Property, the Environment, and the Lockean Proviso

Bas van der Vossen

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Appropriation puts to private use natural resources that would otherwise remain available and untouched, reducing (among other things) what was previously part of the environment. When natural resources are appropriated, in other words, they are removed from what's available in common. Private ownership transforms what could or should remain shared and natural into what is private and economically valued. Environmental conservation, therefore, requires limiting or even rolling back private ownership of natural resources as a way to ensure that a healthy environment remains intact. Private property may or may not be justifiable as an institution, but if it is to be justifiable, its reach must be limited to protect the environment.

So goes a common and popular understanding of the relation between property rights and the environment. (de Shalit 2000: 92; Meyer 2009; Eckersley 1992, 2001 and many others. A good overview of the literature on this point, containing many more references, is Liebell 2011.) And, at first sight at least, it has some plausibility. Market societies put natural resources to productive use, and thus encourage the exploitation of the natural world. The constant drive to put resources to productive use seems bound to create, and of course has created, serious environmental problems.

Viewed in this manner, a clear opposition seems to hold between two different kinds of values. On the one hand, there are the values served by private property rights. These are primarily private and productive in nature – the values celebrated by friends of market society,

such as economic development, growth, and prosperity. On the other hand, there is the value of a healthy natural environment. Given the opposition, the only way to give the environment its due is, again, to limit private property's reach.

Despite its initial plausibility, I will argue that this way of seeing things is mistaken, or at best incomplete. The true story about property rights and the environment is significantly more complicated, both in terms of its theory or justification and in terms of its practical uses. On the side of justification, focusing on John Locke's theory of property and appropriation, I will argue that there are good reasons – indeed, reasons internal to that theory – for conceiving of the relation between appropriation and the environment in more subtle and complex terms. While parts of Locke's theory (especially the famous "enough and as good" proviso) might initially seem to chime with the story above, a more plausible understanding of that theory (and the proviso) incorporates environmental concerns. As a result, environmental values can be served, and indeed can sometimes be *best* served, by allowing natural resources to be privately appropriated and owned.

In other words, while private appropriation can obviously threaten environmental values, this is not necessarily so. Private property regimes can also help protect the environment, and even protect it in particularly effective ways. To illustrate this, I will use a real case of environmental degradation, the depletion of surface water in the American West as a test case. The point that arises from this discussion is that, while Locke's theory played a role in the depletion of such waters, environmental conservation can be (and actually has been) aided by rights of private ownership over natural resources. A richer understanding of the Lockean

theory helps understand the place and justification of such ownership, and how it fits in the theory of private property more generally.

In the end, I will argue, what matters most is not the reach of private property or whether natural resources are privately or publicly owned. What matters is how to bring economic and environmental values in harmony, thus ensuring that a healthy environment be available to all. Rights of private property, and their Lockean justification, can be useful to this end.

1. A CASE: INSTREAM WATER AND THE PRIOR APPROPRIATION DOCTRINE

The Columbia River Basin, located in the Pacific Northwest region of North America, contains several lakes, rivers, and smaller streams. Once rich in water, many of the basin's tributaries have been depleted or even left completely dry due to human activity. Excessive diversions and economic use of water have created significant environmental damage, for example to the salmon population that uses the streams for reproductive purposes. (O'Donnell and Garrick 2017)

The Columbia River Basin is no exception. In many places in the American West, the depletion of rivers constitutes a major environmental threat. As a result of diversions for irrigation, consumption, industrial cooling, and other uses, instream water flow in rivers, lakes, and streams has fallen below what is environmentally sustainable in many places. These diversions represent a major threat to the fish, amphibious lifeforms, birds and plants that live in and around rivers.

Such depletion is largely the result of the legal doctrine of water rights. This doctrine, called the prior appropriation doctrine, took its inspiration from the Lockean theory of appropriation and holds that water can be owned by private parties only if it is (a) diverted out of stream and (b) put to some socially beneficial use. Thus, diverting water out of the stream for purposes like irrigation can give private parties the legal right to take and use certain amounts of water from the stream.

The prior appropriation doctrine represents a deviation from the legal framework used in the American East. In the East, where water is relatively plentiful, the rules from the English common law were adopted. These common law rules were tailored to an environment of abundance, giving riparian owners a kind of shared ownership in the water. On this doctrine, each owner has a right to the continued "natural flow" of water. This means that no one can unilaterally alter or significantly diminish a river's natural stream without infringing on the claims of others. When water is abundantly available, this allows water from the stream to be used for personal or economic ends, while precluding overuse or outright diversion of the river's stream.

In the American West, by contrast, water is scarce. The result is that virtually any use of water will effectively alter a stream's natural flow. The common law rule of shared ownership would thus cause serious problems as it effectively prohibits any significant outstream use of water. This renders human activity all but impossible. Since such an outcome was judged worse than allowing people to use the water and alter natural flow, the natural flow doctrine was abandoned in the West in favor of the prior appropriation doctrine.

