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# The Power of Abstract Objects

## Introduction

A discussion of the link between power and intellectual property could easily turn into a discussion about the nature of the links between intellectual property rights, monopoly and market power. Intellectual property rights are sometimes said to be monopoly rights.[1] To be described, as a monopolist sometimes involves more than just description. It can also be a condemnation. The reasons for the pejorative use of monopoly probably have something to do with early Church teaching. The Church condemned monopolists because their opportunistic behaviour (the sin of avarice) did not fit the model of a good Christian and monopolies seemed to cause real damage to Christian communities by driving up prices over essential items like food.[2]

1 In Australia, see Mason J in *Parkdale Custom Built Furniture Pty Ltd* v. *Puxu Pty Ltd* (1981–82) 149 C.L.R. 191, 206–207. In the USA, see *Hartford-Empire Co* v. *United States* 323 U.S., 386, 452 (1944).

2 The evil of monopolies was something that religious opponents could agree on. 'Of combinations I ought really to say much, but the matter is endless and bottomless, full of mere greed and wrong … Who is so stupid as not to see that combinations are mere outright monopolies, which even heathen civil laws – I will say nothing of divine right and Christian law – condemn as a plainly harmful thing in all the world?' Martin Luther, *Von Kaufshandlung und Wucher* quoted in R.H. Tawney, *Religion and the Rise of Capitalism* (West Drayton, Middlesex, 1938 edn), 104–105.

Economic thinking about monopolies in the 20th century is more nuanced than outright condemnation. It may be that monopolies have a vital dynamic role to play in the evolutionary growth of capitalism.[3] Likewise economies in a given phase of technological development and economic differentiation may find that some monopolies are 'natural'.[4] Neo-classical economic theory describes and evaluates monopolistic behaviour on the basis of its impact on efficiency. Monopoly is not a moral evil, but there are economic grounds for not encouraging its development. The standard economic objection to it is that it causes a dead weight loss.[5] In the case of the perfectly competitive market there is no unmet consumer demand. In the monopoly market the one producer sets price at a level which means there will be unmet consumer demand. The monopolist producer has some choice about setting price and so sets it at a level that maximises the wealth transfer to him from the consumers. The wealth transfer is not an economic problem (although clearly there may be a problem in terms of some distributivist theory of justice). The economic problem with monopolies is that the unmet consumer demand is not compensated for (in terms of a static analysis) by a gain to producers and so the total benefit of the monopoly market is less than the total benefit of the competitive market.

One way in which to proceed to attack intellectual property rights is to insist that they are monopolies. This way of proceeding leads into a debate over who really is a monopolist and who is not. It is a debate which the pro-patent and anti-patent forces have been having for a long time.[6] The pro-patent forces greet the charge of monopoly with the claim that a patent does not necessarily translate into market power. I may have a patent on a mousetrap, but I still have to face competition from killer cats. A legal monopoly does not necessarily translate into an economic monopoly.

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3 Schumpeter thought that monopolies of some kind played a vital role in economic development: J.A. Schumpeter, *The Theory of Economic Development* (Cambridge, Mass., 1949); J. Schumpeter, *Capitalism, Socialism and Democracy* (5th edn, London, 1976).

4 W.W. Sharkey, *The Theory of Natural Monopoly* (Cambridge, 1982).

5 R.A. Posner, 'The Social Costs of Monopoly and Regulation', 83 *Journal of Political Economy*, 807 (1975).

6 See J.T. McCarthy, 'Intellectual Property and Trade Practices Policy: Coexistence or Conflict? The American Experience', 13 *Australian Business Law Review* 198 (1985). The tide seems to have turned in favour of those who do not see intellectual property rights as necessarily leading to monopolies. See the discussion of this by F.H. Easterbrook, 'Intellectual Property Is Still Property', 13 *Harvard Journal of Law and Public Policy* 108 (1990).

Another way of thinking about the issue of intellectual property and monopoly is to concede that intellectual property owners are monopolists *as are all other property owners*. A monopolist is one seller in a market. If I own a block of land I am the one seller of that block of land.[7] The fact that there are other sellers of *other* blocks of land does not change my monopoly status as the one seller of that block of land. Clearly the presence of other land holders does affect the amount of power I have in the market. Roughly speaking the degree of power of monopolists is a function of two variables – the demand (or dependence) for the product (or service) and the extent to which consumers are prepared to accept substitutes or the extent to which substitutes are feasible. An extreme example of extreme market power is a world in which there was one supplier of air. If in this world consumers depended on air and there were no feasible substitutes, then the concentration of market power in the one producer would be very great.

The purpose of the discussion so far is not to set the stage for a discussion of intellectual property and market power since this is very much a matter of economic theory.[8] Rather the conclusion which we draw from the preceding discussion is that not much is to be gained by deciding whether or not intellectual property rights are monopolies. So far as we are concerned, all property rights confer monopolies. Here we want to investigate a different kind of relationship, that between intellectual property and power, that is power broadly conceived. Bertrand Russell suggested that power is like energy: it has many forms.[9] The focus of analysis in this chapter is on intellectual property as a distinctive form of power and the effects of that power on areas of social life. The remainder of the chapter is organised in the following way. The next section develops the claim that property is a form of private sovereignty. Intellectual property, we have seen in preceding chapters, relates to abstract objects. It follows that intellectual property is a form of sovereignty over abstract objects. The nature of abstract objects is the topic of the third section.

7 M. Friedman, *Capitalism and Freedom* (Chicago, London, 1962), 127.

8 Posner and Landes say that a simple economic definition of market power is 'the ability to set price above marginal cost'. See W.M. Landes and R.A. Posner, 'Market Power in Antitrust Cases', 94 *Harvard Law Review*, 937, 939 (1981).

9 B. Russell, *Power: A New Social Analysis* (London, 1938), 10.

This section is followed by a discussion of the connections between abstract objects, the mechanism of property, dependency relationships and the threat power that arises in the context of such relationships.

## Property and Private Sovereignty

In an important treatment of the property concept that pays little heed to the public–private distinction, Morris Cohen argued that private property was a form of sovereignty over others.[10] The argument has a disruptive quality because sovereignty is a public law concept while property usually features as part of private law.[11] Cohen's analytical argument rests on the now accepted view that property consists of a relation between persons in respect of an object rather than a relation between a person and an object. The link between *dominium* and *imperium* is accomplished by arguing, quite plausibly, that the dominant feature of property is the right to exclude others. The capacity to exclude others from things where those things are important or necessities gives the property owner considerable or even great power over others. Hence Cohen's conclusion that '*dominium* over things is also *imperium* over our fellow human beings'.[12]

What are we to make of this argument? One might choose to bypass it by rigidly adhering to a definition of sovereignty in which the sovereign is an originator of law and the property holder a holder of legal rights. Austin's definition of a sovereign – as somebody in relation to whom a pattern of habitual obedience has emerged – might serve this purpose.[13] But this is to treat Cohen's argument too hastily. His deeper message about the connection between property and sovereignty can best be captured through the application of some analytical jurisprudence. Analytical jurisprudence has had a central role to play in the construction of a rights analysis of property.

