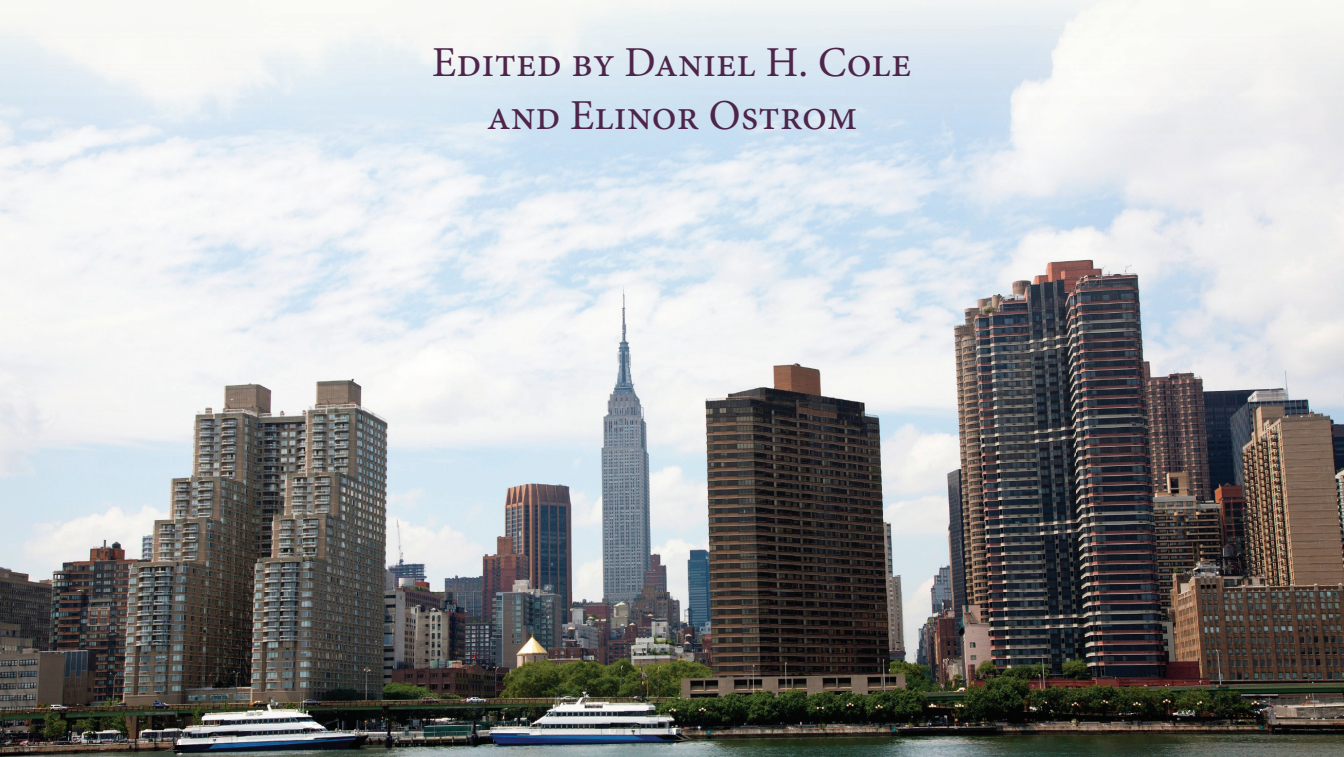
Property in Land and Other Resources

Edited by Daniel H. Cole
and Elinor Ostrom



Foreword by Douglass C. North

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Contents

Wildlife

Land and Water

Global Commons Issues

12

A Political Analysis of Property Rights

WILLIAM BLOMQUIST

Many previous treatments of property rights have been normative, in the Aristotelian or Lockean philosophical traditions. These accounts provide justifications for property rights. They are not empirical inquiries or explanations of how human beings have established property rights as social institutions (for an example, see chapter 11 by Epstein in this volume; for a critique, see Sened [1997]).

Other treatments of property rights have been in the economic styles of Anderson and Hill (1975), Davis and North (1971), Demsetz (1967), Libecap (1989; chapter 13 in this volume), and North (1981). In these accounts, scarcity conditions and/or the opportunity to realize net benefits induce rational individuals to experiment with and commit to the establishment of property rights. This economic analysis provides a view of why people may have established property rights, but less so of how property rights come into existence or how they change after they have been created. Rather, in these accounts, once scarcity rises to a level that makes the need for property rights apparent or the gains from establishing them exceed the costs of doing so, property rights just sort of appear.[1] They are born, but not made.

Political economists' and economic historians' accounts of the development or alteration of property rights display elements of both approaches. Such work has an empirical component, explaining why certain property rights came into being at a particular time and place (Kantor 1991; Sened 1997). The empirical component is typically combined with a normative critique showing why the property rights that were established were inefficient as a result of the corrupting influences of rent seeking, information asymmetries, and other such interferences that diverted individuals from creating the "right" kinds of rights.

