



THE CREATION OF KNOWLEDGE IN SOCIETY: Waste Defined by Property and Exchange

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Independent Institute Working Paper Number 82

July 25, 2017

ABSTRACT

First-user appropriation of private property is defensible on several grounds, and it meets Locke’s “enough, and as good” proviso by actually providing “more, and better” and by creating an institutional context in which objects can be defined as *goods*. This essay considers Locke’s prohibition against waste and argues that private property and exchange also allow us to define what it means for something to be “wasted” by conveying useful knowledge about alternative uses of resources to their owners.

I am grateful to participants at the 2017 Public Choice Society meeting and the inaugural Philosophy, Politics, and Economics Society meeting for comments and suggestions. I am grateful to the Charles Koch Foundation for funding that enabled me to travel to the conference and present Carden (2017), to which this paper is closely related. It is appropriate to repeat the acknowledgments from that paper here. I am grateful to my colleague William Collins and our students in a Jan Term 2016 special topics course at Samford University for conversations and discussions that motivated this paper and to Michael Munger, James Otteson, David Schmidtz, and participants in the “Future of Classical Liberalism” conference at the University of Chicago Law School in May 2016. for comments and suggestions. Seminar participants at Hampden-Sydney College, Geoffrey Lea in particular, also provided useful comments, and students in the 2017 version of the aforementioned Jan Term course provided useful comments as the final version of the paper neared completion. All errors are mine.

I. INTRODUCTION

Is first-user appropriation out of the commons an acceptable way to establish private property rights? Yes, for (at least) four reasons. First, private property rights and exchange are conducive to prosperity in ways other mechanisms for managing and transferring resources are not. Second, private property rights and exchange help us define what we even mean when we call something a “resource” or a “good.” Third, appropriation and exchange are not barriers to the acquisition of property by latecomers who are able to benefit from the fact that the wisdom of the ages is embodied in the objects they encounter and who are not barred from acquiring property given that the vast majority of income accrues to labor services. Appropriation satisfies John Locke’s “as much, and as good” proviso. Finally, appropriation satisfies Locke’s “no waste” proviso by providing the institutional and experimental context within which “waste” can be defined with reference to wants and knowledge.

Locke (1764, 216–17) writes:

Whatsoever then he removes out of the state that nature hath provided, and left it in, he hath mixed his *labour* with, and joined to it something that is his own, and thereby makes it his *property*. It being by him removed from the common state nature hath placed it in, it hath by this *labour* something annexed to it, that excludes the common right of other men: for this *labour* being the unquestionable property of the laborer, no man but he can have a right to what that is once joined to, at least where here is enough, and as good, left in common for others.

Schmitz (2011) argues that first-user appropriation satisfies this “enough, and as good” proviso because first user appropriation allows those who come later to live richer, fuller lives. Objections on the grounds that any withdrawal from the commons fails because first user appropriation gives people incentives to improve resources so that the latecomers, not the first-user, are the lucky ones. Carden (2017) carries this a step further, arguing that market exchange based on private property is a system by which objects come to even be defined as *resources* and *goods* with reference to the broadest constellation of social knowledge. We know what “enough, and as good” means due to the social learning that takes place as people appropriate objects out of the commons and define them with respect to their and others’ wants through experiment and exchange.

There is more to the relationship between appropriation, exchange, and the definition of goods. A few pages later, Locke (1764, 220) writes, “As much as any one can make use of to any advantage of life before it spoils, so much he may by his labour fix a property in; whatever is beyond this, is more than his share, and belongs to others. Nothing was made by God for man to spoil or destroy.”

This “no waste” proviso is, for Locke, another limitation on private property. Waste, however, presupposes standards by which we can assess the opportunity costs of different courses of action.

I explore these ideas in greater detail and extend them to Locke’s “no waste” proviso. Just as property and exchange help us determine what is and what is not a *resource*, it also frames the social learning process by which we can determine whether something has been “wasted” or not.

II. RESOURCES AND WASTE DEFINED IN THE PROCESS OF THEIR EMERGENCE

Appropriation is a defensible way for property rights to emerge because it represents a process by which abstract objects come to be defined as resources and goods (Carden 2017). The first user enters the world in a state of nearly total ignorance. He encounters the Commons in such a state. Armed with knowledge of chemistry, physics, and mathematics, he might be able to define an object with respect to its physical properties and its location in space and time. This will not be sufficient to tell whether or not an object is a good. To make the statement, he must somehow obtain knowledge about the ways in which the object can be used to satisfy his wants. That knowledge develops as he experiments with the object. The object comes to be infused with the first user’s knowledge and experience. It comes to be defined as a good (or bad) depending on whether it satisfies wants or not. To adapt the title of Buchanan (1982), resources and waste are defined in the process of their emergence.

