance liability.¹⁵¹ On the other hand, another strain of nuisance law is about balancing tests and reasonableness inquiries of various sorts, and this approach has been emphasized by the *Restatement (Second) of Torts*.¹⁵²

The contrast between trespass and nuisance quite likely has something to do with bargaining costs, as one of us has previously argued.¹⁵³ Trespass applies to gross physical invasions by visible objects and deploys strict liability and injunctions. Nuisance applies to more indirect intrusions such as noise and odor, is often based on a balancing of the benefits and harms from the offending activity, and damages may be awarded rather than an injunction. This pattern is roughly what we expect if courts are willing to incur higher entitlement-determination costs in those cases in which high transaction costs likely preclude a private bargain over the use conflict.¹⁵⁴ Yet, the bargaining theory does not fully explain why nuisance retains a persistent strand that echoes the *ad coelum* doctrine and the rules of trespass. Notwithstanding the *Restatement*, nuisance law is not pure cost-benefit analysis, but appears to be perched somewhat awkwardly between the simple exclusionary rights associated with trespass and a regime that compares costs and benefits to define customized use rights for each situation.

We can perhaps explain more features of nuisance law by considering the in rem nature of property rights, and contrasting a system of in rem rights with a system that seeks to regulate permitted and prohibited uses of land directly. The former can be analyzed as reflecting what one of us has

(analogizing patent claims to metes and bounds); Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 IND. L.J. 759, 759 (1999) ("Patent law is about building fences."); see also Patrick Croskery, *Institutional Utilitarianism and Intellectual Property*, 68 CHI.-KENT L. REV. 631, 648-56 (1993) (discussing Edmund Kitch's theory assimilating intellectual property into other property).

150. For an overview of these cases, see Robert G. Bone, *Normative Theory and Legal Doctrine in American Nuisance Law: 1850 to 1920*, 59 S. CAL. L. REV. 1101, 1137-99 (1986).

151. Epstein, *Nuisance Law*, *supra* note 146.

152. RESTATEMENT (SECOND) OF TORTS §§ 821, 822, 826, 828 (1977) (setting up reasonableness or balancing tests for various aspects of nuisance liability).

153. Merrill, *supra* note 57.

154. *Id.* Some commentators focus on the likelihood of bargains in light of the nature of the entitlement bargained over. See, e.g., sources cited *supra* note 107.

identified as a strategy of exclusion for delineating and communicating rights; the latter as reflecting a strategy of governance.¹⁵⁵ Where exclusion prevails, rights make use of crude low-cost proxies that sweep many potential uses into the right; in such cases, society in effect delegates most of the control over the resource to the owner by giving her the right to exclude. In contrast, where it is more important to designate permitted and prohibited uses with high precision and the number of dutyholders who need to process the right is not great, a strategy of governance is often preferred. By setting up a detailed right that corresponds to a given use, governance allows for more specialization and greater precision in reducing spillovers. But greater detail of rights requires more costly communication, including more costly processing by dutyholders. At the limit, actors would have to consult a list of use rights every time they encountered a resource in the world.

Nuisance law, from this perspective, can be seen as a legal institution that oscillates uncomfortably between exclusion and governance. Sometimes nuisance tends toward the exclusion pole. A court should not engage in detailed balancing of uses if the cost of measurement is not worth it. In situations of harm so great as to preclude multiple use, there is no point in incurring the costs of precision, and here we get trespass or a trespass-like approach to nuisance.¹⁵⁶ Conversely, where multiple uses remain feasible, we would expect to see more of an emphasis on governance, either through judicial cost-benefit analysis, contract, or government regulation, depending on which is cheapest.

Consider, in this connection, the distinction between nuisance *per se* and nuisance *per accidens*. A nuisance *per se* is an activity that constitutes a nuisance wherever and whenever it occurs.¹⁵⁷ Examples might include the release of toxic pollutants or the maintenance of an illegal activity like a crack house. A nuisance *per accidens* is otherwise permissible activity that constitutes a nuisance only because of where or when it takes place.¹⁵⁸ Examples might include noise associated with the operation of industrial machinery or the operation of a funeral home. The distinction does a poor job of identifying disputes having low transaction costs (in the sense of bargaining costs). Some nuisances *per se* will affect large numbers of parties and thus will have high transaction costs, and some nuisances *per accidens* will affect only two neighbors, arguably a low transaction cost

155. On exclusion versus governance as strategies for delineating rights, see Smith, *supra* note 45.

156. Recall that trespass is a rule of strict liability. Keith Hylton uses a missing markets theory to predict that when external costs are clearly greater than external benefits and transaction costs are high, strict liability regimes prevail. Keith N. Hylton, *A Missing Markets Theory of Tort Law*, 90 NW. U. L. REV. 977, 989-93 (1996).

