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Locke, Labour and the Intellectual Commons

Does a person have a natural right of property in those abstract objects that she or he discovers or creates? The common law ultimately did not declare such a right. The answer to our question might still be a philosophical ‘yes’. One philosopher, probably more than any other, has been linked with a natural rights theory of property. The influence on political philosophy of John Locke’s short discussion of property in Chapter V, Book II of the *Two Treatises of Government* (1690) has been profound.¹ Locke on property has a totemic status. It is not surprising, therefore, that modern theorists discuss a ‘Lockean labour theory’ of intellectual property.²

The purpose of this chapter is to evaluate the application of Locke’s writing on property to intellectual property. By way of preview, it is argued that labour has a comparatively minor, somewhat functional role in so-called ‘labour theories of property’ with which Locke is commonly linked. The real value of Locke’s writing on property is that it shows us that the coherence or truth of an argument that relies on natural rights to justify intellectual property rights primarily depends

1 References to Locke’s *Two Treatises* are to John Locke, *Two Treatises of Government* (1690; P Laslett, ed., Cambridge, 1988). The references are to Book I or II and the numbered sections of Locke’s text.

2 J. Hughes, ‘The Philosophy of Intellectual Property’, 77 *The Georgetown Law Journal*, 287, 288 (1988); H.M. Spector, ‘An Outline of a Theory Justifying Intellectual and Industrial Property Rights’, 8 *European Intellectual Property Review*, 270 (1989); E.C. Hettinger, ‘Justifying Intellectual Property’, 18 *Philosophy and Public Affairs*, 31 (1989).

on a concept of community and an accompanying metaphysical scheme. Appeals to labour in labour theories of property are essentially exhortations to keep certain metaphysical assumptions and a concept of community in place.

Locke is a philosopher who does not lack interpreters.³ No attempt is made to add another interpretation or yet another version of a labour theory of property. The remainder of this chapter is divided into four sections. The first section offers a brief description of Locke's purposes and claims in Chapter V of the *Second Treatise*. Readers familiar with Locke will want to skip this section. The second section discusses some of the conflicting interpretations of his property theory. Sections 3 and 4 link these interpretations to intellectual property.

Locke's Purposes in 'Of Property'

Heretical though the suggestion seems, perhaps Locke does not have a theory of property. Chapter V of the *Second Treatise* is a short chapter. If there is a theory of property in any full-blown sense, it is sparsely presented. Locke begins the chapter by referring to a 'very great difficulty': if God gave the earth to 'Mankind in common', how can any individual have property in any thing?⁴ The remainder of the chapter elaborates an answer to this question.

Chapter V plays a crucial supporting role in Locke's theory of Civil Government. The *Two Treatises*, it is well known, are an attack on absolutist monarchical government.⁵ Locke attacks a specific argument for absolutist monarchy as presented by Robert Filmer in his *Patriarcha: or the Natural Power of Kings* (1680). Filmer had developed the idea that Adam had complete authority over the world, an authority that kings, being Adam's heirs, could claim. Locke opens the *Second Treatise* with the claim that he has shown Filmer's idea to be impossible. This leaves a problem. If the legitimacy of political power is not to be found in Adam's patriarchal heritage, where

3 A good source for the critical literature on Locke is the four-volume work edited by Richard Ashcraft: *John Locke: Critical Assessments* (London, New York, 1991). Volume 3 contains the discussion of Locke's theory of property.

4 II, 25.

5 J. Tully, *A Discourse on Property* (Cambridge, 1980), 53. See also Laslett's Introduction to the *Two Treatises*, 75–76.

is it to be found? Of necessity, says Locke, we must find 'another rise of Government, another Original Political Power, and another way of designing and knowing the Persons that have it, than what Sir Robert F. hath taught us'.⁶

This then is the mission of the *Second Treatise*. How does Chapter V fit in? The answer lies in the problems which Filmer sets for natural law theorists and Locke's desire to use the framework of natural law for his theory of civil government. Filmer had charged natural law thinkers like Grotius with incoherence and inconsistency. How could natural law, which proclaimed the existence of a commons, lead to a state of private ownership? Did this not entail the mutability of the immutable? If the consent of all the commoners was required for individual acts of appropriation from the commons, how could this consent be obtained from *all* the commoners?

In order to show that Filmer's blows against natural law were not mortal, Locke was forced to construct an argument within natural law that showed that equality and the commons could coexist with individual appropriation and property rights.⁷ Having done that, Locke could return to his principal task of providing a theory of government and the right to resistance. Locke's solution to the problem of the God-given commons and private appropriation starts with the assumption that 'every Man has a *Property* in his own *Person*'.⁸ This assumption leads Locke to claim that an individual's labour also belongs to that individual. And in turn this produces the following condition of origination for property: 'Whatsoever then he removes out of the State that Nature hath provided, and left it in, he hath mixed his *Labour* with, and joyned to it something that is his own, and thereby makes it his *Property*'.⁹

Locke adds two further conditions. The first states that labour only originates a property right to the object to which it is joined 'where there is enough, and as good left in common for others'.¹⁰ The second limit on acquisitiveness is derived by Locke from God's purposes. God made things for people to enjoy and not to spoil or destroy.¹¹ From this

6 II, 1.

7 J. Tully, *A Discourse On Property* (Cambridge, 1980), 54.

8 II, 27.

9 Ibid.

10 Ibid.

11 II, 31.

Locke deduces the following: '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.'¹² Locke recognised that this second condition would not serve, in a money economy, to limit large property holdings because men could, through the process of exchange, amass non-perishable wealth. There is more than a touch of unreality about this part of Locke's discussion. One could, according to Locke, acquire fabulous wealth through stocks and money but it was morally reprehensible to allow a bag of plums to go to waste. With breathtaking swiftness he glides over the connections between property, wealth, political and social power and the implications of this for a theory like his which claims that men are naturally equal and have a natural right to property. In Locke's defence it might be said that he does not seem to relish the introduction of money.¹³

For what reason does man acquire property rights through labour? The answer lies in God's purposes. God commanded men to labour so that they might enjoy the conveniences of life: food, shelter, clothes and a comfortable way of living.¹⁴ Locke does not assume that all men will be interested in labouring; it was to the 'Industrious and Rational' that God had given the commons.¹⁵ Labour was to function as a certificate of title. Locke thought that labour needed to be rewarded, for he characterises labour in negative terms.¹⁶ Summarised, Locke's core propositions are these:

1. God has given the world to people in common.
2. Every person has a property in his own person.
3. A person's labour belongs to him.
4. Whenever a person mixes his labour with something in the commons he thereby makes it his property.
5. The right of property is conditional upon a person leaving in the commons enough and as good for the other commoners.
6. A person cannot take more out of the commons than they can use to advantage.

¹² Ibid.

¹³ II, 46, 50. See also J. Dunn, *Locke* (Oxford, 1984), 40.

¹⁴ II, 32.

¹⁵ II, 34.

¹⁶ II, 34, 37.

Proposition 4 does not of itself provide a justification for property rights. Claiming that labour begins property still leaves the question of why labour rather than intention or possession should be the basis of property rights. Locke has several answers as to why labour should serve this role. The connection between labour and property exists by virtue of divine command, or natural law, or both. Locke suggests that property rights are a just reward for the industrious. He does not use the language of just deserts explicitly, although he does later talk of 'just *Property*'.¹⁷ Locke also argues that the labour of individuals adds value to a product and confers a general social benefit. Using the example of land, he claims that the person who encloses ten acres and produces from them the same amount that can be obtained from 100 acres in the commons has increased the 'common stock of mankind'.¹⁸ This argument begins to move in a utilitarian direction.¹⁹

Interpreting Locke

There are different interpretations of Locke on property. In the case of two well-known ones, those of Tully and Macpherson, the interpretive lines are so flatly contrary that the reader of both can ask whether the same text was being read. For Tully, Locke's philosophy represents 'a philosophy of religious praxis'.²⁰ It ultimately justifies, not the right of private property, but the commons. For Macpherson, Locke is one of capitalism's most faithful ideological servants. His service is to provide 'a moral foundation for bourgeois appropriation'.²¹

Perhaps the problem with Locke's text is that it encourages contrary interpretations. Monson, in a perceptive analysis of the philosophical scholarship on Locke, argues that the problem stems from the fact that Locke counterpoises so many basic concepts – obedience to state versus right to revolt, unlimited appropriation versus duty to preserve others, majority rule versus inalienability of consent – that almost

17 II, 46.

18 II, 37, 40.

19 A. Ryan, *Property and Political Theory* (Oxford, New York, 1984), 30.

20 J. Tully, *A Discourse on Property* (Cambridge, 1980), 174.

21 C.B. Macpherson, *The Political Theory of Possessive Individualism* (Oxford, 1979), 221.

any theory is derivable from the text.²² If Monson is right, and the numerous interpretations of Locke's work suggest he may be, then Locke's text in all probability allows for a range of justificatory models of property, including intellectual property, to be built. Certainly those scholars seeking to build a Lockean justificatory theory of intellectual property have yet to discuss the hermeneutical free play of Locke's text and the strategic freedoms it offers interpreters and model builders.

