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Locke, Intellectual Property Rights, and the Information Commons

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Abstract. This paper examines the question whether, and to what extent, John Locke's classic theory of property can be applied to the current debate involving intellectual property rights (IPRs) and the information commons. Organized into four main sections, Section 1 includes a brief exposition of Locke's arguments for the just appropriation of physical objects and tangible property. In Section 2, I consider some challenges involved in extending Locke's labor theory of property to the debate about IPRs and digital information. In Section 3, it is argued that even if the labor analogy breaks down, we should not necessarily infer that Locke's theory has no relevance for the contemporary debate involving IPRs and the information commons. Alternatively, I argue that much of what Locke has to say about the kinds of considerations that ought to be accorded to the physical commons when appropriating objects from it – especially his *proviso* requiring that "enough and as good" be left for others – can also be applied to appropriations involving the information commons. Based on my reading of Locke's proviso, I further argue that Locke would presume in favor of the information commons when competing interests (involving the rights of individual appropriators and the preservation of the commons) are at stake. In this sense, I believe that Locke offers us an adjudicative principle for evaluating the claims advanced by rival interests in the contemporary debate about IPRs and the information commons. In Section 4, I apply Locke's proviso in my analysis of two recent copyright laws: the Copyright Term Extension Act (CTEA), and the Digital Millennium Copyright Act (DMCA). I then argue that both laws violate the spirit of Locke's proviso because they unfairly restrict the access that ordinary individuals have previously had to resources that comprise the information commons. Noting that Locke would not altogether reject copyright protection for IPRs, I conclude that Locke's classic property theory provides a useful mechanism for adjudicating between claims about how best to ensure that individuals will be able to continue to access information in digitized form, while at the same time also allowing for that information to enjoy some form of legal protection.

Key words: digital information, information commons, intellectual objects, intellectual property, John Locke, Lockean proviso

Abbreviations: CTEA: Copyright Term Extension Act; DMCA: Digital Millennium Copyright Act; IPRs: Intellectual Property Rights

In the current debate about whether, and to what extent, intellectual property rights (IPRs) should apply to digital information, many philosophers[1] have appealed to John Locke's classic theory of property to support their respective positions. Perhaps not surprisingly, competing views have emerged as to how Locke's account of property ought to be interpreted with respect to IPRs. On the one hand, philosophers such as Child (1997) and Moore (1997) have argued, each on slightly different grounds, that Locke's property theory provides a justification for IPRs in the form of copyright protection. Kimppa (2005), on the other hand, has recently argued for an interpretation of Locke's theory that would not support IPRs for computer software programs.[2] And some philosophers, such as Scanlan (2005), interpret Locke's position to fall somewhere between

[1] Many non-philosophers, especially law professors working in the area of intellectual property, have also found Locke' seminal writings on justifying property rights to be instructive. See, for example, Gordon and Drassinower's (forthcoming) anthology *Locke and the Law* (Aldershot, UK: Dartmouth Publishing).

[2] Kimppa believes that Locke's property theory is compatible with a position taken by the Free Software Foundation. However, we will not pursue Kimppa's arguments for that view in this paper.

these two views.[3] But others suggest that Locke's labor/desert theory of property is not applicable in the case of IPRs because of either one or both of the following reasons: (a) the kind of labor required to produce (i.e., either to create or discover) "intellectual objects" is fundamentally different from that needed to acquire (or to produce) physical objects; and (b) physical objects and intellectual objects are qualitatively different kinds of things, at least with respect to relevant characteristics pertaining to property rights. The main question I wish to consider in this paper is: To what extent, if any, can Locke's property theory accurately be applied to the current debate about IPRs involving digital information[4] and its implications for the information commons?[5]

1. Locke's theory of property: A very brief overview

In his *Second Treatise*,[6] Locke claims that property rights are justified because humans have a "right to their preservation" and thus have a right to "meat and drink and such things that Nature affords for their subsistence" (Sec. 25). Locke goes on to assert that "everyman has a 'property' in his own 'person'...[and that]...the labor of his body and the work of his hands... are properly his" (Sec. 27). According to Locke, when a person removes something from the state of nature, he has "mixed his labor with it, and joined to it something that is his own, and thereby makes it his property" (Sec. 27). Because labor is "the unquestionable property of the laborer," Locke believes that "no man but he can have a right to what [his labor] is once joined to..." (Sec. 27).

Perhaps Hettinger (1997, p. 21) best sums up Locke's view on how property is justly appropriated when he writes:

> Locke's justification for property derives property rights in the product of labor from prior property rights in one's own body. A person owns her body and hence she owns what it does, namely, its labor. A person's labor and its product are inseparable, and hence ownership of one can be secured only by owning the other. Hence, if a person is to own her body and thus its labor, she must also own what she joins her labor with – namely, the product of her labor.

