The Equality Norm Meets the Evolution of Property in the Law of “Takings”

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A norm of equal treatment is cited regularly in the American jurisprudence of property “takings” under the 5th and 14th Amendments to the constitution, as a benchmark of fair treatment of owners. According to an increasingly prevalent version of this equality norm, courts should look to parity of treatment among property owners in investigating whether particular regulations “take” property. This article argues, however, that such an equality norm is misplaced, and that courts should judge fairness by the criterion of expectation – including reasonable expectations of regulation.

A norm of equality norm becomes problematic in the face of the economic theory of the evolution of property. This theory posits that as resources become more congested, their uses carry increasing common pool costs or “externalities”—a scenario that should predictably result in more stringent resource management—up to and including the establishment of regulatory regimes as well as property rights themselves. This evolutionary pattern, however, places earlier and later resource users in different positions vis-à-vis both common pool externalities and regulatory responses, and their different temporal positions fragment the meaning of equal treatment and destabilize it as a jurisprudential norm. This article argues that while equal treatment may be a benchmark for special or invidious cases, like those relating to civil rights, the great bulk of takings cases involve regulatory responses to congesting resources, where a norm of equal treatment breaks down. Thus in seeking fair treatment, takings jurisprudence should downplay equality and instead look to the understanding of property as a basis of expectations—but those expectations should include the anticipation of reasonable regulatory responses to resource congestion.

Key words: property takings, equality norm, evolution of property, resource congestion, property expectation, regulatory risk

An ideal of equal treatment looms large in American jurisprudence. Above the entrance to the United States Supreme Court building is engraved the motto, “Equal Justice Under Law,”¹ and accordingly, the rhetoric of equality permeates many areas of American jurisprudence. The purpose of this article, however is to show that in the jurisprudence of property takings, that rhetoric is misplaced.

Together with the Fourteenth Amendment, the Fifth Amendment to the United States Constitution guarantees that governmental bodies shall not take private property for public purposes without just compensation. But aside from the obvious case of government's claiming actual title to private property, just when is a governmental action a "taking" of property? This is an issue on which there have been mountains of conflicting opinions, both judicial and academic, to the point that the takings question has come to be known as a "muddle," with a great proliferation of normative proposals but no definitive answers.² One note of apparent unity, however, is that for the last half-century, judges in takings cases have frequently cited a pronouncement in an otherwise unmemorable case, *Armstrong v. United States*: the Takings Clause, said Justice Black, "was designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole."³

But then, what is required of fairness and justice? Law Professor Nestor Davidson argues that although the *Armstrong* citation might be regarded merely as a "rhetorical flourish," in fact it has been deployed to support of an ever-stronger judicial norm of generalized equal treatment among property owners. While *Armstrong* is often cited as a protection against regulation that "singles out" particular owners for special burdens-- language that suggests intentional or extreme cases--Davidson observes that the emergent inquiry about equality is not so confined; instead what Davidson calls the "equality norm" looks to generality of application among property owners. These are quite distinct meanings; the latter shifts the inquiry from extreme cases to what Thomas Merrill and David Dana have called "parity" among owners.⁴ In effect a court acting under this interpretive norm simply asks whether the impact of a regulation or other governmental act on Property Owner A is the same as that on Property Owners B-Z. If not, it is a candidate for designation as a taking of property.

Professor Davidson is a critic of the emerging equality norm in takings jurisprudence, not only because of the well-known indeterminacy about what things are like or unlike other things for purposes

of equal treatment, but also because in practice, claims of equality in takings cases tend to favor more powerful parties; Davidson thinks equality issues are better analyzed through the constitutional Equal Protection clause, where there is a more developed jurisprudence on these matters.⁵ In this article, I will use Professor Davidson's terminology of an "equality norm" to designate a guiding jurisprudential principle of parity of treatment in takings cases, and I too will be a critic, but for a different reason. Putting to one side the extreme cases epitomized by the language of "singling out"—to which I will return later--a general norm of equal treatment is not capable of addressing the most salient issues that arise from the evolution of property itself.

A central feature of both property rights and the regulatory regimes that surround them is that both generally evolve to become more sharply defined as resources come under greater pressure. Where a given resource is plentiful, access may be open to everyone, with no ostensible effect on any of the users, and no one may bother to create property rights or regulate use at all. But things change when an open access or "common pool" resource comes under pressure due to increased demand or scarcity. Under such conditions, users often try to work out property or regulatory arrangements to manage access to the resource so as to reduce conflict and overuse.

If these arrangements evolve successfully, however, they are likely to result in important temporal differences among private property claims. Early users may be restrained only modestly if at all in their access to a common resource—say, the ambient air in which a landowner's chimney smoke or trash burning disperses. When newcomers arrive and wish to use the shared resource in the same way, it may become congested or overcrowded—as in the case of smoke-filled air. A reasonably well-functioning regulatory authority will step in at some point to limit congestion and the losses suffered by all users.

But that very predictable evolutionary scenario renders a norm of equal treatment unstable as between earlier and later owners. Does equal treatment demand that all users, including the earlier

ones, limit their usage of the resource in the same way, so as to avoid serious pollution? That might well be one's initial intuition. But on second thought, it would also appear intuitive that if such a restriction destroys or substantially diminishes the utility of established investments, the burden would fall retroactively and more heavily on those established users than on the newcomers who have not yet invested. Accordingly, much of our regulation and our takings jurisprudence has understood the equality norm differentially, either requiring old users to be compensated or exempting them from new constraints, while imposing those constraints largely on new users.

Other ways too might be conceivably emerge to address the conundrum of new users versus old. We might try to restrict each user according to the increased marginal cost that his or her entry causes. Or more dramatically, we might kick over the traces and say that a norm of equality requires new users be permitted to use the air just as the earlier users did. This latter approach would effectively give up on regulatory limitations on common pool losses.

But the larger point is that even though a generally applicable equality norm may usefully guide legal decisions in other areas like civil rights, where evolving resource pressures are not so clearly at issue, such a norm suffers severe limitations with respect to property issues. In that context, temporal differences cause analyses based on equal treatment to fragment into multiple and often mutually exclusive claims.

This article takes up the quandary that the evolutionary character of property rights poses for a norm of generalized equal treatment in takings jurisprudence. Part I gives a background, illustrating the courts' standard routes to a rhetoric of equal treatment in the last century's takings jurisprudence. Part II turns to the problem of resource congestion, and to the evolution of property regimes to manage congestion. Part III then considers the application of a norm of equal treatment as resources become congested. Where there are no pre-existing rights or practices, it has been relatively easy for new property or management arrangements to impose equal burdens on all users. Much more fraught is the

very common situation in which a new regulatory regime applies to a mixed group of pre-existing and new resource users. Here a regular pattern in regulatory practice and takings jurisprudence has been to privilege older and pre-existing uses. This “grandfathering” pattern has been justified as a version of equality, but it has also been widely criticized, including the critique that it actually violates an equality norm. The same might be said of the more refined version of grandfathering, that is, marginal-cost calculation.

