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## Property, Opportunity and Self-interest

### Introduction

Self-interest is not a total explanation for what drives the self,<sup>1</sup> but as it happens self-interest does explain a lot about the self. And because it does, it makes the use of intellectual property rights by a society costly, to the point where perhaps there should be a presumption against expanding their use. The real-world cost of intellectual property rights remains a complex empirical question. This chapter does not shed any light on those actual costs, but it does provide an argument for thinking that they might be higher than is usually thought.

Intellectual property rights are rights which are created for and exist within market contexts. In such contexts they have a dangerous inner logic. Intellectual property rights create, we shall see, distinctive kinds of opportunities. Rational self-interested actors take those opportunities. By doing so they defeat the social interest that provided the justification for having the rights in the first place. The rational choice theorist's maxim that it is safer to rely on self-interest than on

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1 For some reasons as to why not, see A.K. Sen, 'Rational Fools: A Critique of the Behavioral Foundations of Economic Theory', 6 *Philosophy and Public Affairs*, 317 (1977). For criticisms from another perspective, see J.A. Nelson and M.A. Ferber (eds), *Beyond Economic Man: Feminist Theory and Economics* (Chicago, 1993).

virtue as the foundation for institutions often leads to the adoption of property rights as the institutional design solution.<sup>2</sup> In fact the beneficial effects of the link between property rights and self-interest is, for many, almost a matter of religious faith.<sup>3</sup> This linkage in the case of intellectual property rights runs the real risk of being self-defeating. The problem, we shall see, is that creating property rights in abstract objects invites socially costly levels of opportunistic behaviour. Self-interest makes individuals accept the invitation.

The argument for this claim comes in the following stages. The first section examines the model of perfect competition. Although much criticised, it remains a precise analytical definition of competition. It remains a starting-point in an economic explanation of why in a market some level of property rights in information is needed.<sup>4</sup> Four functions of property in abstract objects are then distinguished: appropriation, adjustment, self-defence and planning. These functions are linked to two types of generic strategies: rule-changing strategies and preventive strategies. It is the use of specific instances of these generic strategies by individual actors to survive in the market-place that potentially makes the cost of intellectual property rights very high. The proof that these strategies are actually used in the market-place by intellectual property holders is a question of fact. The argument in this chapter suggests that we need more data on the strategic uses of intellectual property by individual firms before we commit resources to a further extension of intellectual property regimes. A final section of the chapter suggests that intellectual property rights are connected to the problem of powerful factions in a society that are prepared to contemplate their extensive use.

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2 G. Brennan and J.M. Buchanan, *The Reason of Rules: Constitutional Political Economy* (Cambridge, 1985).

3 'The truth is as simple as fundamental: that private property and private property rights, and only private property, is an indisputably valid, absolute principle of ethics and the basis for continuous "optimal" progress ...'. See H. Hoppe, *The Economics and Ethics of Private Property* (Boston, 1993), 227.

4 See K.J. Arrow, 'Economic Welfare and the Allocation of Resources for Invention', in *The Rate and Direction of Inventive Activity: Economic and Social Factors* (a Report of the National Bureau of Economic Research, Princeton, 1962), 609.

To summarise: the basic thrust of the chapter is that property rights in abstract objects offer their holders strategic opportunities within the market-place. These act as a siren call to actors to think about the use and redesign of these rights to suit themselves. The result is that the collective interest and self-interest part ways.

## The Rationality of Perfect Competition

The core ideas of the model of perfect competition were given an intuitive expression by Adam Smith. Free competition, he said, required sufficient numbers of individual competitors, knowledge of the market and a ban on conspiracies against the public.<sup>5</sup> These ideas were eventually incorporated into a formal model of perfect competition, based on the following assumptions:<sup>6</sup>

1. there are sufficient buyers and sellers so that no one individual is able to influence price;
2. individuals do not engage in collusive behaviour;
3. traders have near perfect information, including information about production methods;
4. there is mobility of resources so that individual traders can shift resources to every profit opportunity;
5. there are no barriers to entry to prevent resources being shifted to a profit opportunity.

Under these conditions the subjective demands of consumers are matched by the supply of services and goods by an army of traders who have full information about those demands. Costs and prices for each trader in relation to any given good must be the same since any deviation in relation to, say, prices would mean either a loss of profit or a loss of sales. Since traders are rational maximisers the equality of prices implies that output is at a maximum and the equality of costs implies that input is at a minimum. Perfect competition produces this

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5 For a historical discussion of the model, see G.J. Stigler, 'Perfect Competition, Historically Contemplated', *LXV Journal of Political Economy*, 1 (1957).

6 C.A. Tisdell, *Microeconomics of Markets* (Brisbane, 1982), 182–183.

allocation because, amongst other things, sellers are free to move to any part of the market in which there are excess profits and buyers are free to move away from those sectors where prices are too high.

The model is restricted in scope. Its claims are analytical, not empirical. It is basically only concerned with one kind of efficiency: allocative efficiency.<sup>7</sup> It is a tightly knit input-output model in which consumers, through the pricing mechanism, extract from producers the maximum output for a given input. One can view the model as a specific theory of practical rationality – what rational traders would do under conditions specified by the model. This leads to the following question: how should traders, who are rational and self-interested, behave under the conditions of the model when making decisions about investing in the production of new information? There are two obvious possibilities. One is that traders would invest in the creation of new information, for roughly the reasons that Marx gives in explaining technical change. Invention and innovation are a crucial source of profit for the individual capitalist. Competitive pressures and the desire for profit (and survival) make investment in knowledge creation a personal and commercial imperative.

