



Property in Land and Other Resources

EDITED BY DANIEL H. COLE
AND ELINOR OSTROM



Foreword by Douglass C. North

Property in Land and Other Resources

Edited by

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Playing by Different Rules?

Property Rights in Land and Water

RICHARD A. EPSTEIN

Property Regimes for Land and Water

One of the ancient philosophical conceits about the nature of the universe was that it was divided into three separate elements: air, water, and land. As an explanation of elementary particles, this antique tripartite division is an arid intellectual curiosity. But, ironically, in dealing with the organization of property rights systems, this early classification system is right on the mark. The focus of this chapter is not primarily air rights of all kinds and descriptions, although the topic does come up.¹ Instead, it deals systematically with the differences and similarities that arise in forming property rights systems in both land and water.

One point common to the two types of systems is that each works in two dimensions. One dimension asks about the assignment of property rights to two or more private parties. The second dimension deals with the relationship of all private right holders, either individually or in groups, to the state. Viewed globally, these cases are concerned with the taking or regulation of land, including land use, which the government may do only if it provides an owner with just compensation for any property interest that is eliminated or reduced. The usual prism through which this topic is raised in the United States is the takings clause, “[N]or shall private property be taken for public use, without just compensation” (U.S. Constitution, Fifth Amendment), and the allied doctrines that develop under analogous state constitutional provisions.

On the first issue, dealing with private disputes, the uniform rule with respect to both land and water starts with an assumption of parity of entitlements among all participants in the original position. Although the remedial side of the question will not be stressed here, the implicit assumption is that both damages and injunctions are available to provide redress for past grievances and protection against future ones, all in an effort to steer the realignment of property rights through voluntary transactions. In contrast, that assumption (to some extent) cannot be fully realized in any takings context because, by definition, the government exercises a set of unique powers in relationship to all private parties. In these situations, once the public use

¹ For a discussion of these issues in connection with the Clean Air Act, see Epstein (2010).

requirement is satisfied, as it typically is, injunctive relief is off the table so long as the government is prepared to pay just compensation. These second-order questions are again put to one side.

This chapter addresses the key challenge of outlining the main features of a private and public system of law with respect to both land and water. The feel, texture, and characteristics of these two resources differ in ways that tend to create large differences in the legal regimes that govern them. The dividing line between land and water has huge staying power in this area, but it is by no means the sole relevant categorical division. As Daniel Cole and Elinor Ostrom (2010) have stressed (see chapter 2 of this volume), differences in property rights within each of these broad categories are at least as important as the similarities. A sensible conception of the much-criticized notion of natural law helps inform analysis of the many doctrines of private and public law that are discussed in this chapter.

The Utilitarian Origins of Natural Law

In dealing with the broad set of issues raised in this chapter, it is important to note something about the much-vexed relationship between natural law and the consequentialist approach.² Many writers think that the use of natural law arguments is a form of mumbo jumbo that is best excluded from political analysis. Itai Sened, for example, offers an explanation of how property rights evolve within a set of political institutions by consciously dismissing the role of natural law in the analysis: “The essence of any social contract should no longer be understood as a delegation of authority by private individuals to a central entity so that this entity becomes the guardian of their ‘natural’ rights. On the contrary, the foundation of any social contract is based on the willingness of government officials to grant individual rights to their constituents in return for political and economic support” (Sened 1997, 7). Without a doubt, there is some grim truth to this proposition. A system of rent control, for example, arises from the combined efforts of tenants to force price controls on landlords for their own short-term benefits. This system exactly fits this definition of “individual rights” because it gives full sway to the political pressures that generate this system of wealth transfer from tenants to landlords. All sorts of tax subsidies can be explained in exactly the same fashion. But the purpose here is not to explain how legislation can ruin a perfectly good system of common-law property rights, but to offer some normative justification of the particular types of property rights that serve human interests well.

In dealing with this question, one can fault the natural laws of classical times for their inability to offer the best functional explanations for the rules that they championed, but they cannot accurately be accused of taking a naïve view of property rights that assumed that nature itself offered an account of property rights. Nor did they make any assumption that any set of property rights established by the political system through interest-group politics was entitled to normative respect. Rather, their general orientation was to try to figure out what set of rules was conducive to

² For development of these themes, see Epstein (1989; 2000).

bringing out the best in human nature by avoiding the inconveniences that were routinely found in a state of nature. Although they did not have a strong theory on how this was to be measured, natural law placed great confidence in those customary institutions that grew up through long use, many of which were employed as building blocks by wise sovereigns who wanted to retain the loyalty of their subjects by protecting these ancient rights.

Indeed, writers like Sened miss the key elements of the classical tradition by treating David Hume, for example, as though he disregarded the natural rights tradition by insisting that individual property “rights are not deriv’d from nature but from *artifice*,” or that property rights were human “conventions” that “acquire force by . . . our repeated experience of the inconveniences of transgressing it” (Hume 1739–1740, 489, 490). The sole force of this passage was to show that people learn the utility of property rights by seeing what happens when the traditional rules are disregarded. That account differs in key respects from the positivist notions that the proper content of property rights should be determined solely by reference to the political struggles that generate this or that configuration of property rights. For Hume, the major task was to justify the traditional rules of property by linking these artifices and conventions to human well-being. His effort was to give a strong account of justice, not to follow out the grisly consequences of interest-group politics: “Our property is nothing but those goods, whose constant possession is establish’d by the laws of society; that is, by the laws of justice . . . A man’s property is some object related to him. This relation is not natural, but moral, and founded on justice” (Hume 1739–1740, 491).

Hume’s basic point is that no one can run a good society if the property of one is subject to constant expropriation by others. The wisdom of this rule is confirmed by long experience. He may use the terms “artifice” and “convention” in opposition to that of “natural law,” but his own theory is no paean to public choice theory; it is at every point heavily dependent for its normative foundations on Roman law. Indeed, as a Scotsman trained in Roman law, he extensively discusses the standard rules by which property is acquired, dealing in success with “Occupation, Prescription, Accession, and Succession,” praising at one point the “remarkable subtilty of the *Roman law*,” and quoting thereafter from Justinian’s *Institutes* on that topic (Hume 1787, 514, 512 n.2 [beginning on 509]). His major intellectual effort is to prove the importance of the “stability of possession” a phrase that he uses on multiple occasions (e.g., Hume [1787], 490, 503, 514, 515, 567), and one that comes directly from the Roman tradition on this problem. It is all too easy to be misled by his use of the terms “artifice” and “convention.” These terms are not meant to repudiate the property conceptions of the Roman lawyers working in the natural law tradition. They are meant only to establish a firmer foundation for these rules by showing how they can be justified by their consequences—a position that no natural lawyer of the time would have categorically rejected. This is evidenced by Blackstone’s justification of property, written some years later, which also relies on a mix of natural law and consequentialist arguments, where again the central challenge is to explain why a person who took property at one moment is entitled to retain possession even when he relinquishes immediate physical possession:

Thus the ground was in common, and no part of it was the permanent property of any man in particular; yet whoever was in the occupation of any determinate spot of it, for rest, for shade, or the like, acquired for the time a sort of ownership, from which it would have been unjust, and contrary to the law of nature, to have driven him by force; but the instant that he quitted the use or occupation of it, another might seize it without injustice . . . But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of more permanent dominion; and to appropriate to individuals not the immediate *use* only, but the very *substance* of the thing to be used. Otherwise innumerable tumults must have arisen. (Blackstone 1765–1769, 2:3–4)

Jeremy Bentham relied on just this type of example to buttress his ostensible critique of natural law. But his differences with his archenemy Blackstone are at root terminological. On matters of substance, he adopts Blackstone’s position root and branch. His most famous aphorism reads, misleadingly, like a tribute to positivist accounts of property rights: “Property and law are born together, and die together. Before laws were made there was no property; take away laws and property ceases” (Bentham 1882 [1802], 113). This view apparently rejects any notion that customary practices prior to state decree can have the force of law unless and until they are endorsed by the state. It also gives no direction whatsoever about why the rules should be as they are. In context, Bentham’s remark comes after a longish passage that derides, as did Blackstone, the limitations of possession in the state of nature, which lasts only as long as one is able to grasp a particular object.³ But this hardly establishes the naked positivism for which it is cited. A fuller account shows that the shift in the rights of possession creates a Pareto improvement (whereby everyone is either as well off or better off than under the previous legal regimes that is clearly justified on efficiency grounds).⁴ Quite simply, any regime that fosters the stability of possession allows those who already have some things to acquire others without having to worry about keeping others away. More precisely, it means that the state will make good on these claims in any dispute by refusing to treat the relaxation of physical control as the abandonment of possession. The key point here is that the normative improvement drives the example. But to the determined nominalist, it would be a matter of total indifference if the arrival of the state was used to reinforce the notion that the person who walks out of his house or leaves his catch untended has abandoned it to the next taker.

It is critical to note that all these examples are drawn from the law of land and personal chattels. There is no doubt that the philosophical writings on the subject of property rights in water are far thinner. Writers like Blackstone are content to

³ “There have been from the beginning, and there always will be, circumstances in which a man may secure himself, by his own means, in the enjoyment of certain things. But the catalogue of these cases is very limited. The savage who has killed a deer may hope to keep it for himself, so long as his cave is undiscovered; so long as he watches to defend it, and is stronger than his rivals; but that is all. How miserable and precarious is such a possession! If we suppose the least agreement among savages to respect the acquisitions of each other, we see the introduction of a principle to which no name can be given but that of law. A feeble and momentary expectation may result from time to time from circumstances purely physical; but a strong and permanent expectation can result only from law. That which, in the nature state, was an almost invisible thread, in the social state becomes a cable” (Bentham 1882 [1802], 112–113).

⁴ For further elaboration of this point, see Epstein (2007).

state that the interest of any person in water is (using the Roman term out of context) “usufructuary” (Blackstone 1765–1769, 1:339). That is, of course, an insufficient account of the system, and for perfectly clear reasons. The difficulties in the context of water are greater than they are with land because of the far greater diversity of circumstances that any comprehensive system of property rights has to address. Some of these problems relate to the highly varied settings in which water rights have to be organized. That physical diversity in turn increases the need to balance competing uses, so that much of the major litigation on the question deals with whether this system governs in the first place.⁵ For these purposes, however, it is evident that the rules that work for a small English river will not do well to harness waters that barrel down a gorge etched out by the Colorado River. That river is governed by a prior-appropriation system that, roughly speaking, gives strict priority to order of acquisitive use. Strong preferences for out-of-river consumptive uses make good sense in physical settings where riparian uses are of minimal value. Taking cows to the edge of the river produces rather different consequences in the two different riparian settings. In addition, natural variations in water environments alter the rate of topological change with respect to water, and to the land that abuts it, far more than with land. This level of natural variation necessitates rules that determine ownership as water levels rise and fall or as rivers are redirected. These concerns gave rise to the doctrines of alluvium and avulsion, which have their origins in Roman law (Gaius 1932, 2.70–72).⁶ Although Joshua Getzler (2006) does not discuss this particular body of law, he rightly notes in his exhaustive treatise that many Roman law doctrines have had a heavy influence on the common-law development of water rights.⁷

On balance, the key insight is that the levels of topological differences, which are easy to underestimate with respect to land, have, if anything, far greater salience with water. At the same time, the rules that govern the state regulation of water rights are largely insensitive to these variations and, in general, tend to reduce the set of circumstances in which compensation is provided, appealing chiefly to the new and distinctive property rights that are applicable.

This discussion leads to the following conclusions: On one hand, the system of private rights and duties, while far from perfect, often ends up with the right divisions between private and common property, and with more or less the right rules for each of these subdivisions. On the other hand, the constitutional doctrines of takings are far too underprotective in both contexts because they make two grave doctrinal errors, each of which serves as a mirror image of the other.

With respect to land, the mistake is to fragment the bundle of rights so that strong protection is given to the right to exclude but weak protection is given to every

⁵ See, e.g., *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443 (1882).

⁶ The footnote was added by the translator, Scott, to reflect the point that these rules were incorporated in their entirety into the English Law. See, e.g., *Bracton v. 2* at 44 (1969) for his version of the distinction between alluvion and avulsion, which uses the first term but not the second.