After providing an argument for what is required in the just appropriation of the various kinds of objects that reside in the commons, such as acorns and apples, Locke proceeds to explain how one can justly appropriate portions of the commons itself. He states:

> As much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property. He by his labor does, as it were, enclose it from the common. (Sec. 32).

Of course, Locke does not believe that one's right to appropriate objects or to enclose a section of the common is absolute – i.e., without qualifications. For example, he imposes certain conditions and constraints as part of his justification for appropriation. One such constraint is sometimes described as the "no-waste" condition (Hughes 1997). According to Locke, one may take from the commons only as much as "any one can make use of to the advantage of life before it spoils" (Sec. 29). His most important qualification for our purposes, however, has to do with constraints on *how much* one can justly appropriate from the commons. This constraint is sometimes referred to as Locke's "sufficiency proviso"; however, we will refer to simply it as *Locke's proviso*. Complying with this proviso, one can remove objects from the commons only to the extent that there is "enough and as good left for others" to appropriate (Sec. 27). In a similar way, one can appropriate land itself by enclosing it from the commons only if there is *enough and as good* left for others to enclose (Sec. 33). Determining exactly what Locke meant by this phrase has proved difficult. Locke scholars have offered various interpretations, which range from

[3] Scanlan argues that, at best, Locke's theory provides a very weak or "limited" justification for copyright protection. Scanlan also argues that Locke's natural law theory would need to be supplemented with a consequentialist argument to defend the kinds of protection provided in current copyright law. However, Scanlan's arguments for this view are not pursued in the present paper.

[4] I am not interested in the implications of Locke's theory for IPRs involving all forms of creative works. Nor do I wish to show that Locke's property theory in itself provides with us with a clear and straightforward argument either for or against IPRs. My interest instead is in showing how certain of Locke's remarks about what is required in the just appropriation of tangible property can be interpreted in a way that applies to the current debate about IPRs involving digital information and the information commons. For a discussion of how Locke's theory can be applied to current disputes involving IPRs and other kinds of information, such a genetic/genomic information, see Moore (2006) and Tavani (2006).

[5] A number of interesting philosophical questions regarding Locke's property theory are not considered in this paper. For example, I do not examine the question of whether Locke's account of property is internally coherent. Also not examined is the question whether Locke's account is a thoroughgoing natural law theory or whether it also includes aspects of consequentialist and personality property theories as well.

[6] All references to Locke' *Second Treatise* are to his *Two Treatises of Civil Government* (London: Everyman, 1924). In particular, the references are to specific section numbers in Chapter V of the *Second Treatise*.

"equal amounts of resources being left for others to appropriate" to a type of "no harm" principle in which no individual is left "worse off" because of an appropriation by others. A detailed analysis of the proviso, however, would take us beyond the scope of this paper.[7] In Section 3, we briefly return to some questions surrounding Locke's proviso in conjunction with our discussion involving an analogy between the physical and the information commons.

2. The role of labor in locke's property theory: Is it relevant for IPRs?

We have seen that the notion of labor is central to Locke's property theory. Many who believe that Locke's theory is also applicable to IPRs point to the role that labor plays in justifying the appropriation of physical property. They argue that, by extension, a person's labor provides the grounds for justifying the appropriation of intellectual property as well. For example, Easterbrook (1990) argues that intellectual property is "no less the fruit of one's labor than is physical property." At first glance, there is something intuitively appealing about this view. One could argue, for instance, that a great deal of an individual's labor is required in writing a novel such as *Gone With the Wind*, just as it is required in the case of an individual who tills a section of land. However, not everyone has been persuaded by the analogy drawn between the kinds of labor required in the production of intellectual objects[8] vs. that which is required in the acquisition of physical objects. In fact, at least two different kinds of problems arise in using such an analogy: one based on differences with respect to the *kind of labor* involved (in producing/acquiring physical and intellectual objects); and another based on difficulties associated with (the highly metaphorical aspect of) Locke's notion of *mixing one's labor* with something. We briefly consider each type of problem.

2.1. Problems involving the Kind of Labor involved and the question of "indeterminacy"

First, consider the kind of labor that is typically associated with the production of physical objects. Is it different in relevant respects from that required to produce intellectual objects? We should note that for Locke, a property right is partly based on the premise that labor is often an unpleasant and onerous activity – i.e., the labor required to produce physical objects or to enclose a section of tangible property is often associated with the physical "sweat of the brow." Becker (1977) points out that in Locke's scheme, a property right is deserved as a just return for the laborer's painful and strenuous work. Locke makes this point when he remarks that anyone who takes a laborer's property desires "the benefit of another's pains."