Another answer to our question is that, within the perfectly competitive community, free-riding is the best strategy. Put simply, a free-rider is an economic actor who obtains the benefits of a good without contributing to its cost of production.<sup>8</sup> Free-riding does not necessarily constitute a problem. Amongst other things, it contributes to the diffusion of information and so adds to the productive potential of an economy.<sup>9</sup> However, free-riding is thought to create a problem for the market mechanism when it comes to ensuring that sufficient resources are devoted to the creation of new knowledge. The problem occurs because knowledge is said to have public good qualities. Public goods are individual goods the consumption of which by

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7 Economists generally distinguish between allocative efficiency, Pareto optimality, Pareto superiority and Kaldor-Hicks efficiency. See J.L. Coleman, *Markets, Morals and the Law* (Cambridge, New York, 1988), 68. The capacity of markets to stimulate invention is captured by the idea of dynamic efficiency.

8 For a survey of the different approaches to the free-rider problem, see J. McMillan, 'The Free-Rider Problem: A Survey', 55 *Economic Record*, 95 (1979).

9 For a general discussion of the benefits of diffusion, see P. Stoneman and P. Diederer, 'Technology Diffusion and Public Policy', 104 *The Economic Journal*, 918 (1994). For a nuanced discussion of the role of law in innovation, see C. Arup, *Innovation, Policy, and Law* (Cambridge, 1993).

one individual does not detract from the possibility of consumption of those goods by another individual.<sup>10</sup> Furthermore, so-called 'pure' public goods (for example, defence) have the quality of being non-excludable: once in existence it is practically difficult to exclude others from consuming them. If the provision of pure public goods is left to the market, suboptimal amounts of resources are likely to be devoted to their production because free-riders who consume the good, by definition, will not contribute to the cost of production. In a system of perfect competition where information is available free, or at cost, profit opportunities generally do not flow from the creation of information. In much the same way that producers, say, of tomatoes would have less incentive to produce if they knew that a proportion of their crop had to be given away, producers of information have diminished incentives to produce information, the more there is a free-rider problem. Some innovation in information could still be expected under conditions of perfect competition, for it would give traders first market entrant advantages. But the crucial point is that perfect competition would fail to achieve an optimal allocation of resources for the generation of new information. Arrow, in his now classic discussion of this problem, summarises the position thus:

To sum up, we expect a free enterprise economy to underinvest in invention and research (as compared with an ideal) because it is risky, because the product can be appropriated only to a limited extent, and because of increasing returns in use. This underinvestment will be greater for more basic research.<sup>11</sup>

There are two standard ways in which to attempt to fix this particular case of market failure. One response is to suggest a greater role for government. The provision of public goods requires collective action. Arrow suggests that in the case of scientific research his analysis leads

10 In the USA the seminal work on public goods is by Samuelson (what he refers to as collective consumption goods). See P.A. Samuelson, 'The Pure Theory of Public Expenditure', 36 *The Review of Economics and Statistics*, 387 (1954); P.A. Samuelson, 'Diagrammatic Exposition of a Theory of Public Expenditure', 37 *The Review of Economics and Statistics*, 350 (1955); P.A. Samuelson, 'Aspects of Public Expenditure Theories', 40 *The Review of Economics and Statistics*, 332 (1958). Since then there has been a lot of water under the bridge. See R. Cornes and T. Sandler, *The Theory of Externalities, Public Goods, and Club Goods* (Cambridge, New York, 1986); A. de Jasay, *Social Contract, Free Ride: A Study of the Public Goods Problem* (Oxford, New York, 1989).

11 See K.J. Arrow, 'Economic Welfare and the Allocation of Resources for Invention', in *The Rate and Direction of Inventive Activity: Economic and Social Factors* (a Report of the National Bureau of Economic Research, Princeton, 1962), 609, 619. See also R.R. Nelson, 'The Simple Economics of Basic Scientific Research', 67 *Journal of Political Economy*, 297 (1959).

to this conclusion. By funding research, government provides a public good and compensates for the failure of the market. An alternative is to create property rights in information and allow this reconstructed market to perform the allocative function. Both solutions depend on government intervention. Those who advocate the creation, or expansion, of intellectual property rights to correct market failure in the case of the market in innovation are inviting government regulation.<sup>12</sup> The consequences of this point are not always fully appreciated. It makes theories of government failure potentially relevant to the creation of intellectual property policy and rights.<sup>13</sup>

The economic argument for intellectual property rights is simple and robust but it contains a paradox. Intellectual property rights are rewards, or more accurately opportunities to gain a reward in the market-place. These rewards act as incentives for individuals to produce new information which, provided the information is diffused to others, benefits society. This proviso may not be satisfied or only partially satisfied because holders of intellectual property are given powers to restrict access to the information. This prevents optimal use being made of it. So the very protection which encourages production at the same time thwarts the object of the exercise, namely, the diffusion of knowledge. The rules which stimulate the creation of information do not necessarily help its diffusion. In the words of one writer, there is a 'powerful tension' between such rules.<sup>14</sup> The basic justificatory argument suggests that intellectual property rights have an important role to play in allocating resources to the production of information. But it also suggests that they have to be designed in a way that strikes a balance between the public and private interest. The basic form of economic argument does not assign intellectual property rights an absolute status. For the economist the design of intellectual property rights becomes a matter of complex cost-benefit calculation. In theory at least, the optimal patent term might vary according to

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12 All property rights are a form of government intervention in that their initial creation involves a collective decision of some kind. See G. Calabresi and A.D. Melamed, 'Property Rules, Liability Rules, and Inalienability: One View of the Cathedral', 85 *Harvard Law Review*, 1089, 1092 (1972).