⁷ “The new water doctrines were built from Roman law and Roman-derived civil-law concepts of common goods and the natural rights of ownership, together with the English sources of Bracton and Blackstone, part-civilians themselves. Water law is one of the most Romanesque parts of English law, demonstrating the extent to which common and civilian law have comingled. Water law stands as a refutation of the still-common belief that English and European law parted ways irreversibly in the twelfth century” (Getzler 2006, 1–2).

other element within the bundle of rights.⁸ Essentially, the government knows that if it tries to take property outright, full compensation is owed. But if it engages in partial takings, its actions will often be demoted, so it is said that they create a “mere” diminution of value (in the millions of dollars, of course) for which no compensation is required.⁹ The excessive fragmentation of private interests thus leads to an insufficient protection of private rights, with consequent resource losses, and the government is spurred on to take private assets for public use without having to make an explicit comparison of the private values that are lost with the public values that are gained. What is ideally, in effect, a system of Kaldor-Hicks efficiency, where the winners could in principle compensate the losers and still come out ahead, breaks down in practice, for reasons that will shortly become apparent.

With water, the courts make the opposite mistake. They treat it as a single unitary thing for public law purposes, even though as a matter of private law, water rights are highly fragmented to reflect the underlying set of multiple inconsistent uses. Any accurate assessment of an individual claim has to deal with trade-offs at the margin, which are often made explicitly in cases involving water rights.¹⁰ Everything that is traded off at the margin goes exactly the opposite way in takings disputes, where the uniform judicial recognition of the so-called navigation easement has long been regarded to dominate every private interest in the water. Total state take-over therefore generates virtually no compensation for either in-stream or riparian private rights. The bottom line is that the same strong, progovernment bias in the takings area manifests itself in different ways, precisely because of the conscious effort to distance all rules in the law of takings from their private law analogies. The path toward reform is not to deny the complexity of property rights, a well-rehearsed theme. Instead, it is to strengthen the relationship of the laws that govern private disputes with those that govern public disputes.

Equal Rights in Property Law

Private Parties

In cases involving private parties, the uniform assumption is that some position of equal rights between the parties is the appropriate point of departure for the analysis. One reason for this particular allocation is that it provides an indispensable focal point in ordinary two-party disputes. That focal point, in turn, avoids the need to ask which party to any future dispute should occupy a preferred position. Any other path is a sure road to danger. Choosing to bestow a preference on one party necessarily gives rise to a second question of even greater complexity: if there is any built-in preference, just how large is it, and by what particular reasons can it be justified?

⁸ For a conventional account of the incidents of ownership, see Honoré (1961). For a discussion of whether fragmentation of rights either strengthens or weakens the constitutional protection of property rights, see Claeys (2006); for a response, see Epstein (2006).

⁹ For the key doctrinal statement, see *Penn Central Transportation Co. v. New York City*, 438 U.S. 104 (1978).

¹⁰ For an account of the marginalist nature of these trade-offs, see Epstein (1994).

Herein lies the difficulty. Improving the lot of one party relative to another produces both gains and losses, which means that the only social measure of efficiency that can be used to deal with the situation is the Kaldor-Hicks measure that will bestow its benediction of an efficient government action only if the gains to the winner are larger than the losses to the loser. All these actions assume, of course, that the transaction occurs in a world in which no transfer of payment, either in cash or in kind, is made (or needs to be made) to the other side. Finding a transaction that satisfies this constraint requires more delving into the particulars of any given case than does the more stringent Pareto formula, which requires that both sides be at least as well-off in the new state of the world as in the previous one, without committing itself to any distribution of the net gains between them.

Formal parity in position between the two parties tends to generate gains for one side only if it generates gains for the other. Given that the judgment of parity in positions is made largely behind a veil of ignorance, there is, moreover, no particular reason to assume that the two parties enjoy some differential level of gains. The much more plausible assumption is that the two sides gain in roughly equal proportion. The position of parity of rights, therefore, is more likely to produce a system of property that generates more overall gains than the less restrictive Kaldor-Hicks test. It is for just this reason that the postulate of equality of persons in the state of nature is used not only in setting out property relations, but in assigning the equal or like liberties of human beings within the general Lockean framework.¹¹ The parity principle thus creates a focal-point equilibrium that any two people, wholly without regard to their previous connections, can sustain.

The second great advantage of the like-liberty or equal property rights position is that it is scalable in ways that preserve the desired focal point. The same rule that works for two people can easily be generalized to n people, at least so long as non-interference with the like rights of other individuals remains the norm.¹² This ability is absolutely critical in property settings, because even if the issue is not property rights that are good against the world, as with land, but those that are binding against a substantial number of people, as with riparian rights, any asymmetry in the definition of rights introduces a new round of complexity from which there is no avenue of easy escape.

The explanation, as usual, rests on a transaction-costs view of the world. Any effort to create preferences in a dispute among n individuals has to be at the very least well ordered, so that a system in which A has priority over B, who in turn has priority over C, has unalterable transitive features. In addition, the magnitude of the preferences again has to be assayed without knowing the alternative conceptual solution or the types of evidence that could lend it empirical credibility. Equal liberty against force and fraud, for example, avoids this problem because everyone can follow a rule that requires him to keep his hands (or feet) to himself against a stranger. At this point, the noninterference rules set a background situation where any two people can form a cooperative venture without the approval of the rest of the world, so long as they do not by any voluntary cooperation or combination infringe on the

¹¹ See generally Locke (1980 [1690]).

¹² These considerations are also tied closely to rule-of-law concerns; see Epstein (2011a).

rights of third parties. By similar reasoning, they are protected against a diminution of rights to third parties, which would otherwise be an implicit tax against voluntary transactions that improved the position of both parties to the transaction. The stabilization of the overall system thus goes a long way to resolve various suits between parties.

The actual way in which this parity constraint operates depends in part on the rules in question. The physical rules of noninterference just mentioned are particularly amenable to this type of approach because it simultaneously creates a perimeter of rights around all persons in which they are free to do as they please. Positive entitlements to external resources, however, are less easily crafted. Thus, all the rules dealing with the occupation of land, the capture of animals, or the taking of various natural resources gravitate to a system of first possession, whereby the first to bring the thing into possession is its presumptive owner.¹³ The key feature that makes this system work is the focal-point equilibrium (whereby everyone recognizes instantly who is the preferred party) if the party in possession is, and is widely known to be, entitled to ward off all others. It is the possession that singles out the owner from the rest of the world, which any system of exclusive rights must do, and it does so long before there are state actions designed to coordinate individual behavior.

Indeed, this first-possession rule is susceptible only to cautious generalization, because in some property settings (e.g., the capture of whales), a single party often cannot land the whale by himself. At this point, the initial logic becomes a bit more complicated, but the basic contours of the first-possession rule bend without breaking. The huge portion of humanity that has had nothing to do with landing whales continues to have no claims against the whale. However, the individuals whose efforts contribute to its successful capture must work out some accommodation that reflects their respective contributions to the catch. The system will break down if all contributors to the catch do not receive a return that equals or exceeds their contribution to the overall venture. In this sense, the strict sequential role of the various players means that any defection at any point in the process results in the loss of the catch for all. All players, therefore, have to be incentivized simultaneously. That set of mutually consistent rewards, moreover, must be created by custom, because there is no direct communication between them at the time they act. Just these conditions, for example, are satisfied in the rule that requires the ship that brought down a fin whale to pay a finder's fee to the person on the beach who gave it information about where it landed.¹⁴ The fee exceeds the cost of the notice, but it does not deny the fishermen the needed return on their investment. (This analysis neglects all the common-pool difficulties that arise from overfishing, which require major adaptations.)

In the area of water rights, moreover, the interlocking nature of claims to running bodies of water make it more difficult to follow the parity position, especially as the level of use intensifies with the introduction of mills and dams, which generate

¹³ For the Roman origins, again, see Gaius (1932, 2.66); see also Justinian (2009), 2:1:12.

¹⁴ See *Ghen v. Rich*, 8 F. 159 (D. Mass. 1881).

much conflict.¹⁵ It cannot be said, therefore, that following a parity principle solves all problems, for two simple reasons. First, rivers flow downhill, and oceans are often influenced by the tides. By the same token, though, the effort to observe those natural conditions does help eliminate certain legal configurations that are less stable than their rivals. But in the absence of any system of boundaries, it is not credible to think that common-law rules can bring the legal system to its fruition without legislative intervention, which occurred with great regularity in both the English and American systems (Getzler 2006). In sum, all that can be said about the parity restraint is that it is a safeguard against the worst abuses but is not in and of itself a sure guide to the optimal system of property rights in water, even if there is some confidence about what the optimum is.

Public Versus Private

Resolution of disputes between the state and individuals cannot, as a general matter, be completely guided by the general principle of parity. The very talk of eminent domain power suggests that there lie in the state some rights that are superior to those held by ordinary citizens. Unlike ordinary private disputes, there is no real difficulty in figuring out who should get the extra rights and no formidable obstacle to applying the applicable rules to large numbers of disputes simultaneously; whether the government takes from one party or from many, it always occupies the distinctive role of the government. The problems of coordinating the behaviors of multiple actors that arise in private disputes do not arise when the state claims pride of place.

The principle of parity does not work as well with systems of direct government. In order to begin that inquiry, it is necessary to concede, without question, that the state can rise above ordinary citizens in using compulsion against individuals, whether on land or water. But just how far above those citizens can it rise? In particular, the most difficult question is often whether the state can act under its police powers so that the regulations it imposes are not offset by any duty to compensate private individuals who are, at least in some instances, cast in the role of wrongdoers, as in the case of pollution. However, not all state initiatives are directed toward private parties as wrongdoers. In some instances, the state demands sacrifices from individuals who have done no wrong in order to advance the common good. The common requirement that just compensation be supplied in those cases is an effort to convert a set of government initiatives that might provide a Kaldor-Hicks improvement into one that provides a Pareto improvement: the purpose of compensation is to ensure that no one is left worse off by the state's use of coercion.

But putting the point in this way introduces the need to determine which cases fall on which side of the line. As a brute historical fact, the systematic errors in dealing with eminent domain are not those that make the state too feeble to meet the challenges that it faces; in fact, they create the opposite risk. The duty to compensate is systematically separated from the conceptions of right and wrong that govern

¹⁵ For a historical account, see Rose (1990). For an extensive critique of this position as oversimplifying the differences between English and American law on the rise of the reasonable-user doctrine, see Getzler (2006).

disputes between neighbors, specifically under the law of nuisance. That gap opens up enormous opportunity for political arbitrage between the private law and the public administrative process. Within the land use context, if it is not possible for a group of neighbors to purchase the right to a view over someone else's land via a restrictive covenant, they may turn to the zoning board, where the restrictive covenant is theirs for the asking if they can prevail by majority vote, particularly given the nearly unbroken history of judicial cases giving deference to zoning authorities since the initial Supreme Court decision in *Village of Euclid v. Ambler Realty Co.*, 272 U.S. 365 (1926).

The space for this kind of behavior is very large. First, the gains from obtaining a desired view are not trivial: the value of land with a protected view can easily increase by as much as 50 percent in the right coastal settings. Second, gains that large can become the focal point of political action because once the restrictions are imposed, future enforcement of the political deal is usually not a major obstacle to its initial realization. The durability of the purchase increases the willingness to make it. Third, the losses on the other side are almost always larger, which is why there seldom are voluntary transactions that implement the restrictions imposed by zoning ordinances. In virtually all cases, the party who is prohibited from building has the same view as the party who gets the zoning order. Those values are lost, and that owner will therefore fight. However, in a political arena, votes count for more than the dollars of economic gains or losses, so that the side with the larger coalition can win even if its result is inefficient. In the end, therefore, there is only one structure with a good view instead of two structures, one of whose view is better than the other's. Fourth, an even greater problem is that the ability to work through political means does not lead to compromise solutions in which, for a fee, the coastal owner will agree to some concessions on the size, type, or location of the new construction for the benefit of the party one level removed from the beach.