These perspectives on property rights have contributed to and built a rich political economy literature on property rights. This chapter concerns a political analysis of property rights, as distinguishable from the more familiar political economy

[1] Eggertsson made this point: "The naïve model . . . postulates that exclusive control will replace open access when the (joint) benefits of doing so exceed the (joint) costs . . . In other words, in the naïve model control issues do not present a dilemma, property rights will adjust to maximize the joint value of resources—and economists need not be concerned with political processes" (1994, 11). Sened also characterizes this approach as naïve: "Analysts should not expect private property rights to come into existence just because they increase efficiency" (1997, 176).

of property rights.[2] Its focus is on how property rights rules are developed and changed in settings that involve multiple actors, multiple resource use values, and multiple rule-making arenas. This approach incorporates perspectives from broader depictions of natural resource uses and usage rights and from political science literature on the processes of policy making.

This chapter reflects the disciplinary bias of a political scientist. Political scientists are apt to be more concerned than philosophers or economists with the questions of how people create property rights and for what purposes, why and how they choose the types of property rights institutions they do, and how and why they change property rights over time. More plainly, a political analysis of property rights is explicitly and primarily concerned with (1) "who gets what, when, how," to quote Lasswell's (1958) famous characterization of politics; and (2) the even more intensely political questions of who decides who gets what, when, and how, and how that question is decided.[3]

These are especially pertinent questions in relation to property rights. Property rights are established and recognized by some form of authority—community consent, the decree of an official, or codification in some formal rule or instrument such as a constitution, statute, ordinance, or regulation. Mere usage or claim of right by an individual is insufficient to establish a property right, properly so called (Cole and Grossman 2002).[4] Rights may be established and/or recognized by various governmental bodies—legislative assemblies, courts, and agencies or officials of various kinds—as long as they have been invested with some legitimate rule-making authority. Community consent may be established less formally, via social conventions or norms, as long as those conventions or norms create a corresponding duty on the part of others to recognize the established right (Cole and Grossman 2002). Politics is necessarily entailed in the analysis of property rights because, and to the extent that, authoritative allocation is a part of the definition of property rights (Sened 1997). An alternative to Lasswell's plainer statement that politics is "who gets what, when, how" is Easton's more refined definition of politics as "the authoritative allocation of values" (1953, 146). Either phrasing expresses the connection between politics and property rights.

At least three other crucial characteristics of human political behavior must be incorporated into any political analysis. First, nothing is ever over. Even when an authoritative decision is made with respect to a particular issue, those whose preferences on that issue fail to carry the day rarely disappear or even capitulate. Rather, those who do not prevail in one decision-making arena at one time will search for ways to prevail on that issue at another time or in another forum or may reframe the

[2] Although this chapter departs from Sened (1997) on a point that will be highlighted, Sened's argument and mine coincide on this and several other points, as in his call for "a more realistic treatment of the role of politics in the evolution of private property and related individual rights" (1997, 7)

[3] Much of what is commonly characterized as "political" discussion, debate, or analysis may be more accurately labeled policy debate or analysis. "What should we do about problem X?" is a policy question. The political question, properly so called, is: who gets to decide what we will do about problem X, and how? When political scientists say that political science is the study of power, this is at the heart of what they mean. For example, how are authoritative decisions made, and who gets to participate and under what circumstances and constraints?

[4] For an alternative perspective, see the discussion of de facto versus de jure property rights in Schlager and Ostrom (1992).

issue itself (Baumgartner and Jones 2009; Schattschneider 1960; Stone 2002). Second, any valued thing (tangible or intangible) over which people contest can be divided, subdivided, recombined, and redefined, at least rhetorically. Such actions may be undertaken to gain strategic advantage, to resolve conflict through compromise (for instance, by allowing one interest to prevail or have control with respect to one aspect of the valued thing and another interest to prevail or have control with respect to some other aspect), or even for the sake of operating within constraints of available time and information.[5] Third, the values that are invoked in political or policy contests, such as efficiency, fairness, security, and community, are also contested in the political process. Political actors can and should be expected to pull any valued thing (and rights to that thing) into multiple pieces and then to search for ways and means to prevail in decision making over the allocation of rights to all or a piece of that valued thing. These crucial characteristics of human political behavior are as much a part of debates and decisions about property rights in natural resources as they are in any other realm of political decision making.[6]

These matters are not avoided or even necessarily ameliorated by the invocation or creation of markets. Because property rights are established and recognized through authoritative (political) institutions, the transaction costs of changing them are greater than zero. Economists who follow Coase have understood and emphasized that in the presence of positive transaction costs (that is, if rights cannot be traded freely and without cost until individuals' utilities cannot be improved by further adjustment), "it can make a great deal of difference—in terms of ultimate economic outcomes—who initially possesses the legal right *and* what that right *means*" (Cole and Grossman 2002, 326; emphasis in original; Bromley 1991).