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10 M.R. Cohen, 'Property and Sovereignty', 13 *Cornell Law Quarterly*, 8 (1927). Cohen's analysis also converges with the arguments made by Robert Hale. See R.L. Hale, 'Coercion and Distribution in a Supposedly Non-Coercive State', 38 *Political Science Quarterly*, 470 (1923); R.L. Hale, 'Bargaining, Duress, and Economic Liberty', 43 *Columbia Law Review*, 603 (1943).

11 Cohen observes that, while the distinction between property and sovereignty is based on the Roman property concept of *dominium* and the political concept of *imperium*, the distinction was not recognised in tribal law; nor was it particularly clear within feudal law where personal services were directly linked to property. Id., 8–11.

12 Id., 13.

13 J. Austin, *Lectures on Jurisprudence* (5th edn, London, 1885), Lecture VI.

Although radical critiques have tried to shift rights talk from its position of prominence, it remains true to say that rights, especially when linked to an analysis of property, form a master discourse.[14] Within this rights-based approach to thinking about property, the intimate connections which power and property enjoy have not been dissolved. One influential analysis of rights that forms part of the analytical tradition has been Hohfeld's.[15] We shall use it here.

The goal of Hohfeld's theory is entirely practical: it is to reduce open ended jural interests and concepts like property, contract, trust and so on to a set of basic or fundamental legal concepts so that it becomes easier to solve practical legal problems. The pairs right/duty, privilege/no-right, power/liability and immunity/disability are jural correlatives in Hohfeld's scheme. Jural opposites consist of the pairs right/no-right, privilege/duty, power/disability, immunity/liability. Our interest here is in the way the scheme relates to the property concept.

Right, for Hohfeld, was a chronically ambiguous generic term. Its potential referents included power, immunity and privilege. Hohfeld proposed that its meaning be confined to a claim for which there was a correlative duty. The link between rights proper or claim rights and duty is axiomatic; such rights necessarily have correlative duties.[16] The correlativity thesis has its critics, but for present purposes their criticisms do not matter.[17] Property relations are perhaps core examples of the right/duty correlativity thesis and in fact many of Hohfeld's examples of the thesis are property examples:

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14 See, for example, C. Smart, *Feminism and the Power of Law* (London, New York, 1989); M. Tushnet, 'An Essay on Rights', 62 *Texas Law Review*, 1363 (1984).

15 W.N. Hohfeld, *Fundamental Legal Conceptions* (W.W. Cook ed., Westport, Connecticut, 1919, reprinted 1978).

16 Hohfeld was not the first to advance the correlativity thesis. He derives the thesis from the language of case law. Austin also argues that all laws conferring rights impose a duty. See J. Austin, *Lectures on Jurisprudence* (5th edn, London, 1885), Lecture I. Likewise Bentham sees a logical link between laws creating obligations and rights. For a discussion of Bentham's theory, see L. Lindahl, *Position and Change* (Dordrecht, Holland, 1977), 4–21. Whatever the merits and demerits of the correlativity thesis, it forms part of the deep structure of liberal thinking about law.

17 See N. MacCormick, *Legal Right and Social Democracy* (Oxford, 1982), chapter 8; A.R. White, *Rights* (Oxford, 1984), chapter 5. One of the reasons why the criticisms do not matter is that the correlativity thesis is best understood as a rule of inference within Hohfeld's system. The fact that it is possible to think of counter examples to the correlativity thesis only amounts to saying that another system can have a different inference rule. While this is undoubtedly true, Hohfeld's system might nevertheless deliver sufficient analytical power for us not to be troubled by the limits of one of its rules of inference.

'if X has a right against Y that he shall stay off the former's land, the correlative (and equivalent) is that Y is under a duty toward X to stay off the place'.[18] When correlativity is linked to property the claim that property is a form of sovereignty begins to gain some credence since sovereigns can be said to stand in relations of right and duty towards their citizens. A feature of analytical models of law such as Bentham's, Austin's and Hohfeld's is that the definitional differences between sovereign and property owner do not manifest themselves in anything like so strong a fashion when the logical structure that belongs to the functions of these concepts is analysed. Sovereigns have the function of making law within a jurisdiction. The analysis of law varies from model to model but command and prohibition are canonical forms of law common to all, with some, like Bentham's, adding other forms such as permission.[19] These forms, like command, prohibition and permission, have the function of directing the action of others. The capacity of property owners to direct conduct in a manner analogous to that of sovereigns comes into view when the logical structure of the general concept of property right is identified. Hohfeld's jural scheme neatly reveals this structure. One of its aspects is that the property owner has a claim right as against other individuals who have correlative duties. Apart from a claim right, property owners also have privileges (the privilege to enter land), powers (for example, to pass title, possession) and immunities (the inability of others to alienate). Hohfeld's scheme shows how property can be decomposed into a 'bundle of rights', the bundle giving the property owner considerable capacity to direct action. The rights, powers, privileges and immunities of the property holder can be thought of as being in microcosm the structural analogue of the sovereign's power to regulate conduct through commands, prohibitions and permissions.

Enough has been said to strengthen Cohen's claim that property is a form of sovereignty. Establishing this is important because it leads us away from linking private property to private power. Private property is a form of both private and public power. The private nature of this power comes into focus in Hohfeld's scheme when he presents the property relation in terms of a single place relation between the

18 W.N. Hohfeld, *Fundamental Legal Conceptions* (W.W. Cook ed., Westport, Connecticut, 1919, reprinted 1978), 38.

19 See D. Lyons, 'Logic and Coercion in Bentham's Theory of Law', 57 *Cornell Law Review*, 335 (1972).

right holder and the duty bearer. The public power of property is also captured by Hohfeld's analysis, for property rights are within his scheme a class of similar rights held by an individual and used against an indefinite number of persons – the right to exclude the world, as property lawyers like to say. Property rights are, in effect, a kind of institutionalised open-ended contractual relation into which an indefinite number of people can enter with the property owner, but which remains a relation between the right holder and the duty bearer.

By linking property rights to sovereignty we seem in our analysis of intellectual property and power to be heading down a path which, Foucault has suggested, gives a very incomplete view of power. It is a classic juridical view in which power and its exercise are linked to the idea of possessing a kind of magical legal token on the basis of which the holder of the token can act negatively: prohibit, restrict, obstruct and so on.[20] By contrast, Foucault's methodological approach is to treat power in terms of flow and network concepts. Power circulates, it is 'exercised through a net-like organisation' and individuals 'are always in the position of simultaneously undergoing and exercising this power'.[21]

Treating power in terms of network flows is a profoundly important contribution to the analysis of power. However, under this approach, an important question remains to be answered: how do agents within the relevant network harness power flows? Clearly, individual agents have to harness power in order to exercise it. Foucault's own analysis suggests that the answer to this question has to be given in terms of mechanisms that allow the individual agent (A) to concentrate to some degree the flow of power so that A can affect B in a manner contrary to B's interests.[22]

Our purpose here is not to give a general description of the mechanisms that can be utilised to harness power. Rather the purpose is to show that property is one such mechanism, what we might call a sovereignty mechanism. This mechanism is obviously dependent upon the law. Here our analysis converges nicely with Foucault's, for law for him

20 See M. Foucault, *Power/Knowledge* (C. Gordon ed., Brighton, 1980), 88, 139–140.
21 Id., 98.
22 A's capacity to act in this way is fundamental, Lukes argues, to different approaches to power. See S. Lukes, *Power: A Radical View* (London, Basingstoke, 1974), 27.