Finally, a more radical version of the equality norm has also appeared in several important and relatively recent cases—that is, awarding new claimants the same access to diminishing common pool resources that have been enjoyed by older users. If this approach were to operate in combination with grandfathering, those approaches together would appear to require both that older users be permitted to continue and that new users be permitted to join them to the point of resource degradation, unless one or the other of these groups is compensated—or perhaps both. That is to say, any regulatory effort to deal with common pool problems becomes an occasion for compensation.

In Part IV I will suggest that a different understanding of “fairness and justice” can avoid this dubious conclusion and yield a more appropriate normative guide in takings jurisprudence: that is, protecting owners’ expectations—but including a normal expectation of regulatory risk. This understanding is compatible with the evolutionary nature of both property and regulatory regimes. Moreover, it is not new in takings jurisprudence; later nineteenth century jurisprudential practice regularly attributed an expectation of regulation to property owners, and the same attribution has continued as a minor theme more recently as well, despite the growing rhetoric of equality. Nor does an expectation-based guide exclude all other considerations, such as the possibility of invidious or extreme treatment of particular groups of owners. But as a general matter, with respect to evolving property arrangements, the link between fairness and expectation serves as a much more usable guide than equality. Perhaps most important, unlike an equality norm, an expectation-based understanding

of fairness comports with the basic reasons for having property in the first place—particularly the encouragement of wealth-enhancing effort and investment.

I. The Norm of Equality in Takings Jurisprudence

Although Professor Davidson identifies a norm of equality as increasingly dominant in American takings jurisprudence, the idea of equality as parity among owners has a long history in takings cases.⁶ The most controversial area of takings jurisprudence involves what are called regulatory takings—roughly speaking, those that neither take title nor physically impinge on the property, but that do diminish its value, sometimes substantially. The foundational case for regulatory takings was *Pennsylvania Coal Co. v Mahon* (1922),⁷ in which Justice Holmes announced the highly indistinct “test” according to which property might be regulated “to a certain extent,” but a regulation that went “too far” would trigger a compensation requirement under the Fifth Amendment’s takings clause. But *Mahon* lay dormant for several decades before the Supreme Court revisited the takings issue. Moreover, *Mahon* was something of an outlier in its own era. In the decades just before and after this case, the Supreme Court and state courts marshalled an impressive array of defenses to regulatory takings claims, finding in each case that the regulations in question met a norm of equal treatment.

It is worth emphasizing that the doctrinal ideas that I describe below emerged as regulatory bodies’ *defenses* against takings claims. Where a court agrees with a complainant that a regulation takes his or her property without compensation, one might expect some judicial references to unequal treatment as among property owners. But the location where a norm of equal treatment has been most challenged, and most extensively discussed, has been in opinions that find no taking. The following paragraphs describe some of the doctrinal moves at or around the time of *Mahon* that continue to be cited as defenses against regulatory takings claims.

A. *The owner has no property right in the relevant activity/location.* Several well-known cases of the early twentieth century avoided takings claims by arguing that the regulated activity was one in which the claimant had no property entitlement. One common justification for regulation of property has been that the regulation suppresses a nuisance or the equivalent of a nuisance, that is, a sub-normal use of one's property that causes damage to others. Thus *Reinman v. Little Rock* (1915)⁸ ruled that a regulation could ban a livery stable as a noxious use in the residential neighborhood where it was located. More famously, *City of Euclid v. Ambler Realty Co.* (1926)⁹ which upheld municipal zoning, described the city's zoning ordinance as an effort to ward off conflicting uses by advance locational planning.

In both these cases, the regulation in question caused the complainant's property value to decline substantially, but the Court ruled that this fact did not entitle the complainant to takings compensation. The reason was that the owner had no clear right to the activity in question, and hence had lost no entitlement through regulation. Similarly, state courts have long ruled that private owners may not build out into the waterfront without permission, on the ground that these areas are subject superior rights of the public under the doctrine of "public trust" in and near navigable waters.¹⁰

Clearly not all these cases were equally convincing on the issue of what constituted noxious or otherwise illegal property uses. The *Euclid* opinion, for example, described apartments as if they were equivalent to nuisances, a treatment that looks very suspicious to a modern eye. Equally suspicious were the rationales for early billboard restrictions, where defendants claimed that billboards were nuisance-like because they might catch fire or provide cover for miscreants.¹¹ But what is noticeable about these cases is their effort to satisfy a norm of equal treatment, arguing that the complaining property owners were not treated differently from others, because they lost nothing to which they were entitled in the first place.

B. The owner has already been compensated. A second line of defense against regulatory takings claims argues that the equality norm is satisfied because the property owner has received implicit compensation through the operation of the regulation itself. Early in the twentieth century, Boston's height restrictions on buildings were justified as fire prevention measures; they protected every building even if a fire started elsewhere, and hence implicitly compensated all owners.¹² Even Justice Holmes in the *Mahon* case allowed that a regulation could be justified if it was part of a scheme to bring about "an average reciprocity of advantage," citing requirements to leave unmined coal walls between mines in order to prevent a flood in one mine from inundating another. In a different part of the opinion, Holmes also mentioned urban firebreaks; here a conflagration rule permitted fire fighters to blow up one or more houses in order to create a gap that would save the rest. After the fact, the owner of a burned-down house obviously suffered disproportionately vis-à-vis the neighbors whose houses were saved because of his loss. But from an ex ante perspective, before any fire occurred, each property owner would be better off if firewalls were permitted; all took equal risks, and the rule implicitly compensated all by making all their properties safer.

The implicit compensation rationale can also be deployed to justify the building and renovation restrictions in historic districts. Take, for example, New Orleans' iconic French Quarter: since all structures are subject to limits on design changes, the charm of the district can be maintained for the benefit of all, as they say in New Orleans, in its *tout ensemble*.¹³ Historic districts are interesting among other reasons because they so clearly illustrate the common-pool characteristics of many of the implicit-compensation rationales. In the French Quarter, the resource held in common is ambience—necessarily maintained by all the owners lest it be chipped away by individual owners and ultimately lost in a heap of motels and fast food outlets.

New Orleans had had its historic district from some decades before the Supreme Court faced a different kind of historic preservation restriction in *Penn Central Transportation Co. v. New York City*

(1978).¹⁴ Here the City effectively barred the owners of Grand Central Station from erecting a tower on top of the historic rail station, in spite of the multi-story zoning for other buildings in the vicinity. Among its other justifications, the Court's majority extended the reciprocal benefits rationale to this landmark case. But as Justice Rehnquist pointed out in his stinging dissent, the historic district analogy was thin indeed; a sprinkling of scattered landmark buildings in large city scarcely has the mutually reinforcing character that the concentration of structures has in a compact district. In *Penn Central*, the city did add another element of compensation in the form transferable development rights, permitting excess building on the landmark owner's other properties. These may well not have represented complete compensation, as Rehnquist also argued, but from the perspective of this article, what is most interesting about the *Penn Central* case was the strain that the majority took to find an equal-treatment rationale. That effort (and Rehnquist's riposte) suggests how powerfully this equality norm affects takings argumentation.