The analysis of Schlager and Ostrom (1992) may be seen as focusing on the latter point: what that right means. They develop a property rights framework in the context of rights in relation to natural resources (Ostrom and Schlager 1996). This chapter incorporates their framework and combines a political analysis of institutional development and change with the following recognitions:

1. Both property rights and natural resources are typically multidimensional.
2. Human beings interact with natural resources in ways that reflect a multiplicity of values and a variety of uses.
3. These social and ecological interactions of humans and nature usually take place in settings where there are multiple potential decision makers and multiple potential decision forums within which choices about property rights institutions may proposed, discussed, debated, and decided (or not).

[5] Noncomprehensive policy making is rational. Time is limited, bargaining is costly, and there are always other issues and controversies vying for attention. Under these circumstances, rational individuals will tend to avoid or set aside issues that can at least conceptually and rhetorically be distinguished. There are incentives embedded in the structure of the action situation to decide only what needs to be decided for purposes of the controversy of the moment, and no more. Related issues, as well as new issues that arise as a consequence of past decisions, will come forward in time and find their way to one or more forums for resolution.

[6] All this political maneuvering and contestation cannot be swept under the term "rent seeking." That term implies or presumes that there is some objective definition of what constitutes an unearned or undeserved "rent," which merely begs the question.

Multiple Elements of Property Rights

Legal scholars, as well as practicing attorneys and judges, have long referred to property rights as actually consisting of a bundle of rights. The metaphor conveys the notion that property rights are to some extent decomposable into elements. With particular respect to the use of natural resources, Schlager and Ostrom (1992) disaggregated the overall term "property rights" into the following elements.

- *Rights of access*, also referred to as rights of entry, identify who has a recognizable claim to be "in" (and, by extension, who is "out") with respect to the resource. If the resource is present within a spatially delineated domain, such as a fishing ground, a forest, or a lake, those with rights of access have a cognizable and potentially enforceable claim to be able to be present within that domain.
- *Rights of withdrawal,* also referred to as rights of extraction or abstraction or use, are possessed by those who can legitimately take usable units (e.g., wildlife, timber, quantities of water) from the resource for their own use. Withdrawal rights often are conditional; that is, they include restrictions on when, where, and how much the rights holder may use the resource. Depending on the physical characteristics of the resource, an extension of the right of withdrawal may be a right of storage (a recognized right to leave one's temporal allocation of resource units in the resource for capture at a later time).
- *Rights of management*, which might also be thought of as a right to participate in decision making, identify those who can deliberate about and help decide the regulation of use patterns, the necessity and provision for improvements/repairs to facilities, and the like. Applying the concept of levels of action presented in Kiser and Ostrom's study (1982), Schlager and Ostrom (1992) distinguish between the operational-level rights of access or withdrawal and the collective-choice rights of management, exclusion, and alienation.
- *Rights of exclusion* identify those who have authority to determine—on their own or in concert with others—who cannot have access to or make withdrawals from the resource.
- *Rights of alienation*, also known as rights of transfer, are possessed by those who can legitimately confer their other property rights on someone else. Although rights of alienation may seem inherent in the other rights, they are distinct, and the distinction is very important. One may possess rights of access to a resource, for instance, by virtue of group membership, residence, or some other characteristic and thus be unable to transfer that access right to another person.[7]

As Schlager and Ostrom (1992) point out, these rights are independent of one another, on one hand, and related, on the other hand. In any particular circumstance, a person may possess some of these rights, but not all of them. The institutional rules

[7] Libecap (chapter 13 in this volume) has undertaken extensive research on the effects of alienation, studying what people do once they have the authority to sell or lease their water use rights, and what effects result (especially efficiency effects). From the discussion in his chapter, one can see that area-of-origin restrictions and compensation for third-party effects of transactions may also be viewed as rights claims.

conferring property rights in a resource constitute a system of rules identifying various aspects of property rights, and some property rights systems specify all of the elements in the list, while other property rights systems for other resources specify only some of those elements. On the other hand, the elements are related in the sense that they have a cumulative character, and possession of some rights is implied by or entailed in others. As one goes down the list from access through alienation, this cumulative character manifests itself. Rights of withdrawal imply that one has access to the resource. Rights of alienation are meaningful only if one has some other rights (e.g., access or withdrawal) to transfer.

This specification of the component elements of property rights in resources is useful in several ways (Ostrom and Schlager 1996; Schlager and Ostrom 1992). For theorists, it aids in unpacking the general concept of property rights and thus may help identify instances where theorists are calling different empirical referents by the same term, a step that is often vital to advancing theoretical debates and theory development. For researchers, it provides a means of comparing resource-management regimes, even when the resources themselves (not to mention their geographic, historic, and social settings) are divergent, which is a great advantage in being able to move beyond individual case studies to comparative qualitative and quantitative analyses. For resource users and those who may be prescribing improvements to resource-management practices, Schlager and Ostrom's framework provides a means of identifying the institutional arrangements that define the status quo and thus of considering in a more deliberate and systematic way what changes in resource use and/or conditions might follow from changing one or more elements of the users' rights. The multidimensionality of property rights also means that in their roles as political actors, resource users have five types or dimensions of property rights to fight over, not just one.