is an instrument of power, albeit a more complex and partial one than traditional analyses would have it.[23] Property for us is a law-dependent mechanism of power. It is a mechanism of power that all individual property holders are, in Foucault's words, simultaneously undergoing and exercising.[24] This is true because property is a *single*-place relationship between X, the property holder, and a non-holder of property. The fact that X may enter into many such relations does not make the right itself a many-place relation.[25] In any society, but especially one in which all individuals own some private property, there will be a very large number of single-place relations in which the individual is either the property holder or the non-holder. When property is analysed in this way it appears to be a mechanism that in formal terms creates a pattern of relations in which power is diffused and dispersed amongst all the individual holders of property. The social geometry of property is based on an individual standing in a multiplicity of single-place relationships, with a multiplicity of other individuals, each of whom in turn stands in a multiplicity of single-place relationships with other individuals, and so on. Power, which is based on property, does appear to be something which is 'exercised from innumerable points'.[26]

The analytical shift to conceiving of power as a polycentric phenomenon has still to confront and explain how individuals harness power. It still has to explain power imbalances between individual actors and how those imbalances are maintained. Here our analysis parts ways with Foucault's, for he is seeking to replace the juridical–political theory of sovereignty which has formed the traditional basis of analysis of power with an approach that is focused on the mechanisms, tactics and strategies of domination.[27] The approach being advocated here adopts Foucault's emphasis on mechanisms of power, but retains the link to sovereignty. It does so because it wants to argue that the mechanisms of power, and in particular property, lead to new forms of sovereignty and thus new kinds of domination. The mechanism of property in other words plays a crucial role in displacing one kind of traditional, and therefore easily recognisable, form of public

23 M. Foucault, *Power/Knowledge* (C. Gordon ed., Brighton, 1980), 141.
24 Id., 98.
25 On this crucial point see L. Lindahl, *Position and Change* (Dordrecht, Holland, 1977), 37.
26 M. Foucault, *The History of Sexuality* (R. Hurley trs., New York, 1980), vol. 1, 94.
27 M. Foucault, *Power/Knowledge* (C. Gordon ed., Brighton, 1980), Lecture 2, 92–108.

sovereignty for a private form of sovereignty. Thus we should not follow Foucault when he suggests that we should 'eschew the model of Leviathan in the study of power'.[28] Instead we need to recognise that, through mechanisms of power, Leviathan changes its shape and produces progeny, which ultimately come to threaten its supremacy.

To this point our argument has been that property is a mechanism of power. This mechanism does not necessarily produce one specific pattern of the distribution of power. The pattern which is produced is a contingent matter depending upon, among other things, the initial set of social conditions. Under certain conditions the property mechanism concentrates power to produce imbalances in the relations of power between individual actors. Property has, as it were, a sovereignty effect. In the remainder of this chapter we will argue that intellectual property has this sovereignty effect because it relates to abstract objects. Property quite clearly, is, not the only mechanism which is relevant to an analysis of power, but it is an important one, perhaps the most important. Likewise the link between abstract objects and the sovereignty effect of property is not an exclusive link. There are other sources of power which can cause the property mechanism to have this effect. We will confine our discussion to abstract objects. Abstract objects are only one kind of base of power or power resource.[29] Similarly property is only one mechanism for drawing on this particular power resource.

The following section sets out to give a more complete answer to the question of what are abstract objects for the purposes of intellectual property law. Once an answer to this question is in place we can move on to consider how intellectual property achieves its sovereignty effect.

## Abstract Objects

What are abstract objects? The beginning of one answer to this question was given in Chapter 2 when it was suggested that abstract objects are subsistent entities or, putting it another way, convenient

28 Id., 102.

29 These terms come from H.D. Lasswell and A. Kaplan, *Power and Society* (New Haven, 1950), 83–86.

mental constructs. By postulating the existence of abstract objects, the law may simply be engaging in a legal fiction, a fiction on which, as it happens, much real power rests.

While the purpose of this section is not to provide a treatment of abstract objects outside the intellectual property context, it is worthwhile considering briefly their general philosophical treatment. Doing this shows that thinking about abstract objects as fictional but useful entities is a coherent and defensible option, albeit one that has many philosophical critics.

Within metaphysics abstract objects are a possible category of existence. Moving from this starting-point to a more precise definition turns out to be difficult. Abstract objects are very often defined in terms of lists of examples (for example, the property of being x, relations and structures) and negative properties.[30] The negative features of abstract objects include things like not being tangible, not being in space time, not being agents of causal change, and so on.[31] In the words of one philosopher, the meaning of the term 'may not be entirely clear, but one thing that does seem clear is that such alleged entities as numbers, functions and sets are abstract – that is, they would be abstract if they existed'.[32] The last part of this statement highlights what has been a major philosophical issue concerning abstract objects, the question of whether or not they exist. Denying the existence of abstract objects leads to some form of nominalism. The challenge for nominalists has been to show how, in the absence of abstract objects, we can have an account of certain kinds of truths like mathematical truth. To what do mathematical propositions refer if not abstract objects?[33] Realists admit to the existence of abstract objects but in doing so have to provide an account of the way these objects connect with the world of human action and knowledge.[34] The difficulty which realists have to

30 This list is by no means exhaustive. See P. Simons, 'What is Abstraction & What is it Good For?', in A.D. Irvine (ed.), *Physicalism in Mathematics* (Dordrecht, Boston, London, 1990), 17, 18 for more examples. For an extended discussion of what is an abstract object in philosophy, see W.K. Künne, 'Criteria of Abstractness', in B. Smith (ed.), *Parts and Moments* (Munchen, Wien, 1982), 401.

31 B. Hale, *Abstract Objects* (Oxford, 1987), 46–50.

32 H.H. Field, *Science Without Numbers* (Oxford, 1980), 1.

33 For a good discussion of the issues, see the papers in A.D. Irvine (ed.), *Physicalism in Mathematics* (Dordrecht, Boston, London, 1990).

34 For an example of a modern defence of a version of platonism, see B. Hale, *Abstract Objects* (Oxford, 1987).

face is that, if abstract objects do exist, they do so apparently outside the spatiotemporal bounds that concrete objects inhabit. How is it possible for such entities to be knowable?

This specialised metaphysical and ontological debate between nominalists and realists within modern philosophy does not connect the existential concerns over abstract objects to questions about the nature and basis of power, but it is important to remind ourselves that this was not always so. One of the virtues of Plato's *Republic* is the unity of his metaphysical and political theory. The fundamental part of his metaphysical theory is the theory of Forms. The theory holds that there exists an ideal and eternal world of perfect Forms of which the physical world is but an imperfect imitation. The reason that the philosopher is ruler in the Republic is that she or he has unique access to this transcendental world of abstract objects. Knowledge of these abstract objects is, by definition, perfect knowledge and it is this perfect knowledge that qualifies philosophers who can gain access to this knowledge to be rulers of the Republic.

The sovereign power of the rulers of the Republic is based on the fact that it is they, and they alone, who have access to the world of Forms. The exercise of this power, which is based on abstract objects (for that is what Plato's Forms are) is not abused. Plato's Republic is an ideal state, a perfect society. In it the power of its philosopher rulers is applied with wisdom. Plato's philosopher kings gain power because they have exclusive access to abstract objects, but they do not use this power to further their power over others. Rather they use their knowledge of abstract objects to develop a craft of just rule. It seems to be a consequence of Plato's theory that the private knowledge of its philosopher rulers is, through a process of statecraft, diffused throughout the population and therefore becomes, at least to some extent, a shared public knowledge.

