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Lockean Justifications of Intellectual Property

Daniel Attas

Locke's theory of property is one of the more influential readily available accounts. In *Two Treatises of Government* he discusses only tangible property, and it would be somewhat anachronistic to think that he had given any systematic thought to the matter of ownership of ideas.[1] Nonetheless, as information increasingly becomes a central aspect of the economy, and with it the increasing legal protection afforded by intellectual property, the need for a theoretical justification arises. Going back to Locke's theory in search of such a justification is one obvious option.

The main purpose of this chapter is to explore the possibility of extending Locke's theory with respect to tangible property so that it might offer a feasible theoretical basis for intellectual property too. The main conclusion is that such an attempt must fail.

Locke's theory comes in three parts: first, a general justification of property which serves to explain why assets ought to be under the exclusive control of individuals; second, a positive method of private appropriation whereby an individual acquires a *prima facie* exclusive claim to previously commonly held natural resources; and third, a negative requirement that other individuals' crucial interests are not harmed by such an appropriation whereby it receives its final approval.

This chapter follows Locke's threefold structure. For each part I present the basic Lockean argument, pointing out the main problems of the theory as it applies to material objects. I then discuss the difficulties involved in applying that part of the theory to the sphere of ideas. Finally, I focus on what I take to be a central aspect of intellectual property that raises the problems of application for each part of the theory.

Two preliminary points are warranted.

First, to qualify as Lockean (or neo-Lockean), the kind of right a theory of property must argue for is a *natural* right, based on a notion of entitlement rather than on desert or on incentive, both of which allow degrees and fine-tuning to adjust the reward to its justification. It follows that it is a *direct* right to the thing, not a contractual right, i.e. not a consequence of agreeing to certain conditions attached to the selling of a material object that embodies the idea. It also follows that it is a right in perpetuity; therefore we would expect that, if we are able to justify ownership of ideas from a Lockean perspective, these will be at odds with the most common forms of institutionalised intellectual property, such as patents and copyrights that are limited in time.

That brings me to the second point I want to emphasise. My question is this: can a Lockean (or neo-Lockean) theory of property justify private ownership of ideas? I am not asking if such a theory can justify the kind of IP regimes institutionalised today. It is evident that certain aspects of these regimes – such as fair use, limited duration, and so forth – make it impossible to justify them on Lockean grounds. My argument seeks to show that any kind of regime that recognises ownership of ideas, whatever its specifics, cannot find its grounds in Lockean theory.

General justification of property

Lockean theory with respect to tangible property

Locke begins his account with a general justification property: an explanation of why property is necessary or justified at all. Property is introduced as a solution to a practical problem. Were there no special need to divide the world into bundles of exclusive control the very notion of property would make no justificatory sense. For Locke, the problem is the need to enable persons to provide for their own subsistence:

> men, being once born, have a right to their preservation, and consequently to meat and drink, and such other things, as nature affords for their subsistence
>
> . . . yet being given for the use of men, there must of necessity be a means to appropriate them some way or other before they can be of any use, or at all beneficial to any particular man
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> (Locke, 1960/1698, pp. 285, 286f)

In order to survive, people must eat and drink, perhaps wear protective clothing and inhabit a dwelling. To do this they must take natural resources, initially not owned, and make them their exclusive property. This is a crucial background supposition that gives the subsequent discussion its urgency and ultimate justification. It also situates the basic notion of self-preservation as the dominant principle within the theory so that any consequences of the theory that might come into conflict with it would be checked or overridden.

Though it seems reasonable that food and drink must exclude others in the process of their consumption, it is far from clear that this implies a property right in any interesting sense. For a property right includes not merely use, but also control, management and the right to transfer. Yet these incidents do not apply in the case of a chewed, swallowed and digested apple, for example. If what I am permitted to take from nature is what I need to eat and drink, then I may do just that. Of course, in a slightly more advanced economy I may want to specialise in apples, say, and trade them for your eggs. Exclusive property rights are certainly required to allow a division of labour to develop and for the possibility of trade, but it does not follow that these are necessary for subsistence.[2]

Rights to clothing and shelter, in so far as they are justified as necessary means of subsistence, may not be used in any way other than that. This allows such little discretion regarding how these assets may be used that it is hardly plausible to call whatever rights one may have in respect of these property rights. Nevertheless, whatever rights these are they would need to be exclusive if even a minimal degree of privacy is to be secured.

We may need exclusive rights over agricultural land, but then again, only over the amount necessary to produce our subsistence needs, that is to say, the produce that we are likely to consume. Other raw material, such as timber or metal required to produce tools and machinery for the production of subsistence needs, does not necessarily need to be our exclusive property. These can sometimes be used more efficiently when shared rather than privately owned. It is even less plausible that land for recreation requires exclusivity for its effective use, though it might need a rationing mechanism for its most efficient use. For example, public parks and beaches might have opening and closing hours and a restriction on the number of people on the premises at any one time. The same goes for some material consumption goods such as books or DVDs. Sharing through public libraries might be a more efficient system than private possession.[3]

So subsistence may be very weak grounds to establish a general justification of property. It can justify only use (consumption) and then only with respect to a narrow range of objects. Contemporary Lockeans typically demote the idea of subsistence, but they must appeal to some other value instead. They must explain why property is important at all, what fundamental interest it satisfies, prior to the particular justification of who rightly owns what. They might appeal to the value of freedom: I cannot really be free unless I have a material domain within my exclusive control.

Another possible basis for the general justification of exclusive property might be as a means to welfare or the pursuit of long-term life plans. According to Loren Lomasky, persons 'have a natural interest in having things'. That interest amounts to the ability to employ the object in the furtherance of one's project. Since control of such objects is a necessary condition of being able to pursue one's projects, there is an interest not merely in having objects but also in being accorded property rights with respect to them (Lomasky, 1987, pp. 120–1). Such a basis seems a more promising avenue for a general justification of property. It allows for more elaborate goods and for a wider range. Land or diamonds, food or mansions, can be part of a project. After all, at least in so far as we are considering material objects as a means to the pursuit of happiness, anything can be such that necessitates exclusive control.