The prior appropriation doctrine takes up the spirit of John Locke's theory of appropriation. On the Lockean theory, individuals are able to appropriate natural resources for private use by mixing their labor with them, thus putting them to productive use. This is mirrored in the prior appropriation doctrine's dual requirement that users can appropriate water only by (a) physically diverting it outstream and (b) putting it toward socially beneficial (here meaning: productive) use.

It's easy to see why such a rule makes initial sense. Diversions are clear representations of people's productive activities involving water. And it seems reasonable to assign property rights in ways that reward and incentivize such activities, at least as long as they redound some significant benefit to the community. The beneficial use requirement ensures that private uses also contribute to the community that lives around a river, for example through enabling industry or agriculture. By allowing water to be put to private use in ways that also serve valuable social ends, the prior appropriation doctrine helped negotiate the potential conflicts that are presented by life in the presence of scarce resources.

At the same time, however, the twin requirements of diversion and beneficial use also imply that instream water becomes eligible for ownership only insofar as it's removed from the environment. The rule thus incentivizes not just the ongoing appropriation but, by legal implication, the diversion of water from rivers. It contains no similar incentives for leaving or returning water instream.

Stronger still, courts have historically prevented owners from leaving water instream, judging such use to be "wasteful" because not serving the productive ends of the community. This meant that private owners of water rights were precluded from leaving their shares

instream in order to safeguard certain water levels. The results are unsurprising: depletion of the stream and environmental degradation.[1]

At first glance, these problems seem a natural result of the Lockean theory of appropriation. In Chapter V of the *Second Treatise of Government,* John Locke famously defends the possibility of people unilaterally appropriating natural resources. (Locke 1988 [1689])[2] Such appropriation, according to Locke, can happen when we labor on previously unowned natural resources. What's more, Locke repeatedly emphasizes that this mixing of our labor with natural resources, as he calls it, is desirable because it helps make things more valuable. The value in question here seems decidedly the kind that results from things being put to productive use.

Locke stresses this in several passages of Chapter V. In sections 34-35 and 40-43, he argues (and praises) that labor creates virtually all economic value in the world.[3] And he suggests that resources being transformed in this way, from their natural state into things that serve human ends, is part of God's will:

[1] For discussion of the prior appropriation doctrine and instream flow depletion, see Gillian and Brown (1997). The only other (short) discussion of water rights and Lockean theory I know is Stevens (1996). While I focus on water here, the question is a much more general one, applying among other things to grazing permits, timber harvesting rights, and oil and gas leases. (See Leonard and Regan 2019: 136, 168-9.)

[2] Hereafter, references to the *Two Treatises* will be by number of the book and paragraph.

[3] Locke in these passages talks about value *simpliciter*. But it's clear from the context that he has in mind economic value.

> The Law Man was under, was rather for *appropriating*. God commanded, and his Wants forced him to *labour*… And hence subduing or cultivating the Earth, and having Dominion, we see are joyned together. (II, 35)

Appropriation, in other words, involves subduing and cultivating the earth, bringing natural resources into human and productive use. This comports with the moral (or: natural) law. (Compare also I, 41, II, 32, 34, 35. More generally, see Dunn 1982: pp. 219-20, 222-24, 250-51.)

By contrast, Locke (like the later courts in the American West) considered resources that remain unused in these ways wasted, referring to such resources as "lyeing wast in common" (II, 37. See also II, 36, 38, 42-43) Such waste is explicitly forbidden, according to Locke, and for the same reason: it perverts God's will and the very purpose of such resources being available. Thus, in his statement of what's sometimes called the "waste proviso", Locke writes:

> But how far has [God] given [the earth to] us? To enjoy. As much as any one can make use of to any advantage of life before it spoils … Nothing was made by God for man to spoil or destroy. (II, 31. See also II, 37, 46.)

The prohibition here is most often interpreted as concerning the waste of things that have already been appropriated. And to be sure, this is a special case for Locke.[4] However, the

[4] In particular, letting things in one's possession spoil combines two wrongs: (a) the wrong of waste as such, and (b) the additional wrong of removing (by appropriation) others' opportunity to put those things to productive use. As a result, this kind of waste is punishable. (II, 37) Not putting unowned things to productive use lacks the second

rationale behind this proviso extends to waste in general for Locke. Natural resources (most notably land) that do not serve humanly valuable uses are explicitly considered wasted too:

> Land that is left wholly to Nature, that hath no improvement of Pasturage, Tillage, or Planting, is called, as indeed it is, *wast*; and we shall find the benefit of it amount to little more than nothing. (II, 42)[5]

This violates the injunction above. To Locke, we are meant to increase the value of things in the world – it is God's command (II, 35). And this means that natural resources are to be put to productive use. Since he sees land that remains uncultivated as unproductive, it should not remain so.[6]

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of these wrongs. The point in the text, therefore, is not a direct application of the waste proviso but rather an extension of its rationale. I thank an anonymous reviewer for pressing me on this point.

[5] Note that Locke applies the term "waste" to *both* possessions that spoil and unowned (common) resources that are not put to valuable use. E.g. in II, 38: "if either the Grass of his Inclosure rotted on the Ground, or the Fruit of his planting perished without gathering, and laying up, this part of the Earth, notwithstanding his Inclosure, was still to be looked on as Waste, and might be the Possession of any other."