The conclusion which follows from Plato's use of ideal theory stands in stark contrast to the argument of the previous chapter. The argument in that chapter proceeded on the assumption that actors in the marketplace would act opportunistically and that they would use intellectual property rights in ways that defeated the collective interest. Put shortly, that chapter suggested that in an imperfect society individuals who gained power on the basis of being able to restrict access to abstract objects would use that power to gain more

power. In imperfect societies, creating a link between the mechanism of property and abstract objects turns out to be a risky institutional design strategy.

Having shown that there is at least one philosophical precedent for connecting power and abstract objects we can return to the main task of this section which is to provide a clearer account of the nature of abstract objects as they relate to intellectual property. Before doing so it is crucial to observe that the use of the term 'abstract object' in the context of intellectual property is not meant to imply an ontic commitment to the existence of such objects. A belief in the existence of abstract objects may simply turn out to be false. But for legal purposes this is irrelevant. The intellectual property system may reject the ontological reality of abstract objects but still retain the category as a convenient fiction to be used in making decisions about relations between actors.

The important feature of abstract objects which we want to concentrate on here is the role they play in *legal* judgements of identity. Before describing this role we need to make clear our focus. We are not here interested in the role that abstract objects play in a general philosophical theory of identity.[35] One way in which to begin an answer to the question of what makes object x and object y identical or similar is to propose that they are so if they share exactly the same properties or some properties.[36] But this is not a beginning that is relevant for our purposes. We have opted for the view that abstract objects are fictional entities, albeit highly useful ones. Our question is, what role do these entities play in the concentration of power? Our answer will be that within law they form the basis of identity judgements, judgements that ultimately determine who has access to vital capital resources. The fact that these judgements are made using fictional entities suggests that the judgements are themselves pragmatic and based on conventions.

35 Identity is a large topic. See the collection of papers in H. Noonan (ed.), *Identity* (Aldershot, 1993).

36 A. Brennan, *Conditions of Identity* (Oxford, 1988), 6. See also S. Shoemaker, 'Identity, Properties and Causality', in H. Noonan (ed.), *Identity* (Aldershot, 1993), chapter 7.

To reiterate, the following discussion of abstract objects is not part of a general philosophical theory of identity, but rather an inductive account of the role that abstract objects play in legal judgements concerning, in particular, the infringement of intellectual property rights.

The term 'abstract object' refers to a putative category of being. It is not a term of legal art. We saw in Chapter 2 that intellectual property rights are classified legally as incorporeal rights. The objects to which these rights relate and over which relations between individual actors are formed are abstract objects. Juristically, physical objects are not the objects of intellectual property. However the identity of the abstract object becomes known by the law through the physical object. At some point before property rights attach to the abstract object the various different regimes of intellectual property law require some kind of 'corporealisation' of the abstract object.[37] A given abstract object is not, however, just the ethereal mirror image of its concrete physical counterpart. The book or the invention is not, at least within the legal universe, to be exclusively identified with its abstract, intangible twin. If the abstract object is not identical with its concrete counterpart, what is it? An answer is that the abstract object is that core structure that is integral to the identity of the concrete object. This core structure forms the basis upon which an observer makes an identity judgement between two particular physical objects. It is the criterion by which the 'sameness' of objects is assessed. Abstract objects are those core structures that are used by legal actors in the process of making a decision about whether disparate physical objects are the same or similar, or resemble each other.

37 Copyright statutes, for example, typically insist on the requirement that works must be in material form before copyright subsists. In the case of patents there is usually a requirement that the invention is fully described before a patent can be granted. In the case of designs and trademarks there is normally an obligation on the applicant to represent graphically the design or mark. Trade secret protection in a sense also involves a requirement of materiality. It is because trade secrets exist in some materially accessible form that owners want legal protection.

As a rule, the law relating to infringement in the different areas of intellectual property recognises that infringement will occur in those cases where something less than the whole abstract object is taken.[38] Naturally the law relating to infringement of a given intellectual property right varies from jurisdiction to jurisdiction. And even in the same jurisdiction, some domains of intellectual property are thought to offer less protection for abstract objects than others.[39] But, despite this variation between different jurisdictions and separate fields of intellectual property, it is a basic proposition that intellectual property law protects abstract objects in the form of core structures rather than abstract objects that are identical with their material counterparts.[40]

Judgements of identity and recognition lie at the heart of infringement issues in intellectual property. Whether a judge has to decide an issue of copyright, patent, design or trademark, the basic process involves a comparison of two physical objects or processes and deciding whether or not one is an impermissible imitation of the other. Judges see the answer to this question as being a matter of fact. But this conclusion of fact is underpinned by a complex dynamic of social, psychological

38 The English common law early on took the position that something less than identical copying could amount to copyright infringement. See, for example, *D'Almaine* v. *Boosey* (1835) 1 Y. & C. EX. 288; 160 E.R. 117. In the case of patent infringement, the common law developed the 'pith and substance' test. See *Clark* v. *Adie* (1875) L.R. 10 Ch. App. 667. The requirement that only a substantial part of a copyright work need be taken is now legislatively entrenched in most copyright statutes. See, for example, section 14 of the *Copyright Act 1968* (Aus.). The degree of similarity required between the original work and the copied work does seem to have changed. On the more relaxed social attitudes of Elizabethan times to copying, see B. Kaplan, *An Unhurried View of Copyright* (New York, London, 1967), 23–24.

39 An example in Australia is to be found in designs law. The Australian Law Reform Commission, in its reference on designs, reported that there was a widespread perception that Australian courts 'have narrowly construed the infringement provisions so that registered design owners are protected only against virtually exact copies'. See Australian Law Reform Commission, *Designs* (DP 58, Australia, 1994), 94.

40 There are some useful judicial illustrations of this proposition. In *Francis Day & Hunter Ltd*. v. *Bron* [1963] Ch. 587, the court had to decide whether one song infringed another. The court approved the proposition by Astbury J, in *Austin* v. *Columbia Gramophone Co. Ltd*. (1923) Macg.C.C. (1917–1923) 398 at 415, that 'Infringement of copyright in music is not a question of note for note comparison'. Diplock LJ in the *Francis Day* case (at 627) observed that one element of copyright, infringement was that the original and infringing works be objectively similar, but this did not mean that they had to be identical. Speaking in the context of copyright, Lord Shand in *Franz Hanfstaengl* v. *H. R. Baines & Co Ltd* [1895] A.C. 20 at 31 said, 'All that can I think be said is that the question of infringement of the right depends on the degree of resemblance'. Similarly in the patent field the Australian courts have made it clear that patent protection extends to the 'substantial idea' behind the patent. See Dixon J in *Radiation Ltd* v. *Galliers & Klaerr Pty Ltd* (1938) 60 C.L.R. 36 at 51; *Minnesota Mining & Manufacturing Co and 3M Australia Pty Ltd* v. *Beiersdorf (Aust.) Ltd* (1980) 29 ALR 29.