13 For such theories, see C. Wolf Jr, 'Market and Non-Market Failures: Comparison and Assessment', 7 *Journal of Public Policy*, 43 (1987).

14 F.H. Easterbrook, 'Insider Trading, Secret Agents, Evidentiary Privileges, and the Production of Information', *The Supreme Court Review* 309, 313 (1981).

the nature of subject-matter of the patent.<sup>15</sup> The types of costs linked to intellectual property rights include the costs of administration and enforcement; the costs of excluding possible free-riders (these include the possible loss of dynamic benefits, since free-riders may well improve a product) and rent-seeking behaviour.<sup>16</sup> There are also the empirically discoverable costs which take the form of various anti-competitive practices that grow up around the use of intellectual property rights.<sup>17</sup> Such practices have both effects within an economy and effects as between national economies. The existence of a patent system in many countries might confer welfare gains on one country but produce an overall net loss in welfare.<sup>18</sup>

The basic *a priori* economic argument we have described can be made problematic in various ways. So, for instance, one might adopt a deconstructionist approach in order to show the socially constructed and contingent nature of the categories of the theory.<sup>19</sup> Alternatively, one might show that information has many more qualities than just its public good qualities that matter to an economic theory and understanding of the role of intellectual property in an information society.<sup>20</sup> Our approach will be different. We will read the model of perfect competition as a specific model of practical rationality in which individual actors possess a strongly maximising rationality. To this we

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15 So, for example, the length of the patent term is ultimately a matter of cost-benefit calculation. See F.M. Scherer, 'Nordhaus' Theory of Optimal Patent Life: A Geometric Reinterpretation', 62 *American Economic Review*, 422 (1972); W.D. Nordhaus, 'The Optimum Life of a Patent: Reply', 62 *American Economic Review*, 428 (1972).

16 See W.M. Landes and R.A. Posner, 'Trademark Law: An Economic Perspective', 30 *Journal of Law and Economics*, 265 (1987).

17 The classic study of the costs of patents is F. Machlup, *An Economic Review of the Patent System* (Study No. 15 of the Subcommittee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary, U.S. Senate, 85th Congress, Washington, D.C., 1958). See also F. Scherer, *Industrial Market Structure and Economic Performance* (2nd edn, Chicago, 1980), chapter 16.

18 For critical discussions of the impact of the patent system internationally, see C.V. Vaitos, *Intercountry Income Distribution and Transnational Enterprises* (Oxford, 1974), 76-79; E. Penrose, 'International Patenting and the Less-Developed Countries', 83 *Economic Journal*, 766 (1973); S. Lall, 'The Patent System and the Transfer of Technology to Less-Developed Countries', 10 *Journal of World Trade Law*, 1 (1976); A.S. Oddi, 'The International Patent System and Third World Development: Reality or Myth?', *Duke Law Journal*, 831 (1987).

19 For a good example, see J. Boyle, 'A Theory of Law and Information: Copyright, Spleens, Blackmail, and Insider Trading', 80 *California Law Review*, 1413 (1992).

20 See D.M. Lamberton, 'Innovation and Intellectual Property', in M. Dodgson and R. Rothwell (eds), *The Handbook of Industrial Innovation* (Cheltenham, UK, 1994), 301; D.M. Lamberton, 'The Economics of Information and Organization', in M.E. Williams (ed.), *Annual Review of Information Science and Technology* (American Society for Information Science and Technology, White Plains, NY, 1984), 3.

will add another behavioural assumption: actors are assumed to be mildly opportunistic. Transaction cost theory assumes opportunism, defined as 'self-interest seeking with guile'.<sup>21</sup> This includes lying, stealing and worse. Our mildly opportunistic actors are of the bad but not rotten kind. The mildly opportunistic athlete will not poison a fellow competitor, but will try and disadvantage that competitor by making it difficult for that competitor to get access to the training ground, for instance. Mild opportunism correlates with the kind of capitalist rationality that Marx assumes in *Capital*. It is a rationality which involves the individual in maximising while at the same time thinking strategically about disadvantaging others in order to maximise. Bearing these assumptions in mind, we will revisit perfect competition.

Property rights under perfect competition function in two obvious ways. They provide the basis on which actors control resources and they allow the appropriation of value to take place. The introduction of property rights in abstract objects conflicts with the assumptions of the model in at least two ways. Perfect competition posits perfect information. All actors within the market are assumed to have information about market opportunities and technological production possibilities. But some areas of intellectual property, such as trade secret protection, prevent the flow of information altogether. A producer who has knowledge of a process that lowers production costs may rely on trade secret protection indefinitely to protect that information and experience higher profit margins as a result. Perfect competition also assumes that there are no barriers to entry so that producers can switch to the production of those goods or services where there is a profit to be made. But as the work by Bain shows, intellectual property rights are one major kind of barrier to entry.<sup>22</sup>

When the model of perfect competition and intellectual property rights are juxtaposed in this fashion, one conclusion which suggests itself is that an important source of competitive advantage in imperfectly competitive economies is various informational asymmetries. Stock markets and insider trading are one example where this is true, but informational asymmetries are endemic throughout economic life. It is how speculators and middlemen of all kinds make their living.