[6] As Locke puts it in II, 34: "God gave the World to Men in Common; but since he gave it them for their benefit, and the greatest Conveniencies of Life they were capable to draw from it, it cannot be supposed he meant it should always remain in common and uncultivated. He gave it to the use of the Industrious and Rational (and *Labour* was to be *his Title* to it;)".

Applied to water rights, the implications seem clear and in accordance with the legal doctrine of prior appropriation: individuals can acquire rights of private ownership by mixing their labor with water, putting it to economically valuable uses. Water that remains unused and unowned – water that remains in common – is to be considered wasteful. Such waste is morally prohibited and thus ought to be discouraged. And, again, courts have explicitly disallowed the private appropriation of instream water on exactly these grounds, holding such use indeed "wasteful" and thus disqualified under the beneficial use restriction.

The legal doctrine of prior appropriation combines (a) the allowing of appropriation via diversion and "beneficial use", with (b) the prohibition on the appropriation of water that remains instream. The former element incentivizes the diversion of water out of stream. The latter precludes the holders of rights leaving water instream, making it impossible for property rights to be violated when a stream is depleted.

This combination represents the way in which property rights systems can treat, and have treated, natural resources as valuable in ways that exclude environmental values, reasons, or goals. When people are incentivized only to divert water for outstream uses, little or no instream flow can remain. And the predictable result is, again, depletion, overuse, and serious environmental harm.

2. LOCKE'S "ENOUGH AND AS GOOD" PROVISO AND ENVIRONMENTAL PROTECTION

The case of instream water depletion is apposite for our purposes. Not only did private appropriation and its Lockean justification lie at the root of environmental problems, water offers a case where issues of economic and environmental uses and values coincide. As such, it

provides a good test case for the justifiability of private appropriation, and the Lockean theory of property more generally. The issue of instream water protection raises the question whether a system organized around rights of private ownership and unilateral appropriation can, despite initial appearances, give the environment its due.[7] If it cannot, the popular view with which we began would seem to win the day: since property serves values diametrically opposed to the environment, protecting the latter requires limiting the former.

In one of the only sustained discussions of these questions,[8] Susan Liebell argues that Locke's theory can indeed adequately handle this issue.[9] Pointing to what's often called Locke's "enough and as good" proviso, Liebell argues that the theory of private property can make room for environmental values and protection. The proviso states that people's right to

[7] It's arguable that Locke himself might not have foreseen the kind of depletion of natural resources that continued economic development might cause. Perhaps the cultivation and development of nature did not progress far enough in his time to raise the kinds of worries we face today. Nevertheless, we do need an answer today.

[8] In addition to the sources cited above, there's some discussion of the proviso in the context of the atmosphere in Dolan 2006; Bovens 2011. I discuss Dolan's view below. Bovens considers the proviso only for economic, not environmental, purposes. In light of this, it's (unfortunately) somewhat premature to claim, as Joshua Mousie (2019) has recently done, that there has been an "environmental turn in Locke scholarship." But in any case, Mousie's "turn" concerns Locke's conception of *politics*. My present focus is on property, which in Lockean theory is a precondition of politics. Our question here, then, is logically prior to and independent of Mousie's. (Mousie (2019: 79) seems to miss this, arguing that "property is political because it involves a set of human relationships regarding ownership.")

[9] As Liebell (2011: 212) puts it, Locke's theory suggests "[a] richer understanding of the liberal tradition [that] can answer many of the objections proffered by green theorists." For a similar discussion, see Shrader-Frechette 1993.

appropriate is limited in ways that protect the rights and interests of others to also enjoy the use of and acquire resources of their own. As Locke formulated it:

> Nor was this appropriation of any parcel of land, by improving it, any prejudice to any other man, since there was still enough, and as good left; and more than the yet unprovided could use. So that, in effect, there was never the less left for others because of his enclosure for himself: for he that leaves as much as another can make use of, does as good as take nothing at all. (II, 33)

Liebell suggests that this reasoning can be extended to the environmental context. Just as morally acceptable appropriations must be consistent with others being able to enjoy the use of and acquire "enough and as good" of their own, so too, Liebell argues, appropriations must leave "enough and as good" of the environment. This proviso, in other words, qualifies the right to appropriate not just to ensure others' ability to create property for themselves and enjoy resources for productive or economic purposes. This (environmental) proviso also limits appropriations at the point where further acquisitions would cause unacceptable environmental damage.

Liebell's point is an important one. Her argument demonstrates that Lockean theory need not ignore the environment. The rationale behind the proviso is that an acceptable system of private property and acquisition cannot produce results that undercut its justification, even as a side-effect. It cannot, for example, sacrifice the important rights and interests of others to enjoy the fruits of the earth for their productive activities. But this rationale seems to

straightforwardly apply to issues of environmental degradation. A charitable reading of Locke's theory would thus interpret the proviso to apply here as well.