and ideological factors. In order to make the decision, judges are necessarily involved in a process of abstraction in which they, as it were, create the abstract object that then forms the basis of their identity judgement.[41] This process is deeply problematic because the abstractness of abstract objects is a matter of variation rather than being an all or nothing matter. Abstractness comes in degrees. Imagine, for example, stories based on the idea of the last three of something left in the world, whether these be nations, people or dinosaurs. The concrete expression of these stories is likely to be very different. Yet at a sufficient level of abstraction they might be thought to be equivalent. At the most abstract level it might be claimed these are stories which are a concretisation of a three-point geometry in which it is assumed that there are no more than three points, no more than two points form a line and there is always a point not on a line. In the stories the lines and points are given an interpretation and definition such that, for example, the points and lines become respectively actors and possible alliances. The reduction of stories to geometric structures is probably a level of abstraction that no judge would choose. But some level must be chosen so that the identity judgement which has to be made in the case of an infringement matter can be made. Clearly, if judges choose high levels of abstractness for the core structures upon which they base their judgements of identity then the more likely it is that isomorphisms, equivalences of all kinds, will be 'seen' which in turn will lead to an increase in the findings of infringement.

So far the analysis of abstract objects reveals that they have two distinct roles: first, they form the object of relations in intellectual property; second, they form the basis for identity judgements in the context of infringement actions in intellectual property. The degree of discretion that judges have in the construction of abstract objects has two sources. The first we have already mentioned. There are many degrees of abstractness. The second stems from the fact that the conventional task of drawing boundaries in relation to abstract objects is far more difficult than in the case of physical objects. Real property has boundaries. Boundary is a conventional concept.[42] Boundaries are

41 For examples of creative definition and definition by abstraction in the case of mathematical objects, see H. Weyl, *Philosophy of Mathematics and Natural Science* (Princeton, 1949), 8–13.

42 For a conceptual discussion of boundaries in real property, see T. Steinberg, 'God's Terminus: Boundaries, Nature, and Property on the Michigan Shore', XXXVII *The American Journal of Legal History*, 65 (1993).

socially, politically or militarily created, but because they relate to a real-world physical object the boundaries of physical property, once decided, can be maintained with some precision.[43] The intangible abstract objects of intellectual property rights cannot be marked with boundaries in the manner of physical objects. The result is that an abstract object can be used to group very different physical objects. Under copyright law, for example, a film can be said to reproduce or be a copy of a literary work, and a three-dimensional work can be a reproduction of a two-dimensional work. Very different physical objects, in other words, can be said to share the same identity in intellectual property law because they all imitate the same abstract object. Such judgements of identity are dependent upon the existence of a core structure that provides the conditions of identity for the relevant judgement. This core structure, we have suggested, is itself a matter of judicial composition. Constitutive judgements about core structures are judgements of convention. Once in place they determine the extensional reach of a given property right into the material world.

A well known example where this conventional judgement has proved difficult to make is in the field of copyright and computer software. It is a feature of computer programs that the functions of a program can be captured in detail by a program written in a different computer language. Protection for the literal expression of a program or a substantial part of it does not help to protect the functions of that program. A now famous judicial solution in the United States was to begin talking about protection for the structure and sequence of a program.[44] This approach basically amounted to increasing the abstractness of the abstract object so that identity judgements concerning computer software could include their non-literal elements.[45] The protection of computer software raises in a stark fashion a problem that had always been there in other parts of copyright and in other regions of intellectual property.[46] This is the

43 For example, it is a requirement of the Torrens system that land should be properly surveyed.

44 *Whelan Associates, Inc.* v. *Jaslow Dental Laboratory Inc.*, 797 F. 2d 1222 (3rd Cir. 1986).

45 Since the Whelan case, US courts have tried to develop tests that narrow the boundary of the abstract objects that relate to software. See *Computer Associates International, Inc.* v. *Altai, Inc.*, 982 F.2d 693 (2d Cir. 1992).

46 Dramatic works have posed similar kinds of problems. See J. Lahore, *Copyright Law* (Service; Sydney, 1988), para 9.20.215.

problem of identifying and determining the boundaries of the core structures that form the basis of identity judgements in intellectual property.

## The Power of Abstract Objects

The previous section offered an account of the role of abstract objects in intellectual property. We can now return to our earlier concern, which was how intellectual property rights allow holders of such rights to achieve a sovereignty effect. We already have the outline of an answer to this question because property rights are, as we have already argued, a form of sovereignty. But this is only a formal characteristic of property which is not necessarily linked to a specific pattern or distribution of power. We are also interested in how intellectual property can function to produce power imbalances between individual actors. Intellectual property not only is a sovereignty mechanism but it has a sovereignty effect in social systems. The remainder of this chapter expands and defends this claim.

When sources of power are listed, wealth or capital is typically among them.[47] Abstract objects are not. Capital, it can hardly be disputed, is an important source of power. The extent of its distribution is one factor to take into account when assessing where economic and other forms of power in a society are concentrated. It is one (but only one) measure of power.[48] Non-human capital is usually identified with the tools and equipment of production.[49] From our analysis it follows that standing behind many capital goods, the processes of production and the products (including services) themselves are abstract objects and these can through intellectual property law be the subject of separate ownership and control. Abstract objects are themselves capital goods that can be traded within the marketplace.

47 See D.H. Wrong, *Power* (Chicago, 1988), 124–125.

48 On the difficulties of measuring power, see D.A. Baldwin, *Paradoxes of Power* (New York, Oxford, 1989), 24–30.

49 A.A. Alchian and W.R. Allen, *Exchange and Production* (3rd edn, Belmont, California, 1983), 173.

The proposal, then, is that abstract objects are a form of capital.[50] Intellectual property both constitutes the existence of this type of capital and determines its ownership. We can view this proposal as an extension of Schumpeter's conceptualisation of capital. Schumpeter argues that capital is not identical with concrete goods but rather is a lever that the entrepreneur uses to obtain control over the concrete goods he needs in order to develop new production possibilities – what Schumpeter terms 'new combinations'.[51] This definition is advanced by him in the course of developing the idea that capital must allow entrepreneurs control over production goods so that they can redirect those goods in new ways. Capital, in Schumpeter's words, is a 'fund of purchasing power'.[52] This can be modified to accommodate abstract objects by saying that capital is a fund of controlling power over productive means. Abstract objects also exert control over the product, not just the means of production.[53] Ideally the entrepreneur ties up both. Within modern economies this fund increasingly consists of abstract objects. Intellectual property law determines rights of ownership over parts of this fund and who has access to the fund. The controlling power over the fund is given by the property mechanism.

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50 The idea that abstract objects are a form of capital resembles the assumption of modern growth-theory that knowledge is the basic form of capital. See P.M. Romer, 'Increasing Returns and Long-Run Growth', 94 *Journal of Political Economy*, 1002, 1003 (1986).