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21 O.E. Williamson, *The Economic Institutions of Capitalism* (New York, London, 1985), 47.

22 J.S. Bain, *Barriers to New Competition* (Cambridge, Mass., 1956).



The broader connection between information asymmetries and economic advantage is a matter for economic theory, but it is clear that intellectual property rights offer actors new opportunities for managing uncertainty and interdependencies within the economy. The model of perfect competition and imperfect markets have one thing in common. They are both examples of interdependent decision making. What one trader does affects another and that decision is itself affected by what that other trader does and so on. Under conditions of perfect competition traders have full knowledge and because of this their decisions are deterministically driven. The net effect of the interdependencies is to drive production and profit in one way – towards allocative efficiency. Intellectual property, however, in the imperfect economy offers traders the opportunity to introduce information asymmetries. Trade secret law, for example, can be used to keep one's economic opponent in a state of ignorance about which compounds make the strongest plastic chairs. Patent law can be used to weave a web of patents around a particular technology and deter a competitor from carrying out R&D in that area.

Apart from the fact that intellectual property rights allow traders the possibility of creating and maintaining informational asymmetries, they also allow individual actors to benefit from high transaction costs. Transaction cost theory seeks to explain organisational relations on the basis that individuals seek to minimise transaction cost.<sup>23</sup> And this approach has had considerable explanatory force. It is also clear that property rights can only have positive economic effects where transaction costs exist. In the absence of transaction costs, the initial property distribution we know, *pace* Coase, does not affect allocative outcomes.<sup>24</sup> Property rights in abstract objects create transaction costs (costs of enforcement and contracting). These costs are high for many reasons. Unlike the case of tangible objects, abstract objects have no natural boundaries, so there is the cost of identifying the object. There is also the problem of enhanced opportunities for free-riding because of the nature of abstract objects. Nevertheless, in the case of abstract objects, some mildly opportunistic actors may favour high transaction costs. A large multinational, for instance, may favour the high transaction costs of the patent system because it means that small

23 O.E. Williamson, *The Economic Institutions of Capitalism* (New York, London, 1985), chapter 1.

24 R.H. Coase, 'The Problem of Social Cost', 3 *Journal of Law and Economics*, 1 (1960).

R&D competitors may not be able to take advantage of the system.<sup>25</sup> Moreover the creation of property rights in abstract objects, when combined with a strategy of deliberately maintaining the option of high transaction costs in relation to such rights, would allow large players the free-riding option while denying it to small players. Large companies could infringe the intellectual property entitlements of small companies knowing that only a small percentage of actions against them would be brought, let alone succeed. This kind of free-riding strategy by powerful, mildly opportunistic actors is, to some extent, safeguarded by high transaction costs to which intellectual property rights contribute.

As Coase observes, factors of production can be thought of as rights rather than physical objects.<sup>26</sup> Rights are unusual factors of production. As social artefacts they can be radically redesigned. Once mildly opportunistic actors realise that intellectual property rights have a clear strategic value in helping them to steer their way through the freedom-restricting interdependencies of perfect competition, those actors become interested in the rights themselves and their further redesign.

The value of intellectual property to rational actors depends on four functions of intellectual property. Identifying these is the task of the next section. Later we argue that these functions ground certain kinds of strategies that tend to defeat the welfare gains that intellectual property rights are meant to bring.

## Four Functions of Property

### The Appropriation Function

Property is for the economist an instrumental institution. It is a means for solving problems of resource distribution and use. A fundamental reason for economists preferring private property rights over collective ownership is that they define and protect individual entitlement.

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25 This strategy runs into a problem if the multinational comes up against an equally well resourced opponent. The solution is for such opponents to agree to a cheaper dispute resolution procedure (like mediation) that has lower transaction costs.

26 R.H. Coase, 'The Problem of Social Cost', 3 *Journal of Law and Economics*, 1, 44 (1960).

This entitlement can then be subjectively valued by its owner and traded for other entitlements.<sup>27</sup> Property rights are a secure means by which individuals can appropriate value (the appropriation function). For these reasons they form powerful incentives for individuals. They help to motivate and frame trading activity. For economists private property rights are perhaps the most important device that a society has at its disposal. Typically it has been assumed that much the same things that can be said in favour of property rights can also be said in favour of intellectual property rights.<sup>28</sup>

## The Adjustive Function

The appropriation function of property is not the only function. Within capitalist systems property rights are adjustive mechanisms which distribute benefits and burdens. Individuals use property law either to gain advantages for themselves or to shift burdens onto others. This process works under a legal regime in which individuals, now legal subjects, are said to have formal equality and freedom of contract.<sup>29</sup>

The broad adjustive function that property performs in social systems is recognised within that part of economic theory that deals with externalities. Within economics there are arguments over how to define externalities.<sup>30</sup> The idea behind an externality is that an individual takes an action which has consequences (negative or positive) for another and there is no economic mechanism by which that other can influence the decision that leads to that action. Property rights may internalise externalities by bringing the effect of the decision to bear on all the interacting persons. Demsetz, in an important attempt to articulate an economic theory of property rights, argues that, within a given society experiencing change in knowledge and technology,

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27 For general discussions of property rights, see G. Calabresi and A.D. Melamed, 'Property Rules, Liability Rules, and Inalienability: One View of the Cathedral', 85 *Harvard Law Review*, 1089 (1972); B.A. Ackerman (ed.), *Economic Foundations of Property Law* (Boston, 1975); R.A. Posner, *Economic Analysis of Law* (4th edn, Boston, 1992).