There is only one way to avoid the political arbitrage that leads to these zoning battles, and that is to use the same set of liability and boundary rules for the resolution of both public disputes and private disputes. But which set? On this point, the ultimate choice is easy. The private law rules between like parties are all honed with the efficiency of the whole in mind. The guiding principle is that the greater the parity in position, the higher the level of expected efficiency. But there is no similar veil-of-ignorance-type protection with public rules, which no amount of ingenuity could render serviceable in dealing with private law disputes. At this point, then, the private law rules supply a baseline for dealing with the key problem of demarcation, which asks how to distinguish between those government actions that generate some obligation to compensate and those that do not. It is instructive to see how these insights play out with regard to land and to water.

Private and Public Disputes over Land Use

Private Disputes

The implicit private law strategy for resolving disputes between two parties proceeds in two stages. At stage one, the law adopts the position of implicit parity between the

parties so as to rule out favoritism, for reasons stated earlier. At stage two, the legal system, when it works correctly, adopts rules that maximize the value for each of the participants. Given the way in which the project is organized, the second task is made easier in most cases by the adoption of the parity rule. To the extent that all the parties to the system are in a lockstep position, the only way in which one party could seek to improve its own position is to adopt a rule that improves the position of all other persons. Stated otherwise, when the first condition is satisfied, the second task becomes far more tractable than would otherwise be the case. Any effort by one party to maximize its own position will result in parallel improvements for all other parties.

EXCLUSIVITY

It is just this procedure that leads to the traditional bundle of rights for the ownership of land—rights that are found in both civil law and common-law systems. Thus, the first question on exclusivity initially receives an easy answer: unless each person can exclude all others, investments in real property can be made by no one. The initial argument in favor of exclusivity of private land is powerful enough that it goes a long way to shape the inquiry into the proper understanding of private property, which is one reason that exclusion has always been included in the general bundle of rights.

The process in this case, however, is iterative and incremental.¹⁶ The best way to look at exclusivity is as an improvement of the state of nature—that is, the situation where no party has any rights of any sort in land. That test requires no detailed empirical inquiry to conclude that exclusivity marks an improvement over a brawl and a free-for-all. But the question then arises whether there are further improvements to be had, and if so, how they should be made. It is well established in every legal system, for example, that the right of exclusion is trumped by a narrowly conceived exception permitting one to enter the land of another in times of necessity in order to escape death, serious injury, or major property loss from forces of nature or third persons. That privilege lasts only as long as the necessity lasts, after which the status quo ante is restored. In most cases, moreover, that right to enter is usually accompanied by a duty to make compensation for property losses inflicted, or even for lost rental value of the property in question. The large empirical hunch is that salvation counts for more than exclusion, so much so that if the owner tries to exclude under conditions of necessity, he can be rebuffed, at least if the issue is whether the outsider can moor his boat at a dock. In general, however, there is no universal duty to rescue (a principle that has problems of its own), and the situation becomes murky if the outsider in cases of necessity wishes to claim access by right to the interior of one's home. The more complicated the accommodations, the less clear the general gain.

In addition to the necessity cases, an exception to the norm of exclusive property arises in connection with common property, which operates as a network link. For those properties that are long, thin, and suitable for transportation, the initial property regime can easily be one that operates in common, as with waters, beaches, and

¹⁶ For a discussion of moral incrementalism, see Epstein (2003).

often customary trails. At this point, the dominant regime assures that each property owner who abuts the common element has access to the transportation (or, today, communication) grid, given the obvious gains in question. There are evident limits to what a purely private system of law can do, but for now, the analysis can proceed at least this far.

USE RIGHTS

The same type of argument that applies to rights of use with respect to water applies to rights of use with respect to land: does the allowance of some use rights work an overall social improvement? In a system in which no one is allowed to build anything, the legal definition of property rights would consign all individuals to states of permanent deprivation. So use rights in property are necessarily allowed, given the manifest Pareto improvements they create. But again, the incrementalist approach dominates because the right to use does not cover all uses, for these are in every jurisdiction hemmed in by some law of nuisance dealing with filth, pollution, odors, and the like on the generalized assumption that all parties are, as a first approximation, better off with these restrictions than without them.¹⁷ But the heterogeneity of nuisances gives rise to a needed notion of caution, so that this first approximation is modified both ways, but always under a principle of reciprocity that applies to all parties in all cases. Thus, for instance, negative reciprocal easements impose duties on landowners to refrain from digging up their soil in ways that cause their neighbors' land to collapse.¹⁸ On the opposite side, the live-and-let-live rule carves out from the general nuisance law those reciprocal low-level interferences with respect to all parties—the rule easily generalizes to n persons, where all persons are better off if none is allowed to sue.¹⁹ Similar logic applies to such matters as the broadcast of radio waves or the overflight of airplanes, for which no relief at all is allowed.

This argument, moreover, applies not only to land use, but also to land development, where, again, the gains are so large that the contrary position is not sustainable as a general rule, given the mutual gains that follow if all parties in the state of nature are allowed to develop their land, instead of a situation where none are allowed to do so. How far these rights can generally go is always a question, and on this matter, the question of lateral support, whereby the land of one neighbor supports all others, often requires individuals to set back their buildings from boundary lines. More controversially, height restrictions, intended to preserve air and light, could also be imposed if they worked well on a reciprocal basis, but the case for imposing those restrictions as a matter of law also tends to be weak. In rural settings, large plot sizes tend to make these height restrictions unnecessary. In urban settings, the close density of property tends to make these blocking rights prohibitively expensive, so that they are usually denied.²⁰ It was for that reason that Justice Holmes, in his usual blunt fashion, wrote: "At common law, a man has a right to build

¹⁷ For discussion, see Epstein (1979).

¹⁸ *Birmingham Corp. v. Allen*, [1877] 6 Ch. D. 284 at 288–289 (discussing the rights of owners of mines to extract coal, preventing the extraction of coal from neighboring mines).

¹⁹ *Bamford v. Turnley*, [1862] 122 Eng. Rep. 27 at 32–33 (Ex.) (Bramwell, B., concurring).

²⁰ See, e.g., *Fontainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc.*, 114 So. 2d 357 (Fla. Dist. Ct. App. 1959).

a fence on his own land as high as he pleases, however much it may obstruct his neighbor's light and air" (*Rideout v. Knox*, 19 N.E. 390, 391 [Mass. 1889]). In dealing with these issues, moreover, it is always critical to remember that any assessment of rights should be made as of the moment that property has been acquired in its natural state. The judgments become completely skewed when the unilateral actions of one side introduce a key asymmetry in dealing with rights. Thus, if A builds on his land, he has a strong case to argue that the law of nuisance should now prevent B from blocking his view by building on her land. The correct analytical framework denies A the opportunity to gain an advantage over his neighbor by taking the unilateral step of building first. His earlier action gives him the benefit of an unobstructed view until she decides to build. It does not create a prescriptive right whereby, through the passage of time, she forfeits her right of construction.

There are, of course, situations where the parity principle cannot be observed, not because of what the law says, but because nature does not allow the parties to interact on what is instructively called "a level playing field." The most obvious case concerns conflicts that arise between uphill and downhill owners. This situation, which is the norm in dealing with water rights, makes it impossible to devise any rule that exhibits perfect parity, so the question is what compromises will be available. The rule that says that no physical invasion is possible will favor the downhill owner but will kill all development from above. What developed, then, was a tripartite solution that had a fair bit of wit to it. Any discharge from the higher land to the lower land, such as dumping filth from an upper-story window onto a neighbor's land, was treated as tortious.²¹ On the other hand, a decision to remove coal from the upper land, such that water could come through, was not tortious. Let the lower fellow fend for himself under the "common enemy" or purchase some protection from the defendant.²² The sense here is that forcing the uphill landowner to supply the protection puts all the cost on one side and leaves all the benefit on the other. In addition, it creates an added cost of coordination between two parties that does not arise when the same person has to keep coal in place, knowing what will happen if he does not.

That leaves the intermediate case, where the upper party wants to engage in ordinary husbandry, from which some level of runoff is inevitable. Here any decision that the uphill landowner had to avoid all interference meant that the lower landowner had a huge strategic advantage that was the reverse of the one nature created. The legal impulse, therefore, was to avoid either of the two end points involved in the other cases, which in turn led to the adoption of a reasonableness rule of the sort that quickly developed in connection with water rights. In the famous case *Middlesex Co. v. McCue*, 21 N.E. 230 (Mass. 1889), Justice Holmes refused to enjoin the defendant from filling up the plaintiff's mill pond with the inevitable runoff generated when the defendant gardened on his plot. His eye for the middle position

²¹ See, e.g., *Baird v. Williamson*, [1863] 143 Eng. Rep. 831 at 831 (C.B.). The great case *Rylands v. Fletcher*, 3 H.L. 330 (H.L.E. 1868) (affirming *Fletcher v. Rylands*, 159 Eng. Rep. 737 [Ex. 1865]) is best understood as a variation on the discharge theme that applied to cases in which a defendant brings, keeps, collects, or accumulates water on his land that is likely to do mischief if it escapes. Both cases were judged by a strict liability rule in which the negligence of the defendant was immaterial.

²² See, e.g., *Smith v. Kenrick*, 137 Eng. Rep. 205 (C.P. 1849).

was expressed thusly: “[A] man has a right to cultivate his land in the usual and reasonable way, as well up a hill as in the plain, and that damage to the lower proprietor of the kind complained of is something that he must protect himself against as best he may. The plaintiff says that a wall would stop the trouble. If so, it can build one upon its own land” (*McCue*, 21 N.E. 230 at 231).

Note that protection is not supplied against actions that count as unusual and unreasonable cultivation, which means, as Holmes loved to say in many other contexts, that the protection of the law was a matter of degree, which in some cases it is.²³ But a simple physical test indicates which cases can be governed by categorical rules and which ones cannot. For those cases in which the field is level, hard boundary lines work because the risk of downward flow is not present. It was for that reason in *Rideout v. Knox* that Holmes gave the categorical rule that denied the easement of light and air. But in cases that involve land on a slope, a reasonableness accommodation is needed to avoid the complete domination of the one by another. It will become clear which category water is in.

DISPOSITION

The third key element in the ownership bundle is the right of disposition. Rights of exclusion, use, and development make no allowance for gains from trade, either between neighbors or with strangers. These rules must be included in the ownership bundles for the system to function. Between strangers, the nuisance rules are first approximations that are subject to limited correction by legal rule. It is also useful to allow parties to make additional adjustments through contracts that bind both themselves and their successors in title. The law that deals with *ius in re aliena* (rights in the property of others) handles that problem by allowing for the consensual creation of servitudes, which can either permit individuals to enter the land of their neighbors without committing a trespass or to restrict the neighbors’ use of their own property without it being an impermissible form of domination.²⁴ These consensual easements may well be reciprocal, as is commonly the case when they are included in a planned unit development, which contains an elaborate crisscross of covenants and easements among the various participants. But these covenants and easements need not be created by a common grant; they can be done in one direction only, upon payment of compensation. No matter how these interests are created, they follow two strict rules for the conservation of property rights. The first is that the parties to the transaction cannot expand their legal rights as against the rest of the world, which is thereby protected against their machinations. The second is that the parties to the transaction are not thereby forced to sacrifice rights to the rest of the world as a condition of finishing the deal. In essence, the rights of A, separately, and B, separately, against the rest of the world are carried over to any admixture of A+ and B– or, indeed, any more complex situation of A++ and B++, where the pluses and minuses represent the paired deviation from the initial set of rights.

²³ See *Rideout v. Knox*, 19 N.E. 390, 391 (Mass. 1889).

²⁴ For the current rules, see French (1994).