The purpose here is to show that the load which labour can carry in a justificatory theory of intellectual property depends on two factors: a conception of community and the relation of that community to the intellectual commons. Although labour is frequently appealed to by judges in intellectual property matters, the metaphysical framework which gives the appeal its normative force is rarely brought out into the open. Similarly, when nation states argue that the international protection for intellectual property ought to be improved to protect the labour of their citizens, the appeal to labour is simply an indicator that a particular conception of community and the intellectual commons is being advanced. Under the cries of theft there is an agenda related to the metaphysics of community. In order to demonstrate these claims, we need to discuss Tully's and Macpherson's respective interpretations of Locke.

Tully's quest is for the theological Locke. The basis of Locke's theory of property is the special relationship between God and man. Tully labels this 'the workmanship model' and draws on the following passage from Locke for support:²³

For Men being all the Workmanship of one Omnipotent, and infinitely wise Maker; All the Servants of one Sovereign Master, sent into the World by his order and about his business, they are his Property, whose Workmanship they are, made to last during his, not one another's Pleasure.

22 C.H. Monson, 'Locke and his Interpreters', in R. Ashcraft (ed.), *John Locke* (London, New York, 1991), vol. 3, 13, 23–24. So, for instance, it is even possible to find in his work a contribution to feminism. See M.A. Butler, 'Early Liberal Roots of Feminism: John Locke and the Attack on Patriarchy', in R. Ashcraft (ed.), *John Locke* (London, New York, 1991), vol. 3, 639.

23 II, 6.

The notion of man doing God's business is crucial to the theological Locke. It allows him to argue that man has a definite purpose in the world and forms the basis of rights and obligations for man. By consulting reason man discovers that he has obligations in the state of nature. The first of these is that he is under a duty of self-preservation. This duty, says Tully, depends on the workmanship model: God made all men and as maker has the rights to which men have a corresponding duty, that of self-preservation and the preservation of others.²⁴ The right to property is deduced from the right of preservation and the right to engage in activities leading to preservation. Natural property rights to the items of subsistence are a necessary consequence of the natural rights of preservation.²⁵

The existence of natural property rights poses a problem because they have to be consistent with the existence of an original common and an original community. Tully argues that the intellectual discourse in which Locke writes contains two versions of community and property. One version of property, articulated by Grotius, Filmer and Pufendorf, confines the meaning of property (*dominium*) to private property. Private property implies a right of exclusive possession. The world is given to people in common, but crucially 'in common' means that the world 'belongs originally to no one and is open to all'.²⁶ Property simply means the right of exclusive possession to the objects which people take from the commons. There is no right to be included in the commons, merely a right to control over what one takes from the commons. The conception of community which underpins this version of the commons and property is negative community.

Negative community has a historically prior opposite – positive community – the second version. Going back to Aquinas, the term '*dominium*' refers to exclusive possession. It is also used by Aquinas to refer to the capacity to use natural things for self-preservation. This 'use right' exists in relation to a commons which is owned by all, rather than a commons which is open to all to procure or appropriate. By Locke's time there is a clear choice to be made concerning property and the commons. Negative community is defined in terms of a commons belonging to no one, parts of which may be appropriated.

24 J. Tully, *A Discourse on Property* (Cambridge, 1980), 4.

25 *Id.*, 62–63.

26 *Id.*, 71.

Positive community is defined in terms of a common which belongs to all. All have a right to be included in the use of it. It is this positive, inclusive concept of property which Locke sets out to defend, according to Tully. The very great difficulty which Locke takes on by choosing to defend a concept of positive community is how individuals can make use of the commons without having to obtain the consent of all the commoners. Lack of consent to taking denotes robbery.

Locke's solution, Tully argues, is to 'redefine positive community'.²⁷ A person's inclusive right to the commons does not include a right to everything in the commons, but merely the right to be included in the commons for the purpose of exercising the natural rights of survival and subsistence. Property refers to the right to use the commons and those objects extracted from the commons – a usufructory right. Describing the means of extraction leads Locke into his famous discussion of how labour begins property. By using labour as the starting-point for property, Locke overcomes the problem of how individuals might be said to acquire property in objects from the commons without obtaining the consent of the rest of the commoners. Labour provides the individual commoners with a way of using the commons for their purposes.

On Tully's analysis of Locke, labour of itself does not produce a right of property. More controversially, Locke, according to Tully, provides a justification not of private property but of 'the English Common'.²⁸ The common is there to serve God's purposes for man and labour enables man to particularise the commons and realise God's purposes.²⁹

Macpherson, on the other hand, discovers the capitalist Locke. Locke's 'astonishing achievement' is to derive from natural law a right of property while simultaneously removing those natural law conditions which traditionally qualify the exercise of that right. The result is an argument which supports unlimited appropriation. The spoilage limitation is overcome by the invention of money. By shifting from a system of barter to a currency system, men can hoard money without fear of infringing the spoilage limitation because money, unlike fruit,

27 Id., 127.

28 Id., 130.

29 Id., 3.

does not spoil. Furthermore, argues Macpherson, this capital formation is sanctioned by Locke within the state of nature, for the consent to the introduction of money takes place there.³⁰

The sufficiency limitation, which requires men to leave enough and as good for others, is removed by Locke, in part, by arguing that it is taken care of by the introduction of money. Locke also argues that the appropriation of land in excess of this limit results in productivity gains which would not occur if the land were left unappropriated. Everyone, in short, is better off if the 'enough and as good' condition does not apply to land. The private ownership of land will deliver greater wealth to all; thereby ensuring men's natural right to subsistence.³¹ Macpherson considers a third implied limitation: one can only appropriate that which one has personally laboured for. This, Macpherson suggests, does not count as a constraint for Locke because he assumes that persons can acquire property through the labour of their servants.³² The property-conferring nature of labour can be transferred to others for wages.

For Macpherson, Locke seems something of an evil genius. Starting from the assumptions of the natural law tradition, Locke produces a justification for unlimited capitalist appropriation. There is no hint in Locke that labour and its products is in some broader sense a joint enterprise between the individual and the society in which he labours. For the capitalist Locke, individuals labour under a law of appropriation that is not qualified by those traditional obligations of preservation that the Thomist tradition ascribed to property owners in a positive community.

Both Tully's and Macpherson's discussions reveal that the commons is a normatively loaded construct. Depending on the set of initial conditions that are specified for it, very different explanations and justifications for the beginnings of private property can be developed. Tully's discussion suggests that within 17th-century political discourse the choice of community in relation to the commons was, at the most

30 C.B. Macpherson, *The Political Theory of Possessive Individualism* (Oxford, 1979), 209.

31 *Id.*, 212.

32 *Id.*, 220.

fundamental level, one between positive and negative community. This same choice, we shall see, faces those who argue for various arrangements of intellectual property.

Locke on Intellectual Property

When he wrote on property, Locke probably did not have intellectual property in mind. It was the ownership of physical rather than abstract objects that occupied his attention. In any case, as we have briefly tried to show, his writing on property was part of a wider philosophical agenda on the nature of government. Despite the very different historical context in which his views on property were formed, those thinking about intellectual property have made use of his work. Generally speaking, people who use Locke's theory tend to concentrate on labour and the mixing metaphor. To a large extent this focus on labour is misplaced. Labour is either too indeterminate or too incomplete a basis on which to base a justification of property. It may work reasonably well in some cases, for example making a dolls house or growing a crop, but its usefulness runs out with forms of work that are characterised by the presence of many interdependent relations (the design of a computer program or building a skyscraper).