One more justification for exclusive property is to avoid what is known as the tragedy of the commons (Hardin, 1968). When land and other resources are not privately owned there appears to be a robust internal logic for individuals to overuse the asset and to under-maintain it. A common grazing ground provides the paradigmatic example where for each individual farmer it seems rational to add one more animal to the common, for he will gain the full benefits of adding that animal yet the cost will be equally distributed among all users. Privatisation of the land will internalise the costs and prompt owners to invest in the asset and guard against its degradation due to excessive use. Thus exclusive private property is a necessary means for the efficient use of natural resources.[4]

One problem with this influential account is that it is inconsistent with historical experience (see Levine 1980; Rose 1986). The commons were a system that operated efficiently for several hundred years in Europe and even longer in other parts of the world. Their demise was less a result of inefficiencies and more the outcome of an avaricious campaign of enclosure led by the growing number of capitalist farmers. Moreover, the argument seems to conflate collective control with no

control of an asset. The fact that the commons are not owned does not mean that they cannot be regulated by the community, as indeed they were in various ways (Levine, 1980, pp. 86–8).

Application to intellectual property

Further difficulties are encountered in the application of the different proposed bases for a general justification of property to intellectual products. We saw that even for material goods exclusivity is not necessary in order to secure the basic interest that might be thought to ground a general justification of property in the first place. It appears to be even more tenuous to require exclusivity with respect to ideas.

Though exclusive use of material goods might be necessary for their consumption, it does not seem to be so in the case of ideas. Ideas are not literally consumed. Unlike food, drink and, at a slower rate, clothing and housing, ideas are not destroyed in the process of their use; they suffer no wear and tear. Of course, they might depreciate in value, but that is only because of the appearance of more useful and advanced technological innovation, or because they are replaced by other styles. In any case, ideas lose their value only when they are succeeded by other ideas. Moreover, the same ideas can be used simultaneously by an unlimited number of people. Use by one does not hinder use by another. This point has been raised countless times.

Seana Shiffrin, though she makes the same point about ideas in general, thinks that at least some intellectual works do require exclusive control for their effective use (Shiffrin, 2001, p.157). She cites two examples. The first relates to the products of creative processes that need, at key stages of their development, a certain degree of isolation or protection from too much interference. Forced publication might prove so disruptive as to inhibit the full effective use of these ideas. Her second example is intimate intellectual products, such as diaries, revealing personal letters, and so forth. Public display and scrutiny would 'disrupt the pure full expression of the author's personality'. No doubt, public exposure can be debilitating and might kill some ideas before they reach fruition. But to think that exclusive property rights might follow from this is to confuse property with much lesser rights of use. For example, secrecy, as the right not to disclose an idea in my mind, is not sufficient for a full-blown notion of property. Likewise, privacy as the protection of an intimate domain is also insufficient for property. These protect against the forced publication of what is under my control. Property, on the other hand, effectively enters only after an idea is publicised. It

guarantees the continued exclusive use and control of an idea that others might get to know about since it is not kept secret. This is not to maintain that privacy in one's own diary or secrecy in the ideas one is in the process of developing is unjustified. What I am denying is that property in ideas is necessary to provide such secrecy or privacy. So I think Shiffrin's examples do not present an exception to the thought that ideas, unlike some material objects, do not require for their effective use the kind of exclusive control that property affords.

Similar considerations apply to freedom as the basis of a general justification of property. The free use of an idea by one person does not exclude the possibility of another to use the same idea freely. There seems to be no reason grounded on freedom for granting exclusive rights to control ideas. Moreover, exclusive rights to ideas arguably restrict freedom in ways more severe than those by which material property restricts freedom. If exclusive rights to material objects restrict everyone other than the owner to use those objects freely; exclusive rights to ideas restrict everyone from using objects they fully own or their own bodies in ways specified by the owned idea. If a certain way of performing an action, such as a productive process or a dance, is patented, non-owners are to that extent unfree. Tom Palmer insists that 'property rights in tangible objects do not restrict liberty at all – they simply restrain action. Intellectual property rights, on the other hand, do restrict liberty' (Palmer, 1990, p. 831;. cf. Moore's response, 1997, p. 84). This may be taking the contrast a little too far. Whatever the supposed difference between restraining action and restricting freedom, tangible property certainly restricts freedom in so far as it prohibits the use of material objects owned by another. Nevertheless, there is a real contrast in the sense that tangible property and intellectual property restrict liberty in different ways. IP restricts freedom in the same way that a law against smoking, for example, might restrict people from this activity. It is a restriction that is not conditional on your lack of access to the material conditions for performing the action. You may have the space, time and tobacco, but you will still be prohibited from using them in the specified ways. Yet the legitimacy of law stems from the idea of political authority or sovereignty from which follows a moral obligation of compliance. Property, on the other hand, does not imply a right to control people. Palmer is correct if his point is that there is something qualitatively different between the restriction of freedom by control of ideas and that by control of tangible objects, though, at least in theory, they may be extensionally equivalent. Substantial ownership of tangible objects might become as restrictive. If all land is privately owned, dwellers are

bound to accept any conditions the owner might impose within his dominion. It is hard to see how this kind of unfreedom might be any better.

Ideas can certainly be made use of in the various projects one chooses to pursue. But there seems to be no necessity for these ideas to be exclusively owned. We can all use the same ideas simultaneously and none will be worse-off for it. No doubt, the market value of these ideas will decrease significantly the more widely available they become. If my project is an entrepreneurial venture, it may indeed be frustrated. Making money is the only project I can conceive of that might necessitate exclusive control of ideas. To be sure, money can be instrumental in the realisation of our projects. The more money we have, the more of our projects we will be able to fulfil. Why is this not a plausible interest for grounding property rights within a Lockean justification? As a preliminary reply I can only reiterate the point that whatever advantages may be obtained from the *use* of an idea can be secured without excluding anyone from a comparable use. Whereas excluding others appears to be a regrettable though necessary condition of obtaining *any* advantage from material resources, in the case of ideas most advantages are available without exclusion. I am not suggesting that profit is an illegitimate purpose or activity, nor that money cannot contribute to an autonomous life. Only that if this is the basis, it robs the general justification of property of the moral urgency that is associated with subsistence or an autonomous life.

Nor, it seems, could avoiding the tragedy of the commons justify the private ownership of ideas. Ideas cannot be overexploited or undermaintained since they are not subject to physical deterioration. Perhaps the contrary – a free flow of ideas might enable and encourage more creativity and innovation, which would enhance rather than impoverish the commons.

Ideas are non-rival

Before asking 'who owns what?' we should answer the question 'why should anybody own anything at all?' The kind of answers proposed by Lockean theories simply do not apply to ideas and intellectual products. The crucial problem of applying a Lockean general justification of property to the realm of ideas is in the often cited fact that ideas are non-rival. They can be used simultaneously by everyone without their use-value being diminished.