But some critics of IPRs note that producing intellectual objects does not necessarily demand the same kind of onerous toil required in the production of many kinds of physical objects. For example, an idea may simply come to someone while she is taking a walk or relaxing at the beach. Furthermore, she may enjoy composing a poem, a literary work, or a software program as a form of recreation and thus would not associate such an activity with labor. And because of the essential role that labor plays in Locke's account of the just appropriation of physical property, Hughes (1997, p. 164) asks how Locke's theory can justify ownership of an expression of an idea "whose inception does not seem to have involved labor."

So it would seem that some important questions need to be resolved before we can successfully draw an analogy between the appropriation of physical objects and intellectual objects based on the kind of labor required for each. However, we should note that some of the difficulties associated with determining the amount of (i.e., how much) labor is required for the just appropriation of intellectual objects also applies in the acquisition of physical property as well. Thus, determining exactly how much of one's labor is required in a just appropriation of property can lead to what some view as the "problem of the indeterminacy of labor." Drahos (1996), for example, has argued that labor is "too indeterminate...a basis on which to base a justification of property."

2.2. Problems involving the Mixing of One's Labor and the question of original acquisition

Another problem that arises with respect to using the labor analogy has to do with the highly metaphorical aspect of one's "mixing one's labor" with something (external to oneself). What, exactly, does one mix one's labor with when creating an intellectual object? In the case of appropriating physical property, Locke suggests that an individual mixes his or her labor with the land, e.g., in tilling a field or in cutting down a

[7] For an excellent description of some ways in which the Lockean proviso has been interpreted, see Child (1997).

[8] Various terms have been used to refer to non-tangible objects; for example, they have been referred to as "ideal objects" and as "non-tangible economic goods" (Palmer 1997). Following Hettinger (1997), however, I refer to these entities as "intellectual objects." For a more detailed discussion of intellectual objects, see Spinello and Tavani (2004, 2005), and Tavani (2004a).

tree for firewood. But in the case of appropriating intellectual objects, it is by no means clear just what it is that the creator mixes her labor with.

However, it is not simply with respect to the appropriation of intellectual objects that the metaphor of mixing one's labor is problematic.[9] Nozick (1974) points out some problems with this metaphor when used to justify the appropriation of physical property as well, when he asks: Why assume that a person should acquire property or acquire an object merely because he mixed his labor with it? Nozick (pp. 174–175) writes:

> Why isn't mixing what I own a way of losing what I own rather than a way of gaining what I don't? If I own a can of tomato juice and spill it into the sea so that its molecules (made radioactive, so I can check this) mingle evenly throughout the sea, do I thereby come to own the sea or have I foolishly dissipated my tomato juice?

Thus far, we have seen that at least two different kinds of challenges arise when drawing analogies between the kinds of labor involved in the production of physical vs. intellectual objects. We have also seen that both challenges illustrate some difficulties for a labor theory of property in general, which Nozick describes as a species of an "entitlement theory" of property. Nozick argues that such theories must satisfy two conditions, by providing a justification for both: (i) the original acquisition of property, and (ii) the transfer of property.[10] But critics such as Mautner (1982) have argued that it is not practically possible to satisfy condition (i), since we cannot go back in time to the period when a piece of physical property was first acquired. And because a clean record of acquisition can never be established in a practical sense, Mautner infers that Locke's theory (like any entitlement theory based on original acquisition) is irrelevant to contemporary debates about property rights.[11] However, even if Mautner is correct in pointing out a serious difficulty that Locke's theory has with respect to the original acquisition of physical property, does it necessarily follow that Locke's theory has no relevance for the debate about IPRs?

Scanlan (2005) points out that in the case of many disputes involving intellectual property claims, no record of original acquisition is needed. As Scanlan notes, many property right claims involving intellectual objects are relatively recent in origin, and in many cases are being contested for the first time. Consider that we are still in the process of determining which rules should apply in the case of some kinds of intellectual objects. Thus, in Scanlan's view, Locke's remarks about what is required in justly appropriating acorns from the physical commons (of the 17th century) might indeed be applicable to establishing criteria for justly appropriating ideas from the information commons. At this point, however, critics could object by pointing out that because we have already seen how problematic the notion of labor is in Locke's theory – even at the level of providing a justification for the appropriation of physical objects and tangible property – any attempt to extend Locke's theory to the debate about IPRs would be futile.