C. The regulation applies to everyone – it is a tax, not a taking. The early twentieth century generated still another takings defense that rang the bell of an equal treatment norm. This is the defense that the public action in question applies equally to others, and hence is an in-kind tax rather than an unequal taking of property. *Richards v Washington Terminal Co.* (1914)¹⁵ was a case that nicely illustrated the difference. Here the complainant owned property at the end of a railway tunnel, where smoke billowed out with the trains that exited the tunnel. The owner sued the railway company (which was a publically authorized entity), and the Supreme Court in response carefully distinguished between the sorts of in-kind damages that were compensable as takings and those that were not. The compensable damages were those that specifically affected the owner's property because of its location at the mouth of the tunnel. But the legislature could authorize damages that were widely shared with other property owners; there the smoke was a common nuisance born by all or at least many others,

who were all subjected more or less equally to a something like an in-kind tax to support the very important ends of transportation and commerce. Indeed, the practice of prohibiting private nuisance suits against public nuisances appears to have been supported by the rationale that public nuisances – annoyances to everyone or at least wide spectrums of the population—would have to be tolerated because they supported some greater benefit and were not borne unequally by any particular owner; instead, they were effectively in-kind taxes.

D. An outlier for the equality norm: Forget about exact equality because not much was lost.

The one takings defense that at least partially jettisons the equality norm is actually one derived from Holmes’ famous *Mahon* opinion, with its well-known nostrum that “[g]overnment could hardly go on” if every loss of value incident to legal change required compensation, and only those regulations that went “too far” would require compensation. This notoriously vague standard has generated endless discussion, including among other things the question about *too-much-of-what*. This has been dubbed the infamous “denominator problem”: complainants naturally attempt to narrow the “denominator,” that is, the underlying property to which the loss can be compared, while defendants try to widen it. The *Penn Central* case gave a particularly pointed example, where the complainants compared the unusable air rights to themselves, as embodied in a proposed airspace lease arrangement that they had entered with a development firm, whereas the defendants argued that the relevant denominator consisted of all the property that the complaining railway owned in the vicinity, augmented by the public subsidies for rail operations over the years.¹⁶

There is no obvious way to resolve the too-much-of-what or denominator issue, except perhaps by an ordinary language approach, that is, by asking what most people would be likely to see as the underlying property. In enunciating such an indeterminate “test,” Holmes, the realist, may have been telling all of us that an equal treatment principle is really no better. As he said, as a practical matter,

government could not go on if every regulatory change triggered a compensation requirement; and digging deeper, a reason government could not go on is because all resource management strategies—including property rights refinements-- have to respond to changes in levels and types of resource congestion. As Holmes may have perceived, these varied responses very often render incoherent a norm of equal treatment.

To sum up: in all the doctrinal moves above, judges have attempted to preserve the appearance of substantially equal treatment in takings jurisprudence. What calls forth these sometimes strained efforts is regulatory change. The following sections take up a major reason why such regulatory change occurs, and why the change so deeply fragments norms of equal treatment in takings cases.

II. The evolution of property rights – and regulation.

A. Evolutionary theories of property rights--a primer. The evolution of property rights—as well as analogous resource regulation--has been a staple of economic and economic-historical analysis for many years.¹⁷ Well over a half-century ago, natural resource economist Scott Gordon analyzed the ways that users of open access or common pool resources may drive them to exhaustion.¹⁸ Gordon used the example of fishing grounds that are open to all comers. He described a typical pattern in which fishermen crowd into the best grounds, doing well at the outset when their numbers are few, but successively reducing the fish population to a remnant as new entrants arrive and as they ultimately dissipate all resource rents for themselves as well as for all the previous fishers. Technically, the problem is a gap between average costs (boats, gear, labor time, and so on) and marginal costs (the same, plus the exponentially rising costs due to resource depletion): each new entrant observes the average costs to his or her predecessors and proceeds on that basis, without taking into account the rising marginal costs that his or her entry will cause to all. This same problem can be extrapolated to

common pool resources more generally. Early (or non-intense) users can continue what they are doing indefinitely so long as their numbers and intensity of usage remain the same, but if the resource comes into increasing demand, more intense exploitation follows, and unless usage is controlled the resource may collapse.

Gordon's 1954 analysis was elegant, but his title was not ("The Economic Theory of a Common-Property Resource: The Fishery"), and Gordon's basic idea came to be known over a decade later under the much more accessible title given by biologist Garrett Hardin: "The Tragedy of the Commons."¹⁹ Hardin's immensely popular essay was aimed at what he perceived to be a disastrous trend toward overpopulation, but he used several other telling examples of resource overuse, beginning with a common grazing field and moving on to such matters as air pollution. Hardin asserted that the only ways to halt the Tragedy were through private property or other methods of "mutual coercion, mutually agreed upon," although he had little to say how these solutions might come about.

Gordon and Hardin represent a dark view of the open access or common pool problem, but they were soon to be joined by more optimistic views—views that gave some glimpse how property arrangements evolve to cope with the common pool problem in any given resource. Just a year before Hardin's article appeared, in 1967, economist Harold Demsetz had written a technically more sophisticated analysis of the common pool problem as a version of "externalities." But, unlike Hardin, he focused on the argument that property rights could evolve to solve such problems. His overall message was that property regimes themselves behave like other economic goods: it is costly to define and enforce property rights, but an initial or replacement property regime can emerge when the benefits of resource management—overcoming common pool losses—outweigh the costs of the new property regime itself. Demsetz used the example of the Canadian fur trade of the 17th-18th century to illustrate how hunting for fur-bearing animals moved from open access when Europeans arrived, through a period of extreme resource depletion as native hunters supplied a new and vast European

market, and finally ending in a system of recognizable and sustainable family properties of animals and habitat. This emergent property regime reduced or removed the mutual “externality” that had derived from the hunters’ unrestrained use of a common pool resource.²⁰

Demsetz’s description of the fur trade and its property-based aftermath amounted to a set of before and after snapshots, without much explanation of what lay between. A few years later, however, Terry Anderson and P.J. Hill elaborated the Demsetz thesis and its optimistic message, illustrating the evolution of property rights on the western frontier. Their 1975 article described a series of increasingly stringent measures to manage increasing competition for land, livestock, and water. New entrants and intensified usage increased the number and costs of conflict, Anderson and Hill argued, but those same costs of conflict led to ever more formal property arrangements for these resources, reducing or eliminating common pool losses.²¹

B. *Accounting for the Public Role.* Although Demsetz as well as Anderson and Hill were primarily interested in emergent private property as a solution to common pool problems, public regulation played a role in the evolution they described. While Anderson and Hill are associated with free-market environmentalism, relying on private action and self-policing to keep resource use within sustainable bounds, their widely-cited article on western resources included some public measures – e.g. criminal penalties against cattle rustling and legalized tradable rights for water.