That we are members of *societies* gives us the wherewithal to satisfy extended wants (Hume 1896 [1739]). We can divide labor, and by so doing we can increase our productivity. Importantly, we also divide knowledge. In the social division of knowledge, we are able to harness and deploy knowledge others have for our purposes—purposes others needn’t know or approve of. Exchange increases the range of potential experiments, and the further markets develop, the greater will be our ability to rely on prices as indicators of opportunity costs and as transmitters of information.

Ridley (2010) emphasizes the ways in which the division of knowledge is proceeded and has made us more productive. Division of labor frees up resources—physical and mental—that can be redeployed elsewhere. It expands the budget constraint and enables a greater variety of experiments in living. This, in turn, is made possible with some type of property rights system.

Locke (1764) emphasized the mixture of labor with objects withdrawn from the commons. The mixture of knowledge is just as important because it inaugurates a system of experimentation, production, and exchange that encourages a further division of knowledge and labor. A complex, capital-using, resource economizing system rests on this foundation. Locke restricts the first-use appropriator by enjoining him to only take what he does not waste. One is not the rightful owner, in the Lockean construction, of what he has appropriated but wasted. Carden (2017) argued that “enough, and as good” is defined with reference to individual wants. Here, we explore the relationship between the notion of “waste” and resource appropriation.

A good has been *wasted* if it has not been directed to its highest-value use. Experiment with objects removed from the commons helps us define those goods with reference to individual wants. Someone picking berries from a tree learns quickly whether those berries are or are not conducive to the elimination of hunger. Someone drinking from a stream learns whether or not the water slakes his thirst. One experimenting with a patch of ground learns the ways in which that patch of ground can be deployed to the satisfaction of his wants. In the progression from the rude to the civilized state of society, people learn via *exchange* and the feedback it provides the degree to which an object is a good. The comparative exercise exchange entails means people are appraising what they are exchanging against its alternative uses. Profits and losses are the market’s feedback mechanism. Profits are a pat on the back and losses are a slap in the face from the invisible hand.

Profits and losses tell people, therefore, whether they have chosen wisely or poorly. *Economic loss* indicates waste: someone incurring an economic loss has used resources in a way that fails to cover their opportunity cost. In trying to decide whether to hire an hour of labor or a capital good, someone compares its hire price to what he expects the hour of labor or the capital good to yield. The hire price is a concatenation of all other market participants’ appraisals of the labor services and capital goods in their next-best uses. The farmer deciding whether to plant corn

or soybeans compares the net earnings from one to the net earnings from the other. If the present value of the net earnings from corn are higher than the present value of the net earnings from soybeans, then the farmer should plant corn. To plant soybeans would be wasteful. In a market economy with securely-defined property rights (perhaps drawing on the first-user appropriation), these are clear and easy to interpret signals.

The principle holds even closer to the state of nature, but the signals are much more opaque due to transaction costs. Moving farther from private property and exchange moves us farther from a setting in which we can assess the opportunity costs of different actions. Property rights, therefore, are necessary if we are going to assess opportunity costs and determine whether we have *wasted* resources or not.

Property rights and markets are instrumentally important because they harness decentralized knowledge and condense it into easy to interpret signals. In non-market contexts, the differences are far more subtle, but the decentralized knowledge of the ages is aggregated in tradition and norms that, at some point in our past, evolved to solve some social problem. Property rights are defensible in that they harness decentralized knowledge. Appropriation, as a way to establishing property rights, brings objects out of the Commons and into this knowledge-using social process. It is a process by which we learn whether an object is a resource, and it is a process by which we learn whether a resource has been wasted or not.