My insistence on the non-rivalry of use-value, ignoring the losses in exchange-value, might appear to some as unwarranted. Though use-value is not reduced by simultaneous access to ideas, the value these ideas carry in a market most certainly is (or so the objection goes). Why could this competitive interest in excluding others from the use of ideas not justify a property right in them? I have already hinted at a deep disanalogy between intellectual products and tangible products as well as between rivalry in use and rivalry in exchange. I now want to present the case more explicitly and cogently. The problem of tangible goods is that, generally speaking, greater use reduces both their use-value and their exchange-value. For example, a swimming pool will be less valuable for the bathers the more crowded it is, and consequently they will be willing to pay less and the owner will probably charge more to restrain usage. Control of these goods, as provided by rights of ownership, is necessary to check or ration use and to protect their value in use. The use-value of intellectual goods, on the other hand, does not decrease with greater use. *Nor does their exchange-value*. Indeed, in certain cases, their use- and exchange-value are likely to *increase* with increased use. If millions use Microsoft Windows (even if many do so illegally) it does not affect the use-value of the software or the exchange-value (roughly speaking) as long as permission to use is restricted and payment may be obtained. The value of Windows may increase with wider use due to compatibility and network effects. Control of intellectual products, as provided by rights of ownership, is not necessary to check, use and protect their value in use. Its only purpose is to secure the extraction of an increased pay for use. But note that this is not an integral aspect of the concept of ownership. If someone were to set up a lemonade stall next to mine, thereby reducing the market value of my lemonade and my stall, I would have no legitimate complaint – or at least not a complaint based on property. But it is this sort of interest that intellectual property is designed to protect. Moreover, it is the only interest that might require property rights to intellectual products in the first place, since interests in use are in any case safe even without such protection.

One final point is that in the context of a Lockean general justification of property the concern with exchange-value makes little sense. In a state of nature, where we are considering the recognition of rudimentary property rights prior to any sort of society-wide contractual arrangement, we can understand the kind of interests in use a prospective owner might have. But the sorts of interest in exchange-value, which already presuppose a more elaborate social context and developed economy, seem conceptually premature.

The non-rivalrous nature of ideas casts serious doubt on the notion of a natural property right in intellectual products. Lacking any basis of the sort that provides a general justification of property, it is not clear why there should be property rights in ideas at all, even before we begin allocating the various objects to different individuals. Some neo-Lockeans deny the need for a general justification of property. The rest of this chapter, dealing with a particular justification of property, goes along with them to some extent.

Positive principle of appropriation

Appropriation of material resources

The second part of a Lockean theory of property is a particular justification of property. It must explain why a particular individual should own a specific asset. When distributions are regulated by rules of property, people own whatever they do because they received it from the previous owners either as a gift or as part of an exchange. Even so, long as it might be, this regressive chain of transfers must reach a point where something unowned becomes the private property of an individual. A theory of property such as this must advance a positive principle of original acquisition. Some action on the part of the individual must make it the case that certain parts of the natural world become his property and must be recognised as such. In Locke's account, self-ownership and labour fill this role. In virtue of these, a person can take something out of the common and mark it in such a way that it becomes his private property.

> every man has a property in his own person. . . . The labour of his body, and the work of his hands, we may say are properly his. 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.
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> (1960/1698, p. 288)

The principle of self-ownership states that every individual owns his own body, in the same way he might own an animal. Thus, he enjoys all the rights of control, income and transfer with respect to his own body. Hence, he would also own each of his body organs taken separately. By the same token he would own any of his body products (hair, fingernails, blood, etc.), as well as the activity of his body. At least for Locke and most of his successors this principle is taken as self-evident.

Arguably, there are better ways to capture the intuitive moral status of our bodies that do not rely on such a proprietorial view of our relation to our own bodies (Attas, 2000; 2005, pp. 49–79). Setting aside this concern, were there a way to extend the kind of privileged status one has with respect to one's body so that it might also encompass parts of the natural world, we could see how one might come to own not only one's body and its products, but also some external resources. For Locke, labour provides such a means.

By labouring on the natural world one mixes one's labour, in Locke's notorious phrase, with some unowned resources. If private property in the newly created object is not respected, in so far as that object contains some self-owned labour, one's self-ownership is violated. Thus one can come to acquire private property in natural resources by infusing them with self-owned substance. It is difficult to view this argument in any way other than metaphorical. On a literal reading there seems to be no end to the problems it raises. Labour in this argument has to be owned and mixed, but depending on its meaning, it cannot be both (see Day, 1966, p. 212; Waldron, 1988, p. 181). Even if labour can be owned and mixed in objects, why would that be a reason for a person to gain ownership over the unowned resource rather than to lose her ownership over her labour? (Nozick, 1974, p. 174f).

Labour could be considered either as a sign of virtue, such as industriousness, or as adding value to the thing laboured on, or of somehow benefiting everyone. As such, it might be thought, labour's deserved reward is a property right in the thing laboured on (see Becker, 1977, pp. 48–56; Gaus and Lomasky, 1990, p. 498; Munzer, 1990, ch. 10; Annis and Bohanon, 1992, pp. 538–43; Spinello, 2003). One problem with a desert argument for appropriation is that appropriation, by its nature, applies only to the first person to act in the relevant way. But if ownership is a fitting reward for the value-adding, general benefiting virtue of labour, it should apply to *all* consequent labouring, not just the first instance (Miller, 1980, p. 9; Waldron, 1988, pp. 203–4; Thomson, 1990, p. 326). Another problem with the desert argument is that if adding value or benefit by labouring on an unowned resource justifies the appropriation of the thing laboured on as a deserved reward, then, by the same principle, subtracting value or harming by labouring on your own property would justify the expropriation of the thing laboured on. And it is not clear what could be an appropriate penalty for subtracting value from an unowned resource. Moreover, even if one deserves a reward for labour, why is the *whole* thing laboured on a proper reward rather than just a part of it? And why is *ownership* of the thing (including

management, income and power of transfer) a fitting reward rather than its consumption, a priority in use or any other lesser interest? (Becker, 1977, p. 51; Waldron, 1988, p. 205).

Though labour as a basis for appropriation is intuitively strong, it raises many problems. Another path taken by neo-Lockeans is the idea of material incorporated in one's ongoing project. If the world is originally unowned and I designate some material resource publicising my intention of integrating it into my project, this might be seen as sufficient grounds for appropriation.

One thought common to both this line of argument and to the argument based on labour is the idea that the world is originally unowned, that neither anyone in particular, nor humanity collectively has any innate claim of ownership on natural resources. There are things to be said in favour of this assumption as well as in favour of the contrary assumption. I shall merely note here that the argument crucially depends on this controversial premise (see Attas, 2003; 2005, pp. 113–18). If the world was jointly owned, no unilateral act lacking agreement could possibly justify the privatisation of collectively owned resources.