That said, Liebell's reading casts the proviso in exactly the oppositional terms mentioned at the outset of this paper. On her reading, the proviso identifies the point at which property and the economic values it serves come into conflict with environmental values. And the response is to limit the extent of private acquisition at that point. In order to give the environment its due, private property must stop where the environment begins.

This reading of Locke's proviso is shared by others as well. Compare economist Edwin Dolan's comments on carbon emissions:

> [E]nergy users have the right to "enclose" air-shed rights under the first-use principle only so long as enough and as good is left for others. Suppose we reach a point beyond which further appropriation of air-shed rights encroaches on the interests of others who have common-property rights to the world's atmosphere and oceans. From that point on, following Lockean principles, further enclosure cannot proceed by unilateral taking. (Dolan 2006: 460)

Again, the proviso is identified as a limiting condition on appropriation, protecting the environment from ongoing encroachment by human use and ownership.

Liebell's and Dolan's treatments of Locke's proviso adopt a fairly literal reading of Locke's text – interpreting the proviso as identifying a limit to how far appropriations can proceed in order to be morally (and therefore environmentally) responsible. To leave "enough

and as good" is thus taken to mean quite literally leaving natural resources (of sufficient quantity and quality) out of the reach of private appropriation and ownership.

We can apply this reading again to the context of water conservation. On this reading of the proviso, water appropriations ought to be limited in such a way that they leave enough and as good instream water flow, judged from the perspective of a healthy environment. And this, too, fits the history and practice of instream water protection, as the movement to address the environmental problems caused by the prior appropriation doctrine has largely focused on curtailing or rolling back property rights over water. In California, for example, courts have invoked the public trust doctrine in order to achieve the environmental protection of water. While the public trust doctrine was historically limited to protecting only some public uses of resources, in particular navigable waters, California law has expanded this doctrine to protect fish and other aquatic wildlife. In the 1983 Audubon case, the California supreme court ruled that the State Water Resources Control Board has an "affirmative duty to consider public trust values not only in permitting initial allocations, but in continuing to review past allocations". The court saw the ruling as "an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands". (Gillian and Brown 1997: 153) The ruling also extended the scope of the public trust doctrine to cover tributaries, diversion of which might affect the flow of protected waters. More recently, this rationale has been used to

expand the scope of the doctrine further to also include the protection of groundwater, leading to prohibitions on pumping up groundwater if doing so can harm instream flow.[10]

Part of the reasoning here is pragmatic. Absent some kind of curtailment like offered by the public trust doctrine, private water rights operate via a seniority system. In this system the rights' point of origination in time (i.e. their seniority) establishes the legal precedence of use. If environmental measures must operate from within the property system, they will therefore remain limited by senior water rights. (By design.) Consequently, the actual levels of instream flow will remain dependent on the decisions of senior rights-holders – which can be the decisions that caused the environmental problems in the first place.[11]

Again, protection of the environment is seen to require restricting the reach of private property. In fact, several states now consider instream water *inherently* public, the implication being that private parties are not able to acquire water rights for instream use. (Sax *et al.* 2000; Sterne 1997: 204, n.7, 213; Neuman 2000: 346; Smith 2019)

3. ENVIRONMENTAL APPROPRIATION IN PRACTICE

The oppositional reading of Locke's "enough and as good" proviso suggests a dual contrast. First, it suggests a contrast between things that are privately owned and things that remain

[10] California Court of Appeal, *Environmental Law Foundation v. State Water Resources Control Board*, C083239 (August 29, 2018).

[11] Of course, governments might simply purchase senior rights from their owners, or perhaps even be permitted to engage in forced transfers with just compensation. However, governmental agencies typically lack adequate budgets for this, further motivating the invocation of the public trust doctrine. (Sterne 1997: 215-9)

held in common. This fits a literal reading of the proviso – appropriations must stop at the point where further acquisitions would no longer leave "enough and as good" of the environment unowned. Second, it suggests a contrast between what's put to private economic use and what's environmentally available. The latter contrast underpins the former: the thought that making sure resources are conserved or protected requires making sure they remain unappropriated is what gives the literal proviso its appeal.

However, there might exist a more complex relation between private appropriation and environmental conservation. We can see this by looking at some more recent developments in the legal treatment of water rights. In this section, these changes and their environmental effects will be reviewed. This will help set up the discussion below about how to better conceptualize the relation between property and the environment in general, and Locke's "enough and as good" proviso in particular.

We have seen that the prior appropriation doctrine traditionally disallowed private ownership of instream water flow, and that some states responded by considering water inherently public. However, several other states have reformed the law to allow for privately owned instream rights. Such rights represent an extension of the prior appropriation doctrine, providing ownership rights on a par with outstream rights. In addition to being able to acquire rights in water for irrigation, residential use, industrial cooling, and the like, parties in these states can also acquire water rights for purposes that do not require outstream diversion. Such instream rights thus offer possessors vested (usufructuary) property rights, held instream. As such, these rights enable owners to leave water instream for various purposes, including environmentally beneficial use. (Getches 1997: 57; Smith 2019)

Where private instream rights have been allowed, conservationist groups, organizations, and individuals have started acquiring private rights over instream water flow for purposes of environmental protection. Private parties thus hold claims to specified amounts of water that are to flow through designated stretches of streams, meaning that such water cannot be diverted without infringement. As a result, water that flows instream no longer represents an unowned resource waiting to be appropriated, but rather something that is to be left undiverted in accordance with private parties' rights to this effect.