These rights of disposition, moreover, are not limited to adjustments among neighbors. Several points are in order. First, these rights also apply where the owner of a single plot of land chooses to create multiple interests in the same plot. Here again, no matter how many parties are involved, and no matter how complex the arrangements are, the same conservation of rights necessarily applies. The question that then arises is what kinds of division of property interests can follow. The list is long and impressive, but the key feature is that two or more deviations from the initial position may always be combined so long as the same constraints are met. Thus, mature institutions have been developed that have divided ownership of property over time, with the creation of life estates (both present and future), contingent remainders, and executory interests, both of which vest only on the occurrence of some future event. In effect, the owner of a piece of land is entitled to give a road map for the disposition of the property that will move from party to party at death, marriage, or some other event. There are some nontrivial limitations on this freedom of disposition, most notably, the rule against perpetuities, which invalidates some contingent remainders and executory interest because they take too long to vest.²⁵ But none of these have any material effect on the ability to divide the actual control.

Second, it is possible to create commercial interests in the form of leases (and subleases), which may ordinarily be assigned to third persons. Again, the accounting among the parties gets complex as the number of these interests increases, but the key point is that no matter how many different ways the fee simple (as the land is called when the title is indefinite) is sliced, the sum of the parts is always equal to the whole in regard to strangers.

Third, it is possible to create mortgages over the fee simple or any part of it, and to do so not once, but repeatedly with second and third mortgages whose respective claims can be organized by precise priority rules.

Fourth, it is possible to divide management from the control of any interest through the use of the trust mechanism, which is not very common today for land, but which is the dominant form for the holding of financial assets. But again, the same tactic works. The parties govern the relationships among themselves by contract. As against the rest of the world, they have the same arm's-length arrangement. The one adaptive response is that often the defensive function of property management and control is vested in the hands of a single person (usually the life tenant or the trustee) for reasons of administrative convenience. At one time, the proliferation of interests made it hard for outsiders to keep track of ownership and thus reduced the ability for further alienations of given pieces of the whole. Modern systems of recording have largely mitigated that problem. A bulletin board, now often available and searchable online, records all interests so that any outsider can determine the state of the title if he wishes either to purchase the property or to lend on the strength of it as security. The proliferation of interests produces gains from trade. The system of deeds and recording reduces the transaction costs that stand in the way of further fragmentation of the interests.

²⁵ For an explanation of the technicalities of the rule, see Bergin and Haskell (1984).

Public Taking of Private Property

The key insight for a proper approach to eminent domain is that the government cannot short-circuit the division of rights in question. The state of the title as a matter of private law binds the sovereign. It may decide to take or not to take land or some interest in it. So long as the taking is for a public use, there is no way for any landowner to resist that takeover. The distinctive feature of the takings clause is that it allows the state to force exchanges on even terms (by payment of just compensation) to prevent the holdout problems that could otherwise prevent the coherent assembly of land that is needed for some kinds of collective ventures.

The success of this operation depends socially on the judgment that the value of the property, when it is placed in the hands of the government, is greater than it is in the hands of private parties, when all spillover effects on third persons are taken into account. Without that constraint, the entire process will be consumed by various forms of public policy intrigue. Unfortunately, however, just that situation results because the current law of “property” as it is conceived under the law of eminent domain does not correspond to the law of private property with its strong system-wide efficiency effects. Here are some of the reasons that this situation flounders badly.

PARTIAL TAKINGS

One key mistake is that the law draws an artificial distinction between the taking of property as a whole and the partial taking limited to an interest in property. A sound system of private property encourages unlimited division of interests until all gains from trade are exhausted. The constitutional version of property law assumes that the only interest that is fully protected is the right to exclude, which is violated when the government enters property, at which point there is a nearly per se, or automatic, rule for compensation of the interest taken (*Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419 [1982]). But even in these cases, the compensation is commonly stated to be only for the “property taken,” which excludes from the mix all the dislocations that occur when the owner is deprived, for example, of property for use in his trade or business.²⁶ But these consequential damages are routinely allowed (to the extent measurable) against private defendants, and the failure to include them in the social calculus leads to excessive takings relative to the proper standard of social welfare.

Starting from its misconceived view of private property, the current takings law offers only scant protection for fractional interests in property, which has the unfortunate effect of discouraging owners from entering into transactions that make business sense. One illustration of this position involves the famous case *Penn Central Transportation Co. v. New York City*, 438 U.S. 104 (1978), where the private owners of the ground sold the air rights to a separate buyer. There was no question that air rights were just one form of sensible property division under New York law, which allowed them to be sold, divided, inherited, traded, bequeathed, leased, and mortgaged. In essence, they were folded into the standard system of property

²⁶ See *Monongahela Navigation Co. v. United States*, 148 U.S. 312 (1893).

rights. In *Penn Central*, New York's Landmark Commission denied the owner of those air rights the right to exploit them. No private party could have used its muscle to do so, but if New York City chose to preserve the view down Park Avenue (which was already blocked by what was then the Pan Am Building), its scenic endeavors counted as a public use, so long as just compensation was paid, as measured by the market value of these air rights in a voluntary transaction. But Justice Brennan deviated from the private law rule that protected divided interests. Instead he held that the air rights had to be considered as part of the "parcel as a whole" (*Penn Central*, 438 U.S. 104 at 131). At the very least, that maneuver is incorrect, for putting the land back together implicitly denied the holder of the air rights the gains from the separation. But in fact, Brennan's agenda was more aggressive. In his view, the development rights received a zero valuation so long as the current operations of the Penn Central terminal allowed the company to cover its costs and make a normal profit. Again, this rule is surely wrong by analogy to the private system, where the taking or destruction of any interest in land has its value lost, not its original cost to the owner, as its proper measure. Brennan's argument was that diminution in value should be treated as though it were a loss from competition, which again deviates from the cardinal principle of private law that even competitive losses are noncompensable, while the removal of any stick from the bundle of property rights is compensable. Otherwise, the risk is too great that the government will achieve its goals by a succession of small takings of partial interests.

This initial error creates a serious question about how to value development rights on land that is at present undeveloped and thus cannot cover its costs. On that issue, the current rules are still incoherent because they have deviated from the only rules that make sense: those that govern the taking or destruction of private property by other private parties. This effort to create a set of preferred property rights in government invites the form of political arbitrage identified earlier. Needless to say, virtually every exercise of the zoning power has the same consequence when it is not tightly tethered to private law conceptions of private ownership.

EXACTIONS

Next, the entire doctrine of exactions is another abuse that follows from the deviation from private law. The standard definitions of coercion involve the threat or use of force against another person or his property. That definition works in a straightforward sense when the two parties stand as strangers to each other. But the account of coercion must be flexible enough to cover other cases. There is a clear case of coercion if I have both your money and your ring and offer you a choice between them when you are entitled to both (Epstein 1993). Unfortunately, that is what is usually done with the law of exactions. An individual should have the right to build his house and to keep his access to the beach. The government announces that it will allow the construction of a new building (which is in no sense a nuisance) only if the owner of the property consents to having a lateral easement across the front of his land. Here there is a choice between two entitlements, and the Supreme Court was right to hold that this choice was not permissible (*Nollan v. California Coastal Commission*, 483 U.S. 825 [1987]). But that decision rested on the notion that an easement (but not a restrictive covenant, even though both are servitudes)

was a possessory interest in land that was subject to the per se compensation rule in *Loretto*. The danger of this illicit choice is everywhere. Thus, the government will only allow the construction of a new apartment complex (which, again, is no nuisance) if the owner agrees to fund a new park, school, or train station that is available to all members of the community. Here the game is that the burdens are borne exclusively by some even though the benefits are shared by others who do not contribute to the cost. There is an implicit wealth transfer through regulation, which courts have refused to guard against outside the context of easements. Once again, the distortions are palpable.

In sum, it should be noted that these key decisions exhibit the same general feature. The deviations from the (efficient) rules used to resolve private disputes all favor the government, almost always on the ground that government officials have an expertise and high-mindedness that no private landowner could hope to match. That naïveté leads to substantial social losses.

Water Law

Private Law

THE RISE OF CORRELATIVE RIGHTS

The private law of water is organized on a principle that is the polar opposite of the law of land. No longer is exclusivity the dominant term of analysis. Rather, in these systems, the rights of all parties are shared, such that the dominant language (as in the case of disputes concerning hillsides) is that of reasonableness, in which no one party is entitled to dominate over any other. The position of any claimant to water is often described as “usufructuary,”²⁷ which means that the person is entitled to some of the use and fruits of the water, but not to the entire stock of water, whose “going concern” value would be diminished if a running river were diverted into a private barrel or reservoir.²⁸ This effort to borrow a term from Roman law leads to a distortion of its primary meaning, which, in connection with land, referred to the right of an individual, the usufructuary, to take the use and the fruits of the land, while the title to that land remained in the hands of the bare proprietor. The exact division of assets in the land context covers a wide variety of issues, from cutting trees to opening mines to remodeling houses. But those conflicts are strictly between the two parties in question and are subject to modification by explicit agreement. There is, however, no one person who stands in the position of a bare proprietor with respect to water. Instead, there are multiple classes of claimants, such as riparians, owners of boats, mill owners, recreational users, and fishermen, each with its own distinctive class of uses that may or may not be valuable in connection with certain rivers. In these cases, topography matters so greatly that the delineation of rights that work in one context need not work in another.

To understand how the system works with respect to rivers, it is useful to set out the deviations that are needed from the law of land in order to develop a system of sensible water rights, which in fact begins with a simple form of riparianism. Once

²⁷ See, e.g., Blackstone (1765–1769, 4:14).

²⁸ For further development of this theme, see Epstein (1985).

that is done, one can ask, as with land, the extent to which it is possible to devise modifications of that body of rules when the potential valuable uses of water are expanded either by technology or changes in the natural topography of water.

On this question, it is instructive to begin with a short passage from John Locke that roughly assumes parity between the rules of acquisition of land and of water. As is well known, Locke thought that the proper way in which any individual separated his property from the common was to mix it with his labor: “Whatsoever, then, he removes out of the state that Nature hath provided and left it in, he hath mixed his labour with it, and joined to it something that is his own, and thereby makes it his property” (Locke 1980 [1690], par. 26).

Locke’s “mixing” image is somewhat overdrawn because it is quite clear that a minimal amount of labor can then separate something from the common; for example, “the acorns he picked up under an oak” would do the job (Locke 1980 [1690], par. 27). Locke is not so foolish as to think that extraordinary levels of effort should be required where simple labor will do. The real issue here is that of the focal point: the simplest way to have one person own property is for him to take it and for others to recognize that claim of ownership and stand aside. From this perspective, it appears to follow that taking water out of the common should be governed by the same rules, given the need to establish a unique owner. Locke, for example, appeared to endorse the parity of position between land and water when he wrote as follows: “Nobody could think himself injured by the drinking of another man, though he took a good draught, who had a whole river of the same water left him to quench his thirst. And the case of land and water, where there is enough of both, is perfectly the same” (Locke 1980 [1690], par. 32).

This approach is, of course, a particular application of the more general Lockean proviso, “Nor was this appropriation of any parcel of land, by improving it, any prejudice to any other man, since there was still enough and as good left, and more than the yet unprovided could use” (Locke 1980 [1690], par. 32). But it also shares the same defect. In both cases, Locke tries to make the case easy for himself by insisting that there is no injury at all, when some injury to the common pool is a physical necessity under the conditions of scarcity. The difference between a draught of water and the wholesale diversion of a river is just a matter of degree. The same point was raised by the plaintiffs’ lawyers in *Embry v. Owen*, when they attacked the claim that the defendant had caused no injury at all: “if this defendant were allowed to take an inappreciable quantity of water for the purpose of irrigation, fifty other persons might do the same” (155 Eng. Rep. 579, 582–583 [Ex. 1851]). Just as the longest journey starts with a single step, so too does the destruction of the largest river start with a single drop.

The great strength of this response is that it reveals a logical objection to a practical position. The difficulty in both these cases is that Locke and his followers are not asking the right question when they focus exclusively on the inappreciable diminution of the river as if it caused no harm at all. That all-or-nothing response is much too categorical. What is needed is a marginalist approach. The correct way to put the issue is to ask what happens to overall welfare if each person takes some portion out of the common for private use. In the case of land, the interdependence between separate parcels is generally small, so that the gains that come from

privatization are likely to exceed the losses that accrue to others who now have limited access to the common. Indeed, these persons could easily be made better off because the privatization of land generates improved productivity, which in turn increases the opportunities of third persons to gain through trade. In most cases, there is no disruption of any common-pool asset, which is what distinguishes the situation with land from that with water. At this point, the first approximation of letting no one take anything from a river will surely do better than the opposite first approximation of allowing the first possessor to take whatever he wants from the common, which is the case for land. Nonetheless, it is impossible to improve on that first approximation by allowing a system of limited, pro rata, access as the common law did. In light of these adjustments, it should be evident, therefore, that Locke's purported equivalence of land and water is misguided.