One way of responding to such critics is by asking how much emphasis we should place on the role of labor per se in Locke's theory. For example, how accurate is an interpretation that either ignores altogether or that significantly underestimates other important components in Locke's property theory? Although labor is clearly a central component in Locke's theory, we also saw in Section 1 of this paper that certain of Locke's remarks in Chapter V of his *Second Treatise* illustrate that several conditions need to be taken into account in justifying property rights. Recall that Locke had insisted that whenever something is appropriated from the commons, "enough and as good" should be left for others who also wish to appropriate. Thus, Locke never assumed that the mere "mixing of one's labor" with something constitutes a sufficient condition for an individual's right to claim ownership of that thing.[12] Perhaps then we should look more closely at what Locke had to say regarding his proviso (requiring that "enough and as good" be left for others)[13] to see whether any insight can be found there with respect to justifying IPRs.

[9] For example, Moore (2001) raises this concern, and he points out that Waldron (1983) believes that the idea of "mixing one's labor" is incoherent since "actions cannot be mixed with objects."

[10] Nozick also requires a scheme of rectification for conflicts that arise when either or both conditions (i) and (ii) are not satisfied.

[11] A similar point is made by Scanlan (2005).

[12] Wolf (1995) has argued for an interpretation of Locke' theory in which the role of labor provides neither a necessary nor a sufficient condition for justifying a property right.

[13] As in the case of "mixing one's labor," which is typically understood to be a necessary (but not a sufficient) condition for property rights in Locke's theory, the proviso is also generally interpreted to be a necessary condition. However, Waldron (1979), Wolf (1995), and Moore (2001) suggest that the proviso can also be interpreted as a sufficient condition.

3. Locke's proviso and its application to the contemporary debate about IPRs and the information commons

As we saw in Section 1 of this paper, no individual can justly appropriate from the commons more than he or she can effectively use; hence Locke worried about possible greed and waste.[14] We also saw that Locke does not believe that a person is necessarily entitled to own everything with which she has "mixed" her labor, simply by virtue of investing her labor in gathering certain objects or in tilling some section of land. Irrespective of how much labor one is able or willing to invest in appropriating objects, a person is not entitled to cut down all of the trees in the forest; nor is she entitled to take the last tree. As we also noted in our brief description of the Lockean proviso in Section 1 of this paper, however, the phrase "enough and as good" has been interpreted to mean many different things.[15]

We saw that interpretations of Locke's proviso range from a kind of egalitarian reading in which equal amounts of resources must be left for everyone (or at least for those who desire to appropriate), to one in which no individual is harmed, deprived, or "made worse off" because of some appropriation. I will refer to the view that everyone is entitled to an equal appropriation of goods – which seems to be based on a reading of the proviso to mean "*as much* and as good" – as the strong thesis; and the view that no one should be harmed by being made worse off because of the appropriations of others, I will call the weak thesis. I believe that I need to defend only the weak thesis of the proviso to make the point that Locke has something important to say with regard to issues affecting the contemporary debate about IPRs. The textual evidence to support Locke's concern that no individual is made worse off as a result of an appropriation can be found in his remarks in Sections 31, 33, and 36 of the *Second Treatise*, where Locke says that appropriations are permissible so long as they do not harm or "prejudice any other man."

What did Locke have in mind when he envisioned the appropriation of land by some individuals in a way that no other individuals were made "worse off" as a result? Locke seems to have imagined a bountiful commons from which people could appropriate freely without harming others, if they adhered to his proviso that "enough and as good" be left for others. According to Locke (Sec. 33), appropriations of this sort were not a:

> ...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...Nobody could think of himself injured by the drinking of another man, though he took a good draught, who had a whole river of the same water left him to quench his thirst. And in the case of land and water, where there is enough of both, is perfectly the same.

What, exactly, is the physical commons that Locke has in mind? On the one hand, the somewhat romantic and idealistic notion of the commons that Locke describes is one that might have existed in primeval times before the establishment of a social compact; such a commons would seem to be nearly inexhaustible in its resources. The commons that existed in England during the 17th and 18th centuries, however, was very different from the one described in Locke's *Second Treatise*. Rose (1993) points out that during the 18th century, the English commons was rapidly replaced with private property and that laws were passed to prevent peasants from catching fish or shooting deer on these lands.[16]

Whereas the physical commons that Locke describes has been significantly diminished since the 17th century, we might assume that another kind of commons – i.e., one comprised of ideas and information – has not been similarly affected. However,

[14] This qualification, which as we noted earlier is sometimes referred to as the "no waste" condition, applies to physical items that can spoil. Intellectual items, on the other hand, are not perishable, at least not in the sense that physical items are; however, greed for intellectual objects on the part of some could result in the depletion of important resources in the information commons.