More generally, in situations of increasing competition for resources, the public too claims regulatory authority. Thus what has been called the evolution of property rights might better be designated the evolution of resource management, which may include a variety of strategies: private property arrangements, public ownership or regulatory authority, and also, as Elinor Ostrom and her colleagues have insisted, community management regimes.²²

Demsetz as well as Anderson and Hill have treated the evolution of resource management—and especially property rights—as naturally and inevitably occurring as the need arises. But that is not the

case. As other authors have observed, this evolution is not necessarily smooth and does not always occur at all. James Krier has been a vocal critic of the evolutionary story, describing it as unhelpful in sorting out when property regimes evolve successfully and when they do not.²³ Economist Gary Libecap has taken a view similar to Krier's. Several years ago, Libecap, together with co-authors Lee Alston and Bernardo Mueller, described a story that was very different from the optimistic tales: the fraught and contingent evolution of property rights on the Brazilian Amazon frontier. They observed the practices of high-risk, low-opportunity-cost young adventurers who were far from access to market, and who staked claims through physical acts like forest clearing or through local customs. As access improved and land values increased, the early squatters or other entrants turned to agricultural pursuits that required steadier rights, but as entrants of new types arrived – more farmers, but also miners, loggers, ranchers and more—their numbers, heterogeneity and conflicting goals made agreement on customary property rights impossible. At that point, the authors argued, the course of land values depended on the state, and in particular whether the state could provide adequate property rights. Values would continue to rise if public institutions provided adequate modern property rights, but if not, values would flat-line; in the latter case participants would be left to fend for themselves to protect land uses and investments, and the cost would soak up all land rents.²⁴

Will adequate property rights appear? Will any other effective resource management regime appear? Not by magic. Libecap and his co-authors argue that state provision of property rights can be quite uncertain, since conflicting political and economic motives intervene – unhappily for the Brazilian frontier, as they observed at the time of their book. The main takeaway from their study, and from many of Libecap's other works, is that emergent changes in resource management – “contracting for property rights” as Libecap has called it, is a contingent matter, depending on the bargaining positions of a variety of actors.²⁵

This story of the Amazon frontier has a familiar ring for the common pool resources that we normally call environmental – air, water, groundwater, sometimes noise and urban congestion. In fact, when problems occur, they generally derive from congestion. In settled countries like those in Europe or North America, property in land is generally no longer at issue. But what *is* at issue is congestion in the environmental resources adjacent to land, like air, water, wildlife, or factors of general ambience like access to light or peace and quiet. Land owners typically assume that their land ownership entitles them to use (or use up) such adjacent resources, even though their use of these resources is very likely to spill over to other people's property.

These spillovers or “externalities” do not amount to much so long as an area is relatively uncongested or the uses are of low intensity, but crowding and more intense uses can create common pool issues—sometimes unbeknownst to the perpetrators. In the introduction, I gave the example of smoke pollution, but many others come to mind. Take for example groundwater: withdrawal or pollution of groundwater emanating from one area can affect the quantity or quality of groundwater not only for neighbors but also for other users at considerable distances, even drying up rivers and other surface waters.²⁶ Nevertheless, groundwater is invisible in place, and its treatment at common law was basically a rule of capture among overlying landowners: if you could take groundwater from a well on your land, it was yours, a doctrine that was called “absolute rights.” In keeping with the absolute rights principle, for example, the Wisconsin Supreme Court in 1903 ruled that the downhill owner of an artesian spring could use his water any way he chose, even if what appeared to be wasteful uses lowered the water table so as to dry up the spring of a higher-up landowner.²⁷

Of course, aside from artesian springs, groundwater removal at that time was limited by pumping technology, which did not permit very deep penetrations of aquifers. Those days are gone. Today, modern pumps mine water hundreds of feet below ground, feeding the huge irrigating equipment whose circular patterns are easily visible to air travelers miles high in the Midwestern sky.

The result of unrestrained or inadequately restrained withdrawals is a common pool problem of immense dimensions, including a substantial and continuing drop in the Ogallala Aquifer, the giant natural water storage that lies underground from the Dakotas to Texas.²⁸

Because of the hiddenness of groundwater and uncertainty about its movements, efforts to meet groundwater's common pool problems have lagged behind surface water—itsself difficult enough to manage. Nevertheless, some legal measures have now displaced the rule of capture. In 1974, the Wisconsin Supreme Court reversed its 1903 decision on absolute rights to groundwater in favor of a doctrine of “reasonable use,” which puts the overlying landowners in a community of more or less equal and correlative rights to the underlying water.²⁹ Other jurisdictions have adopted regimes that allow wells only if they do not deplete neighboring wells. Still others require permits for large agricultural withdrawals. Economists have argued for pricing systems that charge enough for groundwater to disincentivize aquifer depletion.³⁰ Nevertheless, as we shall see shortly, “absolute rights” still threaten aquifers in Texas.

As with management schemes for other environmental resources, all these different points along the evolutionary scale have distributional consequences for users. And this is where the evolution of property bumps into the equality principle. Where does the evolutionary story leave a norm of equal treatment? What counts as equal treatment among the claimants to a resource that was once “free” but is now hedged with limitations? The next section takes up that question.

III. Equality norms collide with the evolution of resource management.

As resource management evolves to meet scarcity or congestion, the question of equal treatment is far from simple. In this section, I take up four possible ways in which the equality norm might be understood in the face of evolving resource refinements.

A. *Equality as equal obligations.* The most intuitively obvious understanding of the equality norm is to require all users of a common pool resource to have the same obligations, or at least obligations calibrated to usage. Thus in medieval times, livestock owners were limited to a “stint” for their livestock’s use of common fields.³¹ More recently, hunters and fishers have needed licenses, which either set limits on catch or calibrate fees to animals actually caught. To some degree, the attempt to charge all users equally has been a feature of modern environmental law more generally; for example, in the Clean Air Act, one among several major pollution control measures passed in the early 1970s, all states are required to meet equal levels of ambient air quality.

The appearances of equality are far from straightforward, however. Even putting to one side wealth differences among those who pay, one can get a glimpse of other fundamental problems about supposedly equal burdens in an environmental context just mentioned: the uniform ambient air quality standards under the Clean Air Act. It is much more difficult and costly to make autos and factories meet those air quality standards in crowded Los Angeles than in, say, wide open Two Dot, Montana, and the Clean Air Act’s uniform requirements quickly drew sharp criticism for their failure to take account of substantial differences in cost as between different regions.³²

When resources become congested, one exceedingly common dimension of difference among users relates to timing: incumbent users are very likely to have investments based on a pre-existing regime, and any change toward greater stringency can put them at a disadvantage. Older buildings, for example, were rarely designed to accommodate wheelchair access, and a retrofit requirement would generally make the building uncompetitive with new construction. Can a version of the equality norm take into account the disparity between the positions of incumbents and newcomers? Briefly put, yes, and one version of the equality norm very often does—which brings us to the much-discussed topic of “grandfathering,” or special treatment for existing users, which I begin with a side excursion into political economy.

B. *Equality and “grandfathering.”* Economist Gary Libecap, cited above for his work on property issues in the Brazilian Amazon, wrote an earlier major work called *Contracting for Property Rights*, in which he analyzed successes and failures in efforts to constrain common pool losses through alterations in resource management.³³ There and in later work, Libecap has argued that alterations require bargaining among interested parties, and in those bargains, the strongest chips are generally held by incumbent users. Putting it crudely, his view is that the winners under the prior regime must be paid off if there is to be any chance of success in altering a resource management regime. As many others have noted, a chief method for paying off incumbents is “grandfathering”: permitting old users to continue their practices while imposing restrictions only on the newer entrants.