28 For example, see M. Lehmann, 'Property and Intellectual Property – Property Rights as Restrictions on Competition in Furtherance of Competition', 20 *International Review of Industrial Property and Copyright Law*, 1 (1989).

29 E.B. Pashukanis, *Law and Marxism: A General Theory* (C. Arthur ed., B. Einhorn trs., London, 1978).

30 R. Cornes and T. Sandler, *The Theory of Externalities, Public Goods, and Club Goods* (Cambridge, New York, 1986), 29–30.

new sets of harmful and beneficial effects arise, and therefore new sets of externalities.<sup>31</sup> Moving towards that border where economics and sociology meet, he claims that 'property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization'.<sup>32</sup> Demsetz uses some anthropological work dealing with the fur trade of an Indian tribe (the Montagnes) to illustrate the thesis. Hunting within the commons is a good example of an externality. The decision to hunt has costs for other hunters, but given the lack of control in the commons over hunting there is no incentive for any given individual to take these costs into account. The arrival of a commercial fur trade raises the stakes. Furs rise in value and more hunting takes place. The problem of externalities is intensified, with the real danger that the fate of the fur trade will be that of the animals, namely, extinction. The development of private property rights in land makes it feasible to encourage the preservation of game. The cost of future hunts is made internal to individual property holders.

## The Self-defence Function

The claim that property rights are a societal response to the problem of externalities is an empirical one. It is an empirical claim because the key to explaining the emergence of property rights is said to lie in the cost of adjusting to new harms and benefits. But the example is also suggestive of another feature of property. Why did the Montagnes not continue hunting under their traditional arrangement? It would not have been the first time that a natural resource in the commons had been depleted. One plausible conjecture here is that they were particularly concerned to maintain a way of life within their lands and the instrument of private property was a suitable means to that end. The decision to adopt the mechanism of private property was motivated by an emotional commitment to customs and traditions which the externality problem threatened. Private property rights in this case functioned as a kind of self-defence mechanism for a group struggling to preserve their ways. Property seems so obviously connected with reason and self-interest that we are apt to neglect

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31 H. Demsetz, 'Toward a Theory of Property Rights', 57 *American Economic Review*, 347, 348 (1967).

32 *Id.*, 350.

its connections with the passions. Focusing on the Montaignes' predicament exclusively as an externality problem tends to play down the non-economic motivations which would have been significant in this situation, just as it obscures the important defensive function that property has for actors.

Another example of property in its role as a mechanism of defence comes from copyright history. The invention of the printing press, it is generally thought, constituted an important stimulus to the development of copyright. One explanation for the creation of printing privileges might be that copyright emerges to deal with a positive externality: free-riding on the efforts of established publishers. This seems to be a straightforward case of property rights emerging to adjust externalities. Equally, though, it could be argued that printing rights functioned as a form of self-defence in this case. The prime motivation for the English Crown to create privileges in relation to printing was to try to prevent the spread of heretical and seditious ideas. The dangers of the new technology were for the Crown primarily political. Political self-preservation, at least at this point in history, rather than the economic costs of externalities seems a better way in which to explain the emergence of copyright privileges.

## The Planning Function

So far three functions of property that matter to rational actors have been identified: appropriation, adjustment and defence. Property rights are critical to rational actors in a fourth way – they are vital to planning. Rational actors plan. The plans can be good or bad, long-term or short-term, well thought out or not, but whatever their range or worth they are an inescapable part of social and economic life. Planning is an activity of the present that relates to the future. One way to think about norms, a functionalist way, is to see them as a way of reading the expectations of others.<sup>33</sup> Planning is made possible by norms. Clearly norms have to be stabilised across time if they are to be of any use in planning. This becomes the role of institutions, most especially contract and property.

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33 As Parsons and others point out, this becomes the expectations of expectations. See T. Parsons and E.A. Shils (eds), *Toward a General Theory of Action* (New York, 1951).

We know, according to Parsons and Luhmann, that law is an expectational structure.<sup>34</sup> It is the capacity of institutionalised law to act across time that conditions the possibility of planning. Law has to create in the minds of individuals the belief that the future to a large extent will be a consequence of the past and present and that their present fragile expectations will not be harmed or disappointed too much by an uncertain future. The role of property law in planning and the transmission of expectations over time is crucial. My property claim in my house is not just a signal of my expectations to others in the present, but acts, so I think and hope, as a command to others in the future. This claim that we make about the centrality of property law in planning links up with our discussion of Hegel. Property for Hegel was crucial to the establishment of personality in the world and, now we can also say, the passage of personality over time.