[15] According to Hughes (1997, p. 114), this phrase could be interpreted as an "equal opportunity provision leading to a desert-based, but non-competitive allocation of goods." Child (1997, p. 59), on the other hand, argues that "enough" does not refer to an "equal amount"; rather, it refers to "some other characteristic of what is left...[and]... whether [another's] position has been worsened" as a result of the appropriation. Moore (1997) interprets "enough and as good" to mean "no harm, no foul." And Hettinger (1997) interprets the proviso to mean "no loss to others." That is, as long as one does not worsen another's position by appropriating an object, no objection can be raised to owning that with which one mixes one's labor (Hettinger, p. 27).

[16] Cited in Halbert (1999). Buchanan and Campbell (2005, p. 228) note that in the English tradition, the commons was a "resource, usually land, that was not owned by anyone privately but was cared for and used by the community as a whole."

some now worry that the information commons (also sometimes referred to as the "intellectual commons") is in danger of experiencing a fate similar to the physical commons of Locke's time. But what, exactly, is the *information commons*? A useful description of what is meant by this expression is put forth by Buchanan and Campbell (2005, p. 229) as:

> A body of knowledge and information that is available to anyone to use without the need to ask for or receive permission from another, providing any conditions placed on its use are respected.

Many are familiar with Garrett Hardin's "tragedy of the commons," which occurs as a result of over-consumption of resources in a physical commons shared by farmers (Hardin 1968). Some now also worry about what Heller (1998) refers to as the "tragedy of the anti-commons," which can result when there is an under-consumption or under-utilization of resources. As more and more intellectual objects are appropriated from the information commons, and as more and more of the information commons itself is fenced off or enclosed through IPRs, some critics fear that fewer and fewer intellectual resources will be available for use by ordinary individuals and that, as a result, information resources will be underutilized.

In a work entitled "The Tragedy of the Information Commons," Onsrud (1998) describes the information commons as one that is "being enclosed or even destroyed by a combination of law and technology that is privatizing what had been public and may become public, and locking up and restricting access to ideas and information that have heretofore been shared resources."[17] How can what Locke had to say about his proviso vis-à-vis the physical commons be brought to bear on protecting the information commons? And how, exactly, can his proviso guide us in framing just laws and policies for IPRs involving digitized information? Answers to these two general questions would seem to turn on two more specific questions (which we examine in Section 4): (1) *Does a particular law or policy diminish the information commons by unfairly fencing off intellectual objects?* (2) *Are ordinary individuals made worse off as a result of that law or policy when they can no longer access information that had previously been available to them?*

Before attempting to answer (1) and (2), we should note that some critics might object by arguing that analogies involving the physical and the information commons will break down in a number of key respects.[18] We briefly consider two such respects in which drawing strict analogies between the two different kinds of commons can be problematic: (a) the physical and the information commons are populated by *qualitatively different kinds of objects*, and (b) resources that comprise the information commons are not as easily exhausted or depleted as resources in the physical commons. We briefly consider each.

3.1. Qualities that differentiate the kinds of objects residing in the physical vs. the information commons

One objection that can be raised in drawing too close an analogy between the physical and the information commons has to do with essential differences in the *kinds of objects* that reside in each. Consider that most intellectual objects, unlike physical objects, are both non-exclusionary and non-rivalrous in nature. Most physical objects, on the other hand, are exclusionary in the sense that if *A* possesses *C* (say a Mercedes–Benz automobile) at a particular point in time, then *B* cannot, and vice versa. But *A* and *B* can both possess copies of the same intellectual object (say a word processing program such as MS Word) simultaneously; *B*'s possessing a copy of that program does not preclude *A* from having it, and vice versa. Also consider that tangible property often is scarce and thus generates competition and rivalry. Intellectual objects, on the other hand, are potentially abundant in the sense that they can be reproduced easily, and are typically reproducible at a very low cost.

Because the characteristics of exclusivity, rivalry, and scarcity that apply in the case of competition for physical objects do not typically apply to intellectual objects, some might question whether Locke's account of the just acquisition of physical objects in the physical commons is relevant to contemporary discussions involving IPRs and the information

[17] Originally cited in Buchanan and Campbell (2005).