Though appropriation by labour does appear to have some initial plausibility, I have identified several complexities it needs to overcome. Whatever the merits of this approach for tangible property, the case of intellectual property raises further insurmountable difficulties, to which we now turn.

Application to intellectual property

On a very simple notion of intellectual creativity, ideas are simply extensions of the self. That is to say, mental products such as ideas, inventions, works of art, and so on, come into being as parts of the mind, in the same way as body products, such as hair or blood, come into being as parts of the body. Since we own our body, we also own its products; if we similarly own our mind, we also own our mind's products. Were Locke to have given any thought to the idea of intellectual property when he was writing *Of Civil Government*, he might have said not only that 'The labour of his body, and the work of his hands', but also that the *ideas of his mind*, 'we may say are properly his'. There is no real need to 'appropriate' anything in the genuine sense, since these things come into the world already attached to persons having foundational rights of self-ownership with respect to them.

In the same vein, Adam Moore asserts that 'while all matter, owned or unowned, already exists, the same is not true of intellectual property . . . it seems that many intellectual works are created *ex nihilo* – from nothing' (1997, p. 76). What follows from this seems to him so self-evident that he adds: 'If we have rights to control anything, it is the contents of our minds' (ibid., p. 78). But such a statement, if true, can hardly be the basis of intellectual property. In fact, it seems inconsistent with intellectual property. Controlling the contents of our minds is not equivalent to controlling ideas *originating* in our minds when they are *outside* our minds. And that is the crux of IP. Controlling ideas originating in our minds when they are in other minds violates the principle of others' right to control the contents of *their* minds. Anyway, this statement makes the idea of original acquisition, by labour or any other way, irrelevant. We 'own' it because it is there – that is to say, in our minds.

Shiffrin objects to this line of reasoning on similar grounds.

> completion and publication of a work seems to effect a separation from the private self. It is not clear that the values animating self-ownership can sensibly be extended to protect individuals' ability to disperse aspects of themselves into the public domain while simultaneously retaining complete control over them.
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> (2001, p. 165)

She asks us to imagine a person who cuts her hair and throws it around in public. Does she continue to have the right to exclude others from its use? Shiffrin suggests that such control cannot be based on the values of autonomy or physical security that underlie the right of self-ownership. Analogously, once publicised, ideas must lose whatever protection self-ownership affords them while they were held in the privacy of one's mind. I agree that if these are the values we care about, it would be hard to see how we could justify control of dispersed body products. But it would also be unclear how we could justify self-ownership in the first place. Taking the idea of ownership of one's body seriously, rather than referring to some extensive set of personal freedoms, separation of body parts from the body does not imply a loss of title. If I own a tree I also own the fruits and I continue owning them even after they drop or are picked. Deliberately throwing my hair on the ground in public view might be conventionally considered relinquishing title to my hair. But publishing my ideas can hardly be considered so. In sum, if some ideas emanate from our minds alone and we own

our minds in the same way that we own our bodies, then we continue to own the ideas once they are publicised.

If this is the basis of rights to intellectual products, then there is no parallel to material property and the elaborate framework for original appropriation turns out to be unnecessary. The structure of a Lockean theory of appropriation includes an unowned common and a means by which individuals can privatise parts of that common. This structure, developed within a material conception of assets, seems unsuited to the sphere of ideas. What would be the unowned intellectual common? Perhaps it is the kind of historical basic knowledge available to all, and by working on this infrastructure and making use of that knowledge one may come to develop new ideas, innovations and artistic creations. Now, in the simple material framework of Lockean appropriation, by working on the common one appropriates bits of that common. But in the intellectual analogue, no one would seriously suggest that by developing certain ideas one comes to own the previously unowned foundational knowledge at the basis of these new ideas. The disanalogy gets deeper still. We come to own things previously unowned because labour imbued them with our selves, so that denying from us exclusive control over them would compromise our self-ownership. Or refusing to grant exclusive control of a material object incorporated in a project will defy our attempts to pursue that project. But the non-rivalrous nature of ideas casts its long shadow here too. Control of a non-rivalrous asset such as ideas by their very nature is not necessary for controlling our selves or for pursuing our projects.

On the simple material model we recognise, on some commonsensical notion, that a product may embody the labour of an individual person alone as well as some unworked natural substance. This might justify ownership of the complete object. In the realm of ideas there is no 'natural substance'. One way or another, all ideas are mental products. Facts may be just out there, but knowledge, methods and imagination all ultimately emanate from a mind. If we begin questioning the origination of ideas we come to doubt not only the plausibility of owning the underlying knowledge to a new idea, but also the individual ownership of whatever is new about that idea.

I now turn to explore in more detail the problem of origination.

The problem of origination

We can classify ideas for our purposes in a rough and ready manner as discoveries, inventions and creations. The first concern a set of facts

that exist independently of human perception. The task of science is to bring these facts to light. The second are the technological innovations that put to some use the underlying ideas of science. The third are ideas that are apparently created *ex nihilo* – they are the work of novelists and artists.

It is very difficult to view scientific discoveries as the product of individuals emanating from their minds alone, and using no resources in the process other than the internal resources of the individual. Surely, they exist independently, even if labour is required to bring them to light. The fact itself (a law of physics, the make-up of a molecule, the correlation between a gene and a behavioural trait, and so on) is not the product of human labour. The effort expended in revealing it and bringing the idea to light might deserve some compensation, but there seems to be no Lockean basis for granting ownership over the idea itself.

Moreover, not all discoveries are the result of a conscious attempt and focused effort to search for and ascertain a fact. Occasionally, scientists stumble on a discovery. In such cases the match between the labour expended and the serendipitous outcome becomes even vaguer and the prize of ownership more difficult to justify. When a conscious effort is made, it is done within the framework of an existing – dominant or emerging – paradigm which includes the kind of questions asked, the theory assumed and the methodology used.

A salient aspect of both scientific discoveries and technological inventions is how often they appear to occur to different people at roughly the same time. As long ago as 1922, William Ogburn and Dorothy Thomas documented almost 150 independent and more or less simultaneous major discoveries and inventions. Classic cases include the development of calculus by both Newton and Leibniz; the proposal of evolutionary theory by both Darwin and Wallace; and the invention of the telephone by both Bell and Gray.