The volume of these acquisitions has been growing. Between 1998 and 2007, the rights to nearly six million acre-feet of water were acquired for instream use, more than twice the amount acquired between 1990 and 1997. (Scarborough and Lund 2007: 10) These rights are typically tradeable. That is, the rights to certain amounts of water can be legally transferred through means such as leases to other parties. In addition to individual exchanges, water banks exist to facilitate exchange. These provide an institutional mechanism for the legal transfer and market exchange of various types of surface water, groundwater and storage entitlements between multiple buyers and sellers. (Anderson, Scarborough and Watson 2012: 8)

One attractive feature of the private ownership of tradable instream water rights is that they offer much flexibility in the allocation and reallocation of water. They make it easier, for example, for water to be reallocated from irrigation purposes back instream during times of low water levels. And they can do this without also curtailing the use of water for irrigation in times of more plentiful supply. To name an example: water owners enter into so-called dry year-options as well as split-season leases. These are lease agreements to reallocate certain amounts of water that become active only during droughts or dry periods within the year. Such

agreements help ensure that instream supply remains at desired levels when natural causes might make the stream to dwindle. By contrast, in times of excess supply, water can be sold and diverted from the instream use to additional valuable outstream purposes like agriculture, industry or residential use. As a result, the holders of water rights can protect themselves from being disproportionally harmed by sudden or unexpected changes in water supply without also having to change water allocations in other situations.[12]

The tradability of instream rights can thus help achieve a more efficient allocation of water between environmental and economic uses.[13] These benefits are not easily shared by common ownership and regulatory schemes, which often don't allow or encourage such flexibility. During wet times, for example, a mandate for users not to exceed certain amounts over a set period of time hinders more efficient uses of water like the ones mentioned above. Such regulations can prevent the additional diversion of water outstream for agricultural, industrial or residential uses when instream environmental goals do not require extra water flow instream.

But it can also hinder efforts at environmental restoration or protection in times of plentiful supply. (Meyer 1993: 2-6) Private rights enable the owners of instream water rights to

[12] The Dungeness Water Exchange in Washington State, to name one example, allows new water users to purchase a certificate that meets state requirements for protecting the Dungeness River. The money thus raised is used to purchase water from willing sellers, which goes back into the river instead of being used out of stream. See <http://www.washingtonwatertrust.org/water-exchange>

[13] In fact, under certain assumptions, a perfectly efficient allocation can be achieved this way. (Griffin and Hsu 1993)

lease additional water from those owning outstream rights. And the decentralized nature of private water rights incentivizes those with specific knowledge of their claims (i.e. owners) to seek specific solutions that fit and enhance the value (environmental or otherwise) of their claims under the circumstances they face or foresee. More centralized means of regulating water typically lack the kind of detailed information and knowledge of circumstances required, as well as the incentives to enhance the value of water claims. Common ownership and regulatory schemes thus make it more difficult to know when and where it may be appropriate to trade off excess instream flow against outstream uses. Such decisions require judgments of comparative value. By enabling such judgments, private ownership and exchange are better suited to reducing the overall economic use of such resources when needed.[14]

Finally, regulatory regimes are subject to political oversight and their incentives are shaped accordingly. Often geared more towards avoiding the most serious and visible harmful outcomes, such regimes typically opt for simpler mandates. One typical measure holds that users don't impinge on a certain "minimum" flow of instream water, setting a lower bound of water that can be diverted at any given time. Lacking the mechanisms for effecting

[14] Rival regulatory schemes typically are blunter tools in other ways, too. For example, attempts to protect water via the public trust doctrine are jurisprudentially limited to resources connected to navigable waters. This puts a limit on the policy as a tool for addressing environmental problems with surface water. Wetlands, for instance, typically cannot be covered under the public trust doctrine since they're not connected to navigable waters. (*Contra* Shrader-Frechette (1993: 217)

reallocations of water in the ways private ownership allows, these approaches again lack the same kind of flexibility.[15]

Another way in which the additional private appropriation of natural resources can reduce their economic use overall is via the purchasing of more junior water rights to instream flow. While in principle junior claims are subordinate to senior claims, meaning the claims they represent come into effect only after senior claims have been fulfilled, in practice they can limit senior right holders' water use through improving the enforcement of the latter's limits. Adequate monitoring and enforcement of senior water rights is costly – it takes gauges, time, and effort – but can be necessary to ensure that outstream use does not exceed existing titles. When instream water is eligible for appropriation, such monitoring and enforcement efforts can become worth the cost. Perhaps counter-intuitively, therefore, empirical evidence shows that purchases of junior water rights have had beneficial environmental effects by making upstream use comply with the limits of senior water rights. (For discussion, see Smith 2019.)