Libecap and others have analyzed this phenomenon primarily as a product of public choice factors: incumbents’ interest is intense while others’ interests are more diffuse; they know more about the resource; and they are better organized and better equipped to pressure politicians and find influential allies. The result, they say, is widespread grandfathering or similar transitional relief for incumbent resource users.³⁴ For example, while the Clean Air Act placed equal ambient air standards on the states, the Act’s technology standards gave a break to older vehicles and factories, subjecting the latter to “new source” standards only when undergoing major repairs. Similarly, when the Act’s 1990 Acid Rain Amendments introduced a cap and trade program, according to which total sulfur dioxide emissions were capped and emitting sources (largely coal-burning utilities) were required to have emission allowances, the bulk of the allowances were distributed to then-existing emitting sources.³⁵

Grandfathering has been the target of a great deal of criticism, and with good reason. Because grandfathering often places incumbents in a position superior to new entrants—including competitors--the practice can incentivize premature investment, smother innovative newer approaches, and encourage prolonged use and painfully inadequate repair of outdated technology and methods.³⁶ Quite

aside from those charges, for purposes of this article, grandfathering is significant because on its face, it would seem to defy the equality norm.

But from a different and widely-held perspective, grandfathering squares with norms of equal treatment—particularly with that aspect of equal treatment that holds that things *not* equal should be treated differently and according to their differences. Consider old cars and factories: to require them to meet new regulatory standards would appear to disadvantage them, sometimes substantially; retrofit would frequently cost considerably more than the costs to newcomers, who can install the required equipment *ab initio*. Breaks for incumbents are somewhat less compelling in the case of environmental taxes or cap-and-trade programs, for example the “individual tradable quotas” (ITQs) in fishing, first introduced in New Zealand in the 1980s and now gradually making some incursions into certain U.S. fisheries. Here no retrofit is mandated, but payment for resource extraction is. To be sure, existing users may have relatively higher costs, given unmodernized equipment, but that would be the case even without charges or quotas. But however that may be, in these programs too, grandfathering is the norm: fishing rights are commonly allocated to incumbent fishers when ITQ programs are first introduced.³⁷

Grandfathering and relief for incumbent users is most prevalent of all in land use regulation. To insist that an old building have its top lopped off in order to meet, say, new height standards would seem to be grossly unequal to the incumbent owner, not to speak of a very wasteful practice. From the start, zoning was seldom if ever contemplated to apply immediately to existing structures or uses, and in general, older uses have been more or less exempt from new requirements on such matters as height, bulk or materials. Thus, to the considerable aggravation of land use planners, the special dispensations for “pre-existing nonconforming uses” have persisted, generating complicated schemes to get rid of them.³⁸ The jurisprudential assumption, however, has been that retroactive land use restrictions generally would constitute takings of property, permissible only with compensation.³⁹ That assumption

received a powerful affirmation in one of the most widely-cited law review articles of all times, Frank Michelman's "Property, Utility and Fairness" (1967), where the author used the phrase "investment-backed expectations" to identify property owners eligible for takings compensation.⁴⁰

Michelman's phrase was repeated in the famous *Penn Central* case cited above; there and elsewhere the phrase was intended to put boundaries on the eligibility for takings compensation. Despite the intent, the "investment-backed" qualification on "expectation" is unfortunate for a number of reasons that I will discuss below, all stemming from its sharp division between new and old uses--early birds who invest in resource development versus latecomers who have not yet done so. Which brings us back to the evolution of property rights: early birds and latecomers may make or plan the same kinds of uses of a common resource, but their timing places them at different spots on the congestion curve. Does an equality norm demand the same or different treatment? Or something in between?

C. *The Equality Norm and (More or Less) Marginal Price Regulation.* One possible in-between solution could be marginal pricing. Readers will recall that in Scott Gordon's elegant and early account, commons tragedies result from a divergence between average costs and marginal costs. In his example, the new fisherman enters the fishing ground thinking that his costs will be like the average of the fishers already there, but due to even slight additional congestion, each new entry carries a higher marginal cost than the predecessor, and that cost is inflicted not only on the new entrant but all the other fishers. The same is true of the next herder on the crowded common field, or the next auto in the smoggy city.

With a little imagination, one can say the same of congestion in the streets, sewer lines, and open spaces of a small town that seems to be growing too rapidly for the disgruntled residents. Why not then charge new entrants at their marginal costs, since they seem to be the ones causing the problems? Of course, thoroughgoing marginal cost pricing would charge the incumbents something

too—perhaps nothing for the first group, who made the town a lovely place, but then somewhat more with each new entrant thereafter, to pay for whatever is needed to maintain the town’s charming ambience.

Local land use regulation has not been so precise, but a very much simplified version appears in development conditions in the form of “subdivision exactions” or “impact fees.” These measures typically result from bargains between local governing boards and developers, through which, as a condition for development permission, the locality requires the developer to contribute in kind or in cash to infrastructure--such matters as parks, schools, sewers, or low-income housing. The ostensible theory is that these charges are only needed because of needs generated by the new developments themselves. Because these conditions can be a rather crude version of marginal cost pricing, they give the appearance of a fancy kind of grandfathering—that is, making newcomers pay more while letting the incumbents off the hook.

Developers have predictably used property takings theories to challenge these conditions.⁴¹ In response, courts have placed constraints on development conditions, although they have not ostensibly rejected the marginal cost idea altogether. An array of judicial controls on development conditions has required that the local entity show that the conditions “reasonably” --or sometimes more specifically-- match the costs created by new entrants.⁴² However, an opinion by Justice Alito in a 2013 Supreme Court decision imposed a formidable proof requirement on development conditions—so formidable that according to the dissenters and some commentators, local governments may abandon the effort to negotiate with developers at all.⁴³

For purposes of this article, however, development conditions represent yet another version of the equality norm’s uneasy relationship to the evolution of resource management. Charging for increasing marginal congestion costs is certainly a more refined regulatory path than grandfathering, though perhaps because of this very refinement, the marginal pricing idea implicit in development

conditions may not be as well understood. Public and academic reaction to development conditions--exactions, fees and so on--has been mixed, with some proponents seeing these conditions as justified and as providing much-needed resources for budget-strapped municipalities to deal with growth, while more libertarian scholars whiff discrimination against newcomers.⁴⁴ Both, however, can call on some version of the norm of equality—which shows why the norm is so strained.