FROM NATURAL FLOW TO REASONABLE USER

English Cases. The difficulty in finding the optimal system of water rights is reflected in the early English and American common law cases.²⁹ The first approximation is thus that riparians, as a matter of natural right, have access to the natural flow of water. This posture is explicitly defensive because the first objective is to protect each riparian landowner against the unilateral actions of any person who threatens to abstract all the water from the river for himself, as is permissible under an unrestricted first-possession rule. As Lord Wensleydale wrote, the riparian has "the right to have [a natural stream of water] come to him in its natural state, in flow, quantity and quality, and to go from him without obstruction; upon the same principle that he is entitled to the support of his neighbour's soil for his own in its natural state. His right in no way depends upon prescription, or the presumed grant of his neighbour" (*Chasemore v. Richards*, 11 Eng. Rep. 140, 153 [1859]).

It is worth exploring how this formulation both follows land law and deviates from it. To do so, it is necessary to consider the differences between the law of prescription and the law of original occupation. On this issue, the brief allusion to the right of lateral support is most instructive. Recall that as a first approximation, all boundary lines in land are rigid: no one can invade the property of another, but one is nevertheless allowed to do as he will with his own property. The lateral-support easement is a deviation from that rule in that it meets the strict test of reciprocity because each person owes the identical duty to a neighbor. That reciprocal duty is justified as a Pareto improvement, precisely because the values of all affected parcels of land are increased by its uniform application. It is critical, therefore, to make it clear that this right of lateral support is not acquired by prescription or its close cousin, the theory of the lost grant.³⁰ The doctrine of prescription is triggered only by open and notorious use over a long period of time. The conceptual difficulty with the doctrine of prescription is the same as that for the kindred doctrine of adverse possession in land: why does a continuous trespass at some point become the source

²⁹ For a comprehensive account of the developments in English law, which were heavily influenced by early nineteenth-century writings on the subject, see Getzler (2006).

³⁰ For a discussion of prescription and the lost grant, see Getzler (2006).

of a valid title?³¹ The answer to that question depends less on the dispute between the parties than on the need to assign title on a systematic basis so that ordinary development and trade of real property can take place without fear of the dead hand of the past.³² To achieve that objective, a firm line dominates a wavy principle, and its arbitrariness is in large part mitigated by its clear publication so that all parties know the rules of the game.

These rules, however, are utterly unsuitable for creating a universal set of correlative rights and duties to govern all individuals from the outset, without any waiting period at all. There are no acts of prescription and no conceivable grants. The social objective is to install the most efficient system of property rights from the beginning, which is what the natural law approach does. This is not to say that doctrines of prescription have no place in dealing with water rights, for clearly they do. But the doctrine of prescription is applied only to those cases in which one person deviates from the natural rights position of common-law parity by open and notorious moves that claim greater rights than the natural flow system allows (Getzler 2006). For the upstream party, that requires blocking water or removing excessive quantities of it for the appropriate limitations period, say, 20 years. For the downstream party, it requires constructing a dam, which backs up water beyond the natural level to the prejudice of the upstream holder. In both these cases, prescription serves its proper function by acknowledging changes in the original rights structure brought about by long use without also altering the general system, which remains intact for all other users.

The second issue raised by the brief passage in *Chasemore* goes to the content of those natural rights. It is at this point that the clear intellectual distance between the rules governing the acquisition of rights in water and those governing the acquisition of rights in land becomes apparent. Recall the two-step analytical framework: first, establish parity; next, pick that set of parallel rules that maximizes overall utility. The parity on the river is preserved among all riparians because each has a right to have the water run past his land, but by the same token, he must allow it to run past the land of others. That initial parity, unfortunately, fares quite poorly under the second test of value maximization for riparians as a group, because there are surely social gains if some amount of water may be removed from the river. Put otherwise, the first drop of water in the river in private hands is worth more than the last drop of water that remains in the river.

The challenge, therefore, that the Lockean proviso's rigid formulation misconceives is to see how to introduce marginalist analysis to deal with water on the river. At this point, the gaps between land and water regimes grow larger. With land, the unilateral action of one person establishes priority over all others under the first-possession rule. But that rule cannot possibly function well (notwithstanding Locke's superficial acceptance of it) in connection with any river, particularly in light of its

³¹ For one prominent early formulation of the question, see Ballantine (1918). For the analogous Roman rules on *usucapio* (taking ownership by use), see Nicholas (1962) and Getzler (2006).

³² "The statute [of limitations] has not for its object to reward the diligent trespasser for his wrong nor yet to penalize the negligent and dormant owner for sleeping upon his rights; the great purpose is automatically to quiet all titles which are openly and consistently asserted, to provide proof of meritorious titles, and correct errors in conveyancing" (Ballantine 1918, 135).

large class of actors, each of whom may have acquired a parcel of land at different times. The first-possession rule gives too much power to the first taker (aside from the difficulty of determining who that person is in the absence of any system of deeds to record when riparian lands were first occupied or water rights were first used). So the property rule switches over to one that allows all persons the right to remove some small quantity of water from the river, regardless of when they acquired their interest in the land. It is better, on the whole, if all riparians are allowed to take a good draught out of the river, so long as its overall level does not shrink too much. That is likely when the amount of water removed by these low-level uses is less than the natural variation in the level of the river attributable to rainfall, evaporation, and other natural phenomena.

In lockstep progression, therefore, all riparians can, under established doctrine, make use of water for their modest domestic purposes. After water is removed from the river, the first-possession rule transfers ownership to the water, just as Locke thought.³³ The key question, however, is not how that person acquires ownership of the water he takes. Instead, it is how to determine the amount of water that can be taken in the first place, for which Locke's labor theory of value does not supply the slightest help. At this point, the hard question is how much more water can be removed from the river. In principle, the same marginalist test that applied to the easier cases should also apply to these harder cases. It is never a question of whether "as much again and as good" is left over; by definition, this is never the case. Rather, the correct question compares the sum of instream and consumptive rights when all riparians are allowed to increase their withdrawals from the stream. And the question whether overall levels increase or decrease with uniform consumption levels admits to a uniform a priori response that is independent of the volume of water in the river and the value of the private riparian uses to which it is put. The challenge is to ask just how much the pro rata removals can be increased until the reduction of instream uses becomes larger than the consumptive uses.

This issue intensified, and ultimately came to a head, with the transformation of the relatively passive system of riparian rights to the more muscular system of reasonable use. The issue was fought out in both England and the United States over key questions arising from irrigation and mills. With irrigation, the question in England was whether a riparian could take water out of the river for irrigation purposes so long as the return flow after irrigation did not reduce the levels of water for the downstream riparian to any appreciable extent. The argument against allowing this right was that its repeated application could easily put such pressure on the notion of appreciable loss that the entire system of negative rights (those that kept the river intact) could in practice be undermined by the recognition of this greater right. The argument on the other side is that the appreciable-loss test could be applied separately by each individual riparian, thereby obviating the risk that a succession of such deviations could undermine the whole system. If, therefore, the right in ques-

³³ "Though the water running in the fountain be every one's, yet who can doubt but that in the pitcher is his only who drew it out? His labour hath taken it out of the hands of Nature where it was common, and belonged equally to all her children, and hath thereby appropriated it to himself" (Locke 1980 [1690], par. 29).

tion could be restricted, the overall value of the water in the river would be increased by the very large gains that came from this additional use. Indeed, that condition could hold even if there were an appreciable decline in water levels, so long as that decline did not prejudice disproportionately the position of downstream users.

The English battle over this question came to a head in a series of cases toward the mid-nineteenth century, which Getzler (2006) describes in complete and accurate detail. The key case is *Embrey v. Owen*, 155 Eng. Rep. 579 (Ex.) (1851), where it is not quite coincidence that the lawyer for the victorious defendant was none other than George Bramwell, who, as Baron Bramwell, announced eleven years later in *Bamford v. Turnley*, 122 Eng. Rep. 27 (Ex.) (1862), the live-and-let-live principle that gave a principled, Pareto improvement account of why rigid boundaries should not govern disputes in low-level nuisance cases between neighboring landowners. In modern terminology, his view was that the detriments from these diversions, even if universally applied, were trivial compared with their gains. He noted that the diversions tended to take place in the wet seasons, when the harm to downstream users would be negligible. Further, much of the water that was used for irrigation returned to the river, thereby moderating any harm to downstream riparians. He concluded by insisting that the gains from the effective utilization of the land worked for the benefit of all. That argument was sufficient to persuade the trial court to adopt instructions that expanded the use of water from an earlier list of limited classes. Thus, Bramwell noted that it had always been accepted that water could at all times be used for “all natural and normal purposes, domestic and agricultural, provided [the riparian user] does not interfere with the rights of other riparian proprietors. For instance, he may, either by himself, his family, or his cattle, drink the water; he may bathe in it, use it in his habitation, and for watering his garden” (*Embrey*, 155 Eng. Rep. at 582). The only difference was that irrigation was a more intensive use than the others listed. But so long as the overall level of diminution was kept low, that point counted in favor of allowing the use, not cutting it back. As stated, the law is universalizable so that all participate in it, and all can enforce the limitation. Indeed, there was evidence at the time that many cooperative ventures between adjacent riparians allowed for more intensive use of water for their mutual benefit.³⁴ By way of analogy in land cases, the locality rule allows for higher levels of pollution in certain industrial districts because the greater reciprocal intensity of use continues to produce gains for all affected landowners.³⁵ In sum, this initial deviation from the older regime of riparian rights led to overall increases in utility without any clear shift in wealth among riparians.

The situation was quite different with the mills that sprang up in great profusion in England’s Midlands during the seventeenth and eighteenth centuries (Getzler 2006). These mills were a source of power for the various factories that sprang up

³⁴ “According to the law so enunciated . . . it would be competent for a [riparian] to erect a mill . . . and take the water from the stream to work it, provided he neither penned back the water upon his neighbour above, nor injuriously affected the volume and flow of the water of the stream to his neighbour below. And the law favours the exercise of such a right: it is at once beneficial to the owner and to the commonwealth” (*Nuttall v. Bracewell*, 2 Ex. 1 [1866], quoted in Getzler [2006, 320–321]).

³⁵ For the adoption of this rule in England at this time, see *St. Helen’s Smelting Co. v. Tipping*, 11 Eng. Rep. 1483 (H.L.) (1865), and the discussions of this case in Brenner (1974) and Simpson (1995).

along the rivers. There is little question that the introduction of some mills could increase the overall value of the river for its consumption and in-stream uses. Unlike the irrigation cases, these mills did not normally create the risk that water would be lost to the downstream users. Also, the use of these mills could generate strong distributive consequences for the riparians along the river. The power of a mill depends on the height of the falling water that is used to turn the wheel. That distance can be increased by building dams behind the mill, which could easily raise the river or even flood the uplands of upstream neighbors. Conversely, the size of that head could be reduced if the downstream owner built his own dam, which in turn would raise the height of the water at the foot of the upstream mill. Clearly, the total value of all mills, and the particular value of any given mill, depended on the number, size, and location of the mills along the river. Given the negative impact that each mill could have on the creation of other mills, the issues of number and spacing along the river became acute. It could be a matter of simple physics and geography that some riparians could construct no mills at all on their land, while the construction of some mills could easily foreclose the construction of others that might have proved equally valuable.