Property comes to the aid of rational planners in different ways, depending on the nature of the property right and its context. Our interest is in intellectual property in the context of markets. There are two questions which we need to address. What is the nature of planning in modern markets? How might rational actors utilise intellectual property rights to help meet their planning needs? A famous passage from the *Wealth of Nations* provides the answer to the first question: 'People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.'<sup>35</sup> Smith saw clearly that traders were disposed to plan against the market. In modern times this theme of traders planning against the force of the market has been pursued by Galbraith. He argues that the nature of modern production in the industrial system requires planning to overcome the uncertainties that a consumer-driven competitive market economy generates.<sup>36</sup> Modern industrial systems are characterised by the presence of large corporate traders investing and using large amounts of capital over time. Above all such traders

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34 N. Luhmann, *A Sociological Theory of Law* (M. Albrow ed., E. King and M. Albrow trs., London, 1985). For Parsons' specific views on law, see T. Parsons, 'Law as an Intellectual Stepchild', in H.M. Johnson (ed.), *Social System and Legal Process* (San Francisco and London, 1978), 11.

35 A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776; Glasgow edn, Indianapolis, 1981), 145.

36 See J.K. Galbraith, *The New Industrial State* (Harmondsworth, 1967), chapter 3.

seek to minimise risk and uncertainty. They do so by spending much of their time planning against the uncertainties that the market might impose on them.

The second question was how intellectual property might help to service the planning needs of rational actors in modern markets. These needs we have broadly characterised in terms of a need to manage uncertainty. The question we are asking involves a change in perspective. In Arrow's discussion of the problem of an optimal resource allocation for invention, the question is asked from the perspective of the competitive market. Our vantage point is that of the individual firm in a situation where the property rights have been introduced in order to help the competitive market reach some allocative optimum for invention. Such a firm is both a rational planner and a manager of uncertainty. It has a new institutional tool at its disposal to help it manage uncertainty: intellectual property. To what uses might it put this tool? A standard answer we have seen is appropriation of economic value. But this does not exhaust the possibilities.

There are basically three sources of uncertainty to consider in relation to the creation of information. First, there is the state of nature itself. Investigating a scientific problem does not mean that it will be solved. Intellectual property rights do not change the complexity of a scientific problem, although they may help towards its solution if they encourage more resources to be thrown at it.<sup>37</sup> A second source of uncertainty stems from the complex nature of social systems. Who knows what markets or governments will be doing ten or twenty years from now? As Keynes put it: 'About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know.'<sup>38</sup> Intellectual property rights probably have no role to play in dealing with this kind of uncertain knowledge.<sup>39</sup>

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37 If we model research as a fishing process, then we might say that the more fishermen there are working a particular ground, the more likely it is that a particular fish will be caught. Intellectual property rights might have the effect of causing more fishermen to work a particular ground. See G. Wyatt, *The Economics of Invention* (Brighton, 1986), 122–123.

38 J.M. Keynes, 'The General Theory of Employment', 51 *The Quarterly Journal of Economics*, 209, 214 (1937).

39 The reason for being slightly cautious is that one can imagine circumstances in which knowledge of the ownership arrangements for particular kinds of important information might help one to come to some probabilistic assessment of the likelihood of a given institutional scenario coming to pass. An example would be if the patent system were used to lock up all the genetic pool.

There is a third source of uncertainty in relation to the production of information under conditions of competition: the presence of competitors. Competitors contribute to uncertainty in various ways when it comes to the production of information under conditions of competition. They may free-ride. Intellectual property rights are one way to tackle this problem. Even assuming that intellectual property rights solve this problem (which is doubtful), competitors contribute to uncertainty in other ways. They may be the first ones to solve the scientific problem. Patent systems operate on a 'first past the post' principle. The first company to invent (or register) obtains all the rewards for a period. Companies having to make decisions about the amount of R&D to undertake are, on the face of it, only partly helped by patent rights. Elster offers a clear picture of the uncertainty that still faces individual firms.<sup>40</sup> The amount of R&D which a firm is prepared to invest depends on the probability of a successful outcome. Even in the absence of competitors the outcome is inherently uncertain. In the presence of competitors the uncertainty is worse. If it invests large sums of money the individual firm may still lose the patent race and thus the money. If the competitors do not make large investments then the firm may be justified in doing so. But all firms are making these calculations and hence a circularity is produced. When lots of firms decide to invest it is rational for an individual firm not to. But since all firms are making the same individual calculation it becomes rational for individual firms to invest. The upshot, says Elster, is that there 'is no basis here for rational belief formation, and hence no firm basis for action'.<sup>41</sup>

Elster may or may not be right about this. Let us assume that he is. Even if actors cannot come to a rational belief about a given situation they may nevertheless start to develop strategies for the management of this problem. The brute empirical fact is that firms do invest in research. In the absence of probabilistic knowledge that might serve as the basis of a rational belief, firms might nevertheless engage in some kind of management or coping strategy for dealing with investment uncertainties. The same rationality that leads one into the circle of uncertainty that Elster depicts can also lead one out. One route we shall see in the next section is through property. But it is not necessarily

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40 J. Elster, *Nuts and Bolts for the Social Sciences* (Cambridge, 1989), 33–34.

41 Id., 34.



the only one. Another solution is that one firm might hire the Mafia to scare off the other firms, but actually there is less need to hire the Mafia, we shall suggest, when one has intellectual property rights.

## The Property in Pay-offs

The preceding discussion suggested that in addition to the appropriation function there were three additional functions of property: the adjustive function, the self-defence function and the planning function. In this section we want to show how these functions in the case of intellectual property combine to enable individual actors to manage the uncertainties of generating new knowledge under market conditions.

One way in which intellectual property is clearly vital to interacting individuals is that it can be used to change pay-offs.<sup>42</sup> Assume that two firms are competing in a market here they have the same costs and profit. Either firm can lower its costs through research and development but neither can prevent the other from copying. This is a standard free-rider problem. The pay-off matrix under these assumptions is that both firms earn the same returns if both do the research, but each does best if it free-rides while the other does the research. But a firm doing its own research is still better off when compared with doing no research. Under these conditions the cautious firm does its own research.