Labour does not, for instance, have a dominant role in the discussion of the origin of property rights to be found in Grotius or in that of Pufendorf. Labour has a role in both, of course, but this role is crucially dependent upon a metaphysic of community. Pufendorf, more clearly than Grotius, depicts the original community as negative and then proceeds to argue that, when men left this 'original negative community of things', they 'by a pact established separate dominions over things, not indeed, all at once and for all time, but successively, and as the state of things, or the nature and number of men seemed to require'.³³ It is also true for Grotius that the emergence of private property is based on agreement and a metaphysic of community.³⁴ Labour is not the dominant category of explanation in Grotius' explanation of the

33 S. Pufendorf, *De Jure Naturae et Gentium Libri Octo* (1672; translation of 1688 edn by C.H. and W.A. Oldfather, New York, London, 1964), IV, 4, 6.

34 H. Grotius, *De Jure Belli Ac Pacis Libri Tres* (1625; F.W. Kelsey trs., New York, London, 1964), II, 2, 5.

beginnings of private property. Similarly, it is somewhat misleading to depict Locke as a labour theorist of property.³⁵ This is too simple a view of the natural law tradition in which Locke worked.

The desire to link a theory of intellectual property back to Locke probably has much to do with reasons of ideological legitimacy. Locke remains a powerful totem. The remainder of this section illustrates how one can generate different 'Lockean' theories of intellectual property by utilising different parts of Locke's conceptual legacy. Theories which claim to be Lockean usually do so because of the use they make of the mixing metaphor and the fact that the property rights they establish are not dependent for their existence upon positive law.

By concentrating on Locke's mixing metaphor and at the same time ignoring the religious metaphysical scheme which Locke uses to give the metaphor a more precise meaning, one can derive a strong justificatory theory of intellectual property. 'Strong' is used to refer to the extensional reach of the theory. Very few abstract objects, if any, would escape individual ownership. In outline an argument for such a theory would have the following form. A strong justificatory theory would have to ignore a possible distinction between those abstract objects which are creations (for instance, the Mutant Ninja Turtles, Bilbo the hobbit and Sherlock Holmes) and those abstract objects which exist independently of us and are discovered (electrons, quarks and large primary numbers are all candidates for this category).³⁶ We might call this a distinction between real and invented abstract objects. It gives rise to many metaphysical issues which we set aside. Creation and invention in a strong justificatory theory would be subsumed under the general category of intellectual labour. One possible direction in which such a theory could go is to claim that there is no such thing as the intellectual commons. Abstract objects, whether discovered or created, are always the product of individual intellectual labour and, therefore, the property of the intellectual worker responsible for their generation. Intellectual property legislation that sets limits on the private ownership of such objects invades the natural right of the owner. The crucial step in this argument is the assumption that there

35 For some argument as to why, see S. Buckle, *Natural Law and the Theory of Property* (Oxford, 1991), 179–180.

36 A scientific realist would claim that theoretical entities of this kind exist. For a description of scientific realism, see N. Tennant, *Anti-Realism and Logic* (Oxford, 1987), chapter 2.

is no intellectual commons. Locke's analysis of property starts with the existence of the commons. It is God's gift. The challenge Locke faces is to explain the shift from the earthly commons to private property. If, as is possible, there is no equivalent of the earthly commons for abstract objects, building a case for the ownership of such objects becomes easier. The challenge under a strong Lockean labour theory of intellectual property is to justify how such objects could ever be part of an intellectual commons, that is, the shift from private property to the commons. The challenge comes about because, while acts of individual labour allow the commoners to demarcate a part of the physical commons which they need for their survival, acts of labour that relate to abstract objects potentially prevent the emergence of an intellectual commons. Labour, once joined to the abstract object, allows an individual to bar its journey to an intellectual commons. Putting it another way, it prevents the creation of a common pool of these objects.

Alternatively, the strong theory might concede that there is an intellectual commons and define it as the set of discoverable abstract objects (and therefore unowned objects). On the strong theory such objects could be annexed by individual labour. They could not be removed or taken from the commons in the way that physical objects can be. Rather, a person would through an act of intellectual labour identify such objects and through that act of identification acquire property in them.

As in the case of the removal of physical objects from the earthly commons, Locke's two provisos, the sufficiency limitation and the spoilage limitation, apply to regulate the removal of abstract objects from the intellectual commons. When the sufficiency limitation is applied literally to physical objects it has the consequence that no objects may be removed from the commons. Any disturbance of the commons means that a condition requiring enough *and* as good be left for others cannot be strictly satisfied.³⁷ But perhaps the provisos

37 The consequences of applying Locke's sufficiency limitation to the physical commons has been the subject of some discussion. See, for example, R. Nozick, *Anarchy, State, and Utopia* (Oxford, 1974), 174–178; J. Waldron, 'Enough and As Good Left for Others', 29 *Philosophical Quarterly*, 319 (1979); J.H. Bogart, 'Lockean Provisos and State of Nature Theories', 95 *Ethics*, 828 (1985); J.J. Thomson, *The Realm of Rights* (Cambridge, Mass., 1990), 330–331. For an example of an argument that offers a counter to the usual problems with the proviso, see D. Schmidtz, 'The Institution of Property', 11 *Social Philosophy and Policy*, 42, 45–46 (1994).

do not apply with such severity to abstract objects. A piece of fruit may spoil but a formula, by its abstract nature, cannot. The 'enough and as good' requirement might also be satisfied. Abstract objects are not consumed in use. In one sense they never leave the intellectual commons. In addition, abstract objects seem to exist in large numbers. The nature of the molecular world, for example, seems to be such that the synthesis of one perfume leaves other manufacturers with lots of other possibilities. If the world of abstract objects is a more or less infinite set of equivalents then it follows under the strong theory we have been discussing that any given appropriation by an individual of an abstract object would be allowed.

Potentially this justificatory line of argument has radical implications for existing intellectual property regimes. It suggests that a much larger scale of appropriation of the intellectual commons is justifiable. Typically, intellectual property regimes have not included ideas and discoveries as objects of property rights. There would, in principle, be no reason why the basic ideas of science, for example the second law of thermodynamics, could not be owned by those who laboured to produce them. Similarly, copyright has traditionally not protected ideas. But on a strong justificatory natural rights model of intellectual property there would be no reason in principle why originators of ideas could not claim copyright protection for them.

A social system that operated with a strong labour-based natural property rights view of intellectual property could be expected to concentrate heavily on the propertisation and appropriation of the intellectual commons. Courts in such a social system could be expected to concentrate solely on the presence or absence of labour when considering the issue of property in abstract objects. Similarly, legislatures could be expected to recognise many new forms of intellectual property. The task of positive intellectual property law would be to secure the labour-based pre-legal rights of individuals.

The persuasiveness of the strong natural rights theory of intellectual property depends on a number of assumptions. One central assumption is that abstract objects are, or can be, the product of labour.³⁸ One counter to this, although an implausible one for materialists, is to

38 See J. Hughes, 'The Philosophy of Intellectual Property', 77 *The Georgetown Law Journal*, 287, 310–314 (1988).

run a supernaturalist argument in relation to abstract objects. Abstract objects, it might be said, have an external source like God, spirits or a platonic heaven and do not therefore involve individual persons in work. On this view people are the passive recipients of ideas and do not labour for them. Needless to say that the metaphysical nature of this counter would itself be highly controversial.

There are less controversial ways in which to problematise the strong argument for property rights in abstract objects. The strong form assumes that Locke's sufficiency and spoilage provisos do not apply to abstract objects. Is this true? Might not ideas (one form of abstract object) spoil? As abstract objects ideas cannot spoil, but the opportunities that they confer may. Ideas for the improvements to the catapult were only of use while the catapult remained a weapon of siege. Perhaps ideas can spoil in the sense that, once appropriated, their time span of useful application in many cases is limited. Those who appropriate ideas with a view to doing nothing with them arguably infringe Locke's spoilage proviso.

There are circumstances in which the sufficiency limitation might also apply to limit any natural right in abstract objects. Assume that it is true that the stock of abstract objects is infinite and that it consists of many abstract objects of comparable utility. Can the sufficiency limitation operate in this case? One reason for thinking that it can is this: even where the stock of abstract objects is infinite, the human capacity to exploit that stock at any given moment is conditioned by the state of cultural and scientific knowledge which exists at that historical moment. Human capabilities set limits on the abstract objects that may possibly be exploited. The set of usable abstract objects may also be further reduced because some ideas or knowledge may be necessary gateways to others. Non-Euclidean geometries, for instance, were essential to the breakthroughs in theoretical physics in the 20th century. Contrary to the view that societies are awash with information, it may be that, at various points in history, societies may face a shortage of supply of abstract objects. Under such conditions of shortage, those who claim property rights in abstract objects may well fail to leave enough and as good for others.