4. *Equality as an equal absence of obligations.* Still another version of the equality norm has surfaced from time to time in takings cases and analogous regulatory policy. Basically, this approach permits new entrants to continue to do as their predecessors did. An early appearance in zoning law was *Nectow v. City of Cambridge* (1928),⁴⁵ in which the owner of a lot at the edge of an industrial area argued that the “residential” zoning designation of one strip of his land rendered the lot unusable and amounted to a taking of his property. The U.S. Supreme Court ruled in his favor not only because the strip would be unusable without regulatory relaxation, but also because relaxation would not undermine the overall zoning plan or the public welfare. The proviso about the overall plan was a nod to an obvious concern: that an unqualified decision --simply allowing affected users to continue as their predecessors had unless compensated--could require compensation for every effort to deal with common pool resource congestion.⁴⁶

Much less attentive to the common pool congestion issue was *Lucas v. South Carolina Coastal Council* (1992),⁴⁷ one of the major constitutional land use cases of the twentieth century. South Carolina’s coastal management plan was in effect an early effort to adapt to the rising sea levels now associated with climate change; not only were too many structures moving close to the ocean but the ocean was and continues to be moving too close to the structures. South Carolina’s answer was to forbid new construction as well as renovation of destroyed buildings seaward of a line representing a retreat from the seashore. Older structures were grandfathered and permitted to continue, but only so

long as they remained substantially undamaged by the sea and its storms. David Lucas, a local developer, retained two lots for himself but was denied permission to build two houses, whereupon Lucas charged that the denial had taken his property without compensation. The Supreme Court agreed, in an opinion by Justice Scalia that emphasized the loss of all economic value, and that recognized as public defenses only such traditional matters as nuisance, which seemingly would not have applied to an ordinary use like a house. Somewhat less noticeable in Scalia's opinion was the point that Lucas's lots were the only undeveloped ones in the immediate vicinity. In effect, Scalia read the equality norm to require that unless compensated, new uses be permitted to continue the same uses as their predecessors, regardless of rising sea levels. Presumably, or at least arguably, this reading would also apply to beach properties when future storms destroy existing structures and the owners wish (or claim to wish) to rebuild.

The impact of this understanding of the equality norm—and its effect on managing congesting resources—became clear in a 2013 Texas case about groundwater, *Edwards Aquifer Authority v. Bragg*.⁴⁸ Texas' groundwater law was long that of "absolute rights," effectively a rule of capture for overlying landowners, without regard to the common pool losses from unregulated and unpriced groundwater extraction – a true Tragedy of the Commons with the advent of ever deeper well-drilling technology. Several decades ago, it became clear that the Tragedy was playing out on the Edwards Aquifer, one of the state's major groundwater natural storage areas, and in response to a federal court order enforcing the Endangered Species Act, the Texas legislature in 1993 passed the Edwards Aquifer Act to halt further depletion. The Act established the Edwards Aquifer Authority (EAA) to administer a classic example of grandfathering in a cap and trade system: the Act fixed a cap on groundwater extraction and allocated all groundwater rights to existing users according to their use levels from a rolled-back prior period, effectively requiring new or expanded uses to acquire groundwater rights from incumbents. The Braggs were pecan growers who intended to expand their operations, and when they were denied water

beyond their past extraction, they sued the EAA, arguing that the measure was a taking of their property rights.

The Texas Court of Appeals found that the Act was an unconstitutional taking of property under state law and required the EAA to pay compensation. After considerable delay and much controversy, the Texas Supreme Court declined to review the case.⁴⁹ Aside from the finding of a taking—quite controversial in itself—the court’s damage calculation was most striking. Damages to the plaintiffs were to be measured by the difference between their land value with no new water and its value with an unfettered right to pump groundwater. Thus the underlying assumption is that property owners may pump as they please for new and expanding water uses—and the effort to alter their “absolute rights” becomes a compensable event. Seemingly unnoticed in this damage equation is the externality foisted on all owners when they effectively mine the aquifer: the groundwater will run out for everyone. Instead, the version of the equality norm behind this formula is an invitation to join in the raid on the common resource, and to take what one can before it is gone for everyone.

Having said all this, one can sympathize with the plaintiffs’ complaint from at least one perspective on the equality norm: the Act’s grandfathering meant that their entitlements fell well behind those of established users. Things might have looked different if entitlements had been distributed by auction, but one can also easily imagine that the EAA feared takings suits from the old users if it had tried to charge for the water rights that those incumbents had previously enjoyed. Indeed, the old users would have had the usual grandfathering perspective on the equality norm: they had already made agricultural capital improvements (especially orchard crops) on the basis of groundwater availability, and their trees might well go to waste if the growers were saddled with a new cost. By contrast, the argument would go, newcomers had relatively little to lose, because they had not yet planted trees. Aside from that, the old growers could make the marginal-cost point: we were doing fine until you came along, and if there are shortages, the fault is yours. But the endpoint of the Texas

litigation was neither an auction open to all, nor a grandfathered allocation favoring incumbents, nor any fancy marginal pricing scheme. Instead, the equality norm established in this case is business as usual, whatever the effect on the common pool resource, unless the public compensates landowners for the attempt to keep them from destroying the very resource on which they depend.

IV. The equality norm reconsidered.

The examples given above suggest that the norm of equality has little salience in the face of depleting or congesting common pool resources—which is to say, the bulk of issues in takings jurisprudence. In that context, “equal treatment” can mean the same requirements on all owners’ properties, newcomers and incumbents alike. It can mean an uneven set of requirements as between newcomers and incumbents, with newcomers subject to greater restraints than incumbents because of the sunk costs that incumbents have incurred. It can mean a refinement of unequal requirements according to arrival time, with different users subject to different limitations in accordance with the timing and marginal costs of their use. Or finally, it can mean giving up altogether on management of a common resource, and holding that unless compensated, all users may continue with their ever costlier depleting or congesting activities.

This article is not the first to observe that an equality norm may have little value in directing outcomes in property takings cases, although to the best of my knowledge it is the first to link that ineffectiveness to the evolution of resource management. To be sure, a norm of general equal treatment may be more relevant to property takings jurisprudence when there are no issues of evolving resource pressures and related temporal differences among users. One example would be in connection with civil rights; more generally, a number of authors have argued that takings jurisprudence protects those who have little access to the political process.⁵⁰

But when evolving resource constraints are at issue, a better benchmark for fairness than equality in takings questions is *expectation*. An expectation norm protects owners from sudden and unforeseeable alteration; it looks to fairness in the sense of restraining regulatory “blindsiding,” but just as importantly, it also focuses attention on the major reasons we have property regimes in the first place. Secure property ownership has a number of benefits of a political and even highly personal nature, but with respect to resource management, property’s major institutional function is to encourage planning, investment and careful management, as well as trade in the products of investment and management. Those are the features that make property an engine of greater individual wealth, and through individual wealth, collective prosperity.⁵¹ The protection of property owners’ expectations is one of the guarantors of their individual efforts. But in a well-functioning property regime, owner expectations should normally include regulatory responses to resource congestion, so that individual efforts do not undermine more general wealth production.

Expectation as a guide is not some novel notion in takings jurisprudence. Frank Michelman’s brilliant and much cited 1968 article on takings focused on owner expectations, elaborating Jeremy Bentham’s very trenchant observation that property is nothing more than a basis of expectation.⁵² As noted above, however, Michelman very unfortunately added “investment-backed” to “expectation.” While Michelman evidently saw the qualification as a limit on takings compensation, the phrase has problems: it encourages premature development, and it may even backfire as a limitation, insofar as later users appeal to equal treatment to justify their own inroads on depleting common pool resources. If anything, management of common pool resources calls for a more rigorous containment of existing uses and to “grandfathering” practices generally, lest they build up owner expectations that regulators will simply ignore cumulative congestion and depletion.