The relevance and significance of Schlager and Ostrom's property rights framework for a political analysis of property rights becomes even clearer as one adds other dimensions. One of these involves another process of disaggregation, this time with respect to the resource itself.

Multiple Properties and Uses of Resources

A number of resource economists, as well as some ecologists and planners, have referred to the multifunctionality of resources.[8] This term signifies that a particular resource yields more than one stream of value for people and for other species. For example, a forest may be simultaneously a source of timber, shade, open space, and habitat, a buffer between communities, a place of recreation, and a place of spiritual significance, as well as providing oxygen and consuming carbon dioxide.

Because this basic premise of multifunctionality has been well covered elsewhere, this chapter applies it directly in a way that relates to the discussion of property rights. The essential point is that property rights in a natural resource can be, and often are,

[8] Although the term has been in use since at least the 1990s, it gained wider currency after the Organisation for Economic Co-operation and Development promoted it in books by Maier and Shobayashi (2001) and Shobayashi (2003). For a recent application to policy, see Brouwer and van der Heide (2009).

defined or limited functionally. This point can be illustrated by considering water in a watershed.

A given watershed usually has both surface water and underground water. The surface water, flowing in watercourses such as streams or rivers or stored in bodies such as lakes or reservoirs, is subject to a variety of uses.[9] A first step toward categorizing the multiple uses of surface water in a watershed is to distinguish between in-channel and out-of-channel uses.

Values derived by people from in-channel uses of a surface water resource are associated with the following:

- Navigation: using the flow for shipment.
- Hydropower: using the flow for energy production.
- Recreation: using the water for exercise and entertainment.
- Waste conveyance and dilution: using the water for discharge and disposal.
- Aesthetics: using the water for scenic views, enhancing property along the shore, and the like.
- Spirituality: keeping natural or divine beings that are associated with the water undisturbed.
- Ecology: using or protecting the water for habitat.

It goes nearly without saying that these uses may conflict because one use may preclude or diminish the value of one or more other uses.

Values derived by people from out-of-channel uses of a surface water resource are associated with the following:

- Domestic uses: diverting water from the watercourse or water body for such purposes as drinking, cooking, and sanitation.
- Irrigation: diverting and using water for growing plants.
- Industry: diverting and using water for such purposes as cooling and manufacturing.
- Public safety: diverting and using water for fire suppression.

These out-of-channel uses can conflict not only with one another, but also with in-channel uses.

Groundwater in a watershed, which is hydrologically interconnected with surface water except in rare circumstances, also provides values for people that are associated with all the previous claims of right for out-of-channel uses of surface water, as well as the following uses:

- Ecology: claims of right for habitat.
- Storage: claims of right to use the capacity of the aquifer system to store and retrieve water.

[9] This point is made also in Epstein (chapter 11 in this volume), among others. He further notes that because of the multiple interests in any given body of water, the politics of water rights is always intense.

These groundwater uses may conflict with one another, and to the extent that groundwater in a watershed is hydrologically linked with surface water resources, these uses may conflict with in-channel or out-of-channel surface water uses as well.

Recognizing the multiplicity of uses and values is one step in the analysis, and recognizing the prospect of conflicts arising from multiple uses is another step. Both of these have been cited in the past in emphasizing the importance of water rights regimes that establish and define priorities among uses and can be employed by users to obviate or resolve conflicts. Combining the multiplicity of uses and values with Schlager and Ostrom's framework is another step, however.

Schlager and Ostrom's property rights framework does not align perfectly with the multiplicity of uses of water resources in a watershed. It is not clear, for example, that withdrawal rights are associated with uses of a surface water body for aesthetic or spiritual purposes. But the five categories of property rights in Schlager and Ostrom's framework can be associated with nearly all the water uses listed previously. Table 12.1 is a simple illustration of a mapping of Schlager and Ostrom's framework onto those water uses.

With the exception of a few less logical cases (like the example of withdrawal rights in connection with aesthetic uses), the cells in table 12.1 could be filled in with institutional arrangements specifying (1) who does or does not have that type of right in association with that particular use; (2) to what extent a person has that

TABLE 12.1

Elements of Property Rights in a Multifunctional Watershed

	Aspects of Property Rights				
	Access	Withdrawal	Storage	Management	Transfer
In-channel surface water uses					
Transportation/navigation					
Hydropower					
Recreation					
Waste disposal					
Aesthetic					
Spiritual					
Ecological					
Out-of-channel surface water uses					
Domestic use					
Irrigation					
Industry					
Public safety					
Groundwater					
Domestic use					
Irrigation					
Industry					
Public safety					
Ecological					

right; and (3) under what conditions (rights might vary according to the situation, e.g., when the resource is in drought or at risk of flooding).