157. *Morgan v. High Penn Oil Co.*, 77 S.E.2d 682, 687 (N.C. 1953).

158. *Id.* at 688.

situation. But the distinction makes more sense from the larger information-cost perspective associated with the distinction between exclusion and governance strategies. Some intrusions are so severe that they always result in a finding of liability. If an invasion is so severe that it interferes with all use and enjoyment of property, then it is likely to be easy to identify it as such and not very costly to assimilate it into the basic package of in rem exclusion rights associated with ownership of property.

In contrast, the fact that many activities can be said to constitute a nuisance only in certain times and places helps explain the movement in nuisance law toward a more negligence-like standard such as that reflected in the *Restatement's* balancing test, as well as the rise of zoning and environmental regulation. As population density rises and industrial activities become more intense, more delineation of particular uses becomes worthwhile.¹⁵⁹ This can be accomplished by making nuisance law less categorical and more context-sensitive. At some point, contractual regimes based on covenants and servitudes and public regulation may become more cost-effective. While this is not the place to evaluate the costs and benefits of various land-use controls or to venture a guess as to how close they come to optimality, we would expect a regime of in rem exclusionary rights to be supplemented at some point with more particularized delineation of use rights. Nevertheless, even if such delineation makes sense at the margin, there remain a large number of uses and users that can still be regulated at low cost by using the low-information-cost in rem rights associated with possession and trespass. This is why nuisance law retains overtones of trespass, although in a highly qualified fashion.

VI. CONCLUSION

If it is "absolutely vital" to grasp the distinctive nature of in rem rights in order to grasp the institution of property, as the philosopher J.E. Penner has written,¹⁶⁰ then contemporary economic theories of property come up short. Property is regarded as important by modern economists either because it facilitates contracts transferring resources to higher-valued uses, or because it serves as a legal rubric for the collective resolution of disputes between individuals over the use of resources. The implicit conception of property that underlies these assumptions is that of an authoritatively established collection of use rights with respect to a resource. Each situation has its own unique list of use rights, with different use rights assigned to different individuals. "Property" is the list that is currently recognized by

159. For a related perspective on pollution controls, see Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1, 9-36.

160. PENNER, *supra* note 102, at 30.

law (in the case of legal property rights) or by established practice or convention (in the case of informal or social property rights).

This orientation ignores the in rem dimension of property rights. This feature of property was familiar to Blackstone, Smith, Bentham, and their successors, but has been all but forgotten after decades of legal realism and under the influence of Ronald Coase's revolutionary identification of transaction costs as the key determinant of the structure of legal entitlements. Every theory must abstract away from certain details. But by systematically abstracting away from the in rem feature of property rights, law and economics has blinded itself to certain features of property regimes—features that are important and cannot be accounted for on any other terms.

Why did economists and economically oriented lawyers lose sight of the in rem dimension of property? It may be that property, in the sense of a right to a thing good against the world, is an idea that looms largest at a relatively early stage in social and economic development, when a society has not yet solved the problem of order. Early commentators like Blackstone, Smith, and Bentham were alert to the possibility of a world in which property rights were routinely violated, and consequently they felt it was important to articulate why security of ownership matters. By the time the modern law and economics movement emerged in the 1960s and 1970s, however, the problem of order had largely been solved, at least in advanced economies. These modern commentators, not surprisingly, were more interested in problems that had not been solved, such as managing long-term contractual relations, controlling the behavior of agents in complex organizations, and fine-tuning incentives for the efficient management of spillovers. In other words, modern legal economists were interested not in the problem of order but in the maximization of welfare.¹⁶¹ What this overlooks, of course, is that the refined problems of concern in advanced economies exist at the apex of a pyramid, the base of which consists of the security of property rights.¹⁶² Without an accurate understanding of the base, our conceptions of what happens in the refined atmosphere of the apex will often be distorted, or at least incomplete.

161. See Richard Posner, *Blackstone and Bentham*, 19 J.L. & ECON. 569, 601 (1976) (noting that Blackstone was interested in the problem of order, whereas Bentham was more interested in welfare, and observing that "[t]hat has been the approach (or neglect) of most economists throughout history").

162. The importance of security of property rights to economic development has received renewed emphasis by authors concerned with explaining the lackluster economic performance of many post-socialist and developing countries. See, e.g., HERNANDO DE SOTO, *THE MYSTERY OF CAPITAL* (2000); Andrzej Rapaczynski, *The Roles of the State and the Market in Establishing Property Rights*, J. ECON. PERSP., Spring 1996, at 87; Sunstein, *supra* note 111. This work could also lead to a rediscovery of the importance of the in rem dimension of property rights.