American Cases. The question, therefore, is how to design a regime that can deal with these situations. The closest parallels in the land use context are the disputes between farmers located at the top and the bottom of a hill, which in *Middlesex v. McCue*, 21 N.E. 230 (1889), generated a compromise that allowed ordinary farming at the top, even if it generated runoff that hurt the farmer at the bottom, who otherwise would have had the dominant hand in the matter. Just that solution was adopted in the reasonable-use cases, which reached the same uneasy conclusion about mills. For instance, in *Dumont v. Kellogg*, 29 Mich. 420 (1874), which involved simple but instructive facts, the plaintiff (the downstream owner) constructed a mill that was powered by water from above. The defendant (the upstream owner) subsequently constructed a dam that materially diminished the flow to the downstream mill. The question of “prejudice,” as that term is used in irrigation cases, has to be resolved conclusively for the plaintiff. But in this instance, the decision came out clearly for the defendant. Justice Cooley put the proposition as follows:

[A]s between different proprietors on the same stream, the right of each qualifies that of the other, and the question always is, not merely whether the lower proprietor suffers damage by the use of the water above him, nor whether the quantity flowing on is diminished by the use, but whether under all the circumstances of the case the use of the water by one is reasonable and consistent with a correspondent enjoyment of right by the other. (*Dumont*, 29 Mich. at 423–424)

Elsewhere, the point is put as follows:

The person owning an upper mill on the same stream has a lawful right to use the water, and may apply it in order to work his mills to the best advantage, subject, however, to this limitation; that if, in the exercise of this right, and in consequence of it, the mills lower down the stream are rendered useless and unproductive, the law, in that case, will interpose, and limit this common right, so that the

owners of the lower mills shall enjoy a fair participation. . . . —Woodworth, J., in *Merritt v. Brinkerhoff*, 17 Johns., 320, 321 [N.Y., 1829]

It is fair participation and a reasonable use by each that the law seeks to protect. (*Dumont*, 29 Mich. at 420)

At this point, the system comes apart at the seams. There is no way to preserve parity between upstream and downstream users in ways that give both of them fair participation and reasonable use. It is easy to think of situations in which parity results in a situation where neither riparian can maintain a successful mill, so that one mill must remain useless if the other is to be viable. The carrying capacity of the river over the relevant interval supports only one but not two mills. The system of social welfare, even if it is carried to the maximum, can no longer meet a Pareto standard, at least in the absence of side payments, which, as far as I know, were never used. The best that can be done is to create a system in which it is hoped that the gains to the upstream riparian exceed the losses to those of a downstream riparian, as judged by the sense of the community, however determined. In essence, there is no clear hierarchy among the correlative uses of instream users. The only clear rules in this context are those that involve a diversion of the water from the river for nonriparian uses, which will always be forbidden if there is any diminution in flow; the same is true of any diversion by a stranger.³⁶ In effect, both of these activities are no different from the strict rules on exclusion of others that govern the use of land. Whatever the complications among coowners, the hard boundary lines reassert themselves in two contexts: those situations where a stranger takes from the group as a whole, or those cases in which an insider converts what is common property into sole property.

Even if the common-law rules work well in those two contexts, they surely fall short with respect to conflicts among in-stream users, for there is no obvious reason that unilateral moves by various riparians will be able to maximize the value along the river. If the legal rules fall short when there are only two parties to the dispute, they cannot work well with more. At this point, it seems as though some administrative solution is required to deal not only with the question of mill size and separation, but also with compensation for those persons whose lands are flooded. Schemes of this sort were developed during the nineteenth century and managed to survive constitutional challenges on the ground that the takings were not for public use.³⁷ A more accurate set of procedures would follow the unitization rules for oil and gas, where the common practice was to limit the number of wells that could be drilled in the field and to provide compensation for those surface owners who were denied rights to drill on their own land. Stated otherwise, there is no way to avoid reasonableness solutions so long as water flows downhill, but there are ways to supply compensation to the losers in the all-or-nothing choices for construction.

³⁶ “No person has a right to cause such a diversion, and it is wholly a wrongful act, for which an action will lie without proof of special damage. It differs, also, from the case of an interference by a stranger, who, by any means, or for any cause, diminishes the flow of the waters; for this also is wholly wrongful, and no question of the reasonableness of his action in causing the diminution can possibly arise” (*Dumont*, 29 Mich. at 422). For the same result, see also *Stratton v. Mt. Hermon Boys’ School*, 103 N.E. 87 (Mass. 1913).

³⁷ See *Head v. Amoskeog Mfg. Co.*, 113 U.S. 9 (1885). For discussion, see Epstein (1997).

ALLUVION AND AVULSION

The last of the distinctive features of water law involves the long-established doctrines of alluvion and avulsion, which arise when the watercourse itself changes direction. In dealing with rivers, there is a good deal of sense in the Roman solution referred to earlier. The gradual changes in the course of the river essentially lead to automatic changes in the ownership of the land. If the river moves away from X, his holdings expand; if it moves toward him, they contract. *Ex ante*, there is no particular reason to believe that the river will move in one direction or the other, and certainly no reason to think that any action subject to human control can alter its course. The great advantage of this rule is that it keeps all riparians riparians, thereby eliminating the loss in value that would arise if a former riparian could no longer access the river. It also eliminates the task of having to decide who owns any new sliver of land that emerges between the river and the former riparian's land. By the same token, a sharp change in the course of a river from one channel to another cannot be handled by this means. Other landowners could easily own land between the new and the old courses, and their holdings would be wiped out if the alluvion doctrine applied. Hence the new stream has new riparian owners who are subject to the same rules.

The situation with respect to littoral property, which borders either lakes or oceans, is different. If the waters move in, the land is lost; if they move out, the additional land accretes to the landowner. These additions and diminutions are not trivial. Along Lake Michigan, the lake has moved out well over 100 feet in the last 15 years. The new and substantial dunes accrete to the owners of the beachfront property. Any losses, of course, would affect the same parties. The issue has great importance because the expansion of lands should not be allowed to destroy the key components of value in any lakefront or oceanfront property. The difficulty of applying these rules depends on the rapidity with which these shores change direction. Although the topic is beyond the scope of this chapter, Florida water law is especially complicated because the issue of moving is coupled with the issues of flooding and drainage, which give rise to difficult questions about who owns the beds of lakes that have been drained (the answer appears to be the state, which owned them when they were covered with water).³⁸ In essence, the introduction of yet another element of complexity puts additional strains on the system of property rights as among the parties. The question that now remains is how this complexity plays itself out in a constitutional setting.

Constitutional Protection of Water Rights

THE NAVIGATION SERVITUDE

The final piece of this inquiry seeks to integrate the discussion of water rights into the general principles of American constitutional law. This issue arises most saliently with regard to a question that has not yet been discussed, namely, the rights of navigation along rivers. Given the obvious government interest in transportation within and across state lines, this question has loomed large in the constitutional

³⁸ See, e.g., *Martin v. Busch*, 112 So. 274 (Fla. 1927), discussed in *Stop the Beach Renourishment, Inc. v. Florida Department of Environmental Protection*, 130 S. Ct. 2592, 2611 (2010). For my views, see Epstein (2011b).

decisions devoted to this topic. The Roman law on this subject was not fully developed, and it contained some internal complexities. One was that not all rivers were necessarily public, particularly if their entire course lay within the boundaries of a single owner. But many rivers obviously were public, and for those, the matter of correlative rights and duties quickly became paramount: what was the relationship between the public's rights of navigation and the rights of riparians? The answer was that the navigation rights could not be impaired by the use of riparian rights, by which it was meant that the natural course could not be blocked by improvements from the land, nor could the waters in question be drained from the channel in a way that impeded passage (MacGrady 1975). It was in this sense only that it can be said, as Getzler does, that "in the Digest, navigation and irrigation are given absolute priority over other consumptive uses" (2006, 13–14). There are no references in the Roman materials that deal with the converse question whether public improvements to a river could be allowed to entrench on the riparian rights of landowners.

English law in many respects follows from the Roman principles. The original common-law rules in England held that rivers were navigable only to the extent that their levels varied with the tides. That rule made sense for most small English rivers, but clearly not for the longish rivers in the United States, which were then governed by a rule of navigability "in fact," wholly without regard to the tides.³⁹ To the extent that a river is navigable in fact, its use is open to all, not just to the riparians who border it. That rule makes perfectly good sense because otherwise the river would have a large unused carrying capacity. But so long as the general public cannot make any consumptive use of the water, the net gains from increased utilization of these waters seem positive.

The phrase "open to all," however, is a natural law phrase that does not take into account the power of sovereign governments to limit access to the navigable waters of the state (or, indeed, any other property). The Roman law texts of Gaius and Justinian never address this issue but assume that these relationships are governed by the *ius gentium*, or the law of nations, which are general principles that are thought to be applicable to common situations whenever and wherever they occur. There is a deep tension between natural law and political power because natural law principles are not tied in any way to the power that a sovereign exercises of its own territory.⁴⁰ Quite the opposite, the broad outlines of natural law were thought to bind all sovereigns to general principles, leaving to particular states questions of implementation, which might determine, for example, which individuals enjoy the status of riparian owners. The peculiar role of the sovereign never rose to the fore in the English context with its unitary system of laws administered by one central government. But the potential collision between natural law and sovereign power arises with special urgency in the United States because of its federal system of divided state and national power. One consequence of making property rights part of the law of nations is that all persons in the world, regardless of citizenship, have equal access to the various forms of common property. Indeed, the phrase "law of

³⁹ For discussion, see *United States v. Cress*, 243 U.S. 316, 320–322 (1917).

⁴⁰ For a recent explication of the natural law theme in relationship to sovereign power, see Hamburger (2008). For comments on the matter, see Epstein (2011c).

nations” is no stranger to the U.S. Constitution, which at times also takes the natural law approach to these matters. Thus, it provides explicitly that Congress shall have the power “[t]o define and punish Piracies and Felonies committed on the high Seas, and Offences against the Law of Nations” (U.S. Constitution, Article I, § 8, cl. 10).⁴¹

In any real-world context, however, sovereign states and nations enforce the particular mandates of natural law. Side by side, therefore, with the earlier tradition lies the view that all property rights are the creature of the sovereign that has created them, whose power is essentially unlimited. Thus, Justinian not only speaks of the law of nations, but also expresses the famous phrase of royal power, “Quod principi placuit legis habet vigorem,” or “That which is pleasing unto the prince has the force of law” (Justinian, quote in Thatcher 1907, 1.2.6).⁴² Within the context of American federalism, the question of sovereignty gives rise to a further complication: which sovereign, state or federal, takes this responsibility? That question has special relevance in connection with the takings clause, which, in its original construction, offered protection only against the federal government (*Barron v. Baltimore*, 32 U.S. 243 [1833]). But historically, all water rights long antedated the creation of the federal government, so that the common and correct conclusion on this matter has always been that the delineation of the property rights to which the takings clause attaches is determined by state law.⁴³ Where else could they come from, given the limited powers of the federal government? The question of navigable easements pertains to all rivers, not just those that lie in two or more states. But as *Gibbons v. Ogden* makes unmistakably clear, from the time of the founding of the United States until the early twentieth century at the earliest, the commerce clause did not extend to any navigation that took place entirely within the confines of a single state.⁴⁴

⁴¹ Note the implicit tension between the law of nations, which is generally customary and thus discoverable by inspection, and the ability to “define” the offenses that are subject to punishment, which can, it appears, be done only in some bounded way.

⁴² A second translation of this critical passage differs in instructive ways. In the Moyle version, the same passage is rendered, “Again, what the Emperor determines has the force of a statute” (Translated into English by J. B. Moyle, D.C.L. of Lincoln’s Inn, Barrister-at-Law, Fellow and Late Tutor of New College, Oxford Fifth Edition (1913), http://www.gutenberg.org/files/5983/5983-h/5983-h.htm#2H_4_0003), which likewise misses the level of arbitrariness found in the word “placuit”). On these matters not one ounce of literalism beats a pound of creativity.

⁴³ See, e.g., *United States v. Cress*, 243 U.S. 316, 319–320 (1917) (the same view is taken in connection with the modern due process cases); see also *Board of Regents v. Roth*, 408 U.S. 564, 577–578 (1972) (“Property interests, of course, are not created by the Constitution. Rather, they are created and their dimensions are defined by existing rules or understandings that stem from an independent source such as state law—rules or understandings that secure certain benefits and that support claims of entitlement to those benefits”). *Roth* involved claims of procedural due process for property rights that arose from contracts with the United States, for which there is no natural law origin, as in the case of water rights.