By itself, Schlager and Ostrom's property rights framework demonstrated that users may (and in many cases do) have different degrees of right to the use of the same resource. In combination with the multifunctionality of resources, their framework produces an even more complex, but arguably more realistic, depiction of the actual circumstances of property rights systems, namely, that some users will have some rights to some uses of the resource, while other users will have other rights with respect to other uses of the resource. This critical point deserves additional emphasis by restatement: in the world we are trying to understand and explain, there is not a unique resource being used for a particular purpose by one set of users with one bundle of property rights. There are various resources with multiple valued uses, there are multiple and overlapping groups of users, and different users have different types of rights to different aspects of the valued uses of those resources.

In this more complicated reality, externalities take on differing types and gradations as well. What can be called reciprocal externalities may arise among rights holders who are engaged in the same use, such as irrigators. Conflicts arising from reciprocal externalities may be challenging, but they are at least potentially resolvable through marginal adjustments among claims of similar rights. In other words, irrigator A may have to divert and use a little less water in order for irrigator B to have a little more if B's right supersedes A's in some way that is recognized within that property rights system (seniority, for example). Nonreciprocal externalities arise between rights holders who are engaged in different uses. These conflicts are still at least potentially resolvable within a property rights system, but that system will have to include some sets of priorities among uses and not just among users. Thus, if the placement of a dam on a watercourse renders navigation beyond that location impossible, the property rights system will need to include some determination of whether navigation takes precedence over hydropower. Side payments among conflicting claimants may be possible, but the priority among uses established within the property rights system will determine who owes payment to whom.

In a social-ecological setting where there are rights of varying degree and uses of varying kinds, important questions arise that are critical to resource use and management. The questions that have often been raised and addressed through previous legal, economic, and policy analyses are as follows: Do some uses have priority over others? Within the same use, do some rights have priority over others? If so, on what basis?

To these more familiar questions, a political analysis of property rights adds the following: Who gets to decide? Can these priorities be changed? How, and by whom? Who is "in" and who is "out" of the "resource community," to use Barbanell's (2001, 67) term? Who has rights of participation?

The questions in the second group are harder to address merely by offering the hope of transferability of rights among rights holders. They are questions at the collective-choice level of action (Kiser and Ostrom 1982). And underneath those questions are questions at the constitutional-choice level: How do we decide who gets to decide over which domain of uses and resources, and who gets to participate in those decisions? Who can shift levels of action, and under what conditions?

Multiple Arenas and Strategies of Political Decision Making

Those questions carry us from the operational level of the resource itself to the collective-choice and constitutional-choice levels of the community. To assume that there is one decision maker for the community may be a useful abstraction for simple modeling, but it is nonetheless an abstraction and indeed a distraction for a political analysis of property rights.[10] In political situations, the number and nature of participants and the arenas in which participants will deliberate, negotiate, or fight are all at least potentially contestable. Political contestation is in large measure a matter of framing the issue at hand in a way that attempts to influence (1) the scope of the conflict so as to bring in or leave out certain participants and (2) which decision-making arenas will be used to reach decisions.

A great deal of work in political science has focused on these aspects of political contestation and how they enter into public policy making with respect to any topic, not only property rights. Kingdon (1995) highlighted the significance of molding the definitions of problems to fit one's preferred policy solutions—one view of energy shortage suggests the need to reduce consumption, while another view of energy shortage suggests the need to increase production. One can expect proponents of each solution to define the problem strategically. Stone (2002) and others have articulated and illustrated the malleability of issues and the strategic uses of rhetoric, as well as statistics, in political debate. These uses are often referred to as framing. Is water an instrumental economic commodity to be put to maximum beneficial use, or is it a part of the natural landscape and regional heritage to be preserved in its current state?

Closely related to framing is Schattschneider's emphasis on the importance of "managing the scope of conflict" (1960, 5). Political actors assess the relative balance of influence in any given conflict and then try either to bring in more people (enlarging the scope of conflict) in anticipation that a preponderance of them will come in on one's side or to keep people out (reducing the scope of conflict) in anticipation that a preponderance of them would come in on one's opponent's side. Part of managing the scope of conflict is the choice of decision arena, as Baumgartner and Jones (2009) and Kagan (2001; 2004), among others, have pointed out. In a community with more than one decision maker or decision-making arena—in other words, in most actual settings—there is also a strategic choice to be made about whether to press for policies (such as assignments of property rights) at a local or a larger scale and in a legislative body, a regulatory agency, a judicial forum, or some other structure.