51 J.A. Schumpeter, *The Theory of Economic Development* (Cambridge, Mass., 1949) 116.

52 Id., 120.

53 This control by the owner of the abstract object over the physical product can include some acts of distribution. So, for instance, under section 37 of the *Copyright Act 1968* (Aus.) it may be an infringement of copyright to import a work into Australia without the permission of the copyright owner. The parallel importation provisions have been the subject of much discussion in Australia. For example, Copyright Law Review Committee, *The Importation Provisions of the Copyright Act 1968* (Canberra, 1988). See also note 82 for the work done by the Prices Surveillance Authority. Academic discussions include M.J. Davison, 'The Market for Books: Open or Closed?', 18 *Australian Business Law Review*, 179 (1990); A. Fels and J. Walker, 'The Market for Books and the Importation Provisions of the Copyright Act 1968', 17 *Melbourne University Law Review*, 566 (1990); C. Turner, 'Copyright and Parallel Importation: The Australian Experience and Recent Initiatives', 7 *Intellectual Property Journal*, 149 (1992). The right to prevent importation is also to be found in patent law. See W.A. Rothnie, *Parallel Imports* (London, 1993), chapter 3. For a discussion of the importation right in the context of US copyright, see *BMG Music* v. *Perez*, 952 F.2d 318 (9th Cir.), *cert denied*, 112 S. Ct. 2997 (1992). See also R.H. Stern, 'Some Reflections on Parallel Importation of Copyrighted Products into the United States and the Relation of the Exhaustion Doctrine to the Doctrine of Implied Licence', 4 *European Intellectual Property Review*, 119 [1989]. For a discussion of parallel importation in general, see W.A. Rothnie, *Parallel Imports* (London, 1993).

The claim that the abstract objects which are constituted by intellectual property are a form of capital contains the following elements. Abstract objects function as gateways to valuable physical objects. These physical objects may be capital items important in the processes of production, or they may be the end result of such processes – products like penicillin, a genetically modified organism, seeds and so, on – products that cannot be imitated. Abstract objects are also capital entities in their own right and can be used and traded as such.[54]

The idea that the abstract object is a form of capital and that therefore it is a source of power is an idea which in part is to be found in Veblen's theory of the nature of the business enterprise. Veblen proposes that the 'substantial foundation of the industrial corporation is its immaterial assets'.[55] One thought behind this proposal is that crucial to the success of a business is some element of monopoly.[56] One source of monopoly is 'custom and prestige (goodwill)'.[57] These kinds of monopolies, described by Veblen as less definite in character, are linked to advertising. It is through advertising that traders achieve levels of product differentiation between articles such as bars of soap, which at first glance seem more or less the same.[58] Intellectual property

54 The conclusion that propertised abstract objects are tradeable entities in themselves follows from their classification as a form of personal property that may be assigned. For an example of a typical statutory provision, see section 196 of the Copyright Act 1968 (Aus.). See also note 34, chapter 2. Intellectual property plays an increasingly important role in the modern economy as a form of security. Intellectual property may be the subject of a mortgage or charge. See M. Henry, 'Mortgages of Intellectual Property in the United Kingdom', 5 European Intellectual Property Review, 158 [1992]; S.M. Pollard, 'Aspects of Lenders' Security Over Computer Software', 6 *Australian Intellectual Property* Journal, 80 (1995). Even trademarks, which in the past were not recognised as commodities that could be traded in their own right, are coming to be recognised as such. For a judicial discussion of English history on the prohibition on trafficking in trademarks, see Lord Brightman's judgement in Re 12 *Applications by American Greetings Corporation to Register the Trade Mark 'Holly Hobbie'* (1984) 1 IPR 486.

55 T. Veblen, *The Theory of Business Enterprise* (1904, reprinted New York, 1965), 143.

56 Id., 54. Monopoly is not used by Veblen in the strict economic sense of exclusive control over supply, but something less than that. See note 2 at 54.

57 Id., 55.

58 Bain concludes that the most important barrier facing new traders wishing to enter a given market is product differentiation: J.S. Bain, *Barriers to New Competition* (Cambridge, Mass., 1956), 216.

law is indispensable to modern marketing.[59] Without trademark law, for instance, advertising could not create the high degree of product differentiation that exists in many markets. At the heart of modern marketing is the creation of an image that aims to persuade the consumer to choose the product of which has a value in itself for the consumer. Abstract objects like trademarks form convenient tags for such images. The trademark in the modern consumer society no longer just informs.[60]

The importance of the abstract object to business survival resurfaces in Veblen's discussion of capital and capitalisation. Rejecting a definition of capital which is tied to the material objects of production, he suggests that within the corporate sector the basis of capitalisation is 'the earning-capacity of the corporation as a going concern'.[61] This earning capacity is in turn fixed by goodwill, which Veblen stipulates to include business reputation, franchises, trademarks, patents, copyrights and trade secrets.[62] Absolutely crucial to the life of a corporation, argues Veblen, is the acquisition of intangible property, for it is intangible property, that confers differential advantages on its owners.[63]

The argument so far has been this. Property is a sovereignty mechanism. This sovereignty mechanism in the case of intellectual property applies to abstract objects. Abstract objects are core structures that are essential to legal identity judgements. They are a form of capital and as

59 Veblen saw that it was advertising and salesmanship that would take 'first place' in manufacturing. See T. Veblen, *Absentee Ownership* (London, 1924), chapter XI. The general neglect of marketing and the role of intellectual property within economic theory are nicely brought out in W. Kingston, *The Political Economy of Innovation* (The Hague, Boston, Lancaster, 1984), chapters I and II.

60 See the discussion of trademarks in the section entitled 'Proprietarianism in Action' in Chapter 9. Trademarks are not the only form of abstract object important in the marketing of products. The use of famous personalities, whether real or fictional, to advertise products has become a routine way to generate and capture consumer allegiances and preferences. The law relating to the commercial use of personality has undergone significant development in Anglo-American jurisdictions. Once again lying at the heart of the legal issues has been the question of ownership of the abstract object, namely the public personality that has the much sought-after promotional power. For a discussion of English and Australian developments, see S.K. Murumba, *Commercial Exploitation of Personality* (Sydney, 1986). In the US, see M. Madow, 'Private Ownership of Public Image: Popular Culture and Publicity Rights', 81 *California Law Review* 127 (1993); S.R. Barnett, 'At a Crossroads: The Right of Publicity in the United States', 160 *Revue Internationale du Droit d'Auteur*, 5 (1994).

61 T. Veblen, *The Theory of Business Enterprise* (1904, reprinted New York, 1965), 137.

62 Id., 139.

63 Id., 139–143.

such function as a source of power. The mechanism for the utilisation of this source of power is property. But how does this mechanism, when applied to abstract objects, come to have a sovereignty effect? That is to say, how is it that property in abstract objects promotes the concentration of power amongst individuals within a society rather than its diffusion?

Part of the answer lies in our discussion of the nature of abstract objects. One of their distinguishing features is that they are fuzzy, indeterminate objects. Their boundaries depend on the identity judgements of a legal elite. These judgements are judgements of fragile convention that may easily break down or be influenced by specific interest groups, with the consequence that they cease to serve the broader, more diffuse societal interests to which they are meant to be directed. The fact that these abstract objects are gateways to many other kinds of capital resources provides a strong motivation for individual actors to accumulate those abstract objects. Moreover the fuzzy nature of these objects provides an incentive for financially well-endowed actors to change conventional judgements about the identity of these objects in ways that suit them. Such actors may be able, by exploiting the fuzziness of abstract objects, to gain capital transfers for themselves because they manage to change conventional legal judgements about the reach of the relevant abstract object. They acquire a stronger capital asset.