There are other problems with the strong justificatory form for intellectual property. The connection it posits between labour and the object of the property right is not straightforward. Can labour

precisely designate the object of the right it is meant to begin? Nozick, in a somewhat teasing fashion, raises an aspect of this problem when he asks whether, by mixing my tomato juice with the ocean, I can claim property rights in the ocean. There is a serious problem here. If labour is to form the basis of a natural property right there must be some way in which to demarcate precisely the object of the property right. Locke's two provisos, the spoilage proviso and the sufficiency proviso, do not necessarily help here, for they operate primarily to set limits on the extension of property rights to objects. But what is it that defines the boundaries of the object of property? Labour creates the property right, but what identifies the object of that property right? This issue does not arise in a central way for Locke since his examples of objects of property, such as game or acorns, suggest to the reader that objects have natural boundaries. The issue of boundaries does arise for Grotius when he discusses whether the sea can be privately owned. Private ownership could take place through occupation, but only objects with definite limits could be occupied.³⁹ The sea, like the air, could not be occupied.⁴⁰ Therefore it was not capable of private ownership. Both Grotius and Pufendorf spend time discussing the link between occupation and the physical object of occupation. They are clearly aware that, even in the case of physical objects, the action of labour needs to be supplemented by custom and convention in order to settle the object of occupation. They do not, of course, discuss the fanciful examples put forward by Nozick. This is hardly surprising since the existence of boundaries is to a large extent dependent on shared understandings and conventions. No one in the natural law tradition would seriously have contended that one could own a planet by clearing a space on it. This, amongst other things, would have seemed, on the face of it, inconsistent with God's purposes.

If a labour theory of property has problems in accounting for the boundaries of physical objects, those problems are magnified when it comes to abstract objects. In Chapter 7 we will see that the problem is a severe one. Abstract objects have the potential to reside in one physical object or many. Their extension to the physical world depends on their definition. A literary archetype (an abstract object) is potentially 'seen' in many individual works. The action of writing

39 H. Grotius, *De Jure Belli Ac Pacis Libri Tres* (1625; F.W. Kelsey trs., New York, London, 1964), II, 2, 3.

40 H. Grotius, *Mare Liberum* (1608; R.V.D. Magoffin trs., New York, 1916), chapter V, 28.

begins an abstract object. But how does one limit the proprietary scope of that abstract object? The action of labour does not of itself provide the answer, for it simply begins the process. Within the natural law tradition the answer was largely provided by a religious metaphysical scheme. A labour theory of property, if it is to provide an answer as to how abstract objects might be limited and defined, has to start by adopting some metaphysical scheme in order to avoid labour becoming a major source of indeterminacy within the theory itself.

Taking a strong labour theory of property rights seriously may, paradoxically, threaten the legitimacy of individual property holdings. In a market society the value of objects one has produced is set by the subjective demand of others in the market.⁴¹ How can labour ground a natural right to market value if that value is determined not by individual labour but by the demand activity of others? If the right relates, not to the value but to the object, the boundary problems mentioned in the previous paragraph arise. Concentrating on the labour of individuals might extinguish the possibility of private ownership of abstract objects altogether. Within an interdependent, differentiated society the labour of any one individual is made possible by the labour of others. If we define a direct contribution of labour in terms of a contribution that enables the production of an abstract object, this forces a recognition of the fact that many ostensibly individually owned abstract objects are in reality collectively owned by virtue of joint labour. It is perhaps because a full acknowledgement of the labour of others has such profound implications for the possibility of private ownership that Grotius and Pufendorf were careful to emphasise, in their accounts of the origins of private property, the role of agreement and convention. Property in their theories has a strong conventional element. In Pufendorf's words, 'the proprietorship of things has resulted immediately from the convention of men, either tacit or express'.⁴²

So far our criticisms have been aimed at a strong justificatory form of the labour theory of property. This is not the only kind of theory of intellectual property that might be extracted from Locke's text.

41 See E.C. Hettinger, 'Justifying Intellectual Property', 18 *Philosophy and Public Affairs*, 31, 38 (1989).

42 S. Pufendorf, *De Jure Naturae et Gentium Libri Octo* (1672; translation of 1688 edn by C.H. and W.A. Oldfather, New York, London, 1964), IV, 4, 4.

On one view of Locke the role of labour in the formation of private property is confined to that period of the state of nature where there is abundance. Olivecrona takes this line, arguing that the 'age of abundance' comes to an end because of population pressures and the introduction of money.⁴³ In the age of scarcity distinct communities exist and the distribution of property becomes primarily conventional, settled 'by Compact and Agreement', to use Locke's words.⁴⁴ Positive law and convention, informed by utilitarian considerations, determine the shape of property law. Intellectual property laws would on this approach be positive laws justified by utility and designed to serve the goal of maximising welfare of the community in question.

The strong form of the labour theory of intellectual property is consistent with modern theories that portray rights as pre-social entities. This emphasis on the independence and naturalness of rights is to be found in Nozick's theory of state and rights. For Nozick, the state is an invention, but individual rights are not, or at least they are not an invention of the state. Rather, they set limits on the kind of state we are justified in inventing. For Nozick the primary task of the state is to secure individual property rights rather than interfere with them. The implications of this kind of theoretical approach for the reform of intellectual property are radical. One might be led to the conclusion that intellectual property rights should be held by individuals in perpetuity: where legislatures limit the duration of intellectual property rights or enact compulsory licensing provisions, as they do in the case of patents and copyright, they commit theft.

Modern supporters of natural property rights tend to play down the historical tradition on which they rely, because this tradition does not establish the sanctity of property rights. They remain a regulatory phenomenon. Locke states that governments have the power to regulate property.⁴⁵ This power has to be exercised consistently with the goals of natural law, but at the same time governments have, when making regulatory decisions, leeways of choice.⁴⁶ There is also enough evidence to suggest, Macpherson's interpretation notwithstanding, that Locke's right of property is primarily an instrumental right. It is

43 K. Olivecrona, 'Locke's Theory of Appropriation', in R. Ashcraft (ed.), *John Locke* (London, New York, 1991) vol. 3, 327–342.

44 II, 45.

45 II, 120.

46 J. Tully, *A Discourse on Property* (Cambridge, 1980), 48.

deduced from the rights to life and self-preservation and is 'always subordinate to the latter'.⁴⁷ This then clearly allows for the possibility that the natural right of property may be modified by positive law, provided always that any such law itself remains consistent with natural law.

Ultimately, looking to Locke as the theoretical fountainhead of a strong labour theory of intellectual property is not sustainable. Locke's mixing metaphor, once it is stripped of its metaphysical context, generates too many indeterminacies and problems to provide a justification for intellectual property. The lesson from Locke on property is that we should take the metaphysical context of labour theories of property and their accompanying schemes of community seriously. Labour should not hold centre stage.

Community and the Intellectual Commons

The Intellectual Commons

There are probably a variety of metaphysical schemes which might be used to support a theory of property. There is less choice when it comes to offering a generic characterisation of community. Essentially the choice is the same one that faced Grotius, Pufendorf and Locke. This is a choice between negative and positive community. What follows is an analysis of the relationship between these two conceptions of community and the intellectual commons. A final opening remark: we have seen that some of the elements of Locke's property theory might be used to advance the conclusion that there should be no intellectual commons. There are, we have seen, problems with this extreme conclusion, problems of indeterminacy based on the nature of labour. Without further argument we shall assume that some version of the intellectual commons will be necessary to a theory of intellectual property.

How might we describe the intellectual commons? One way in which to think about it is to say that it consists of that part of the objective world of knowledge which is not subject to any of the following:

47 S.B. Dury, 'Locke and Nozick on Property', in Richard Ashcraft (ed.), *John Locke: Critical Assessments* (London, New York, 1991), vol. 3, 495, 506.

property rights or some other conventional bar (contract, for instance); technological bars (for example, encryption) or a physical bar (hidden manuscripts). Our definition emphasises the idea that the intellectual commons is an independently existing resource which is open to use. Open to use does not mean, however, that abstract objects in the intellectual commons are necessarily accessible. Moreover the fact that an abstract object is not in the intellectual commons and therefore not open to use does not mean that it is inaccessible. Some examples are needed to illustrate.