⁴⁴ “Comprehensive as the word ‘among’ is, it may very properly be restricted to that commerce which concerns more States than one. The phrase is not one which would probably have been selected to indicate the completely interior traffic of a State, because it is not an apt phrase for that purpose; and the enumeration of the particular classes of commerce, to which the power was to be extended, would not have been made, had the intention been to extend the power to every description. The enumeration presupposes something not enumerated; and that something, if we regard the language or the subject of the sentence, must be the exclusively internal commerce of a State” (*Gibbons v. Ogden*, 22 U.S. 1, 194–195 (1824)). This passage is quoted in full here because it has been twisted in subsequent decisions to make it appear that the commerce clause covers all productive activities. See, e.g., *United States v. Wrightwood Dairy Co.*, 315 U.S. 110 (1942) (holding valid an act regulating prices of milk that has traveled through interstate channels or that affects the marketing of such milk). In it, *Gibbons* was redacted to read in a manner at war with its original meaning: “The power of Congress over interstate commerce is plenary and complete in itself, may be exercised to its utmost extent, and acknowledges no limitations other than are prescribed in the Constitution (*Gibbons*, 22 U.S. at 196). It follows that no form of state activity can constitutionally

CRESS AND THE LIMITED SERVITUDE

At this point, one can address the central question: to what extent can the federal government alter the distribution of rights to protect and advance the interests of the public at large? This issue arises with protection of the uplands, access to the river, and the variety of in-stream uses insofar as they relate to the navigation servitude of uncertain scope. The correct approach to this question was taken in *United States v. Cress*, 243 U.S. 316 (1917). The two separate plaintiffs in *Cress* complained of the destruction by the increase of a variety of interests: the frequent inundation of fast land next to the river caused the destruction of a ford over the river, and a mill on the river was rendered inoperable by increases in the water level. In both cases, the government activities took place on navigable rivers. In one case, it was likely, and in the other, certain, that the harm took place on nonnavigable rivers.

The conclusion that these acts were for public use is, in the context of a navigable river, too obvious to contest. Accordingly, on this view, the only issue left for decision is the compensation, if any, that the government should be paid for undertaking its particular action. In line with decisions like that in *Dumont*, the government's ability to flood uplands was governed by ordinary eminent domain principles. Flooding for public use could not be enjoined, but full compensation was owed. To reach that conclusion, Justice Pitney applied the simple agency test developed earlier, namely, that actions that are wrongful when done by private parties are compensable when done by the state. At that point, he examined the scope of the navigation servitude in terms that relied heavily on the natural law origins of water rights. The key passage is worth quoting in full, if only because it has in many instances been disregarded:

In Kentucky, and in other States that have rejected the common-law test of tidal flow and adopted the test of navigability in fact, while recognizing private ownership of the beds of navigable streams, numerous cases have arisen where it has been necessary to draw the line between public and private right in waters alleged to be navigable; and by an unbroken current of authorities it has become well established that the test of navigability in fact is to be applied to the stream in its natural condition, not as artificially raised by dams or similar structures; that the public right is to be measured by the capacity of the stream for valuable public use in its natural condition; that riparian owners have a right to the enjoyment of the natural flow without burden or hindrance imposed by artificial means, and no public easement beyond the natural one can arise without grant or dedication save by condemnation with appropriate compensation for the private right. (*Cress*, 243 U.S. at 321)

Thereafter, he describes the relationship of the federal power under the commerce clause: "Congress shall have the power . . . to regulate commerce with foreign Nations,

thwart the regulatory power granted by the commerce clause to Congress. Hence the reach of that power *extends* to those intrastate activities which in a substantial way interfere with or obstruct the exercise of the granted power" (*Wrightwood*, 315 U.S. at 119; emphasis added). Constitutional law becomes all too easy if "restricts" and "extends" have the same meaning.

and among the several States, and with the Indian tribes” (U.S. Constitution, Article I, § 8, cl. 3).

The States have authority to establish for themselves such rules of property as they may deem expedient with respect to the streams of water within their borders both navigable and non-navigable, and the ownership of the lands forming their beds and banks subject, however, in the case of navigable streams, to the paramount authority of Congress to control the navigation so far as may be necessary for the regulation of commerce among the States and with foreign nations; the exercise of this authority being subject, in its turn, to the inhibition of the Fifth Amendment against the taking of private property for public use without just compensation. (*Cress*, 243 U.S. at 319–20 [citations omitted])

And further:

The authority to make such improvements is only a branch of the power to regulate interstate and foreign commerce, and, as already stated, this power, like others, must be exercised, when private property is taken, in subordination to the Fifth Amendment. (*Cress*, 243 U.S. at 326)

Justice Pitney’s excellent opinion in *Cress* is quite explicit in insisting that the “natural condition” of waterways sets the baseline from which the takings analysis should proceed. He correctly identifies the relationship between the public use and just-compensation requirements. The riparian interests that are good against other riparians are also good against the United States. In this regard, there is little question that the United States can, without compensation, take necessary steps in order to ensure that navigation is not blocked along the original channel by silting or other human actions, including those by riparians or others lawfully on the river. It is a closer question, in principle, whether the United States can counter natural changes in the course or depth of a navigable river. In addition, Pitney says (but only once) that the interest of the United States in the navigation servitude is “paramount,” but only in this restrictive sense: it lets the United States expand the scope of the navigation servitude so long as it pays just compensation when it exercises the privilege. In this regard, he follows the applicable law for easements in land, where it is well established that no private party is allowed to “surcharge” an easement by making more extensive or intensive use of it than is allowed by the terms of the original grant, for example, by using an easement meant to allow the holder of the dominant interest to enter the land of a servient tenement also to encroach on the interests of third parties.⁴⁵ If the easement is acquired by prescription, the scope of the original use also determines its proper limits. Thus, an easement to walk over someone’s land cannot be used to drive cattle over it. A new and broader easement is required. Private parties thus face an injunction if they do not purchase the broader easement. In like fashion, the government can take that wider navigation easement, but it must pay for its expansion. Pitney sees the point and refuses to allow the government to rise above the natural easement as determined by sensible private law principles.

⁴⁵ *Penn Bowling Recreation Center, Inc. v. Hot Shoppes, Inc.*, 179 F.2d 64, 66 (D.C. 1949); see also Restatement of Property § 478 & cmt. e (1944).

In dealing with this particular problem, such a solution is the only way to avoid the problem of political arbitrage noted earlier. The politics of water rights is always intense, given the multiple interests in any given body of water. The want of a just-compensation requirement thus incentivizes dominant political factions to seek extensions of the navigation easement through political action, well knowing that they need not pay for the change or ask the taxpayers to come up with the needed funds. The only way to control the abuse of government powers is to insist that all takings for public use require payment of just compensation in the absence of any common-law nuisance. The nuisance issue, of course, always lingers in the background. In *Cress*, the issue was not explicitly raised, probably because the matter had been put to rest in earlier cases, which limited the power of the state to redefine nuisances at will in ways that negated its duty of compensation. Thus, in *Yates v. Milwaukee*, the Supreme Court said: “It is a doctrine not to be tolerated in this country, that a municipal corporation, without any general laws either of the city or of the State, within which a given structure can be shown to be a nuisance, can, by its mere declaration that it is one, subject it to removal by any person supposed to be aggrieved, or even by the city itself” (77 U.S. 497, 505 [1871]).

The statement in *Yates* arose in the context of efforts by the private landowner to build a pier that reached the navigable waters of the local river. The precise decision in the case held that the state could not block that effort by calling the wharf a nuisance in the absence of a showing of any interference with navigation along the river. The government here was called out for an overaggressive defense of its navigation servitude, not for its effort to expand the servitude where it had not previously run, as in *Cress*. If a state seeks to expand its sphere of influence for the navigation servitude, the nuisance issue is dead on arrival, which is why it never surfaced in *Cress*. Instead, everything turns on the compensation question and its relationship to the various types of interests that the government’s construction project hurt. If there are any damages to the fast lands by the river, the compensation issue is easy because of the per se rule in private law that protects these upland interests from any action by any user of the river. The government is bound by that rule. Damage in the river proper, including the loss of power of the mill, is a more difficult issue because the correlative nature of all private rights and duties means that to prevail, the private parties must show actual damages and the unreasonableness of the government’s action. That inquiry could, in some cases, give rise to delicate questions of fact, which could turn on the natural scope of the navigation easement. But in *Cress*, the artificial expansion was in and of itself enough to establish that result. At that point, the takings finding followed. The navigation easement is one of a group of correlative interests in waters. It cannot by this logic become the dominant one.

SCRANTON AND THE PARAMOUNT NAVIGATION SERVITUDE

Cress is virtually the only twentieth-century Supreme Court case that gets the correct sequence from top to bottom. In all other situations, it is said that the navigation easement of the United States is paramount over all interests in the river. The delicate balance is thus put to one side. The cases that take this position are legion. In *Scranton v. Wheeler*, 179 U.S. 141 (1900), the question was whether the government owed compensation when its canal construction project cut off the access of a private

riparian to a navigable river. Justice John Marshall Harlan rejected the claim by reading the term “paramount” to cover not only the public use issue, but also the just-compensation question. “All the cases concur in holding that the power of Congress to regulate commerce, and therefore navigation, is paramount, and is unrestricted except by the limitations upon its authority by the Constitution” (*Scranton*, 179 U.S. at 162). He went on: “It was not intended, by that provision in the Constitution, that the paramount authority of Congress to improve the navigation of the public waters of the United States should be crippled by compelling the Government to make compensation for an injury to a riparian owner’s right of access to navigability that might incidentally result from an improvement ordered by Congress” (*Scranton*, 179 U.S. at 164–165).

The two key assertions of this passage are wholly erroneous, relating first to the nature of the navigation easement and second to the role of the commerce power. Harlan’s reading of “paramount” is utterly inconsistent with the usual understanding of water rights as mixed and correlative. An instructive parallel to this claim for the paramount easement is Blackstone’s overwrought (and widely criticized) definition of the ownership of real property as “[t]hat sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe” (Blackstone 1765–1769, 2:2). But ironically, Blackstone is closer to the truth because exclusive rights are the initial starting point for delineating property rights in land, while correlative rights and duties are surely the best way to think about this subject for water. This imperial definition of “paramount” is surely inferior to Pitney’s more measured use of the term in *Cress*.

Nor does Harlan offer any compelling reason for this extravagant argument. His use of the word “crippled” makes it appear that the riparian could block the project, but all that can be done is to demand compensation for the property loss attendant to the improvement. That requirement does not “cripple” the land acquisition of the government, but instead puts an accurate price on the social costs of its adventures. The same conclusion applies here. Nor are matters made better by the use of the weasel word “incidental,” which makes it appear as though only intentional takings done solely to hurt the private property owner are covered by the takings clause. But that term is neither here nor there. The government knows full well that most dams will back up water, and if it does not, its ignorance is hardly an excuse to allow it to keep the benefit for the public at large by inflicting harm on some of its members. The private law governing the rights of riparians among themselves in no way turns on whether or not any riparian who dams or diverts a river intends to harm the riparians above or below him on the river. A strict liability norm takes hold that is equally useful in this context.

Harlan’s second error is to read the commerce clause as though it were on steroids. In particular, his entire argument rests on a deep confusion between federal sovereign power, on one hand, and the federal ownership of specific assets, on the other hand. In the initial Supreme Court foray into the scope of the commerce clause, Chief Justice Marshall, in *Gibbons*, opined correctly and at great length that the commerce power of the United States covered navigation, including navigation that

extended into the interior of a state (22 U.S. 1 [1824]). That power surely gives the federal government the power to regulate existing sources of navigation and to expand or enlarge them. But there is no reason to convert this grant of federal power into an overarching claim of property rights that ignore other elements of the Constitution.