The more technologically advanced a society, the more likely are multiple independent discoveries and inventions. To be granted a patent in the United States the applicant must be considered the 'first to invent' and not merely the first to file an application. Sometimes two or more applications for the same invention are received within a short time of each other. In cases such as these the Patent and Trademark Office must investigate to determine which is the first. Some 200 cases of this kind are filed each year (Kingston, 2004, pp. 209–20).

Some (e.g. Merton, 1961) have taken this as confirmation of a social deterministic theory of invention. Rather than a heroic account, these are seen as the inevitable outcome of historical social circumstances

that make them ripe for the taking.[5] I am making the much weaker, almost trivial claim that the phenomena of multiple inventions support the idea that inventions and discoveries cannot be considered the product of a lone inventor. Much of their substance is owed to circumstances, common knowledge, a social problem awaiting a solution, a methodology of technological innovation based primarily on imitation and piecemeal improvement, and chance.

Literary and artistic creations seem the best candidates for the notion of products of an individual mind. The odds that two writers will write virtually the same book, or two composers the same musical score, are infinitesimally small. But even artistic works cannot be considered as created in a social vacuum. Story plots and artistic themes are often borrowed from real life. The artist presents an impression of something that exists independently.[6] At other times the artist or writer take their cue from earlier works – plays adapted from novels, paintings that reinterpret old masters.[7] Even abstract expressionists, who allegedly use only internal resources and their individuality to express themselves on canvas, make use of a style, develop within a school, and so on. They make a statement that can only be comprehensible within a context of a social practice of creative art (Friedland, 2001, pp. 185–99).[8]

Richard Spinello deridingly identifies the problem of origination, or what he calls authorship, as a postmodern concern. While offering a Lockean justification of intellectual property, he raises three objections to 'radically revising the concept of authorship and disengaging the concept of property from intellectual and creative endeavors' (Spinello, 2003, pp. 7–8). His first concern is that if the thought that we cannot easily identify an originator of an idea were to become generally accepted, 'we will end up diluting intellectual property laws to the detriment of innovation'. Now, this is not the sort of argument a Lockean can make. We can indeed solve the origination problem conventionally and construct a notion of authorship for the sake of putting into place a system of incentives. But we cannot then take this notion as metaphysically fundamental and employ it in a Lockean justification of property. Second, Spinello is worried that 'if the post-modern deconstruction of the author is taken to its logical conclusion . . . if all creation is communal, how do we hold anyone accountable for egregious acts of plagiarism or for a tract full of defamatory remarks?' He seems to believe that ownership and accountability stand or fall together; that if we cannot attribute authorship as a basis for ownership, we will not be able to attribute agency as a basis for accountability. But there is no obstacle to ascribing responsibility to individual acts such as plagiarism and defamation

without considering the results of these acts as original or owned. There is no question when expressing some harmful or fallacious idea of who it is that is putting across the idea and who may be held accountable for the performance of that act. What we are questioning is the originality of the content of that idea. Third, Spinello believes that challenging the idea of authorship entails a rejection of the common-sense idea of originality. We do, it is true, distinguish genuine original art from copycats, imitations and strong influences. This is a common-sense idea of which we would not be easily willing to dispose. A valid account of Mozart composing *Don Giovanni* 'does not suggest that there were no influences or tendencies outside the composer, but those influences do not fully explain his creative activity'. This is all that is required to raise the problem of origination with credibility. External influences do not *fully* explain the creative activity but, Spinello agrees, they do explain some. The question is how we disentangle the real contribution of the author from the contribution of a wider culture within which the author works. Even if there were a natural right to property, it would apply only to that part of the product that we can attribute to the 'author', not to the whole product. Hence, the product cannot be wholly attributed to an author, and there is nothing especially postmodernist about that claim.

The non-rivalrous nature of ideas robs a Lockean theory of property from its general justification. But even if ideas were not non-rival, and their effective use required exclusivity, it would be difficult even in theory to pinpoint the individual to whom we could attribute the production of the idea. Although we could imagine a first and solitary human being gathering and hunting to satisfy his needs, it is more difficult to form a coherent image of a person inventing or making discoveries in a social-scientific vacuum. A theory of appropriation that depends on a one-to-one relation between producer and product is useless in the case of intellectual products.

Negative principle of appropriation

The proviso with respect to material resources

The third and final part of a Lockean theory of property posits a negative condition on appropriations. It is a condition that, out of concern for the interest of others, limits the kind or amount of resources that may be privatised in this way. Thus, a resource laboured upon or incorporated in one's project will only become one's property if it complies with the

stated condition. The *prima facie* claim generated by the positive aspect of the principle of original acquisition is finalised only if it meets the terms set by the Lockean proviso.

Locke proposes two such provisos. The first is the *non-spoilage proviso* and it appears to follow from the same rationale of the general justification of property, namely, subsistence or self-preservation:

> The same law of nature that does by this give us property, does also bound that property too . . . 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.
>
> (Locke, 1960/1698, p. 290)

This can be interpreted quite literally in the sense that spoiled food is an offence against the provider of all food and His intentions. Or perhaps an expression of greed, taking more than one could hope to make use of, as a vice one ought to suppress. Indeed, the proviso appears to apply primarily to gathered fruit and hunted game. Concerning these Locke says:

> But if they perished, in his possession, without their due use; if the fruits rotted, or the venison putrified, before he could spend it, he offended against the common law of nature, and was liable to be punished; he invaded his neighbour's share, for he had *no right, farther than his use* called for any of them, and they might serve to afford him conveniences of life.
>
> (ibid., p.295; emphasis in the original).

Here it appears that violating the non-spoilage proviso is an offence against others, an invasion of a neighbour's share. The problem with letting food rot is not so much the vice of greed or acting against God's purposes, but the waste involved when others who could make use of it are denied access to it. Similar considerations concern ownership of land:

> 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.
>
> (ibid.)

If a person encloses more land than he could usefully employ so that crops perish before they are gathered, the proviso is breached. Thus, not only does he lose his ownership of the fruits of the land, but also of the land itself. This is an important point: the non-spoilage proviso is motivated not by the aesthetic of rotting fruit or the insult to the Creator, but by what is denied other needy people. Thus it does not understand waste as the ruin or perishing of foodstuffs, but the non-use, abuse or misuse, that is to say, the criminally inefficient use, of resources.[9]

Now it is sometimes claimed that the introduction of money in Locke's scheme, without contract and prior to the formation of civil society, overcomes the non-spoilage proviso (Hughes, 1988/9, pp. 325f). For money, 'a lasting thing that men might keep without spoiling' (Locke, 1960/1698, p. 300), removed the limit to accumulation. Whereas before the introduction of money people could accumulate only as much as they could make use of, they can now accumulate durables indefinitely. But money does not eradicate the notion of non-waste itself. It allows the accumulation of wealth, and therefore enables great inequalities to which the tacit consent of all is allegedly given (ibid., p. 302). But it continues to prohibit the accumulation of perishables, and it should consistently still forbid the non-efficient use of land.