The Tale of Genji was completed probably by the first quarter of the 11th century in Japan. By now it is part of the intellectual commons. While this tale remained in Japanese it was accessible, at least on one level, only to those who could read Japanese. Much of modern theoretical physics is open to use (that is, in the intellectual commons) but is accessible to only a small number. Hieroglyphic, while part of the intellectual commons, might at some point in its history have been accessible by no one. Accessibility to the intellectual commons depends on a commoner having the relevant capability and competence (for example, to be able to read and understand Japanese). The openness to use of an abstract object depends on its subsisting in the intellectual commons. Intellectual property rights can take an abstract object out of the intellectual commons, but this does not mean that it becomes inaccessible. Competent and capable persons can still gain access to the object provided they pay the relevant licence fee. Intellectual property rights place restrictions on the use of an abstract object, but this is a separate matter from the accessibility of the object to agents. This, as we have said, relates to the agent's capacities and competencies.

Our characterisation of the intellectual commons makes use of the idea of an objective world of knowledge. This at best would seem quaint to a post-modernist and in any case it seems to suggest that abstract objects exist. Actually the use of objective knowledge can be consistent with the claim that abstract objects only subsist. The objective world of knowledge is a concept developed by Karl Popper as part of his epistemological project.⁴⁸ Popper divides the world into world one, world two and world three: world one is the physical world; world

48 K.R. Popper, *Objective Knowledge* (Oxford, 1972), chapter 3.

two is the world of our conscious experience; world three is the world of objective knowledge and this equals the logical contents of books, libraries, computer memories and so on. *Objective knowledge* for Popper simply means that truths about this world are independent of our subjective preferences. World three remains a human construction. Language provides a useful illustration of these two points. Humans invent language. Having invented it, certain truths about language hold independently of their wishes. I may want it to be the case that all languages have a subject predicate structure but the truth of the matter is independent of my desires. Abstract objects have their place in world three. Clearly different ontological accounts can be given of them. Their objective status does not settle their metaphysical status.

The intellectual commons, then, consists of those abstract objects which remain open to use. It is a resource which by its nature is inexhaustible but not necessarily accessible. So far the intellectual commons has been portrayed as a global entity constructed by the collective labours of all humanity over all time. One implication which might be readily drawn from this model of the intellectual commons is that it is a resource open to use by all. This is by no means the only way in which the intellectual commons can be presented. Seeing the other possibilities is helped by a comparison with the common in English law.

The commons is a distinctive legal concept within English property law.⁴⁹ By Locke's time the commons in English law already had a complex legal form. When Locke speaks of the common it is this legal conception that he has in mind.⁵⁰ The commons refers to rights of common held by persons in relation to another's land.⁵¹ These rights include rights of pasture, rights of digging turf (common of turbary) and rights of fishing (common of piscary). Rights of common are confined to specific groups such as the inhabitants of a village or a manor or town. Most importantly for our purposes, the concept of common does not refer to the public ownership of land. Common land is land that is already owned by a person against whom the commoners have rights.⁵² Those who have rights of common have a right of access

49 G.D. Gadsden, *The Law of Commons* (London, 1988).

50 See II, 35. See also Laslett's notes on pp. 288–289.

51 *Halsbury's Laws of England* (4th edn), vol. 6, para 505.

52 *Id.*, para 504.

to the commons for those purposes connected with the exercise of their rights; there is no general right of access by commoners and no general right of access by members of the public.⁵³ The concept of the commons in English law is a deeply territorial, group-specific one. It does not refer to something to which all humanity has rights of entry or even something to which all the citizens of one state have entry.

Rights of entry to the intellectual commons can also be limited to some group smaller than all of humanity. Some countries might lay claim to a distinctive intellectual commons which their citizens have, over time, generated. The cultural intellectual commons is something which is often linked to a specific group, this group being defined by reference to a criterion such as race or territory. Within the context of international law at least, the idea of a distinct international cultural heritage has only embryonic beginnings.⁵⁴ The idea that there are objects that belong in a global cultural commons is an idea which has been discussed, but has in no way replaced the belief that the cultural commons is predominantly national or regional.⁵⁵ Just as countries recognise and protect their cultural commons, so they may lay claim to the existence of a distinctly territorial scientific/technological commons which is open only to those who are related to the territory or group. The belief in a territorial scientific commons may help to explain the reluctance of western countries to concede to developing countries the claim that technology is the common heritage of mankind.⁵⁶ Yet at the same time there is no doubt that some technology is now the common heritage of mankind.

The scope of the intellectual commons, we have seen, can be narrowed by being linked to the activities of different kinds of groups. The intellectual commons can be divided up in different ways according to place, time and content. There can also be different assumptions about the nature of community in the intellectual commons. At a fundamental level the decision comes down to a

53 T. Bonyhady, *The Law of the Countryside: The Rights of the Public* (Milton Park Estate, Abingdon, 1987), 131.

54 The UNESCO Convention for the Protection of the World Cultural and Natural Heritage (1972), which requires states to cooperate in the preservation of cultural heritage, suggests that states may have to recognise duties towards some global cultural commons.

55 See Council of Europe, *International Legal Protection of Cultural Property* (Strasbourg, 1984).

56 For a discussion of the common heritage of mankind, see this chapter of this volume.

decision between positive and negative community. This decision, we shall see, has direct implications for the content and scope of intellectual property laws.

Four Types of Community

The purpose here is to show the different choices to be made concerning positive and negative community and the implications of this for intellectual property, particularly its scope of appropriation. As part of this exercise we shall be drawing on Pufendorf in order to illustrate the analytical possibilities implicit in positive and negative community. The use of Pufendorf, though, is not part of an exegetical venture and should not be taken as such. Finally it needs to be remembered that for Pufendorf, Grotius and Locke the challenge is to explain the origins of private property in a world in which things begin their existence in common. Our purpose is different. It is to show that the evolutionary possibilities of intellectual property law depend heavily on how one models the relationship between the intellectual commons and community.

Pufendorf, unlike Grotius, spends time discussing the distinction between positive and negative community. In one passage he describes negative community as a 'community of all things' in which 'all things lay open to all men, and belonged no more to one than to another'.⁵⁷ Negative community is a state in which things are open to anybody to make the subject of exclusive belonging. Air, for example, can be captured, compressed and bottled. By contrast positive community is a state in which things (for example, land or a fishing ground) are jointly owned by some group. In positive community there are joint rather than individual owners of common things. Pufendorf, in describing the difference, says that common things in positive community 'differ from things owned, only in the respect that the latter belong to one person while the former belong to several in the same manner'.⁵⁸

Positive community is for Pufendorf clearly a product of consent. It is not the state in which people found themselves. Rather it was created by people to suit their purposes. 'And so things were created neither

57 S. Pufendorf, *De Jure Naturae et Gentium Libri Octo* (1672; translation of 1688 edn by C.H. and W.A. Oldfather, New York, London, 1964), IV, 4, 5.

58 Id. IV, 4, 2.

proper nor common (in positive community) by any express command of God, but these distinctions were later created by men as the peace of human society demanded.⁵⁹ Pufendorf's discussion of positive community shows that it does not include all in the ownership of things but only 'those for whom the thing is said to be common'.⁶⁰ Positive community for Pufendorf is an exclusive state. It excludes those who are not part of the ownership agreement. In the case of negative community the position is different. There is no ownership agreement in place. No one is excluded by virtue of an agreement and so acquiring the ownership of something is open to all. Once acts of ownership take place in negative community, it too becomes exclusionary in nature. But at least in the beginning we might see it as an inclusive form of community, for ownership is open to all.⁶¹

Taking Pufendorf's distinction between negative and positive community and then applying the inclusive/exclusive distinction to both produces a matrix of four basic types of community: inclusive positive community, exclusive positive community, inclusive negative community and exclusive negative community. These four types of community have the following stipulative meanings assigned to them.

Inclusive positive community represents a broad vision of human community, for it includes all humans; that is, there is only one group.⁶² Inclusive positive community is a global vision of community in which all have the right to use the commons for their individual welfare.⁶³ The commons acts as a kind of global resource which belongs to all to use. This form of community is perfectly consistent with individuals holding private property. Under conditions of inclusive positive community all individuals have a right to use the commons as a resource and may generate property rights in those things made by using the resources of the commons.⁶⁴ The commons itself does not fall into appropriation, for that would be to destroy it as a resource for all.