If one incorporates these insights on policy making from the work of political scientists into a study of property rights, one may still rely on a presumption of rational actors, but those rational actors now are also political entrepreneurs from different constituencies associated with different uses of the resource. They contest for the establishment, recognition, and enforcement of their desired rights of access,

[10] On this point, the political analysis approach of this chapter diverges from the political economy analysis presented by Sened (1997). He retains the simplifying assumption of a unitary political actor. He acknowledges the existence of multiple governmental bodies and processes but decides that for purposes of his analysis, "government, its delegates or any decisive coalition in government, end up making decisions 'as if' they were unitary actors" (1997, 6).

withdrawal, management, exclusion, or alienation with respect to different uses of the resource—in the watershed example, to divert water for irrigation or to leave it in the stream for hydropower, recreation, or some other purpose. They also make calculations of the likelihood that their rights claims will prevail if the matters are decided in one type of decision-making forum or another, depending, among other things, on how they can frame the issues at stake and whether their cause will benefit from enlarging or reducing the scope of conflict. Thus, for example, in a hypothetical state in the western United States, irrigators might go to a state court to protect rights of withdrawal, rafters and fly fishermen might go to the state legislature seeking rights of access, the hydropower interests might go to the federal legislature seeking rights of exclusion, and an indigenous religious community or ecology advocates might go to the federal courts seeking rights of exclusion on other grounds.

Outcomes in any of these decision-making forums may be couched in definitive and formal language, but they are also inherently and unavoidably contingent. In the short run, they are liable to be contradicted by the actions of another forum or appealed to yet another; in the long run, they are vulnerable to being undermined or overridden by altered definitions of the problem or changes in the authority or jurisdiction of one or more of the decision-making forums. The implications of this understanding and approach are significant for the literature on property rights in natural resources. One implication is that it is highly unlikely in any actual setting that property rights in a natural resource will ever become "well defined" in the sense commonly used in the literature. Another is that even if a set of well-defined property rights in a natural resource were somehow to be arrived at, it would likely be a transitory state of affairs liable to be undone by the next entrepreneurial challenge.

Recent and Current Developments in Water Rights in Colorado

What does strategic political behavior regarding rights to a multifunctional resource in a multiple-venue policy-making arena look like? An in-depth study is beyond the scope of this chapter, but opportunities for illustration abound. Colorado provides a timely example. The story of the early development of water use rights in Colorado has been told often and well by others (Black 1960; Hutchins 2004; Jones and Cech 2009; Radosevich 1976; Wiel 2010 [1911]). There is no need here to attempt another comprehensive account of that institutional evolution from before statehood through the 1970s.[11] Recent and current controversies with respect to property rights in various water uses can more simply and directly illustrate how the approach described in the previous sections can shed light on actual cases.

In semiarid locations such as Colorado, stream flow tends to be highly variable within a year as well as across years, and arable land is often distant from surface

[11] Readers of this volume may find it difficult to relate the material in this section to the discussion of water rights in Epstein (chapter 11 in this volume). Colorado water rights doctrine is premised on prior appropriation rather than riparianism. Epstein focuses on riparianism and expressly sets aside the prior-appropriation doctrine. In the western United States, where water resource management problems have been most salient and complicated for the past 100 years or so, prior appropriation is a more common foundation of water rights law than riparianism.

streams. Since statehood in 1876, the foundation of Colorado water law has been, and remains, promoting and protecting the withdrawal of water from surface streams for use on lands near or far from the surface water source.[12] During the twentieth century, the basic emphasis in Colorado water law on withdrawing water from streams came under challenge as stream flows diminished, but also as the values (financial and other) of in-stream uses rose. Since the last decades of the twentieth century, Colorado water rights law has been changing and coping with competing claims of right to diverse water uses.

Appropriative rights (rights to divert or withdraw a specific amount of water from a specific source during a specified period of time) now account for essentially all expected water flows in Colorado. There is no "extra" water remaining. If all appropriative rights are exercised in an average year, many of the state's surface streams go dry. These appropriative rights are protected by seniority, but the state's economy and demography have changed significantly during the past half century. Colorado's population is overwhelmingly urban and suburban, and the state has attracted many residents and regular visitors who value recreation highly. Indeed, as an economic sector, recreation has outpaced and overtaken traditional agriculture in its contribution to the state's overall economy, as measured by jobs and income. Most (but not all) recreational uses involve leaving water flowing in the stream, rather than taking it out of the channel, which has been the principal emphasis of Colorado water law.

Of course, markets have been advocated as a means of addressing the pressures for adjustment in the state's water uses from traditional irrigated agriculture to municipal and especially recreational uses. Transfers of water rights have occurred in Colorado, and there is plenty of room for markets to continue to facilitate the transition from older to newer valued uses. The prerequisite for markets to play this role, however, is the actual and authoritative recognition of a use as a claim of right. Unless and until recreational in-stream uses gain legal recognition within Colorado law, markets cannot operate, at least not openly, to make those adjustments. An irrigator cannot sell or lease a water use right to a recreational outfitter, for example, unless and until the right to leave water in the stream and use it for recreation stands on a comparable legal footing with the irrigator's right to divert water and put it to use for crops or livestock. Much of the story of Colorado water law over the past half century has been the effort by advocates of nonconsumptive and in-channel water uses to gain a legal foothold in order to have a position from which to start transacting with holders of consumptive out-of-channel use rights.[13]

[12] Legally recognized water rights in Colorado are rights to the use of the water and not to ownership of the water itself. The Colorado Constitution declares that the waters of the state belong to the public and allows individuals to acquire rights to the use of those waters.