Waste presupposes some standard by which we can ascertain the most efficient use of resources. Here I will consider two alternatives. The first is the market process. The second is central planning whereby a knowledge surrogate imposes his or her will on others. They each have a different knowledge-using capacity and knowledge-using mechanisms. Markets make use of knowledge through voluntary exchange of private property, which generates the prices needed in order to appraise alternative courses of action. Non-market alternatives discard this knowledge and replace it with the knowledge of the surrogate. Five hundred years ago, this might’ve been the Lord of the Manor. In the Soviet Union, it might’ve been the central planning board or some lower-level party functionary. In the modern United States, it might be a regulatory authority. People frequently delegate decision-making authority to an organization like a firm or homeowners’ association because using markets is prohibitively costly (Coase 1937)—but the imposition of surrogate deci-

sion-making discards others' knowledge about whether using markets is too costly or not.¹

At some point, we must agree on who has the right to say “no” to a proposed use of an object. Who, ultimately, has the right of exclusion and determination? How do we arrange (or rearrange) the property rights? Market exchange is one mechanism by which we can do this, and it is a mechanism by which we are able to ascertain the opportunity costs of different uses of resources. The objects removed from the Commons and mixed with knowledge mean we have ways of defining objects with reference to their capacity for satisfying wants. Respect for others' first-user rights implies that we, in turn, admit their knowledge to a place at the bargaining table and further that we acknowledge that we can learn something from them. In the case of controversies surrounding, for example, the Dakota Access Pipeline, if it is indeed the fact that the native tribes have first-user rights to the land that they never alienated, running over them would be an act of extreme injustice *and* unwisdom. First, it treats other autonomous moral agents as mere means to our ends. Second, it sacrifices the knowledge and beliefs of those who might have something to teach us. The person who isn't willing to sell at a very high price is likely not irrational, or even unreasonable. Susan Kelo's stubbornness and the resolve of the DAPL protestors suggests an intensity of conviction that, ideally, is open to persuasion but that should also be able to persuade. Unrealized gains from trade reflect a constitutional problem: something prevents the price system from fully reflecting the costs and benefits of different actions, likely because property rights are incomplete.

Determining whether resources are wasted or not is a relatively easy problem for Robinson Crusoe. He is alone on his island, his production processes are rudimentary, and therefore, he can ascertain the relationship between objects withdrawn from the Commons and the satisfaction of his wants. It is therefore relatively easy to determine whether his time, energy, and treasure are being wasted. This gets more complicated once Friday shows up and division of labor becomes possible. Friday has knowledge that is not available to Crusoe and vice versa. As an autonomous moral agent, Friday has cause to protest should Crusoe seek to use him merely as a means to his own ends. Crusoe can choose to do this, however, only by discarding some of Friday's knowledge and talent. By making Friday an instrument of his will rather than treating him as an autonomous moral agent, Crusoe would be ignoring things Friday could bring to the table

beyond brute force and (limited) understanding of how the island works. He is unable, in other words, to take advantage of the fact that Friday could mix his knowledge with the objects of the island and, in so doing, make them both better off. Here, Crusoe establishing a property right in Friday's person means unexploited gains from trade and unexploited innovation. Perhaps Friday has homesteaded some of the objects in the commons. Riding roughshod over others' first-use claims means that we sacrifice their knowledge.²

At this point, it is tempting to object that Friday may find himself in a position to be ruthlessly exploited by Crusoe. If Crusoe owns the entire island, then he can deal with Friday on terms that are arguably coercive. In this situation, however, the problem is not that Friday has an opportunity to exchange on extremely unequal terms—that the exchange is not *evolutionary*, to use Munger's (2011) term—but that Friday is poor.³

The problem grows as society grows. More minds mean more opportunities to innovate and more opportunities to gain from trade. Therefore, the information space within which one might define resources and determine whether they have been wasted or not becomes intractably complex. Decentralized social mechanisms—tradition and norms in some contexts, market prices in others—therefore become **essential** as they resolve disputes over who gets to use and derive income from an object and, therefore, which knowledge gets reflected in social outcomes. Respecting the fact that others are autonomous moral agents requires we leave ourselves open to persuasion, and it suggests that transaction costs are fundamentally the barriers to gains from exchange. It means that we confront in every object withdrawn from the commons and turned into a resource the combined and distilled knowledge of those who are and who have been—with the exception of the fact that we have been impoverished by our ancestors' unwisdom in exploitation and coercion. Here, circumventing others' fundamental right to their persons discarded social knowledge.