Each time the law constitutes new abstract objects by, for instance, increasing the scope of patentable subject-matter or legislatively creating new forms of abstract objects such as plant variety rights, the law in effect creates capital. But this kind of capital has the danger that it can act as an enormous power resource for a select few. Not all abstract objects have a power-creating effect. Producing an artistic work or a poem which is protected by copyright is probably unlikely to increase the power base of the author. But there are other kinds of abstract objects that relate to resources upon which there is considerable or universal dependence. Once the law creates abstract objects in relation to resources like genes, seeds, chemical compounds or forms of medical treatment it opens the way to the private ownership of resources upon which there is some level of collective dependence. For the economist, creating abstract objects in these kinds of resources is justifiable if there are real dynamic efficiency gains to be had that outweigh the costs of such rights. But there is a broader consequence to consider

here, one that is harder to measure in terms of some economic metric, and this is the potential effect of abstract objects upon the distribution of power within a given social system.

There are some resources, like the ones we have just mentioned,upon which many people depend. Once abstract objects come to govern access to these resources we have added to the resource-dependent relationship a formal, legally constituted person-dependent relationship. A farmer, in order to plant crops, is dependent upon having seeds to plant. This we might term an object-dependent relationship. If those seeds are now the subject of a patent or plant variety right the farmer is dependent upon the permission of the owner of the abstract object for access to those seeds. A person-dependent relationship has been added to the object-dependent relationship. A relationship of dependence between persons we can broadly characterise in the following way. B is dependent upon A if B believes that he cannot give up that relationship because doing so would affect one or more of B's interests in a way that B does not want.

Relationships of dependency between persons can arise in many ways. Where a dependency relationship exists between A and B, one possible consequence is that B may face a coercion claim from A. Coercion claims in their most general form are cases where A is said to coerce B to do x. Theories of coercion attempt to specify the conditions under which such a claim can be said to be true.[64] One proposition in coercion theory which has substantial assent is that threats are coercive. There is much more debate over whether offers can be regarded as coercive as well as the right kind of test to use for separating threats from offers.[65] Pursuing this debate is not necessary for present purposes. Here we simply want to make the intuitively plausible claim that relationships of dependence create the conditions necessary for the making of credible threats. A clear-cut example of where a threat is being made in the context of a dependency relationship is if B is dependent upon A, her doctor, for treatment, treatment which A is obliged to provide and which A proposes to withdraw unless B does x (for example, pays A more money).[66] Whether or not an attempt by A to get B to do x in

64 See A. Wertheimer, *Coercion* (Princeton, New Jersey, 1987), 5.

65 Id., chapter 12.

66 See Id., 207–208 for a discussion of occasions when similar cases can be said to contain an offer.

the context of a dependency relationship amounts to a coercion claim will be affected by the position one takes on offers, since one may take the view that offers, or at least some offers, are not coercive. But clearly coercion claims include at least threats. To summarise: dependency relationships make coercion claims feasible. They create conditions that allow A to make use of 'threat power' against B.[67] For A to be able to harness this power, A has to make use of some mechanism, property being an example of such a mechanism.

Property rights of all kinds, potentially at least, create person-dependent relationships. Clearly much depends on the object of the property right. When those objects are abstract objects and the resources to which they relate are the subject of considerable or universal object dependency, there are two consequences for the distribution of power. The first is that new kinds of threat power come into being. This happens because, as we have seen, the creation of a property of abstract objects creates relationships of person dependency and those relationships create an essential condition necessary for the exercise of threat power by the owners of those abstract objects.[68] Where those abstract objects relate to resources upon which many people rely, the scope of that threat power can be said to be extensive.[69] The range of power based on abstract objects is potentially global. It is certainly a power that can cross territorial boundaries. When in 1984 Australia was considering its position in the international patent system, the main cost it took into account of withdrawing from that system was the threat power it would face, as a technology importer.[70]

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67 K.E. Boulding, *Three Faces of Power* (Newbury Park, London, New Delhi, 1989), 25.

68 The exercise of this power is dependent upon the existence of a social system that recognises, at the very least, the rule of law and private property rights. Power based on abstract objects is a form of power that is heavily rule-based and structure-dependent. There is a debate between those who support structuralist or individualist accounts of power. See K.M. Dowding, *Rational Choice and Political Power* (Aldershot, 1991), 5–8. The position we take here, without offering a defence for it, is that setting up a dichotomy between structuralist and individualist approaches to power does not seem a useful way to proceed. Structures are critical to the creation, definition and maintenance of some types of power. Power runs through these structures. Individuals operating within these structures do not so much have power as the facility, through various social mechanisms, to harness power.

69 Extensiveness being a feature of power. See B. De Jouvenel, 'Authority: The Efficient Imperative', in C.J. Friedrich (ed.), *Authority* (Cambridge, Mass., 1958), 159.

70 *Patents, Innovation and Competition in Australia* (Industrial Property Advisory Committee, Australia, 1984), 17.

The second consequence which the creation of a property of abstract objects has for threat power within a social system is that this kind of extensive power is likely to be unevenly distributed within the social system and to become increasingly so. This is not an analytical consequence, but an empirically probable consequence of the nature of modern economic production. The reasons for thinking it to be empirically probable go back to our discussion of Marx and abstract objects. There we saw that Marx believed that each new generation of technology carried with it greater and greater investment costs. Scientific production, Marx correctly foresaw, would become more important and more costly. Under the pressure of competition, capitalists would be forced to meet this investment cost. A good example comes from the making of metals. Making iron and steel was for centuries a process of trial and error, with progress depending on enough combinations of materials being tried.[71] Once the chemical processes behind the techniques being used were understood, the techniques could be applied to produce better and better products. As science proved itself commercially and militarily useful, industry began to make an increasing and systematic use of scientists, this use taking the form of industrial laboratories.[72] The chemical and steel industries were among the early recruiters of scientific expertise.

> For the period 1916–45 it has been shown that the number of patents granted annually grew much more rapidly in classes dependent upon the application of knowledge from scientific disciplines such as chemistry and physics, whereas the growth in classes dependent upon empirical or practical knowledge and mechanical ingenuity has been much slower.[73]

This example illustrates that the ownership of some kinds of abstract objects requires both high-level scientific capability and large capital investment. In certain exotic areas of science it may be that the ownership of the relevant abstract object is open to only a handful of well-resourced players. And where those abstract objects are gateways to universally important resources it follows that proprietors of those objects acquire vast threat power. The owner of a block of land and the pharmaceutical company which owns the patent on a lifesaving drug both have a sovereignty mechanism at their disposal

71 N. Rosenberg, *Technology and American Economic Growth* (New York, 1972), 120.
72 N. Rosenberg and L.E. Birdzell Jr., *How the West Grew Rich* (New York, 1986), 247.
73 N. Rosenberg, *Technology and American Economic Growth* (New York, 1972), 118.

(the property right). Formally both are in single-place relations with relevant others, but the person-dependent relationship that is created through the recognition of the abstract object (the patent over the drug) means that the pharmaceutical company can harness much more threat power. It is only in the case of the pharmaceutical company that the sovereignty mechanism of property has a sovereignty effect. The declaration of property rights in certain kinds of abstract objects leads to the concentration of vast threat power in their owners.