59 Id. IV, 4, 4.

60 Id. IV, 4, 2.

61 This is how Buckle interprets Pufendorf. See S. Buckle, *Natural Law and the Theory of Property* (Oxford, 1991), 94.

62 It is not the broadest possible vision of community since the reference to humans makes it vulnerable to the charge of speciesism.

63 Tully claims that Locke redefined positive community along these lines. See J. Tully, *A Discourse on Property* (Cambridge, 1980), 126–129. For some objections to Tully's interpretation of Locke, see S. Buckle, *Natural Law and the Theory of Property* (Oxford, 1991), 183–187.

64 J. Tully, *A Discourse on Property* (Cambridge, 1980), 127.

Exclusive positive community is the ownership of things in the commons by a group of some kind; that is, a group smaller than all of humanity. Those who are not part of the ownership group are necessarily excluded.

Inclusive negative community, like inclusive positive community, encompasses all individuals. It is, following Pufendorf, a community in which the acquisition of things lies open to all. The principal difference between it and inclusive positive community is that, in the case of the former, the commons does not belong to anyone. But anyone may capture and own a part of it.

Exclusive negative community represents some subset of inclusive negative community. The ownership of things in the commons is open to all the members of some group, rather than just all.

There are many forms of community. It seems the worst kind of reductionism to posit four types. But our claim is not this. There are as many kinds of community as there are moral traditions, shared understandings and ways of life. Different communities also make very different normative and legal arrangements for the distribution and use of property. However all communities have to make decisions about the scope of the commons and the relationship of those in the community to the commons. Our four basic types of community represent alternative models of the way that relationship might be constructed. The existence of these four models is perfectly consistent with the existence of many communities, all differing in the detail of their moral and property norms. Two communities, for instance, might both adopt a model of an inclusive negative community, but have very different views on what may be taken out of the commons. The fact that in negative community things lie open to all does not necessarily mean that all things are open to ownership.⁶⁵ Furthermore, as we saw earlier, the intellectual commons itself may have different boundaries drawn around it, based on content, time and place. So, for example, the intellectual commons might be limited to the

65 Here we do not follow Pufendorf since he took the view that in negative community 'all things lay open to all men'. See S. Pufendorf, *De Jure Naturae et Gentium Libri Octo* (1672; translation of 1688 edn by C.H. and W.A. Oldfather, New York, London, 1964), IV, 4, 5.

culture of a particular people, or a place such as North America, and this form of the intellectual commons might be linked to exclusive positive community.

When it comes to the regulation of the commons, all property regimes are underpinned by some version of one of the four basic types of community we have identified. Which model serves any given property regime is a question of fact. Pufendorf, for instance, makes it clear that the original community was negative and that this is a matter of fact, not moral argument.⁶⁶ Humans are free to change this arrangement provided always that whatever they choose is consistent with natural law.

Our analysis of the commons and community then raises two separate questions. Which vision of community drives the property arrangements for the intellectual commons? Are there moral arguments for preferring one type of community over another when it comes to making decisions about the relationship between community and the intellectual commons? The first question is primarily a question of fact. The intellectual commons is a resource, a resource which consists of abstract objects. Every community has to make decisions about the use of this resource. There is no escaping this. Decisions about who is to have rights of access and use of the intellectual commons are decisions that are constitutive of community.

The second question we posed is moral in kind. Are there reasons to choose one kind of community rather than another when it comes to making regulative arrangements in relation to the intellectual commons? Answering the second question is going to be difficult outside the context of any given community, its goals and predicaments. This is not to say that there are no philosophical methods for generating an a priori, context-independent answer as to which model of community and commons is morally desirable. One might use, as John Rawls does in his analysis of justice, a combination of ideal theory and abstract contractarianism, in order to arrive at some universal answer. Another route to a universal answer might be through the method of dialectical reasoning employed by Plato. Choosing either one of these methods would involve us in a debate with their communitarian critics.

66 Ibid.

Another way of approaching our second question is to ask whether there are any philosophically grounded reasons for thinking that one vision of community is preferable to another when it comes to decisions about property that involve the use of the intellectual commons. This approach does not aspire to demonstrate a philosophical truth, but rather seeks to build a philosophical case for a position by providing reasons for thinking it to be correct. At the same it remains open to the possibility that the philosophical case may be rebutted by experience. But, equally, experience may help to show that the philosophically grounded case is correct.

Our question, then, is whether there are reasons to favour one of the models of community we have identified when it comes to making decisions about the relationship between community and the intellectual commons. One assumption we make without defending it is that communities have an interest in encouraging the creativity of their members. A way to proceed to an answer is to come to some understanding of the role that the intellectual commons has in aiding creativity of all kinds. If, as we shall suggest, the intellectual commons has a vital role to play in the creative process then one way in which to decide amongst the various basic types of community is to ask which one best serves to cultivate an intellectual commons. Of course it may be that the intellectual commons does not just serve to promote creativity, but also has a more general role in the economic survival and evolution of communities. In other words there may be more reasons than just the encouragement of creativity to maintain the intellectual commons as an open resource. The next section confines itself to a discussion of the link between creativity and the intellectual commons.

Creativity and the Intellectual Commons

The link between the commons and creativity is not to be found in Locke. Tully claims that Locke has a view of man as a maker of things, but he then goes on to say that Locke was seeking to emphasise man's creative achievements.⁶⁷ This is probably a mistake on Tully's part because the concept of creativity does not gain wide currency until the 20th century. It does not appear as a fully fledged notion until

67 J. Tully, *A Discourse on Property* (Cambridge, 1980), 121.

the Romantic movement of the 18th century.⁶⁸ Until that period man's status was that of labourer while the role of creator is exclusively occupied by God. According to Locke, the clear implication is that men are workers and labourers in the commons, rather than creators. With Marx, as we shall see in Chapter 5, the creativity of humans is fully recognised, but the full expression of that creativity only occurs outside of private property rights and capitalism.

One problem is that the concept of creativity has for a long time been the province of psychology rather than philosophy. It may be a concept that is not responsive to philosophical treatment.⁶⁹ On one view creativity is simply a psychological phenomenon best consigned to the philosopher's category of the context of discovery. This seems too limited a view. And, in any case, the philosophical work on the importance of tradition in the context of the philosophy of science suggests that it may be possible to develop a coherent philosophical account of creativity.⁷⁰

One common view of creativity is to see it as a highly individual process or act. This view, if analysed, would have for its ontological base some version of individualism. Roughly this is the idea that the dominant forces in social life are individuals and their decisions, rather than groups, forces of history, institutions and so on.⁷¹ Linked to this ontology is a standard view of the nature of individuals which emphasises their rationality and independence. Individuals are whole and they extend themselves in various ways to make up parts of social life. On this view creative acts would be the expressive acts of individuals following their own interests. On the other hand, one can also completely subordinate the individual in an analysis of creativity. Such an analysis is conditional upon denying individuals their ontological primacy. Individuals in a sense become derivative creatures, dependent for their make-up upon various collectivities and impersonal forces. Individuals still create, but their role becomes that of a conduit for some greater whole.

68 See P.O. Kristeller, 'Creativity and Tradition', XLIV *Journal of the History of Ideas*, 105 (1983).

69 For philosophical discussions of creativity, see D. Dutton and M. Krausz (eds), *The Concept of Creativity in Science and Art* (The Hague, Boston, London, 1981). See also A. Koestler, *The Act of Creation* (London, 1964).

70 The standard work is T.S. Kuhn, *The Structure of Scientific Revolutions* (2nd edn, Chicago, 1970).

71 P. Pettit, *The Common Mind* (New York, Oxford, 1993), chapter 3.

Neither view of the ontology of creativity is particularly attractive. It is incomplete at best to say that creativity is exclusively an individual act or alternatively that it is the manifestation of greater forces outside of the individual. The first view ignores the importance of tradition. Creativity is tied to tradition. Authors, composers, musicians and scientists move in traditions and cultures which they react to or against. Equally a story about creativity which sees it as an outcome of tradition or other social forces ignores the capacity of individuals to step outside of social norms. Creative individuals are in one respect rule breakers. They develop ways of looking at the world that have no immediately recognisable fit with the pre-existing norms or ways of thinking in a given area. A better way of thinking about creativity is to say that it involves individuals in dual and contrary roles. When the act of creation is complete, the individual steps forward to claim the role of inventor, pioneer, innovator, genius and so on. Yet the link between tradition and creativity suggests that, in the creative process, individuals play out another role, that of the borrower and copier. When intellectual property rights are claimed, right holders often lose sight of the duality of roles they have occupied, preferring to think of themselves exclusively in terms of creator and demanding protection against other borrowers and copiers. Intellectual property law, because of its focus on individual ownership, helps in fact to embed an individualistic notion of creativity.