III. RIVALRY AND THE “RIGHT THING” TO DO

For the reasons documented by Mises (1920), Hayek (1945, 1948), Lavoie (1985a, 1985b), and many others, private property rights in the means of production are necessary in order that entrepreneurs be able to appraise factors of production and thereby direct them toward their highest-valued uses. Appropriation is one way of estab-

lishing these rights, and it is a way of establishing rights that enables us to define goods (with reference to wants) and to determine whether something has been “wasted” or not.

Competition solves the problem of rivalry, which emerges when people have conflicting ideas about how to use an object (Lavoie 1985a). Some cases don’t require a lot of moral imagination for us to determine whether something is acceptable or not—murder-for-hire is wrong—but many other cases are not so simple. The farther we move away from one another in moral space, the less useful will be neighborly impulses like empathy and the more useful will be market impulses like the drive to buy low and sell high. Smith (2003, 466) notes that “(m)arkets economize on the need for virtue, but do not eliminate it.” The development of exclusion rights—even crude exclusion rights—helps us understand the contexts that give us opportunities for virtue. Regarding a centrally planned economy, Lavoie (1985b, 21) points out: “The problem is not that people will be insufficiently motivated to do the right things, but, more fundamentally, that they will not know what the right things *are*, even if they passionately wanted to do them.” Instances of virtue require that we have well-developed senses of the meaning of human requirements and more. In an abstract sense, these requirements are simple (food, clothing, shelter). More particularly, when we make claims about human requirements we embed assumptions about which objects do and do not fulfill these requirements. We also assume that there is a mechanism “out there” that enables and encourages wise use of the resources at our disposal. We assume that these are *resources* to begin with, and we assume that for those resources to be “wasted” has a clear and easy-to-interpret meaning.

Value is imputed backward from final consumption goods to capital goods and finally to the “originary factors of production” (labor and land), to use Mises’s phrase. The price of a capital good reflects its contribution to the value of the final good or service to which the capital good contributes. The prices of the originary factors of production (labor and land, again) reflect their contributions to consumable output. Value is imputed backward to factor prices.

It is an acceptable simplification to assert that the capital goods, raw materials, and labor services that go into production are already well-defined if one seeks to explain how factors of production get their prices. The argument generalizes, however: the definition of a *resource* in a

market economy is also imputed backward from the wants satisfied by the final consumption goods to the characteristics of the objects that go into that good’s production. Shelter is a human requirement. Lumber, nails, hammers, and so on derive their meaning from the ways in which they can be used to provide shelter (among the many other ways they can be used).

“Has this object been wasted?” is answered with reference to the object’s opportunity cost. We can conceive of alternative realities in which what currently occupies garbage dumps around the world has been used to produce value, but these are problems with transaction costs and the structure of property rights that has emerged, not with appropriation or the institution of private property *per se*. Appropriation of objects out of the commons—and the existence of private property—are defensible on the grounds that we know whether an object is a good or not based on what we learn about its ability to satisfy wants. We also learn from the market process whether the objects we have withdrawn from the Commons are being used wisely or being wasted.

IV. IMAGINING “FUTURES TO BE”

Solutions emerge from the application of imagination to unique settings and novel situations. These solutions spin off the goods-character of the objects that have been employed, and they infuse those objects with newly-created knowledge. Where there were once objects, there emerge goods infused with knowledge by imagination and action. That knowledge may not be perfectly correct or perfectly accurate, but the senses obtain and process feedback that replace for us our previous perceptions of reality with new perceptions of reality in which objects have been assessed and defined with reference to our ability to use them to satisfy wants.⁴

G.L.S. Shackle explores these themes in his 1979 book *Imagination and the Nature of Choice*, pointing to the phenomenon of “enterprise,” or “action in pursuit of imagination” (Shackle 1979, 138). He continues: “Enterprise suggests another essential aspect of choice, namely, that action requires resources” (Shackle 1979, 139). Appropriation establishes a context in which “action in pursuit of imagination” is coherent and meaningful (note: not claiming this is exclusive in this essay). Action is preceded by thought, perhaps tacit and unreflective, in which the actor confronts a “skein of possible sequels” to the action that is taken. Action is taken with reference to this skein of possible sequels: “This view of choice as conceiving of

ends, even if they are formulated in widely encompassing and general terms, and an attempt is made to render them imaginatively possible by a choice of action which includes the desired end within its skein of possible sequels, may better be labelled *policy*” (Shackle 1979, 141). *Policy* is action undertaken with reference to “the entities which [Shackle has] called imagined paths of history-to-come” (Shackle 1979, 61).