Neo-Lockeans usually ignore the non-waste proviso, either because they think it is transcended and no longer applicable in a money society, or, like Nozick, they think that it is redundant if Locke's other proviso – to leave enough and as good for others – is met (Nozick, 1974, pp. 175f). After asserting that labour sets apart the natural resource and makes it the labourer's property, Locke adds what sounds like an afterthought: 'at least where there is enough and as good left in common for others' (Locke, 1960/1698, p. 288).[10]

In a world where practically everything is owned, the idea of leaving anything, let alone enough and as good, seems hopelessly unrealistic. Nozick and others following in his footsteps think that the crucial point of the proviso is that no one's position is worsened. If that is the case, no one can reasonably complain. But this is exceptionally vague. The phrase 'worsening someone's position' can be interpreted more or less stringently in each of several dimensions. Nozick and other neo-Lockeans assume a very weak interpretation of the phrase in all possible dimensions. I have argued elsewhere that though this might be necessary to permit the creation of any property rights at all, it makes the proviso, whatever its rationale, highly unattractive. It is unlikely that a strong case could be made in favour of such a weak version (Attas, 2003; 2005, pp. 100–13).

Application to intellectual property

The non-spoilage proviso seems not to apply at all to intellectual products. Ideas do not rot or perish. If they become outdated it is only due to improvements through which more advanced or more fashionable ideas are made available. Thus a proviso that restricts appropriation to what can be made use of before it decays sets no limits on private property of ideas.

However, if we understand waste not as the ruin or rotting of perishables, but as the recklessly suboptimal use of resources, then the appropriation of intellectual products can definitely be checked by a non-waste proviso. Intellectual property widely and routinely denies use from all those who cannot or will not pay for it. Though in the case of tangible assets such a restriction is necessary for the enjoyment of most advantages, in the case of intellectual products it is not.

Consider the following. A commercial firm will typically adopt a pricing strategy that maximises their profits, not one that maximises their sales. Consequently, some technology will be made available only to the few who can afford it, even though more people could conceivably enjoy it with its production still viable. That is to say, in many cases the technology can be more widely shared without jeopardising the economic basis of its production. This is exacerbated by the monopolistic control held by the owners of intellectual property. Lacking any competition, their maximising strategy will tend to restrict even further the user base. In one intuitive sense, therefore, intellectual property can lead to waste.

How does Locke's other condition apply to intellectual products? According to contemporary understandings of the 'enough and as good' proviso, an original acquisition is permitted if it does not worsen anyone's material well-being. Our initial thought concerning intellectual products might be that since nothing that previously existed is now denied others, no one can be said to be harmed by private property in ideas. As Nozick put it: 'An inventor's patent does not deprive others of an object which would not exist if not for the inventor' (1974, p.182; see also Moore, 1997, pp. 80–2; Spinello, 2003, p. 10). Moreover, since ideas that did not previously exist are now made available to anyone willing to pay for them, it seems that the situation of at least some people other than the owner is improved by the appropriation. One might also argue, along with Hughes, that the proviso is satisfied since new ideas, even when privately owned, provide springboards for the generation of more ideas to everyone's benefit (1989/9, pp. 319, 322).

However, this line of reasoning appears to involve some sort of confusion. Though invention arguably harms no one, perhaps even benefits everyone, appropriation surely harms everyone other than the owner. The invention or discovery of an idea is not required to satisfy the condition of not worsening others' situation. It is the propertisation of an idea that must adhere to such a proviso. Whether an invention or discovery worsens or benefits people's situation, private ownership of an idea (even if that idea is new) restricts everyone in the use that would otherwise be freely available. In this sense, at any rate, all intellectual property violates the proviso. The fact that new ideas can contribute to the generation of even more ideas can only benefit those who would come up with the further developed ideas since under the regime we are considering these too will become the private property of their creators.

There is perhaps an implicit assumption that invention and propertisation stand and fall together. That without the promise of ownership there would not be an incentive to create, invent or discover. Though it seems reasonable to assume that there would be less of an incentive, there is ample empirical evidence that at least some intellectual work would continue nonetheless. Many of the most valued discoveries and works of art were produced and developed without the protection of intellectual property. To name the most obvious: the wheel, the alphabet, the Bible, the works of Homer, Archimedes, Shakespeare, Guttenberg, Bach, Leonardo, Newton, and so on. Much research that academics are engaged in is done without any concern for intellectual property protection. A significant number of contemporary inventions are developed with government funding, or as offshoots of military and space programme R&D. So at least for those ideas that would develop even without the incentive of appropriation, where the good of invention might be available without the bad of exclusive ownership, private property of ideas violates the proviso.[11]

Some inventions and discoveries, even when not privately owned, do more harm than good. Dangerous drugs or tobacco products are a case in point. Private ownership of these ideas, and the intensive marketing by the owner that often comes with it, might very well make things worse in so far as they encourage wider use of these products. For example, the high profits expected in the production and development of new drugs induces the pharmaceutical industry to engage in some practices of questionable value such as direct-to-consumer advertising. Most newly patented and marketed medications do not constitute an improvement on available generic drugs, thus promoting the use of less effective and more costly drugs (Lexchin and Mintzes, 2002). Other

drugs offer a remedy to a condition that was not considered a 'medical problem' at all prior to their marketing, in effect fostering drug use by healthy people (Mintzes, 2002).

Certain useful and beneficial inventions can harm some people. When a newly introduced technology becomes so widespread that it engenders structural and environmental changes so that it becomes a social necessity, it harms those who cannot afford it. Take the motorcar – no harm was done when it is first introduced. But when it becomes the principal means of transportation, a network of roads is established, the city spreads out to the suburbs, walking to work or to the supermarket is no longer a reasonable option, public transport deteriorates, and one can hardly lead a normal life in such an environment without access to a motorcar. At that point individuals who cannot afford a motorcar are harmed in the sense that they would have been better off had society and urban living developed differently. Similarly, anyone who cannot afford the use and maintenance of a mobile phone is made worse off today by its invention compared to the time prior to its introduction. Moreover, the monopolistic position of the patent owner and the ability to extract rent only exacerbate the harm by increasing the number of individuals who cannot afford the new technology.