[13] Recreational uses of in-stream flows should not be confused with navigation. As Epstein (chapter 11 in this volume) and others point out, navigation of streams invokes federal law and its supremacy over any state's system of water use rights. The most popular recreational water uses in Colorado and in many other places are rafting, kayaking, canoeing, and tubing, which can be done on both nonnavigable and navigable streams. Colorado has very few stretches of river that would qualify as navigable and thus would be brought under federal law, but it has thousands of miles of streams on which people can engage in recreation in relatively small devices such as rafts. Recreational uses of those streams have spawned a rapidly growing economic sector of outfitters and tour companies. In addition, recreational fishing is an in-stream water use that does not require navigability, and fly fishing,

The question for advocates of recreational and other in-stream flow rights and protections in Colorado has been how to get the institutions governing Colorado water rights law to recognize and give priority to those claims of right. Colorado has a statewide system of local water courts that, in coordination with division offices of the state engineer, have recognized and adjudicated rights to divert and use water under the state's prior-appropriation doctrine. Questions or conflicts over the seniority, quantity, and timing of one user's diversion rights relative to others' have been handled and resolved in the water courts for decades. Both because of their legal mandate and their long relationships with the state's traditional water users, neither the water courts nor the State Engineer's Office have been seen by advocates of other water uses as receptive bodies in which to press for the recognition of new rights to other water uses.

Because of the growing economic importance of recreation and other in-stream water uses, however, the Colorado legislature has at times appeared to be a more promising body for enacting changes in state water law. The state's process for policy change through initiative and referendum is another available policy-making venue because with the demographic changes in the state, the voting population has become more receptive to appeals based on ecological and aesthetic values, as well as the popularity of recreation. Rule-making processes of both state and federal executive agencies charged with administering and enforcing environmental policies, including water conservation and habitat protection, or managing public lands are another prospective policy venue.

Changes in Colorado water rights law during the past half century have largely displayed the dynamics alluded to earlier in this chapter. Rights holders in the traditional and well-established areas of water use—agriculture and municipal/industrial supply—have tended to make their stand in the courts, relying on 150 years of precedent and practice from the Colorado Constitution and a body of case law composed of hundreds of thousands of rulings over those years. Rights claimants wishing to establish legal recognition of their uses at a minimum, and preferably legal parity with traditional uses, have taken their case to other policy venues, such as the legislature, referendum, and agency regulations.

In one of the most recent battles over what has come to be called the "right to float," commercial outfitters and other advocates of recreational stream uses found a legislative sponsor for a bill in 2009 that would have recognized their rights of access to streams that have historically been used for recreation. Furthermore, the proposed legislation would have given that access right superiority over the rights of adjacent landowners to exclude rafting on streams running through or adjacent to their lands by exempting the rafters from trespass actions by the landowners. Advocates of recreational uses also reached the Colorado secretary of state's office with four proposals for ballot initiatives to amend the state's constitution to recognize and give priority to the right to float. Landowners and irrigation interests countered with twenty constitutional initiative proposals of their own. The legislative proposal was changed in the Colorado House to a recommendation for study

which has become one of the most popular forms of recreational fishing during the past quarter century, basically requires nonnavigability.

of the issue by the Colorado Water Congress, a body composed of multiple representatives of water interests within the state, along with state government officials and staff.[14]

Related controversies have arisen and persist over the operation of reservoirs (Sibley 2010). Most reservoirs in Colorado were built to impound water flows during the wetter periods of the year for gradual release during the drier parts of the year to accommodate agricultural and municipal/industrial stream diversions. Once in-stream flow protections gained a legal foothold in Colorado in the 1970s, when the legislature charged the Colorado Water Conservation Board, an executive-branch agency, with determining in-stream flow needs for ecological as well as recreational uses, in-stream water use advocates (recreational interests, of course, but also wildlife and other conservation groups) began to challenge the traditional operation of reservoirs. The long-established method has ordinarily released just enough flow into streams during the summer and fall to accommodate diversion rights for out-of-channel uses recognized under the state's prior-appropriation system. In an average year, and certainly in a drier-than-average year, this practice has meant that as a practical matter, little or no flow remains in the stream once the out-of-channel diversions have been made. Proposed changes to reservoir operations in order to accommodate state-recognized in-stream flow uses are typically opposed by irrigators and other traditional users. These disagreements can also involve the federal government, both because some of the dams and reservoirs are operated by the U.S. Bureau of Reclamation and because Native American communities are among the irrigation users of the surface streams that the reservoirs regulate. State and federal legislative authority, state and federal courts, and state and federal executive-branch agencies are all potentially implicated in the resolution of controversies over reservoir operation and water use rights. This is a rich environment for the expected pattern in the recognition, protection, and enforcement of water use rights: advocates of certain types of rights seek out venues sympathetic to their claims and interests, while advocates of other types of rights try to divert action from those venues and pursue their interests in the forums they anticipate will be more favorable to them.