This point brings me back to the exceptional cases mentioned in the introduction: for takings jurisprudence, one problem for regulatory response is not that it occurs at all, but that it is sometimes so

tardy. As I have written elsewhere, many common pool issues, and especially environmental issues, are ignored for long periods precisely because the resources in question are held in common:

environmental resources belong to the public at large, but they do not belong to anyone in particular and hence there is little individual payoff for learning about them.⁵³ As a result, problems are ignored and regulatory efforts may come very late in the game, when only a very few properties may be affected. In such long tail contexts, an owner may be excused for having no reasonable anticipation of regulation, or for thinking that he or she is “singled out” for exceptional burdens. Moreover, regulation at that stage raises an issue of backlash, where fairness considerations overlap with pragmatic ones: owners may take matters into their own hands to defeat the very purpose of the regulation, as for example in arson in an historic property, or destruction of the remaining remnants of an endangered species, as exemplified in the perverse maxim, “shoot, shovel, and shut up.”⁵⁴

The important point, however, is that the ordinary course of events, property owners should be held to recognize the cumulative collective action issues embedded in the use of resources—and to expect that there will be collective responses to those issues. People have long formed associations for organized management of collective resources, as in the common fields of medieval England or the even more ancient irrigation systems in Spain, where participants understood the need to ration individual usage and to adjust resource use according to changing conditions.⁵⁵ More modernly, we rely on governments to adjust regulation of collective resources according to evolving conditions of congestion or scarcity. In the takings jurisprudence of the later nineteenth and earlier twentieth centuries, it was taken for granted that property owners would anticipate that common resource inputs—such as clean air or water or silence—might be used so long as neighboring property uses were unaffected, but subject to regulatory limits as resource congestion emerged. In the older case of *Hadacheck v. Sebastian* (1915), for example, a brick manufacturing plant could create noise and fumes so long as no one cared, but could make no claim to continue once expanding urban uses spread to the locality.⁵⁶

Regulatory risk is a contested point in takings scholarship, on the ground that regulatory action is subject to human frailties and political chicaneries, unlike natural events or uncoordinated movements of markets. This may be true, at least to some extent, but it is also true that the evolution of resource uses should give rise to *some* reasonable expectation of regulatory response.⁵⁷ And if “reasonable” seems like a weasel word to philosophers, it is nevertheless a central part of legal regimes like torts and property, generally denoting ordinary practice and ordinary understanding in the relevant circumstances. It would be very odd for coastal residents, for example, not to anticipate regulatory response to rising sea levels, after years of public discussion of climate issues.

To be sure, no one should be subject to arbitrary or irrational regulation. As property scholar Bradley Karkkainen has pointed out, although our legal norms generally requires courts to defer to legislators, courts cannot be entirely blind to senseless or invidious regulation. Like Professor Karkkainen, I would favor at least an occasional and very sparing judicial inquiry into the rationality of regulation itself, whether this occurs under the takings clause or constitutional requirement for due process.⁵⁸ Owners should be held to expect regulatory response to the evolution of resource demand, as well as other collective action responses, but they should not be held to expect regulatory venality, vindictiveness, or extreme belatedness.

There are a few optimistic glimmers that in cases of congesting resources, our takings jurisprudence may come to focus more on owners’ reasonable expectations, including regulatory expectations.⁵⁹ However, given the anti-regulatory environment of the last generation, it would not be surprising to see takings jurisprudence take a different direction, deploying a supposed norm of equality to paralyze regulators’ efforts to cope with increasingly pressured and depleting common pool resources. This would strike me as a great error. Among those who regard one of property’s most important functions as the generation of wealth—and I am one of those--this error neglects a basic fact. The greatest wealth of any society is not just private wealth. It is the sum of private wealth together

with the collective wealth embodied in common pool resources, and it is that sum that our property regime should aim to enhance.

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¹ The phrase is usually attributed to *Caldwell v. Texas*, 137 U.S. 692 (1891), where it was slightly longer: “equal and impartial justice under law.”

² See, e.g. Bradley C. Karkkainen, “The Police Power Revisited: Phantom Incorporation and the Roots of the Takings ‘Muddle,’” *Minnesota Law Review* 90: 826-913 (2006).

³ 364 US 40, 49 (1960). For the frequent citation of the case, see William Michael Treanor, “The Armstrong Principle, the Narratives of Takings, and Compensation Statutes,” *William & Mary Law Review* 38 (1997): 1151-1176, 1153; see also Nestor Davidson, “The Problem of Equality in Takings,” *Northwestern University Law Review* 102 (2008) 1-54, 21.

⁴ Davidson, Problem of Equality, 20-22; David A. Dana and Thomas W. Merrill, *Property Takings* (New York: Foundation Press, 2002), 33-34.

⁵ *Ibid.*, 37-49. Technically, takings cases fall under the “due process” clauses of the Fifth and Fourteenth Amendments, rather than the Equal Protection clause of the Fourteenth Amendment.

⁶ Dana and Merrill, *Property Takings*, 33-34.

⁷ 260 U.S. 393. [Mahon]; cf Karkkainen, “Police Power,” 862-863, identifying earlier cases finding regulatory takings.

⁸ 237 U.S. 131. [Reinman]

⁹ 272 U.S. 365 [Euclid]

¹⁰ “Public trust” has a long history but recent state court decisions have extended both its geographical and functional reach; see Carol M. Rose, “The Comedy of the Commons,” *University of Chicago Law Review* 53 (1986): 711-781; Alexandra B. Klass, “The Modern Public Trust Doctrine,” *Notre Dame Law Review* 82 (2006): 699-754.

¹¹ *St. Louis Gunning Advertisement Co. v. City of St. Louis*, 137 S.W. 929 (Mo. 1911)

¹² *Welch v. Swasey*, 214 U.S. 91, 107 (1911)

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- ¹³ *Mahe v. City of New Orleans*, 516 F.2d 1061 (5th Cir. 1975), *cert. denied* 426 U.S. 905 (1976).
- ¹⁴ 438 U.S. 104. [PC]
- ¹⁵ 233 U.S. 546. [Washington Term]
- ¹⁶ The New York Court of Appeals took this broad view: 366 N.E. 2d 1271 (N.Y.1977).
- ¹⁷ Harold Demsetz, "Toward a Theory of Property Rights," *American Economic Review* 57 (1967): 347-359; Terry Anderson & P.J. Hill, "The Evolution of Property Rights: A Study of the American West," *Journal of Law & Economics* 18 (1975): 163-180; James E. Krier and Edmund Ursin, *Pollution and Policy* (Berkeley: University of California Press, 1977).
- ¹⁸ H. Scott Gordon, "The Economic Theory of a Common-Property Resource: The Fishery," *Journal of Political Science* 62 (1954): 124-142.
- ¹⁹ *Science* 162 (1968): 1243-48.
- ²⁰ Harold Demsetz, "Theory of Property Rights."
- ²¹ Anderson & Hill, "Evolution of Property Rights."
- ²² Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge, England: University Press, 1990); Elinor Ostrom et al, *The Drama of the Commons* (Washington, D.C.: National Academy Press, 2002).
- ²³ James E. Krier, "The Tragedy of the Commons, Part Two," *Harvard Journal of Law and Public Policy* 15 (1992): 325-48.
- ²⁴ Lee J. Alston, Gary D. Libecap, and Bernardo Mueller, *Titles, Conflict and Land Use: The Development of Property Rights and Land Reform on the Brazilian Amazon Frontier* (Ann Arbor: University of Michigan Press, 1999).
- ²⁵ Gary D. Libecap, *Contracting for Property Rights* (Cambridge University Press, 1989).
- ²⁶ Robert Glennon, *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters* (Washington, D.C.: Island Press, 2002).
- ²⁷ *Huber v. Merkel*, 94 N.W. 354 (Wisc. 1903).
- ²⁸ Glennon, *Water Follies* 23-50.
- ²⁹ *State v. Michels Pipeline Construction Co.*, 217 N.W.2d 339 (Wisc. 1974)

³⁰ See, e.g. Manuel Schiffler, *The Economics of Groundwater in Arid Countries* (London; Portland, Oregon: Frank Cass, 1998), 4.