Waste as an economic category requires the ability to imagine skeins of possible sequels—imagined paths of history-to-come—in which the objects being used are effectively applied to wants and in which they are ineffectively applied to wants. This requires valuation, which for Shackle “is not ignoble; it is part of the technical art of survival and enjoyment” (Shackle 1979, 63). The “no-waste” proviso restricting the right to obtain property out of the commons assumes an answer that must be argued for, specifically, that we can define “waste” independent of the knowledge we obtain through experiment and exchange. The more complex the division of labor grows and the more extensive markets become, the greater the need for profit and loss signals that will identify whether resources have been wasted or not. Without bringing resources into the ambit of exchange, we cannot make this determination.

Mechanistic metaphors for human action and social processes can be extremely useful in some contexts, but they can be extremely misleading when attempting to evaluate the overall organization of a large society where knowledge is dispersed among many minds and in which people act by bearing risk, confronting uncertainty, and forming expectations about skeins of imagined sequels to action. The appropriate metaphor for society is not a jigsaw puzzle in which the pieces have determinate and well-defined places but a free-form mosaic in which the degree to which two pieces fit together is highly contextual and not at all predetermined (Shackle 1979, 120–21). Appropriation of property out of the commons, in this light, gives us a mechanism by which we can determine whether resources have been *wasted* or not.

Wilson (2015) summarizes and extends the existing literature on the emergence of property as a moral convention, arguing that the rights emerge not simply for instrumental reasons but based on our background knowledge of what is right—we have property rights not because we have an instrumental desire or value for using *things*; rather, we have property rights because it may often be the case that someone with “a stronger hand” might try

to take our property from us (Wilson 2015, 220). From the perspective I have outlined here, property rights are valuable because they are the foundation of processes by which we apply knowledge to the social world, navigate the constraints of scarcity, and leverage others’ knowledge for our own ends.

This raises a question: which kinds of knowledge are permissible and admissible? Which beliefs and such are proper constraints on our actions? Within very broad confines, that which does not interfere with others’ use of knowledge is permissible. Seemingly “irrational” beliefs and practices are permissible as well given the importance of local knowledge and custom and the inaccessibility of the knowledge that makes cooperation possible in different institutional contexts to an outside observer. We all have an interest—perhaps privately unstable, but a collective interest certainly—in a well-functioning structure of private property rights and exchange because it encourages maximal knowledge utilization.

V. CONCLUSION

First-user appropriation of private property is defensible on many grounds. It leads to more and better by developing the system of exchange whereby people have incentives to buy, sell, trade, and produce. The latecomer is the lucky one (Schmidtz 2011). Beyond this, however, the establishment of private property rights allows us to even define what a resource *is* as it brings it into a context of experimentation. More important than the mixture of labor with an object is the mixture of knowledge and the continuing redefinition of the object with reference to wants. Appropriation satisfies Locke’s “enough, and as good” proviso by initiating a process by which “enough, and as good” can even be defined.

Beyond this, appropriation also satisfies the “no waste” provision for the same reasons. “Waste” requires a standard by which one could understand the relationship between an object and its best use. Property and exchange establish the reference points. First, appropriators have the wherewithal to define “waste” with reference to preferences, beliefs, and expectations—skeins of imagined sequels identified by Shackle that can be imagined because the property owner has incentives to use resources wisely, but beyond this, because experiment and exchange are the knowledge-creating presses making imagination possible.

In short, the criticism of appropriation as something leading to *waste* is invalid because it presupposes “waste”

can be determined independently of an understanding of the opportunity costs. Opportunity costs are revealed in action, and the indices—prices—that allow us to assess costs in a complex society with reference to others' preferences and knowledge are formed through experimentation and exchange. Appropriation and exchange solve the problem of rivalry—and with reference to waste, it is not always clear what is the right thing to do, or what constitutes *waste*. The defense of capitalism is built in no small part on the fact that it is a system by which alternatives can be compared with reference to others' knowledge.

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ENDNOTES

- 1 See Sowell (2007) for a discussion of knowledge surrogates.
- 2 Crusoe may be willing to bear this cost depending on his time horizon and his expectations about Friday's useful knowledge.
- 3 On euvoluntary exchange, see Munger (2011, 2012), and Munger and Guzman (2014).
- 4 See North (2005) on the relationship between "perceived reality" and social outcomes.