This sketch of creativity assumes a different ontology from the two just described. It endorses some version of individualism, for it recognises an autonomous capacity of individuals to create. But it also implies that individuals only reach this capacity with the help of others, for in the role of borrower the creator sits at the table of others. The ontology which best fits with this view of creativity is the one that Philip Pettit develops and defends under the distinctive label of holistic individualism.⁷² Roughly his argument is that social ontology has two axes. The vertical is concerned with the extent to which individuals are patterned social objects, patterned from above by structures, forces and so on. The horizontal axis is concerned with the extent to which individual capacity depends on interaction with others. Pettit defends one form of individualism on the vertical axis and holism on the horizontal axis. This ontology fits neatly with our

72 P. Pettit, *The Common Mind* (New York, Oxford, 1993).

view of creativity and so we will adopt it for our ontological base. It helps to provide the analytical justification for our claim that creators are involved in dual and contrary roles.

As we have seen, individuals engaged in the creative process need the interaction of others. The presence of others can manifest itself in various ways. It can be a personal presence or a notional presence in the form of the creator accessing the works of other individuals. Presence can also take a diffuse form as it does in the case when individuals work in ways which have been determined by tradition. The intellectual commons has a vital role in the interactive process. It consists of abstract objects embodied by others in works, works which individuals draw upon in the process of creating their own. Abstract objects are the beliefs, arguments and theories of others. They are, as it were, the disembodied presence of others. By its nature the commons is an inexhaustible resource which grows richer in content through use. Its influence is hard to map in some straight-line fashion.

The kinds of arrangements which are made to regulate the access of individuals to the commons would affect creativity in different ways. Restricting access to the commons would probably have a negative impact on creativity, at least for those individuals denied access. The general argument we have developed makes this a plausible claim. Ultimately, though, assessing the truth of this claim is a matter of experience over time. We can deepen the plausibility of our claim by means of an example drawn from the history of science. The dominant motif in much of the scholarship in this area has been that the fate of scientific theories is heavily affected by social and cultural factors.⁷³

Some history of science is deeply suggestive of the possibility that even temporary bars to the intellectual commons might have adverse long-term effects on scientific understanding and creativity. Goldberg's comparative study of the response to, and spread of, the theory of relativity in four different countries illustrates how different social structures caused vast differences in the understanding and spread of the theory. In Germany between 1905 and 1911, relativity became a focal point of discussion because of the combative and competitive

73 See, for example, T.S. Kuhn, *The Structure of Scientific Revolutions* (2nd edn, Chicago, 1970); R.K. Merton, *The Sociology of Science* (Chicago, 1973); S. Goldberg, *Understanding Relativity: Origin and Impact of a Scientific Revolution* (Oxford, 1984).

nature of German academic scientific life, as well as the migratory behaviour of its academicians. No one university was able to dominate scholarly discussion for any length of time and the comparative free flow of information and ideas within an intellectually competitive environment ensured a variety of critical responses. This variety was in the case of Germany the reason for the eventual acceptance of the theory of relativity.⁷⁴ The French response to relativity in the same period came in the form of a superior silence. The reason lay in an institutional arrangement which made it possible for one man, Poincaré, to dominate thought about the theory.⁷⁵

Although Goldberg is centrally interested in the diffusion of relativity theory, his work suggests, on the assumption that variety of response in a given field is a key indicator of creativity at work, that a strong link exists between scientific creativity and institutional structures that promote the communication of scientific ideas. Such a claim is also consistent with those analyses of creativity which see its essence lying in the act of crossfertilisation or recombination of different frames of reference, ideas and theories.⁷⁶ Without access or with only limited access to ideas, creativity in the form of crossfertilisation is not likely to flourish. One might extrapolate from this kind of work that creativity in science especially might be dramatically affected by choices about the structure of the intellectual commons in which science is to work.

A summary of the point we have arrived at is this. The intellectual commons is crucial to creativity. We can depict it as a resource. It is much more than this, but that is another matter. It is an unusual resource in that it grows in strength through use and exploitation. In other words, as the contents of the world of unpropertised *objective knowledge* (abstract objects) expand that world becomes more valuable for problem solving. Experimenters, whether they are artists or scientists, have more abstract objects that are open to use. Progress with the solution of complex, polycentric tasks improves.

74 S. Goldberg, *Understanding Relativity: Origin and Impact of a Scientific Revolution* (Oxford, 1984), 185.

75 Id., 220.

76 A. Koestler, *The Act of Creation* (London, 1964); A. Koestler, 'The Three Domains of Creativity', in D. Dutton and M. Krausz (eds), *The Concept of Creativity in Science and Art* (The Hague, Boston, London, 1981), 1, 2.

If this is right, there are at least two objectives a society should consider when it comes to considering arrangements for the intellectual commons. First, the existing intellectual commons should not be depleted. More rather than less abstract objects should remain open to use. (The question of access, we have noted, is a separate matter.) This suggests the existence of preservationist duties with respect to the commons. Second, the intellectual commons should continue to be enlarged. More rather than less abstract objects should be added to it. This suggests that duties of nurture relate to the intellectual commons.

The next stage of the argument suggests how we might proceed in making decisions about community and the intellectual commons. The point has already been made that there is not likely to be a satisfactory universal answer to this question.

Choosing Community and Common

One way in which to decide about the appropriate property arrangement for the intellectual commons is on the basis of self-interest. Self-interest forms the basis of certain kinds of ethical theory. It also is a central assumption of rational choice explanations of individual behaviour and the social patterns that such behaviour causes. In the past, self-interest seems to have been at play when agents have had to choose negative or positive community. The history of certain resources under international law and the evolution of the common heritage of mankind principle in international law are both instructive in this respect. When Grotius, a defender of negative community, argued for the principle of freedom of the seas, 'he provided a useful ideology for competition over material resources in the non European world'.⁷⁷ Grotius' *Mare Liberum*, which articulates the principle of freedom of the seas, was, we know, a legal brief composed to justify the capture of a Portuguese galleon by a vessel of the Dutch East India Company.⁷⁸ Debates over the concept of community to govern use of various resources still continue to be heavily influenced by perceptions of economic self-interest. The deep sea-bed, for instance, is a natural resource. Amongst other things it contains mineral deposits. Over the years the status of this resource in international law

77 R. Tuck, *Natural Rights Theories* (Cambridge, 1979), 62.

78 See the Introductory Note by J. Brown in H. Grotius, *Mare Liberum* (1609; R.V.D. Magoffin trs., New York, 1916).

has been the subject of considerable debate.⁷⁹ Clearly those countries like the United States which have the technological capacity to exploit the sea-bed have a great deal to gain from the legal implementation of a regime for the sea-bed which sees it as part of the commons in the context of negative community. Under such a regime all states would have the rights of commoners to appropriate the resources of the sea-bed but only some would be capable of exercising those rights. Those agents who are not integrated into negative community, in that they lack capacity to exploit it, are left with the effort of arguing for a share of the proceeds of the commons on the basis of some distributivist principle, or alternatively depending on some principle of charity. The inclusiveness of individual agents in the negative commons and community only relates to the existence of rights of use or appropriation which all are said to have. This inclusiveness does not extend to making one a part-owner of the commons.

It is hardly surprising that developing countries that lack the industrial power to exploit natural resources like the sea-bed have argued that positive forms of community should underpin the legal regimes that govern the exploitation of such resources. Positive community offers commoners the rights of joint ownership. Any one individual commoner has to seek the consent of the others to exploit the resource or cooperate with others in the exploitation of the resource. No such cooperation is required in negative community. The contest between negative and positive community emerges clearly in relation to the sea-bed and the principle of 'the common heritage of mankind'.⁸⁰ The problem has been that the common heritage principle like the commons needs some supporting vision of community so that its implications in terms of rights and obligations of states can be identified.⁸¹ Developing countries have naturally sought to inject some

79 For an overview, see O. Schachter, *International Law in Theory and Practice* (Dordrecht, Boston, London, 1991), chapter XIII.

80 The General Assembly of the United Nations has passed a declaration stating that the sea-bed is the common heritage of mankind. See UNGA Res. 2749 (XXV), 17 December 1970 containing the Declaration of Principles Governing the Sea-bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction.