The simple view that invention and private property in new ideas harm no one and might even benefit some is simply false. Property and exclusive control always deprive those who are left out. In the case of intellectual property, appropriation unnecessarily denies others' use. The claim that property and invention stand and fall together, that we cannot have the good of invention without the bad of appropriation, is misleading. There is historical anecdotal evidence that at least some invention goes on without intellectual property. Moreover, not all invention is good, and the expected gains of intellectual property might spur owners to encourage use, thus aggravating the harm (for example, marketing new medications). Even good inventions might harm some people, and the number of people so harmed might increase by monopolistic power exerted by the owners (for example, mobile phones).

The problem of individuation

Prior to working out whether an appropriation of some intellectual product satisfies the conditions laid by the proviso in either its non-waste or its non-harm form, there must be a clear conception of what exactly the idea consists of. The problem is not altogether unique to the

realm of ideas. Problems concerning the defined boundaries of a material object with which labour is mixed have also been raised. Nozick emphatically asks: 'If a private astronaut clears a place on Mars, has he mixed his labor with (so that he comes to own) the whole planet, the whole uninhabited universe, or just a particular plot?' (1974, p. 174). Does erecting a fence count as mixing one's labour with the enclosed land or just with the land immediately underneath the fence? These problems are real but not unmanageable. As Lawrence Becker points out, the fact that labour is purposive helps to define the extent of the object one labours on (Becker, 1977, pp. 33f).[12] The same cannot be said, however, about ideas. First, on many occasions discoveries are made accidentally. A scientist proceeding along a certain line of inquiry finds a solution quite by chance and not where he expected. One of the most famous cases is Fleming's discovery of penicillin. Sometimes in the search for one thing the researcher stumbles on another. Cases in point are x-rays and Teflon. With the inventor's focus and attention directed elsewhere, it becomes impossible to define the boundaries of an accidental invention or discovery on the basis of the inventor's purpose.

Second, individuating an idea seems a lot more baffling than individuating a material object. Say I am seeking a cure for cancer and I find a substance of type X that at a particular dosage successfully treats cancer of type Y. It is then discovered that X is also effective for the treatment of some other complaint; or that at a different dosage has some other desirable effect. Now, do I own any cure for cancer as I initially set out to find? Any cure for cancer of type Y? The substance X and any use to which it might be employed? Or only the use of X at a specified dosage for the treatment of Y?

Let me take a closer look at the problem of individuation. I can identify at least three such problems. First, the distinction between the idea in its first expression and the many secondary expressions it might stimulate. Does ownership of an idea include *imitation*? Microsoft Windows, for example, an independently developed graphical user interface for the PC, consciously set out to emulate the older Apple Mac operating system. Does Apple own the idea of double-clicking to open folders, files and applications, dragging and dropping them and so on; or only the particular way in which such operations are integrated into their machines? *Parody* is another tricky issue. Do the creators of the espionage movie genre back in the 1960s have any claim to Austin Powers' movies which, after all, would make no sense were it not for the object of their parody? Creations often *inspire* further creations, sometimes

presented as homage, reinterpretation or development. Paul Gauguin's 1889 *Bonjour Monsieur Gauguin* was inspired by Gustave Courbet's *The Meeting*, or *Bonjour Monsieur Courbet*, painted in 1854 and depicting a meeting between the artist and an acquaintance in the countryside. Another homage to the famous nineteenth-century painting is *Have a Nice Day Mr. Hockney* (1981–83) by the pop-artist Peter Blake. Sometimes all that the secondary creations retain is the distinctive style of the source. Take, for example, the American Madeleine Peyroux singing like Billie Holiday, or debutants acting like Brando, or Miro-style paintings drawn in third-grade art classes. Do these cases in anyway transgress their predecessors' intellectual property?

A second problem lies in the distinction between a general and more abstract idea and the specific details that are required to put the idea to practice. Take for example the general idea of a light source produced by electrons travelling through a filament within a vacuum. Several elements that required much experimentation to determine remain unspecified such as the filament material, the kind of vacuum and the electrical charge. Using lower current electricity, a small carbonised filament and an improved vacuum inside the globe, Thomas Edison was able to produce a reliable, long-lasting source of light. In commercialising his improvements, was he transgressing an existing intellectual property right?

The third problem is the metaphysically most troubling. Does an idea I own extend to the ownership of a similar idea at which another arrived independently (the way that a legal patent does)? Or does ownership of an idea preclude independent discovery (the same way as trade secrets, in so far as they are considered intellectual property, fail to provide legal protection against independent invention)? The first possibility depends on a metaphysics of Platonic forms. The idea in an individual's mind is considered the same object as the idea in another's mind. Therefore, if I own that object I own its representation in any mind whatever way it got there. The second possibility follows an alternative metaphysics whereby the identity of an intellectual object depends on the ability to trace a continuous path back to a common precursor. If I learn from you that $2 + 2 = 4$, then the idea of that equation in my mind is identical with the same idea in your mind. But if I worked it out on my own, then that thought would not be identical with a similar thought in your mind. What is the 'idea' that one owns? Is it the substance of the idea, a Platonic object that transcends all particular mental representations? Or is it the form, the carrier of the substance, the identity of which is path-dependent?

The point is not that the law cannot handle these sorts of puzzles of individuation and come up with reasoned and principled justifications for recognising intellectual property in some cases and rejecting it in others. In doing so it might seek to balance competing values or to strive for an optimal solution in terms of scientific and cultural progress. The point is that a Lockean natural right justification is not available to determine whether intellectual property ought to be admitted in each of these cases. Moreover a Lockean justification cannot proceed prior to determination of the boundaries of the intellectual product to which there is no natural solution.

Even if it was not for the non-rivalrous nature of ideas and some general justification of property were available, and even if it was not for the problem of origination and a positive case could be made for the appropriation of intellectual products, there would still be the problem of individuation, of what it is exactly that one can lay a claim to and that must pass the negative test of the proviso in one version or another.

Conclusion

Lockean and neo-Lockean theories of property are often thought to furnish an adequate justification of intellectual property rights. Indeed, they are sometimes said to apply even better to the sphere of ideas than to the sphere of real assets. A tempting initial thought concerning intellectual products is that they are a product of our minds and that nothing that previously existed is denied from others when private property in ideas is recognised. Accordingly, ideas are merely an extension of our minds in the same way as hair is the product of our bodies, and both are similarly protected by the principle of self-ownership. Their ownership is justified simply by a full appreciation of the assumption of self-ownership without the need of genuine appropriation. Moreover, since no one can be harmed by an appropriation of something that would not otherwise exist, the appropriation of an idea by its originator necessarily conforms to the Lockean proviso.