Finally, the possibility of environmental appropriation can provide additional beneficial incentive effects, for example in terms of search and capture activities. As a result of such activities, previously unknown or unreachable resources can be brought into circulation, and these can offset more harmful environmental impacts elsewhere. Such incentive effects are well-known in the context of economic resources but apply to the context of water as well.

[15] None of these, of course, are necessarily the case. Rather, they are the result of the transactions costs posed by different regimes, among other things, and the interaction between these and the environmental and other values in play. For the general framework, see Coase (1960).

Aquifer discovery is costly (a problem especially in developing nations), as is the discovery of freshwater springs in remote locations.[16] But such discovery can increase the availability of resources by bringing them into circulation. This makes it possible that these resources can become used in ways that diminish our harmful environmental impact overall.[17]

Examples like these show that the theoretical contrasts mentioned above do not necessarily match the relation between appropriation and conservation in practice. While it's possible to make a (definitional) distinction between what's privately owned and what remains in common, it's a mistake to think this implies a (practical) contrast between what's used for private purposes and what might serve common environmental values. There is no simple dichotomy between the economic and environmental value of resources.[18] And private parties can and do appropriate resources in order to conserve or restore the environment.

4. ENVIRONMENTAL APPROPRIATION AND LOCKEAN THEORY

[16] For an example of the latter, in the context of Baja California, see Macfarlan (forthcoming). For aquifer discovery, see e.g.: https://www.npr.org/sections/thetwo-way/2013/09/11/221430067/discovery-of-massive-aquifers-could-be-game-changer-for-kenya.

[17] There are other ways in which increased appropriation can have beneficial environmental effects which I set aside here. As more resources come into circulation, and wealth increases, it becomes easier to afford measures that diminish environmental impact. For further discussion, see Van der Vossen and Brennan (2018: ch. 11)

[18] For instance, resource conservation and recreational uses can go hand in hand. Instream water conservation can benefit fisheries, allow for recreational uses, tourism, and so on.

The discussion above shows that what's *available* after people have appropriated resources does not equate to what's *left in common* when people appropriate resources. And what ultimately matters is the availability of resources, including for environmental purposes. Since natural resources can be protected environmentally despite or by means of private appropriation, there is no necessary conflict between protecting the environment and private property.

If there is no necessary practical conflict between private appropriation and a healthy environment, a good theory of property rights cannot posit such a conflict either. So we should return to the question of how to incorporate this into the Lockean theory of property on which we've been focusing. As we've seen, Locke's "enough and as good" proviso standardly has been interpreted as reflecting the (mistaken) opposition between property and the environment. For the Lockean position to be plausible, this proviso ought to require not only that enough and as good of the environment remain intact and available, but do so in a manner that's consistent with their private ownership and appropriation.

In order for the Lockean theory of property to be plausibly extended in these ways, a reorientation of the theory is required. If morally acceptable systems of private property function in ways that also ensure the availability of a healthy environment, the Lockean theory must *ipso fact* also value the environmental purposes that the private ownership of natural resources can serve. This means rejecting the traditional Lockean focus on putting resources to (narrowly) productive use. After all, that narrow focus was what led Locke to describe the non-economic uses of such resources as "waste."

The productive focus of the Lockean theory is most visible in two places. The first is Locke's labor-theory of appropriation. As mentioned in the discussion of the prior appropriation doctrine for water (where appropriation required "diversion for beneficial use"), the Lockean theory of appropriation seems to require that resources be made more productive or economically valuable in order to be privately owned. And Locke invites this reading by emphasizing that appropriation for economic benefit is in accordance with the law of nature and God's will (II, 35), that the world was given "to the Industrious" (II, 34), and praising appropriation for increasing value in the world (II, 34-35, 40-43).[19]

The second place where Locke's focus on economic or productive values is visible is the proviso prohibiting waste. The rationale behind that proviso, we saw, stems from the thought that natural resources ought to be put to valuable use. And the standard reading of Locke's theory has seen this rationale as implying a prohibition on the private appropriation of resources for environmental protection or conservation.

But while valuing increased productivity is clearly part of Locke's view, it's not clear that it must be the whole of it. There is no principled reason why the category of valuable uses would not also include the environmental value of natural resources. That is, after all, a reason for which people in fact acquire private rights over instream water. Consequently, there is no principled reason why resources that serve important environmental ends ought to be considered as "waste" or as such ineligible for appropriation either.

[19] Some argue that, for Locke, labor in his account represents productive activity in general. See for instance Simmons (1992: ch. 5)

A more plausible interpretation of "waste" would refer to resources that are not put to valuable uses *at all*. On this interpretation, the Lockean position considers it wrong to let resources that could be serving valuable ends to remain in a condition that does not serve any such ends. And given that the class of things that are valuable is broader than the class of things that are productive, this would allow for a much broader class of things being owned.

What labor represents, and the waste proviso protects, on this interpretation, is more straightforwardly the creation and protection of value. This can be achieved is by transforming resources through labor, putting them to more productive uses. But it can also be achieved by protecting resources (through exclusionary rights of ownership) from being damaged or depleted, including as a result of being put to productive use.