In Telser's discussion of this problem property rights are silent operators.<sup>43</sup> There must obviously be some ordinary property rights so that firms can appropriate returns on the goods they sell, but no enforceable property rights in the research results, otherwise the pay-off matrix could not be what it is. It is actually the definition of property rights that conditions the form of the pay-off matrix.

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42 The term as used here comes from game theory. Game theory is the study of decisions by rational agents under conditions of interdependency. See R.D. Luce and H. Raiffa, *Games and Decisions* (New York, 1958).

43 A discussion of this model can be found in L.G. Telser, *A Theory of Efficient Cooperation and Competition* (Cambridge, NY, 1987), 205–210.

Imagine that a firm's R&D efforts become appropriable through property rights. The pay-off matrix changes. Where neither firm does the research, returns to both remain at zero. Where one firm does the research the other cannot appropriate. There is a return to the firm doing the R&D. The critical question is the size of the return. The answer to this depends again on the definition of the property right. The property right may prevent the appropriation of another firm's R&D, but may not prevent the independent discovery of the same research (copyright is an example of such a right – software companies could independently engineer the same software and have property rights in that software). The second firm would have to follow the first in doing the research or face a competition on price it could not win. If both do the research then returns are equal, but if only one does then the other has zero returns. Most importantly, if the intellectual property regime is changed, or 'stronger' intellectual property rights can be employed, the firm which invests in R&D does even better. So, for example, where the nature of the property right is such that one firm is prohibited from independently making commercial use of the research once the other has (patents) then it follows that the firm doing the research makes all the returns while the firm not doing the R&D or failing to do it first makes zero returns.

This example shows that in the interaction between the two firms the presence and content of property rights shape the pay-off matrix. The result could equally be applied to two countries having to make decisions about R&D expenditure. Another claim that seems hardly controversial is that firms engaged in R&D can be said to be engaged in a search for the most favourable pay-off matrix. Actors could be expected continually to seek ways in which to renegotiate or redevelop prevailing property norms. Once private individuals have some limited set of property rights that turn knowledge into a private good, one eminently rational strategy is to work on the further favourable redevelopment of those rights. An abstract way of putting this is to say that rational actors within the market seek to make use of property law's alterability in time.<sup>44</sup> Our argument points to a feedback effect of property rights within the market system. Intellectual property rights are created to stimulate individual interests in the supply of

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44 This is a feature of law in general and not just property law. For a discussion, see N. Luhmann, *A Sociological Theory of Law* (M. Albrow ed., E. King and M. Albrow trs., London, 1985), 159–166.

inventiveness and creativity. The extent to which they do this is not really known. But these rights do one thing: they stimulate the rational agent's interest in the property rights themselves. And rational agents become particularly keen on such rights once they realise that they can escape the unfavourable constraints of a fixed-rule game by switching to another more favourable game through the strategy of redefining the rules of the game by redefining the property right. They begin to focus more clearly on the rule mutability of games.

Games, generally speaking, are what we might term fixed-rule games. This simply means that they have a number of set rules all of which potential players know or can learn beforehand so that they know what actions are permissible under any given circumstances. When von Neumann and Morgenstern introduced the formal theory of games they did so on the assumption that the rules of any game remained fixed. Within a given game, players could pursue strategies, but the one strategy not available to players was to seek a modification of the rules of the game, for these functioned like 'absolute commands'.<sup>45</sup> Breaking the rules of the game meant that by definition one was no longer transacting in the same game. Since these beginnings it has become customary to distinguish between cooperative games and non-cooperative games.<sup>46</sup> In the former players can negotiate and make enforceable agreements, while in the latter players simply choose between strategies without communicating and obtain rewards the shape of which are determined by the combined effects of their choices. Both cooperative and non-cooperative games are fixed rule games.

The rules of games need not always be fixed. One can imagine a game in which the rules were changed by the players as the game progressed. Games might in other words be rule mutable. Children and adults sometimes play rule mutable games where one of the players, usually the child, introduces a rule change. Young children do this because either they are not winning the game under the existing set of rules or they see an opportunity to win if they make the rule change. Adults will sometimes allow this, for a variety of reasons. They may want to help the child's confidence, make the child happy,

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45 See the discussion of the simplified concept of a game by J. Von Neumann and O. Morgenstern, *Theory of Games and Economic Behaviour* (3rd edn, Princeton, 1953), 49.

46 See J.C. Harsanyi, 'A New General Solutions Concept for Both Cooperative and Non-cooperative Games', in J.C. Harsanyi, *Papers in Game Theory* (Dordrecht, Holland, 1982), 211–212.

avoid a tantrum and so on. Rule mutable games, then, are games in which players secure changes to the rules during the course of the game in order to secure a win. The means of securing these changes can vary from bargaining and negotiation to coercion of one party by the other. The idea of the rule mutable game draws attention to the fact that rational actors are just as likely to think strategically about the structural elements of the game as they are about the options that they have under a set of rules that define a pay-off matrix, possible moves and communication possibilities. At a given moment we can use the formal theory of games to give us an analytical snapshot, as it were, of the consequences for the players of their various interdependent decisions. Our earlier discussion of the two competing firms investing in R&D is an example of that. But at the same time those players may be running strategies outside the game itself to change the constraints which the game imposes on them. Much of economic life, we suggest, is a complex mixture of fixed-rule and rule mutable games in which the actors are trying to shift the constraints that operate on them and increase the opportunities available to them. Property rights are fundamental to this process.