It is this kind of thought that may have led Ayn Rand to proclaim that intellectual property is the first or paradigmatic sort of property: 'Patents and copyrights are the legal implementation of the base of all property rights: a man's right to the product of his mind' (1967, p. 130).

I have argued that rather than being a paradigmatic object of Lockean property rights, ideas are not susceptible to such justifications. Several relatively minor problems of application arise when attempting to

extend Locke's theory beyond the material realm. These problems might be overcome by slight revisions to the theory. However, three major problems stemming from the nature of ideas make it ultimately impossible to justify natural property rights in ideas on Lockean grounds. First, the non-rivalrous nature of ideas, the fact that they can be used simultaneously by many individuals without their use-value diminishing in any way, robs such an attempt of any plausible grounds for a general justification of property. Whether the grounds be self-preservation, freedom or incorporation in a project, if there is no reason to allow exclusive control to an individual, and in so doing denying others control, all that follows is of no consequence. Second, a Lockean positive principle of appropriation assumes that we can unproblematically identify the producer of a material product. The problem of origination makes it impossible to make out the originator of an idea. Ideas, whether discoveries, inventions or artistic creations, develop within a social context that provides the major inputs for their cultivation as well as the social practice that gives them their meaning and significance. There is, therefore, no natural way to determine the individual originator of an idea who can claim ownership on the basis of such a status. If origination is *conventionally* determined, this opens the way for the kind of consequentialist reasoning that shifts intellectual property away from a theory of natural rights. Third, a Lockean proviso that approves or rejects particular appropriations on the basis of other people's interests assumes that the boundaries of the material resource appropriated can be straightforwardly determined. The problem of individuation is the mirror image of origination. If origination looks back to ask who else but the claimant of ownership is responsible for the intellectual product, individuation looks forward to ask what subsequent intellectual products will be considered as stemming from the present one and therefore included in its ownership. Similar to the problem of origination there is no natural way to draw the boundaries, to individuate, the intellectual product. Again, appealing to convention invites consequentialist reasoning and amounts to abandoning a natural rights account of intellectual property. The dual problems of origination and individuation pose a thorny problem even for a conventionalist account. For it appears that the more we are willing to recognise the owner as the originator of the idea, brushing aside inputs of preceding ideas, the less we are able consistently to recognise offshoots of the idea as included within it. That is to say, the narrower we individuate the intellectual product. For we cannot have it both ways: that the idea owes nothing to its predecessors yet its successors are wholly indebted to it.

All this leaves intact the plausible thought that ownership of ideas can be justified on non-Lockean grounds, that is to say, on consequentialist or other grounds not based on natural rights to intellectual property.[13]

Notes

1. Not that he had no thoughts at all on the matter. Ironically, for any one seeking Lockean support for strong natural rights to intellectual property, he wrote a letter in 1694 opposing the renewal of the Licensing, Act objecting to copyright 'in any book which has been in print fifty years' (Locker, 1997, quoted in Shiffrin, 2001, p. 154). Only *somewhat* anachronistic because *Two Treatises of Government* was published in 1698, whereas the origins of patents in Britain can be traced back to the fifteenth century.
2. Possibly, a structure of incentives created by the establishment of IP might contribute to some subsistence needs. This might form part of a consequentialist justification of IP, but not of a natural rights approach. I shall say more on a limited role that incentives might play in a Lockean account below.
3. I use the term 'efficient' in a very intuitive and non-technical sense: *sharing* is more efficient than *duplicating*.
4. This is different from a full-blown consequentialist argument of property. It is part of a justification of why there should be any property at all, rather than who should own what, and it is defensive, aimed at avoiding deterioration rather than inducing the creation of more value. Whereas consequentialists hold that the institution of property and its rules of allocation are the optimal system for creating value; the position being considered here maintains that unless we allow for some private property our natural resources would deteriorate beyond usefulness. Who should own what is justified on independent grounds.
5. Ogburn and Thomas claim that their analysis of multiple inventions 'indicates the great importance of the status of culture as a factor in the origin of inventions' (1922, p. 91).
6. Vincent van Gogh, perhaps one of the most original of the nineteenth-century artists, in a letter to his brother Theo (1888): 'I exaggerate. I sometimes change a motif, but in the end I don't invent the whole painting. Instead I find it ready-made in nature, though I still have to extract it.'
7. For example, Manet's *Le Déjeuner sur l'herbe* has been the subject of reinterpretations by several artists such as Monet and Picasso, and continues to inspire artists to this day.
8. If ideas really are the product of several, perhaps many, individuals, and even if we assume we know which individuals are responsible for each intellectual input, so that all these individuals would be the joint owners of an idea, this would raise the problem of joint products. The principles of property do not offer a solution to the question of the division of *joint* products. See Attas (2004; 2005, pp. 122–6).
9. John Steinbeck's unforgettable *The Grapes of Wrath* comes to mind: 'And a homeless hungry man, driving the roads with his wife beside him and his thin children in the back seat, could look at the fallow fields which might produce food but not profit, and that man could know how that fallow field

is a sin and the unused land a crime against the thin children. And such a man drove along the roads and knew temptation at every field, and knew the lust to take these fields and make them grow strength for his children and a little comfort for his wife' (p. 245).

10. Waldron interprets Locke as not intending to impose a proviso at all, but merely making explicit a factual assumption about the world when no one appropriates more than he can use without spoilage. (1988, pp. 210–11).
11. There is a crucial difference between the role incentives might play in consequentialist justifications and in natural rights (Lockean) justifications of (intellectual) property. On a consequentialist account we may ask about the structure of incentives *a system of IP* might generate, and whether the system as a whole might produce more good than harm. This is irrelevant for a proviso in a natural rights approach. To be sure, we may take into consideration the incentive effects without which the idea perhaps might not be developed at all. Nevertheless, we must focus on *each individual appropriation* and ask whether it produces more good than harm for others.
12. David Hume raised similar problems with respect to the extent of occupation. Disputes over such issues 'can be decided by no other faculty than the imagination' (Hume, 1978, p. 507). The extent of occupation, and similarly the extent of an object laboured upon, is a matter of human 'fancy', and must therefore be determined by convention.
13. I would like to thank David Enoch, Axel Gosseries, Alon Harel, Alain Marciano, Jonathan Trerise and an anonymous referee for their helpful written comments and valuable suggestions.

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