There is room in Locke's text for such a reorientation of the theory. When Locke discusses "wast Land" in II, 36, he equates this to land that's "neglected" in general. And the waste proviso quoted above (II, 31) does not just prohibit the ownership of land that's not used productively. It prohibits the ownership of things that do not serve "any advantage of life". And, obviously, there is no reason to understand things advantageous to life as only those things that are productive.

Such a reading of the Locke's theory has the additional benefit of being plausible in its own right. Plainly, maintaining a healthy environment *is* advantageous to life. And presumably Locke would think nothing wrong – or wasteful – with people owning things that are not productive in any narrow sense. (Presumably he would not object to people keeping gardens for aesthetic purposes, say.) Conversely, while it's not problematic for resources to be used for non-productive yet advantageous purposes, there *is* a good case against resources that could

be advantageous being allocated in ways that serve no valuable ends whatsoever. Such a use of resources would indeed be wasteful. But this leaves intact the point here. Since protecting environmental resources cannot plausibly count as wasting them, Locke's theory should not prohibit environmental appropriation and ownership either.

In addition to his remarks on waste, Locke's remarks on the nature of original appropriation leave a similar opening for such an interpretation. Locke offers several arguments for why labor is appropriative. One of these, and by far the most (in)famous argument, holds that laboring on unowned things literally mixes something one owns (one's labor) with something that's unowned, and that this is sufficient for appropriation. (II, 27) But immediately thereafter, in II, 28, Locke suggests a quite different approach. Starting with the observation that appropriation must be possible because, if nothing else, at least the eating of food must be appropriative,[20] Locke asks at what moment between digesting the food and first picking it up the food transitioned from commonly available to privately owned. "And 'tis plain," he answers, that "if the first gathering made them not his, nothing else could." (II, 28)

There is no mention here of the mixing of owned and unowned things. Instead, the point seems to be that labor is simply the most reasonable means by which we distinguish what's privately owned from what remains unowned. Acts of appropriation are morally significant, in the sense of creating entitlements that command respect, because they are essential to creating and protecting humanly valuable things in ways that respect people's efforts, even to such basic ends as sustenance. And so, when people perform such acts, no one

[20] Locke considers it sufficient for appropriation that others lose their common right to a thing.

but they has title to their proceeds. (For a detailed defense of this reading of Locke's theory of appropriation, see Van der Vossen 2009.)

So, while it's true that Locke heavily focuses on the productivity-increasing potential of labor, and praises resources being put to more productive use, there is no need to interpret his argument as exclusively geared towards this end. (Nor should this focus come as much of a surprise during a time where land being left idle by landlords was a major social problem. For discussion, see Tully 1980: 153-4.) As the case of instream water illustrates, the Lockean position can countenance private appropriation of natural resources for environmental ends as well. There is no conflict, then, between the values around which the Lockean theory of property is organized and interpreting that theory, and the "enough and as good" proviso along the environmental lines suggested above.[21]

In a recent and interesting article, Billy Christmas (2020) supports a similar conclusion about Lockean appropriation. Christmas also argues that the Lockean theory of property needs to be stripped of its exclusive focus on productivity. His argument starts from the claim that property rights are ultimately rights of non-interference, based on a right to pursue our independent projects in several exclusive spheres of action. Because people are fundamentally project-pursuing creatures, they must have the right to establish such separate exclusive

[21] It's worth noting that it's *also* a mistake to posit an opposition between Locke's support for productivity and environmental values. In II, 37, Locke points out that increased productivity enables us to have a smaller ecological footprint, writing: "he, that incloses Land and has a greater plenty of the conveniencys of life from ten acres, than he could have from an hundred left to Nature, may truly be said, to give ninety acres to Mankind. For his labour now supplys him with provisions out of ten acres, which were but the product of an hundred lying in common."

spheres. These provide us the essential protected space to carry out our projects. But if property rights have this nature, argues Christmas, then it must be exclusive use, and not productive labor, that forms the basic rationale underlying the Lockean theory of property rights.

Christmas' point here is that if property rights are to provide such exclusive spheres for the pursuit of projects, those rights will need to be rather open-ended. And in particular, they will need to be more open-ended than what's allowed by the traditional Lockean emphasis on productivity. For while the economic goals that are prized by this perspective are surely central to many people's projects, they need not be. And those other projects are equally good candidates for protection by property rights. Thus, in addition to the familiar forms of individual economic appropriation, resources must be eligible for appropriation for non-productive purposes as well. That includes the environmental purposes discussed here. The upshot is the same, therefore: whatever "mixing one's labor" might stand for, it cannot be only economically productive labor.

Christmas' argument thus fits the view defended here. His arguments also imply that the Lockean position ought to countenance appropriation for environmental goals. However, Christmas would deny the position I have defended above. In particular, he would deny that the Lockean theory of property supports an environmental proviso. For, according to Christmas, once the Lockean theory of property is understood along his (revised) lines, it no longer supports *any* kind of proviso. Once we appropriately broaden the Lockean theory of appropriation, he argues, the basis for the Lockean "enough and as good" proviso simply disappears. And, in its wake, the case for an environmental proviso ought to disappear as well.