THE WILLOW RIVER SYNTHESIS

The same confusion manifested itself in the important case *United States v. Chandler-Dunbar Water Power Co.*, 229 U.S. 53 (1913) (where Justice Pitney was oddly silent), which split the difference by allowing recovery for any flooding of uplands but denied compensation for the loss of power of the company's mills attendant to the expansion of the river in question. The most notable decision in the sequence, however, is that of Justice Robert Jackson in *United States v. Willow River Power Co.*, 324 U.S. 499 (1945), where the question was whether the actions of the government that raised the water level of the St. Croix, a navigable river, created a compensable loss to the owner of a power plant on the Willow River, an upstream nonnavigable river, whose power was diminished when the height of the St. Croix River was raised. On its facts, the case is indistinguishable from *Cress*, which exhibited the same interaction between navigable and nonnavigable rivers. The cases, however, were duly "distinguished," leaving *Cress*, as it were, dead in the water, which is its current status in the law.⁴⁶ Key to the argument in *Willow River* was the asserted dominance of the navigation servitude. Use of the natural law baseline makes this an easy case, which is why the surge for positivism dominated Jackson's opinion: "[T]he claimant in this case cannot stand in the *Cress* shoes unless it can establish the same right to have the navigable St. Croix flow tail waters away at natural levels that *Cress* had to have the non-navigable stream run off his tail waters at natural levels" (*Willow River*, 324 U.S. at 506–507). The agency theory of government rights is then brushed aside on the ground that the correlative duties between riparians of equal stature before the law do not bind the government with its superior rights:

Rights, property or otherwise, which are absolute against all the world are certainly rare, and water rights are not among them. Whatever rights may be as between equals such as riparian owners, they are not the measure of riparian rights on a navigable stream relative to the function of the Government in improving navigation. Where these interests conflict they are not to be reconciled as between equals, but the private interest must give way to a superior right, or perhaps it would be more accurate to say that as against the Government such private interest is not a right at all. (*Willow River*, 324 U.S. at 510)

There is a delicious irony in a decision that deprecates the recognition of "absolute" rights while elevating the navigation servitude to that lofty state. But the rejection of one position, without argument, requires the creation of an alterna-

⁴⁶ See, e.g., *United States v. Grand River Dam Authority*, 363 U.S. 229 (1960); *United States v. 531.13 Acres of Land*, 366 F.2d 915, 922 (4th Cir. 1966). These cases relied on *Willow River* for a broad construction of the navigation easement that allowed the federal government to trump all state interests in power sources and other uses of nonnavigable rivers.

tive. Rather than face this question head on, Jackson offers a variety of functional considerations by insisting:

[N]ot all economic interests are “property rights”; only those economic advantages are “rights” which have the law back of them, and only when they are so recognized may courts compel others to forbear from interfering with them or to compensate for their invasion. The law long has recognized that the right of ownership in land may carry with it a legal right to enjoy some benefits from adjacent waters. But that a closed catalogue of abstract and absolute “property rights” in water hovers over a given piece of shore land, good against all the world, is not in this day a permissible assumption. We cannot start the process of decision by calling such a claim as we have here a “property right”; whether it is a property right is really the question to be answered. Such economic uses are rights only when they are legally protected interests. Whether they are such interests may depend on the claimant’s rights in the land to which he claims the water rights to be appurtenant or incidental; on the navigable or non-navigable nature of the waters from which he advantages; on the substance of the enjoyment thereof for which he claims legal protection; on the legal relations of the adversary claimed to be under a duty to observe or compensate his interests; and on whether the conflict is with another private riparian interest or with a public interest in navigation. The claimant’s assertion that its interest in a power head amounts to a “property right” is made under circumstances not present in any case before considered by this Court. (*Willow River*, 324 U.S. at 502–503)

Jackson’s passage is a fog of words that explains the challenge to be faced without answering it. Further, it does not address any of the functional explanations for the stabilization of property rights that the natural law system so powerfully and freely supplies. It is true enough to say that property rights exist only when the law is behind them. However, it is critical to explain why the law should not back the plaintiff in this case. Jackson treats the situation as though it is one of *damnum absque iniuria*, which, literally translated from the Latin, means harm without legal injury. The modern, equally unilluminating term is “pecuniary externality,” which refers to losses from changes in prices and quantities in the operation of the competitive economy. But these losses do not arise because people prefer to patronize power that is now derived from cheaper sources. It comes from wiping out the mill by actions that would not be tolerated under the standard of reasonableness in riparian use developed in *Dumont*. The effort to demote them thus anticipates the same misguided move in *Penn Central*, when Justice Brennan relies explicitly on the muddled argument in *Willow River* to equate the loss of a property interest to a competitive loss. Brennan thus points to

the decisions in which this Court has dismissed “taking” challenges on the ground that, while the challenged government action caused economic harm, it did not interfere with interests that were sufficiently bound up with the reasonable expectations of the claimant to constitute “property” for Fifth Amendment purposes. See, e. g., *Willow River* (interest in high-water level of river for runoff for tailwaters

to maintain power head is not property); *Chandler-Dunbar* (no property interest can exist in navigable waters). (*Penn Central*, 438 U.S. at 124–125)

That error follows hard on the heels of Justice Brennan's original mistake in belittling the possibility of articulating any clear rules by insisting wrongly that everything depends on "ad hoc" inquiries that balance various factors (*Penn Central*, 438 U.S. at 124), which denatures the internal structure of any system of property rights.

Willow River thus marks a regrettable decline in how modern cases approach the question of property rights relative to earlier authorities, like *Yates* and *Cress*, which followed the natural law principles even if they were not always clear about why they had such explanatory power. In most instances the strength of the natural law lies in the soundness of its implicit utilitarian foundations (Epstein 1989).

AVULSION AND *STOP THE BEACH RENOURISHMENT*

For most standard waterways, the takings law developed in the sequence of cases from *Scranton* through *Willow River* has set the path for further developments. The most novel development in this area comes with the question of how to apply takings principles to government actions that take place in the shifting Florida waters. In *Stop the Beach Renourishment, Inc. v. Florida Department of Environmental Protection*, 130 S. Ct. 2592 (2010), the issue was a strong antierosion program introduced by the State of Florida that was designed to stabilize conditions on lakefront properties. The key to this situation was a decision to build walls and other supports that would prevent the erosion of the beach. The statutory scheme fixed a new boundary line between the public and the private lands at the place where this erosion line was established. That line replaced the usual mean high-water-mark line that could vary widely with circumstances. It was clear that this system could, with the expansion of the littoral lands, demote the original littoral owner by allowing the government to claim title to the new lands that emerged from the water.

In light of what has been said here, that interposition constitutes a rejiggering of the fundamental private relationships, counting as a taking of the property for which compensation is owed. It is easy to see the strength of the state's claim in this situation, for why would it invest its resources in beach renourishment at public expense if all the benefit inured to the private landowners? However, this objection can be met within the framework of traditional eminent domain law once the full arrangement is examined (Epstein 2009). The key point in favor of the current arrangement is that all the benefits of the renourishment did not fall to the state. As the statutory scheme was constructed, the landowners not only received the benefits of a stabilized water line, but also had their access and view rights explicitly preserved. This troika of rights is surely impressive and may well have left the landowners better off with the new scheme than they were before, at which point no cash compensation is appropriate. The record on this point, however, was not developed, so that one possibility was to remand the case for a determination of relative values, with the understanding that the most the state would owe would be the net diminution in value, once all pluses and minuses were taken into account, including the prospect that the general public could make use of the land seaward to the antierosion line.

The sensible framework gives protection to the state interest, but this entire line of argument was lost on Justice Scalia. Far from concentrating on the details of the particular scheme, he instead relied on the view that the private law in this area did not establish any background expectations. Relying on his earlier decision in *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992), he concluded that “a regulation that deprives a property owner of all economically beneficial use of his property is not a taking if the restriction ‘inhere[s] in the title itself, in the restrictions that background principles of the State’s law of property and nuisance already place upon land ownership’” (*Stop the Beach*, 130 S. Ct. at 2609).⁴⁷ His application of this test in *Stop the Beach* was quite useless because he relied on *Martin v. Busch*, 112 So. 274 (Fla. 1927), to support the proposition that no such expectation had been formed. That was odd because the distinctive feature of the Florida statute was that it preserved both the former littoral owner’s right of access to the beach and his right of view over it as part of the grand settlement. The correct approach, therefore, was to raise a factual issue on which the government could well prevail, namely, whether the stabilization of the shoreline (which prevented retreat or “reliction,” which would have resulted in the loss of the lake front land to which ownership rights attached), coupled with the easements of access and view, made the parcel worth more than before.

Moreover, it is instructive why Scalia went so far astray. In dealing with the Florida law, he cited several early treatises that dealt with the subject for the rules that had developed.⁴⁸ But at no point did he pay any attention to the natural law framework that dominated their discussions.⁴⁹ Because of his utter lack of mooring in the traditional literature, Scalia adopted a framework that was devoid of insight when he should have followed the analysis in *Cress*. Once again, the utter separation of the public and private law, coupled with the total disregard of the natural law tradition, led the Supreme Court astray.

This chapter has traced two sets of interconnections that are of vital concern in understanding the law and economics of natural resources. The first task is to figure out, within the context of private law, the overlap and differences between the rules that govern land and those that govern water. It should not be supposed that there is no connection between them because the natural law tradition in which these relationships are all involved featured two considerations. First, private rights were acquired through a decentralized customary system that did not depend for its inception on the use of public power. The first-possession rule was operative in

⁴⁷ There are two great weaknesses of this approach. First, it implies that there are two regimes for takings, one that deals with total wipeouts (loss of all economically beneficial uses) and one that does not. Second, it never specifies the explicit police power issues that surround the law of nuisance. Interestingly enough, Justice Pitney never made that mistake in *Cress*. There he noted first that permanent flooding of land created a compensable taking whether or not the government formally took title to the property. See *Pumpelly v. Green Bay Co.*, 80 U.S. 166 (1872). *Cress* did not involve permanent flooding. “It is true that in the *Pumpelly Case* there was an almost complete destruction . . . of the value of the lands, while in the present case the value is impaired to the extent of only one-half. But it is the character of the invasion, not the amount of damage resulting from it, so long as the damage is substantial, that determines the question whether it is a taking” (*Cress*, 243 U.S. at 328).

⁴⁸ Farnham (1904); Lewis (1909); Maloney, Plager, and Baldwin (1968), cited with approval in *Stop the Beach*, 130 Sup. Ct. at 2598.

⁴⁹ See, e.g., Farnham (1904).

both contexts, albeit in very different ways. For land, the dominant trope was always that of exclusive rights to possession, use, and disposition, not as the ultimate assignment of rights, but as the best first approximation to preface a more comprehensive solution. For water, the notion of riparianism denoted a class of individuals who had complex rights among themselves, much like joint tenants or tenants in common for land, but who, as a group, did have a set of exclusive rights (for consumptive uses) that they did not have to share with the rest of the world. Starting from these simple components, a larger system of property rights that was in some rough sense efficient could develop in both areas.

A successful public law—one that can distinguish between takings and legitimate regulations requiring no compensation—is possible only in a legal environment that builds on the full set of private water rights. The distinctive power of the government is not to redefine the common law of nuisance in ways that work to its short-term advantage. It is that it may initiate for public use changes in private rights without consent of the riparian owners only if it pays the appropriate compensation for the rights so taken. In dealing with this question, the property rules in government cases follow those developed in private law contexts. For real estate, this means that fractional interests must receive as much protection as the larger fee interest of which they are a part. For water, it means the exact opposite, such that the government's effort to expand its navigation servitude has to respect (or pay compensation for) the many correlative interests in water.

The course of takings law in the United States has not followed that path. Instead, for both sets of resources, the traditional conceptions of property rights developed in private law contexts are either belittled or ignored. This disregard has opened a vast public space for political intrigue, which often leads to political conflict and wasteful allocation systems that a more definite and coherent approach to property rights would avoid. Time after time, the new learning is said to reflect an intellectual sophistication that the intuitive natural law jurists were said to ignore. And time after time, the modernists are wrong, precisely because they have lost all sight of the key fundamentals.

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