81 For discussions of the common heritage of mankind principle in international law, see B. Larschan and B.C. Brennan, 'The Common Heritage of Mankind Principle in International Law', 21 *Columbia Journal of Transnational Law*, 305 (1983); C.C. Joyner, 'Legal Implications of the Concept of the Common Heritage of Mankind', 35 *International and Comparative Law Quarterly*, 190 (1986); O. Schachter, *International Law in Theory and Practice* (Dordrecht, Boston, London, 1991), chapter XIII.

vision of positive community into the principle. On the other hand, in different economic contexts, developing countries might support the idea of negative community. Those developing countries which had a rich variety of plant genetic information might favour negative community if they had the economic and technological capability of profiting from the transformation of such information into a tradeable commodity.

Self-interest might guide agents to other kinds of decisions about the community and the intellectual commons. Obviously enough, much depends on whether the self, as it were, includes more than just economic gains in its thinking. In any case, even if self-interest is calculated purely in economic terms, rational agents may decide in favour of positive community. Assume for a moment that the claim that the intellectual commons supports creativity is right, and assume further that agents, in this case states, want to encourage creativity of all kinds. Then one means to that end is to ensure that the choice of community serves to preserve the commons. Is there a reason for thinking that either positive or negative community will better serve the goal of preserving the intellectual commons? The answer to this question is largely an empirical matter. Without arguing the matter in full, positive community does probably establish some kind of duty of care to preserve the commons. It seems to do so in Locke's theory. For Locke, once the proviso concerning enough and as good for others is not satisfied in the state of nature, then property must revert to common ownership.⁸² Nor is the situation so strikingly different in civil society. Property in civil society is now a matter of positive regulation, but governments have to carry out that regulation bearing in mind that persons retain their natural rights of life, liberty and the means of preservation.⁸³ Individuals continue to have a right to participate in the resources of the community. Rights of common ownership along with private property rights are one important way in which the natural rights of individuals over resources are preserved. Preserving the commons seems to be part of the prudential duties of governments.

82 J.L. Mackie, *Ethics* (Harmondsworth, 1977), 176.

83 J. Tully, *A Discourse on Property* (Cambridge, 1980), 166.

Negative community contains more dangers for the existence of the intellectual commons, both its present existence and its future enlargement. There are two kinds of dangers. One kind involves more individual raids being carried out on the existing commons. Property strikes against the commons manifest themselves in various ways. The scope of patentable subject matter, for instance, increases. A second kind of danger is that individuals find ways to prevent abstract objects from making it into the intellectual commons. So, for instance, individuals find ways of switching protection for abstract objects from systems of limited duration to systems of indefinite duration. (An example is the use of trademarks to protect shapes once design protection for those shapes has run out.) Both these dangers increase under proprietorism, something we discuss in the final chapter.

The adoption of negative community has the possible consequence that large parts of the intellectual commons can be appropriated over a period of time. There are two reasons for suggesting it is only a possible consequence. First, some things may be inherently incapable of being appropriated. This is just the point which Grotius makes with respect to the sea and why on his argument it remains in the commons. Second, negative community need not logically entail the appropriation of the intellectual commons, if there are regulatory conventions or principles which in some way set limits on the permissible scope of appropriation. In the case of intellectual property, distinctions like those between ideas and expression in copyright and discovery and invention in patent law have just such a regulative role.

The dangers of negative community for the intellectual commons come when technology makes new kinds of appropriation possible or when the regulatory conventions protecting it for one reason or another cease to work. The intellectual commons then becomes a hunting ground for the economically strong and the technologically capable. An example from patent law helps to illustrate the kinds of appropriations that might become allowable under conditions of negative community. Most patent law systems operate with a distinction between discovery and invention. Discoveries, unless they are part of some novel process, are not generally patentable. So, for example, human DNA sequences, because they are sequences of information that occur in nature, would not normally be patentable. They would form part of the intellectual commons. If, however, for some reason the principle that

discoveries were not to be patentable were no longer followed, then, under conditions of negative community, human genes could become the subject matter of individual appropriation.⁸⁴ It is less clear that this would happen under conditions of positive community. Before it could happen, it would require the consent of all the commoners since the human genome would itself be jointly owned. Linking positive community to the intellectual commons would have the effect of reducing predatory moves against the commons by individuals. The cooperation of other individuals would be necessary before individuals could make any such moves.

It is not possible to be sure about the fate of the intellectual commons under either negative or positive community. Our general claim is that, under conditions of negative community, the existence of the intellectual commons is more likely to be threatened, more likely to be propertised. If we accept that the intellectual commons is vital to the goal of maintaining and encouraging creativity, we have one reason for choosing to link positive community to the intellectual commons: it is more likely to preserve the commons. Those who argue for an extension of intellectual property rights and link that extension to negative community may ultimately be suggesting a self-defeating strategy. The extension of intellectual property rights under conditions of negative community may provide individuals with strong incentives to act in non-preservationist ways when it comes to the intellectual commons. A reversal of the economist's common pool problem takes place.⁸⁵ Common pool problems deal with valuable objects/assets that are open to capture. In the case of physical objects such as fish the absence of property rights leads to a depletion of the resource. First possession rules.⁸⁶ People overfish because there is no incentive to do otherwise. Some scheme of well defined property rights in such a case can have a preservation effect with respect to the

84 For a discussion of the issues, see G. Winter, 'Patent Law Policy in Biotechnology', 4 *Journal of Environmental Law*, 167 (1992); R.S. Eisenberg, 'A Technology Policy Perspective on the NIH Gene Patenting Controversy', 55 *University of Pittsburgh Law Review*, 633 (1994); R. Moufang, 'Patenting of Human Genes, Cells and Parts of the Body? – The Ethical Dimensions of Patent Law', 25 *International Review of Industrial Property and Copyright Law*, 487 (1994).

85 H.S. Gordon, 'The Economic Theory of a Common Property Resource: The Fishery', 62 *Journal of Political Economy*, 124 (1954); A.E. Friedman, 'The Economics of the Common Pool: Property Rights in Exhaustible Resources', 18 *UCLA Law Review*, 855 (1971).

86 For an analysis of the problems of first possession, see D.D. Haddock, 'First Possession Versus Optimal Timing: Limiting the Dissipation of Economic Value', 64 *Washington University Law Quarterly*, 775 (1968).

resource in question, provided the scheme makes people calculate the costs of overfishing. In the case of abstract objects under conditions of negative community, property rights provide an incentive to appropriate the commons or prevent abstract objects from making it into the commons. The stronger the property rights the more marked this effect. Self-interest combined with conditions of competition make this behaviour the only rational course of action. (We expand on this argument in chapters 5 and 6.) Under conditions of negative community, property rights in abstract objects no longer have a strong preservation or nurturing effect. Depending on their scope they may in fact, for reasons we give in Chapter 6, have a destructive effect. The intellectual commons faces a different kind of tragedy to its physical counterpart.

So far we have explored the role that self-interest might play in choices about community and the intellectual commons. But there are other kinds of arguments which might be explored – in fact probably a long list of them. Classical liberal principles suggest some *prima facie* reasons for choosing positive community when considering the link between community and the commons. For many, if not most, liberals it is axiomatic that the state should be neutral as between conceptions of the good life. The state is only to intervene in order to prevent harm to others. Private property is central to liberalism's promise of allowing different visions of the good life to flourish. The institution of private property gives individuals control over those resources needed to implement their particular version of the good life. One possibility, within market societies, is that property holdings may be concentrated in the hands of a few. This is a problem to the extent that control over property by a few entails the control over the means of implementing different individual visions of the good life. The problem of a concentration of ownership may be more of a problem in those societies where negative community is regularly chosen over positive community. Positive community, because it mandates the cooperation of the commoners, may be a better option in relation to those resources like the intellectual commons which we think should have the status of a universal and permanently accessible asset.

Conclusion

Locke is important to the intellectual property theorist but not because he provides a labour theory of justification for intellectual property rights. First, his analysis shows the indeterminacy of labour as a basis for a theory of property rights. Labour only offers an apparently stable basis for theorising in Locke's work because of Locke's metaphysical assumptions. Locke, and the natural law tradition of which he was a part, remind us that the choices over property forms are choices about the nature of community. When it comes to intellectual property it is, we have argued, positive community we should be inclined to choose. The intellectual commons has to be nurtured by a continuing process of accretion. Negative community is more likely to interfere with or curtail this process.

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