[18] For example, Boyle (2006, p. 250), who himself suggests that it is useful to compare the two kinds of commons from the perspective of "enclosure," points out that the analogy is not perfect because "the commons of the mind has many different characteristics from the grassy commons of Old England." Boyle believes that we are currently undergoing a "second enclosure movement" and that it is analogous in relevant respects to the first such movement, which occurred during Locke's time.

commons.[19] However, even if important distinctions can be drawn between the kinds of objects that reside in two different commons, does it follow that no useful comparisons can be drawn between them? And, more importantly, does it necessarily follow that the information commons is currently in any less danger of being eroded than the physical commons was in Locke's time? Consider that if the laws that protect intellectual objects become too strict, those objects will be less accessible (and perhaps eventually will be altogether inaccessible) to ordinary people. Thus, the information commons, like the physical commons, can easily be eroded and diminished – and it can be diminished despite the fact that the kind of objects that populate the information commons are very different from the kind that reside in the physical commons.

3.2. *Depleting and exhausting resources in the information vs. the physical commons*

Another objection that could be raised in drawing too strict an analogy between the physical and the intellectual commons has to do with the ways in which the resources two different commons can be depleted or exhausted. For example, one could argue that whereas the physical commons is limited or fixed in terms of its resources, the resources comprising the information commons seems to be virtually limitless and thus inexhaustive. Himma (2005, p. 7) points out that the intellectual commons, unlike the physical commons, "is not a resource already there waiting to be appropriated by anyone who happens to be there." Rather, he describes it as a resource that is "stocked by and only by the activity of human beings." Moore (1997, p. 83) makes a similar point when he claims that all matter, whether owned or unowned, already exists, while the same is not true of intellectual property. Based on these distinctions, one might assume that there is no need to worry about a diminished information commons because more and more intellectual objects can be produced to populate it. However, this important distinction regarding the resources that comprise the two different kinds of commons does not necessarily preclude the fact that the information commons also can be diminished or eroded.

Let us assume that the information commons is infinitely expandable in terms of the kinds of intellectual objects that can be produced. Would this phenomenon in itself be sufficient to ensure that the information commons is not in danger of being eroded? We should note that IPRs have been granted not only for the production of intellectual objects but also for the development of certain kinds of *methods* used to access those objects. Additionally, IPRs that are granted for these purposes can result in restricting one's ability to access and use information, in the same way that fencing off sections of the physical commons resulted in individuals being denied access to tangible objects such as acorns and apples.[20]

Many advocates for IPRs believe that the methods used to access digitized information are among the kinds of things that deserve legal protection.[21] However, critics point out that granting this kind of protection has already resulted in ordinary individuals being denied access to information that had previously been available to them. In this sense, then, the information commons (like the physical commons in England during the 17th and 18th centuries) is subject to erosion; and it can be eroded even if countless new intellectual objects are produced. Because the current threat to the information commons is analogous in relevant respects to the threat posed to the physical commons in Locke's time, looking to Locke's property theory for possible guidance would not seem unreasonable.

4. Extending locke's proviso to the information commons

We are now in a better position to see how Locke's property theory with its "proviso" can be applied to

[19] For example, Kimppa (2005) interprets Locke's rationale for granting ownership rights for physical objects and physical property to be based on considerations having to do with scarcity and with the fact that multiple individuals cannot own these items simultaneously. Since the same is not true of intellectual objects, Kimppa believes that Locke would not support the granting of property rights for intellectual objects such as software programs. As Hughes (1997) asks: "Why should one person have the exclusive right to use and possess something which all people could possess and use concurrently?"

[20] Kimppa (2005, p. 74) believes that although Locke was willing to grant ownership rights to an individual for the acorns he or she gathered in the commons, Locke would probably not be willing to grant property rights to someone for the *method* he or she used in acquiring the acorns.

[21] Thus far, advocates for this view appear to be successful in influencing court decisions. Consider, for example, that controversial copyrights and patents have been granted for "shopping cart" icons and for "one-click" (express) shopping in on-line transactions. And graphical interfaces themselves, which provide a method for accessing on-line information, have been eligible for copyright protection because of court decisions ruling in favor of arguments based on the need to protect "the look and feel" of computer software.

the contemporary debate about IPRs and the information commons, and how it can further guide us in framing just laws and policies. Recall that, on our interpretation of Locke's proviso vis-à-vis its application to the information commons, two questions need to be answered when evaluating a law or policy involving IPRs: (1) *Does that law or policy diminish the information commons by unfairly fencing off intellectual objects?* (2) *Are ordinary individuals made worse off as a result of that law or policy when they can no longer access information that had previously been available to them?* We examine both questions in our brief analysis two recent US laws – the CTEA and the DMCA – to see whether the information commons is now threatened by the enactment of those particular laws.