³¹ Henry E. Smith, "Governing the Tele-Semicommons," *Yale Journal on Regulation* 22 (2005):289-314, 295.

³² See for example James E. Krier, "The Irrational National Ambient Air Standards," *UCLA Law Review* 22 (1974): 323-42 . See also Shi-Ling Hsu, "Fairness versus Efficiency in Environmental Law," *Ecology Law Quarterly* 31 (2004): 303-402, 323-32, noting self-serving arguments of fairness among competing interests.

³³ Libecap, *Contracting for Property Rights*.

³⁴ See, e.g., Libecap, *Contracting for Property Rights*; Hsu, "Fairness versus Efficiency"; Huber, "Transition Policy." Another factor could be a psychological "endowment effect" according to which people weigh prospective losses more heavily than gains; see Daniel Kahneman, *Thinking Fast and Slow* (New York: Farrar, Straus & Giroux, 2011), 289-99.

³⁵ Hsu, "Fairness versus Efficiency," 359; Thomas W. Merrill "Explaining Market Mechanisms," *University of Illinois Law Review* 2000 (2000): 275-98 ; David Dana and Susan Koniak, "Bargaining in the Shadow of Democracy," *University of Pennsylvania Law Review* 148 (1999) 478-560, 483-84, note 24, and sources cited therein.

³⁶ [Bruce] Huber, "Transition Policy"; Peter Huber, "The Old-New Distinction in Risk Regulation," *Virginia Law Review* 69 (1983): 1025-1108; 1075; Christopher Serkin, "Existing Uses and the Limits of Land Use Regulation," *New York University Law Review* 84 (2009): 1222-91.

³⁷ Dallas DeLuca, "One for Me and One for You: An Analysis of the Initial Allocation of Fishing Quotas," *New York University Environmental Law Journal* 13 (2005):723-768, 742-57.

³⁸ Serkin, "Existing Uses," 1228, 1235-38.

³⁹ For historical practices, Robert H. Freilich, "Missouri Law of Land Use: With National Perspectives," *UMKC Law Review* 41 (1973): 1-132, 41; for an "amortization" scheme applied to billboards, see *Metromedia v. City of San Diego*, 453 U.S. 490.

⁴⁰ "Property, Utility, and Fairness: Comments on the Ethical Foundations of Just Compensation Law," *Harvard Law Review* 80(1967): 1165-1258, 1213, 1241.

⁴¹ Takings jurisprudence in this area now includes a branch called "unconstitutional conditions," originating with *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987).

⁴² For the traditional tests, see John J. Delaney and Larry A. Gordon, "The Needs-Nexus Analysis: A Unified Test for Validating Subdivision Exactions, User Impact Fees and Linkage," *Law and Contemporary Problems* 50 (1987): 139-166, 146-57.

⁴³ *Koontz v. St. Johns River Water Management District*, 133 Sup. Ct. 2586; compare Justice Kagan's dissent, as well as Sean F. Nolan, "Bargaining for Development Post-Koontz: How the Supreme Court Invaded Local Government," *Florida Law Review* 67 (2015): 171-219, 203.

⁴⁴ For a review of practices and reactions, see Ronald H. Rosenberg, "The Changing Culture of American Land Use Regulation: Paying for Growth with Impact Fees," *SMU Law Review* 59 (2006): 177- 263.

⁴⁵ 277 U.S 183 [*Nectow*]

⁴⁶ In practice, *Nectow* ushered in a system of variances and other small-scale local zoning changes that caused much consternation in the planning community, though it is arguable that this system has legitimate advantages. See Carol M. Rose, "Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy," *California Law Review* 71 (1983): 848-912, 857-63, 882-93.

⁴⁷ 505 U.S. 1003. [*Lucas*]

⁴⁸ 421 S.W. 118 (Tex. Ct. App, 4th Dist.); see also Brendan Gibbons, "Edwards Aquifer Authority Must Shell Out to Pecan Farmers," *San Antonio Express-News*, Feb. 22, 2016; Jim Malewitz, "State Supreme Court Punts on Major Water Case," *Texas Tribune*, May 1, 2015.

⁴⁹ See, e.g., Joseph Belza, "Texas Takings Trap: How the Court in *Edwards Aquifer v. Bragg* Fell Into a Dangerous Pitfall of Takings Jurisprudence," *Boston College Environmental Affairs Law Review* 43 (2016): 211-220.

⁵⁰ Saul Levmore, "Just Compensation and Just Politics," *Connecticut Law Review* 22 (1990) 285-322, 309, and sources cited therein. A related issue comes up in international relations, where outside investors fear being targeted by local politicians; here as a practical matter, restraints on uncompensated takings may allow developing countries to attract foreign investment by giving credible assurances to outside investors. For a somewhat critical analysis, see Alan O. Sykes, "Public versus Private Enforcement of International Economic Law: Standing and Remedies," *Journal of Legal Studies* 34 (2005): 631-666.

⁵¹ For “blindsiding,” see Mark W. Cordes, *The Fairness Dimension in Takings Jurisprudence*, *Kansas Journal of Law and Public Policy* 20 (2010), 1- 57, 39; for varied functions of property, see Carol M. Rose, “Property as the Keystone Right,” *Notre Dame Law Review* 71 (1996): 329-365.

⁵² Bentham, *The Theory of Legislation, Civil Code Part 1*, chaps. 7-9 (Ogden ed.; New York: Harcourt Brace, 1939).

⁵³ Carol M. Rose, “Surprising Commons,” *BYU Law Review* (2013): 1257-82

⁵⁴ J. Peter Byrne, “Precipice Regulations and Perverse Incentives: Comparing Historic Preservation Designation and Endangered Species Listing,” *Georgetown International Environmental Law Review* 27 (2015): 343-392, 346.

⁵⁵ Ostrom, *Governing the Commons*, 69-82; Henry E. Smith, “Semicommon Property Rights and Scattering in the Open Fields,” *Journal of Legal Studies* 29 (2000): 131-170.

⁵⁶ 239 U.S. 394 (1915).

⁵⁷ *Lucas*, 505 U.S. 1035 (Kennedy, concurring); Cordes, “Fairness Dimension,” 38-40.

⁵⁸ Karkkainen, “Police Power,” 905-909; for a different view, Robert G. Dreher, “Lingle’s Legacy: Untangling Substantive Due Process from Takings Doctrine,” *Harvard Environmental Law Review* 30 (2006): 371-406.

⁵⁹ Serkin, “Existing Uses,” 1251-52, citing several cases that focus on reasonable expectations about the future rather than the past.