One other current controversy in Colorado is worth mentioning because it highlights the fact that conflicts over water use do not arise simply when competing users want the same water at the same time. Water uses can also conflict when those who engage in one use want water at a different time than other uses. A vital component of the Colorado recreational economy is snow skiing. Extending the skiing season and assuring the availability of snow even in drier years have led the Colorado skiing industry and its counterparts elsewhere to become increasingly dependent on snowmaking machinery. Artificial snowmaking is an example of a recreational, but out-of-channel, water use. Water is diverted from streams and transported to the snowmaking equipment. In semiarid Colorado, demand for water for snowmaking escalates in late fall, when water withdrawals for irrigation and municipal/industrial uses have largely exhausted stream flows over the summer and early fall. What remains in the stream is also needed in order to maintain

[14] See Smith (2010) for a very readable account of this and other controversies.

state-mandated minimum in-stream flows for environmental purposes, such as fish habitat. Thus far, negotiations among the various interests involved in particular locations (Sibley 2010) have prevented changes to policy that might place snowmaking water diversions on a legal par with irrigation, environmental, and other uses. Should policy change be sought or opposed by those interests, however, the thrust and parry are likely to take place in multiple arenas: the Colorado Water Conservation Board, the legislature, the courts, and possibly the referendum process.

These illustrations go beyond making the point that water rights law is complicated and dynamic. They show as well that (1) individuals contest not only over the same rights to a resource but over different rights; (2) a multifunctional resource multiplies the types of rights of use for which people may contest; and (3) a multiorganizational policy arena not only multiplies the number of decision points, but also changes the strategic assessments and behaviors of individuals and groups. The last point bears some further elaboration. As issues arise in connection with property rights in a multifunctional resource, and as governmental bodies address those issues in a noncomprehensive way (dealing with one claim of right to one use of the resource this time, another claim of right to the same or a different use of the resource the next time, and so on), individuals and groups gain information about which policy venues are more or less likely to be receptive to their interests and arguments. Individuals and groups pursue their interests in various venues as they calculate their relative likelihoods of success. Rather than being an "input" to the policy-making process—a problem to solve—divergent and conflicting property rights claims in a natural resource are the expected output of a policy-making process that features multiple policy-making venues.[15]

The considerations discussed in this chapter complicate the analysis of property rights immensely. Most people probably agree that simplicity is a desirable characteristic of analysis. On that basis, many scholars can be expected to continue to develop and refine analyses of property rights that eschew many or most of these complicating elements. One might therefore legitimately question the value of the discussion in this chapter.

The value of this discussion depends on the extent to which it accurately characterizes some of the factors and processes that go into the development and evolution of property rights institutions but have been disregarded in other approaches. It is worthwhile to ponder the likelihood of encountering actual situations where (1) resources have but one dimension and one use; (2) choices among alternative property rights arrangements are made by a single decision maker or in a single forum; and (3) those who take an interest in a resource have no inclination or ability to (re)frame the issues in question, alter the scope of conflict, and shift decision-making venues. Analytical approaches that explicitly or implicitly assume such

[15] Policy makers' political interests may be served by this dynamic as well. By deciding on, say, a right of access to one aspect of a natural resource in one venue at one time, and perhaps a right of management to that or some other aspect of the resource in another venue or at another time, policy makers multiply their opportunities to respond to many constituencies. "Solving" a problem comprehensively (but perhaps in a way that sends some interests home victorious and other interests home empty-handed) may well be less useful politically than being able to give one constituency after another a little bit of what it wants by addressing only one aspect of resource use at a time.

situations will be simpler to develop and refine, but they may turn out to be applicable to relatively limited sets of cases.

The more complicated approach sketched in this chapter constitutes the dynamics of a political analysis of property rights. Empirical applications of this approach should seek to determine the extent to which the analysis advances the explanation and understanding of how property rights have developed and changed over time in actual settings. If the results are promising, such a political analysis could represent an addition to the rich literature that has emerged over the past half century on property rights, primarily through the work of economists.

What remains to be done is to apply the kind of political analysis presented in this chapter to actual cases in depth and to determine whether it sheds light on the emergence of property rights institutions in those cases, the forms those institutions take, and how they change over time. This is a daunting task. But it may not suffice much longer to speculate about the presence or absence of property rights, or about the effects of one type of property right versus another, if we want to be able to speak about the world as it exists and as human beings have made it. Such work will be time consuming and painstaking, so one must hope that there will be a positive yield in the explanation and understanding of property rights that will warrant the effort.

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