Christmas' argument for this (somewhat startling) claim is that the broader conception of appropriation he defends by itself guarantees what the proviso was supposed to secure. And so the recognizing the former undercuts the case for and justification of the latter. (The proviso was a symptom of a mistaken conception of appropriation.) The argument goes as follows: when previous appropriations fail to leave enough and as good for others, those others will experience an important kind of interference with their own personal projects. And such interference is wrong simply on the basis of the right of non-interference, which grounds the (property) right to exclude in the first place. No proviso is needed, then, since all violations of a proviso constitute violations of rights of non-interference. (Christmas 2020: 197-9)

But this cannot be right. Locke's "enough and as good" proviso identifies a necessary condition for the justifiability of a system of property rights. It operates as a limiting condition, identifying when a property regime functions in ways that pass moral muster. On Christmas' view, that evaluative judgment can be made only on the basis of individual rights of non-interference. After all, the only test of whether a system of property rights passes moral muster is whether or not it violates people's rights to non-interference.

The question whether Christmas is right that no (environmental) proviso is necessary, therefore, depends on whether the right to non-interference is sufficiently capacious to reflect the full range of moral values by which we should test a system of property. It depends, in other words, on whether environmental degradation (among other things) constitutes a violation of individual rights of non-interference.

Perhaps it's plausible to say that environmental degradation can violate individual rights. But if the rights in question are really rights of non-interference organized around

people's projects, this will only be the case if people in fact have projects that include environmental conservation. And this presents problems. For people might not have such projects or have projects with inappropriate environmental content. In those cases, there seems to be no basis to object to property regimes that harm the environment within Christmas' view. The approach thus leaves open whether environmental degradation counts as a moral objection to a property regime. But plainly this is not an open question.[22]

One might try to avoid this problem by holding that people *necessarily* have the right kind of projects. Perhaps one might want to say this because environmental degradation threatens the preconditions of having projects at all.[23] But, while plausible, this puts the bar far too low. The point at which environmental degradation begins to interfere with our ability to develop projects includes conditions like the atmosphere becoming toxic, water pollution rising to levels that are beyond remedy, and so on. No plausible ethical theory can hold that only at this point humanity's environmental impact becomes problematic.

Of course, Christmas might hold that the bar for environmental protection should be set higher. And while again plausible, this is difficult to sustain within his own view. If the relation

[22] Perhaps one might think that there is no sense in which property systems' environmental impact can be morally problematic *other than* in terms of a conflict with people's projects. But this implies that only those people whose projects have environmental content can rightfully object to environmental degradation (because it would violate their rights). And this is no less implausible. We can all rightfully object to environmental problems. Our claims to a healthy environment do not depend on the content of our projects.

[23] Christmas (2020: 198) writes: people's right to "non-interference … includes (at a bare minimum!) their existence and subsistence."

between environmental protection and project pursuit isn't one of necessity (of the former for the latter), what exactly is it? How might we know what kind of environmental protections are required by this? The idea of non-interference with our projects doesn't help. There seems to be no real sense, for example, in which we experience *interference* when a river in Utah suffers from depleted instream flow. Many won't even be aware of the fact, let alone experience it as some kind of interference. And our ability to develop projects of various kinds is simply untouched.

It's true, of course, that a theory of the proviso faces the same problem. Anyone who accepts an environmental proviso owes us a story about what kinds of protection that proviso requires and why. Formulating this with any kind of precision is no easy task, to be sure. But that isn't what matters for our argument at this point. What matters is that the right to non-interference cannot generate a plausible environmental requirement. A separate argument is needed. And the account it will offer is precisely what's expressed by the Lockean (environmental) proviso.

5. CONCLUSION

The Lockean theory of property can allow, even require, the conservation of natural resources. Locke's famous "enough and as good" proviso is plausibly interpreted to express (among other things) this demand. However, that proviso cannot be plausibly interpreted to require that resources remain outside the realm of the privately owned. What matters, instead, is that a sufficiently healthy environment remains available. And what's available is not the same as what's left.

At least sometimes, the best way of making sure things remain available is not to require that they are left unowned. The literal demand that appropriations leave enough and as good unowned is unacceptable, therefore. And this is really as it should be. While the natural flow doctrine makes sense under the conditions of water abundance in the United Kingdom and the American East, it was abandoned in the American West precisely *because* there wasn't enough water to go around. Under such conditions, a general right to the natural flow of rivers would render use all but impossible. And while the unrestricted prior appropriation doctrine significantly harmed the environment, such an alternative rule would greatly harm the communities that rely on access to water.

This suggests that no simple opposition between property and the environment can be posited. More broadly, it suggests that there's no simple choice between having a society that serves economic values and a society that serves environmental values. The Lockean theory purports to establish very strong protections for property rights. If that view can successfully incorporate environmental values, then so too can views defending weaker protections (protections that are more easily traded off against competing values).

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