4.1. The CTEA and the DMCA

The Copyright Term Extension Act (CTEA) and the Digital Millennium Copyright Act (DMCA) were both passed by the US Congress in 1998. CTEA[22] extends copyright protection from the life of the author plus 50 years to the life of the author plus 70 years,[23] and the DMCA restricts access to and use of information that either is created in or converted to digital format. Whereas CTEA diminishes the amount of information that once had been in the public domain and thus had been freely available to ordinary individuals, the DMCA restricts both access to and use of information that resides in digital form, such as electronic books. Physical (or "paper and glue") books, on the other hand, have been and still are more freely available for people to access and share.

To understand the threat to the information commons posed by CTEA, consider the case of Eric Eldred who set up a personal (nonprofit) Web site dedicated to electronic versions of older books. On his site (http://www.eldritchpress.org) he included many classics, such as the complete works of Nathaniel Hawthorne. Some of the books on Eldred's site were either difficult to get (as physical books) or were out of print. At the time Eldred set up his Web site, these books were in the public domain. With the passage of CTEA, however, some of the books on his site came under copyright protection and thus were in violation of the newly expanded law. Electing not to remove any of the books from his site, Eldred instead decided to challenge the legality of the amended Copyright Act, which he argued is incompatible with the fair-use provision of American copyright law and thus in violation of Article 1, Section 8, Clause 8 of the United States Constitution. He lost his court challenge (*Eldred vs. Attorney General John Ashcroft*) in a hearing by a United States circuit court; and the lower court's decision was upheld by the US Supreme Court in a 7-2 ruling in 2003. As a result of CTEA, the information commons has arguably been diminished in that many books that once had been freely available to ordinary persons are no longer accessible to them (either in physical space or on the Internet).

The DMCA, which restricts the way that information in digitized format can be accessed and used, also has significant implications for the information commons. Despite the fact that digital technology has made information exchange easy and inexpensive, the DMCA has made it more difficult to access information that either resides in or is converted to digitized form. To illustrate this point, consider the case of interlibrary loan practices involving physical books. Such practices have not only benefited individuals, but arguably also have contributed to the public good by supporting the ideal of an information-sharing[24] community. If the books that we were so easily able to borrow in the past become available only in digitized form in the future, it may no longer be possible to access them freely through an interlibrary-loan system. By granting copyright holders of digital media the exclusive right to control how electronic (versions of) books are accessed and used, the DMCA can easily discourage the sharing of digitized information between libraries. So as more books become available only in digital form, the information they contain may be less accessible to ordinary individuals in the future, which will further diminish the information commons.[25]

If we apply our interpretation of Locke's proviso – i.e., that it is not permissible for some individuals to be made worse off as a result of an appropriation of

[22] This Act is also sometimes referred to as the Sonny Bono Copyright Terms Extension (SBCTEA); however, in this paper we refer to it as the CTEA.

[23] The protection granted to "works of hire" produced before 1978 was extended from 75 years to 95 years.

[24] McFarland (2004) has argued that information is something whose nature is to be communicated and shared. And I have argued elsewhere (Tavani 2002, 2004a, 2005a) for the presumptive principle: *Information Wants to Be Shared*. I believe that this principle is compatible with Locke's proviso when applied to the information commons.

[25] As Coy (2004) points out, an essential difference between intellectual property and physical property is that the former is intended to enter the public domain at some point. However, it would seem that the DMCA enables intellectual property in digital format to be owned exclusively by the rights holder for an indefinite period of time. Thus far, no time limits have been established as to how long the rights holders of information residing in digital media can retain exclusive control of that information.

property on the part of other individuals – to the information commons, then we can see how both the CTEA and the DMCA violate the spirit of the Lockean proviso. Thus far, I have said very little about what it means for someone to be "worse off" – e.g., in what sense one is worse off – because of another person's appropriation. Nozick (1974, p. 176) offers two interpretations of what this could mean: one stronger, and the other weaker. In the stronger sense, one's position is said to be worsened if he or she is deprived of *opportunities to acquire* because of the appropriation of others. On the weaker interpretation, however, one's position is worsened when that person can *no longer use freely* (without appropriation) what he or she previously could because of someone's appropriation. We need only to appeal to the weaker interpretation to see how ordinary individuals are now worse off because of CTEA and DMCA.[26]

4.2. Locke and copyright law

At this point, however, we should be very careful not to infer from what has been claimed thus far that Locke would necessarily reject copyright laws altogether. As noted in the opening paragraph of this paper, arguments have been advanced for the view that copyright protection in some form is indeed compatible with Locke's theory of property.[27] But where, exactly, in Locke's remarks in the *Second Treatise* can a justification for copyright protection be found? Perhaps we should look more closely at what is implied in Locke's comments suggesting that those who either enclose sections of or appropriate from the commons often create *value*[28] for others.