The morality of threat power based on abstract objects is not something that this chapter has tried to address. Its main goal has been to show that the price of a property of abstract objects is a sovereignty effect. That is to say that extensive, possibly global, power will probably be concentrated in the hands of those who, through their scientific/technological capabilities and superior capital resources, are able to capture, through the property mechanism for abstract objects, resources upon which there is a universal reliance.

Reactions to increasing the threat power of some agents in this way will differ. How much of a problem it will be will obviously be influenced by the kind of political tradition to which one belongs. Some republican traditions would be worried by the concentration of global threat power in the hands of an elite. Such power would make it harder for a society to achieve the republican ideal of liberty, an ideal in which citizens are part of a free society and have their interests safeguarded by the rule of law.[74] Since, for republicans, the ideal of negative liberty is rooted in groups, any mechanism that created extreme discrepancies in the distribution of threat power in groups would be critically viewed. Some libertarians may be more sanguine about the presence of threat power based upon abstract objects, or perhaps not even see it as threat power. Nozick, in his discussion of the Lockean proviso, suggests that the person who finds and appropriates the total supply of some medically beneficial substance does not worsen the situation of others because no other would have found the substance.[75] He makes a similar point about

74 For a discussion of the republican ideal, see J. Braithwaite and P. Pettit, *Not Just Deserts* (Oxford, 1990), chapter 5.

75 R. Nozick, *Anarchy, State, and Utopia* (Oxford, 1974), 181.

the effect of patents. Patents do not deprive others of access to the patented object since that object only comes into existence because of the patentee's efforts.[76]

Assume now that A (a pharmaceutical company or perhaps two or three companies) proposes that if B (a developing country or countries) does not do x (pay more for some life-saving drug such as penicillin) it will do t (revoke patent licences, cut B off from technological information, know-how or something of that kind).[77] In terms of our earlier analysis this is a dependency situation and a coercion claim is certainly feasible in such a situation. But perhaps some libertarians would want to say that there is no threat power being exercised by A. Implicit in such a view would have to be an assumption of negative community. The substances in question are open to all to own, including A. And property rights for roughly Lockean reasons (or rather an interpretation of Locke's labour theory) would have a high degree of inviolability about them. This, combined with the view that patents do not offend the Lockean proviso, because they do not deprive anyone of the relevant thing, might allow A in this case to satisfy the morality test for distinguishing between threats and offers. The morality test simply states that whether or not A is making an offer or threat depends on what A is morally obliged to do.[78] If A is not morally obliged to provide the drugs to B then A is making an offer. (Of course, some offers may be argued to be coercive, but that is not something that matters for the purposes of this illustration.) A libertarian might argue that under conditions of negative community A is entitled to the drugs it discovers and is under no obligation to B with respect to price since property rights enjoy some kind of lexical ascendancy over other kinds of rights. Our claim is not that all libertarians would reason this case in this way or see the threat power of abstract objects in this way. Rather, it is to show that the connections and inferences that are made concerning abstract objects, property and threat power depend on deeper assumptions such as

76 Id., 182.

77 For the use of patents as conspiratorial devices by pharmaceutical companies on an international scale, see P.M. Costello, 'The Tetracycline Conspiracy: Structure, Conduct and Performance in the Drug Industry', 1 *Antitrust Law and Economics Review*, 13 (1968).

78 Nozick has an important discussion of this test in R. Nozick, 'Coercion' in S. Morgenbesser et al. (eds), *Philosophy, Science, and Method* (New York, 1969), 440.

the nature of community. Clearly those libertarians that subscribed to some kind of moral proprietarianism would be less likely to see activity based on the exercise of those property rights as coercive.

Threat power based on the ownership of abstract objects is a form of power that is law-dependent. It is law, as we have pointed out, that constitutes the abstract object. This, in one sense, makes it a fragile form of power, for it relies on the acceptance of legal norms and on the efficacy of the enforcement mechanisms that support those norms. But it is precisely because threat power is law-dependent that it may be hard to recognise as a form of threat power. Threat power which is so inextricably linked to law is perhaps the most dangerous kind of power for a society to contemplate creating and facilitating because it derives legitimacy from the law itself. The dangers of doing this are made worse because threat power based on abstract objects is linked to the property mechanism. Again, because of the central importance of property rights in liberal ideology, the likelihood that this kind of threat power will be largely uncritically accepted, seen as natural, or even not seen as threat power increases. The authority of law masks, as it were, this kind of threat power.

When threat power based on abstract objects is placed in the hands of opportunistic actors, it is likely to give rise to all kinds of economic and social dangers. During his defence of liberalism, Hayek distinguishes liberal economies from collectivist economies by saying that the former are committed to the presence of competition.[79] The principal virtue of competition for Hayek is that it limits the extent to which any one individual can hold power in society. Collectivist economic planning is dangerous because of the amount of power it gives to planners: 'whoever controls all economic activity controls the means for all our ends, and must therefore decide which are to be satisfied and which are not. This is really the crux of the matter.'[80] Much the same can be

79 F.A. Hayek, *The Road to Serfdom* (London, 1944).
80 Ibid., at 68.

said about planning by global private sovereigns.[81] States that enact property forms that enable private sovereigns to harness enormous threat power embark on a dangerous strategy, for they increase the capacity of those private sovereigns to discipline markets and to plan against competition. Private sovereigns, like their collectivist counterparts, are likely to plan against competition rather than for it.[82]

## Conclusion

Within liberalism the possibility that individuals through the acquisition of large property holdings may also acquire power and be a danger to others remains muted. When a society creates property rights in abstract objects, it faces the prospect of an extensive threat power being concentrated in the hands of a few. The route to this conclusion has been to argue that property is a sovereignty mechanism. When this sovereignty mechanism operates in relation to abstract objects, threat power within a social system increases dramatically. This occurs because abstract objects are both a form of capital and a gateway to other kinds of capital, capital upon which others depend. The property mechanism allows property owners to make use of the threat power that arises because of the dependency relationships that occur around this kind of capital.

The suggestion that abstract objects are one type of capital and that they are linked to the formation and exercise of threat power leads to a question about the distribution of such capital. Because this form of capital is constituted through law, the state and its law makers play

81 Institutional economists have made the idea of a private form of centralised planning in the capitalist economy a major theme of their work. Simplifying, institutionalists are not happy with neo-classical models that locate power within markets and portray power as an outcome of market structures. For institutionalists a much more realistic picture of the economy is obtained once the market is seen as an outcome of those groups that hold power, especially those in the corporate sector of the economy. See J.R. Commons, *Institutional Economics* (New York, 1934); W.J. Samuels (ed.), *The Economy as a System of Power* (New Brunswick, New Jersey, 1979); M.R. Tool and W.J. Samuels (eds), *State, Society and Corporate Power* (2nd edn, New Brunswick, Oxford, 1989).

82 Using abstract objects to discipline or order the market has many forms. Prohibiting parallel imports is one form of 'orderly marketing'. In Australia the economic consequences of this are well documented. See Prices Surveillance Authority, *Inquiry into Book Prices: Final Report* (Canberra, December 1989); Prices Surveillance Authority, *Inquiry into the Prices of Sound Recordings* (Canberra, December 1990); Prices Surveillance Authority, *Inquiry into Prices of Computer Software: Final Report* (Canberra, December 1992).

a crucial role in its distribution. What arrangements should be set in place for the distribution of such objects? The next chapter explores one possible answer to this question.

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