Still we could ask what specific textual evidence there is for claiming that Locke would be willing to defend copyright protection[29] for authors seeking to enclose sections of the information commons because of any value they may have created or added. For an answer to this question, we can look to what Locke says about granting individuals the right to enclose and thus own sections of the physical commons. Just as Locke believed that not all of the land comprising the physical commons should always remain common and uncultivated (Sec. 36), it would seem that he could consistently endorse the "cultivation" and thus the enclosing of some sections of the information commons. Consider that in his justification for granting ownership rights for physical property, Locke claims that we are better off when a tract of land is developed to bear crops than when it is left undeveloped. Analogously, Locke could consistently support the cultivation of the information commons by arguing that we are all better off when someone contributes an intellectual object to the information commons – i.e., the contributor has added value of some sort to the commons.

So based on what Locke said about the development and cultivation of the physical commons, it would seem that he also would not want an underdeveloped information commons. Thus in the same way Locke believed that individuals who appropriated from the physical commons in a manner that was compatible with his proviso have a right to their appropriation, Locke could consistently argue that those who appropriate from the information commons in a manner that is also compatible with the proviso are also entitled to ownership rights. In the latter case, authors could be granted ownership rights in the form of copyright protection, provided that the kind of protection being granted to them does not violate the proviso.[30] For example, if an author writes a quality

[26] A more detailed analysis of Nozick's distinction is beyond the scope of this paper. Moore (2001) examines this distinction from a Pareto-based model. He argues that if no one is harmed by an acquisition and one person is bettered, then the acquisition ought to be permitted. This is also a form of what Moor describes as "weak Pareto-superiority."

[27] As we saw earlier, Moore (1997), Scanlan (2005), and others have argued for this interpretation of Locke's theory.

[28] I am grateful to Ken Himma for helping me to see a distinction that Locke can make with regard to granting a property right to someone in return for the "value" that one has contributed in producing an intellectual object, as opposed to rewarding someone with a property right merely because that individual has "mixed his or her labor" with some object – a condition that may or may not be relevant in the case of IPRs.

[29] With copyright protection, however, creators of intellectual objects are granted ownership rights only for their particular *expression of an idea* (i.e., the manner in which the idea is expressed in some fixed or tangible form), but not for the idea itself, which still could be accessible to others in the information commons. And they would be awarded ownership rights only for a limited period of time, unlike in the case of physical property where there are no time constraints put on the length of ownership.

[30] As noted earlier, both and Moore (1997, 2001) and Scanlan (2005) believe that Locke's property theory is compatible with copyright protection. For Moore, it is also consistent with a "weak Pareto superiority model" in which at least one person could be better off through an appropriation (i.e., having a work copyright protected) provided that no one else is made worse off as a result. Scanlan, on the other hand, has recently argued that Locke's theory is compatible with a weak or "limited form" of copyright law.

novel, then arguably she has contributed something valuable to the intellectual domain. And if granting the author copyright protection for her novel in a way that does not deny ordinary individuals fair access to that novel in the form of "fair use" provisions – i.e., others are not made worse off because of the author's appropriation – then granting that author copyright protection for the novel would seem to be justifiable.

Of course, the question of whether copyright protection is or is not compatible with Locke' property theory is not the primary concern of this paper; rather, my principle objective has been to show that Locke's account of property is applicable to the current debate involving IPRs and the information commons. In doing so, however, it would seem that at least two important points also follow from applying Locke's theory to the current debate: (i) we are worse off when, as a result of overly-strong copyright laws, the information commons is diminished to the point that ordinary individuals are denied access to information that had once been in the public domain; and (ii) copyright laws such as the CTEA and DMCA are unjust to the extent that they make ordinary individuals worse off by unfairly diminishing the information commons.

Concluding remarks

We began this paper by asking whether Locke's property theory can be extended to the current debate involving IPRs and the information commons. We saw that despite the breakdown in some analogies between the kinds of labor used in producing physical vs. intellectual objects, Locke's theory nonetheless is applicable to the current debate involving the information commons. In particular, we saw that implicit in Locke's proviso is an adjudicative principle that can guide us in framing just laws for IPRs involving digitized information, which will also help us to preserve an information commons that has become increasingly threatened. We also saw that although Locke would not necessarily reject copyright protection altogether, he would likely find recent copyright laws such as the CTEA and DMCA to be unjust since they are incompatible with the spirit of his proviso. So it would seem that Locke's property theory is indeed applicable to the contemporary debate about IPRs involving the information commons, even if that theory does not provide us with definitive answers to many important questions underlying controversial disputes about IPRs in general.

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