Property rights feature in both rule mutable and fixed-rule games. If we model investment in R&D as a fixed-rule game then one clear function of property rights is to fix the pay-offs. But property rights also become targets for rational actors within the context of rule mutable games. Firms may begin the search for information under one kind of pay-off matrix, but because the game they are playing is a rule mutable one the possibility of obtaining a more favourable matrix remains. Given that it is property rights that are an important factor in determining the pay-off matrix, a natural and parallel strategy for any firm doing R&D is to seek through some means (litigation and lobbying are two examples) either individually or as part of an organised group, a redefinition of the relevant property rights in order to obtain a more favourable pay off matrix. The extent to which this kind of strategic use is made of intellectual property rights is an empirical matter, but it does seem a natural strategy for at least some actors to pursue.

## Preventive Strategies

The previous section discussed reasons why intellectual property rights become the object of strategic thinking for rational actors. This section considers a kind of generic strategy that holders of intellectual property might employ. The strategy is based on the idea of preventing others from acting. In order to make sense of this we need to draw a distinction between the effects of exclusion and the effects of prevention. Exclusion and prevention sometimes amount to the same thing. Assume that I am disbarred from medical practice. I am simultaneously formally excluded and formally prevented from undertaking the activity of practising medicine, although I may choose to flout the law. But there are cases where I might be excluded from an activity, but not prevented from undertaking it. Clubs, for example, exclude people for all sorts of reasons. A tennis club might exclude a person on the grounds of race, religion or dress code. Those excluded are not necessarily prevented from the activity of playing tennis provided they can find somewhere else to play. Excluding somebody from a particular activity does not necessarily entail that the person is prevented from undertaking that same activity. To exclude is not necessarily to stop. This distinction, as we shall see, has some important ramifications.

Exclusion is very often thought to be the dominant signifier of a property relation. Exclusion is clearly crucial in the case of intellectual property rights, for it allows the act of appropriation to take place in relation to information. Exclusion, appropriation, markets and competition all connect strongly. Individuals competing against each other in a given market are involved in a process of checks and balances in which no one individual has the total power to determine price. The incentive to engage in this unpleasant process is that property rights allow individuals to appropriate the outcome of individual investment. Appropriation relates neatly to the view of property which sees it as being fundamentally about exclusion.

Intellectual property has another dominant signifier, that of prevention. Prevention is an extra dimension of intellectual property law. The following example can be used to illustrate the claim. Imagine a farmer growing cherries on a five-acre plot for sale at the market. The farmer's property right in the land and the cherries does

not of itself prevent others from acquiring similar plots of land and growing cherries. If there are profits to be had from doing so, all other things being equal, the cherry farmer can expect competition. Others will enter the market. Property rights in this example function in their standard fashion. Now imagine that the cherries are genetically engineered with the effect that they are bigger, tastier, redder and that the farmer has a patent right over them. This does not mean the end of competition if it is the fruit market which we define as the relevant market.<sup>47</sup> The patent right does have one very important effect here, though. Unless the farmer chooses to license, others are prevented from doing as he does. Others cannot supply the market with the bigger, redder, tastier cherries. We can contrast this with our first example, where the farmer has rights of property over the physical objects (the land and the cherries), but not the abstract object (the DNA code of the cherries). In that first case others are in a position to imitate the farmer, to do as he does. In the second case others are not at liberty to imitate the farmer and can only do so if he grants them permission. This feature of intellectual property rights is better conceptualised in terms of prevention rather than exclusion.<sup>48</sup> All intellectual property rights are concerned with stopping the imitative conduct of others. Copyright and trademarks are both concerned with stopping the imitative behaviour of others rather than the exclusion of others from physical objects. Doing the latter does not stop the abstract object from being reproduced. Preventing others from imitating is an additional feature of intellectual property rights, a feature which the exclusion function of property does not fully pick up.

For traders experiencing competition the preventive function of intellectual property has great appeal. This is so because competition is a process in which traders risk injury. As two judges have put it, 'Competition by its very nature is deliberate and ruthless. Competitors

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47 Market definition issues lie at the centre of competition law. See M. Brunt, "'Market Definition" Issues in Australian and New Zealand Trade Practices Litigation', 18 *Australian Business Law Review*, 86 (1990).

48 A striking example of what amounts (in our terms) to the preventive nature of intellectual property is to be found in the Australian case of *Davis v. The Commonwealth* (1988) 166 C.L.R. 79. In that case the Australian Bicentennial Authority was given the power to regulate the uses of expressions like '200 years', 'Bicentenary', 'Founding', 'Sydney', etc. The Court took the view that the *Australian Bicentennial Authority Act 1980* had simply gone too far, for it was an 'extraordinary intrusion into freedom of expression' (at 100).

jockey for sales, the more effective competitors injuring the less effective by taking sales away. Competitors must always try to “injure” each other in this way.<sup>49</sup>

Competition does not just involve the risk of injury. It is also a fundamentally imitative process. Competitors, at the same time as they are trying to distinguish their products and services from that of others in the marketplace, are also engaged in providing the same kind of service or product. Competition is a process which begins when others begin to imitate someone’s good idea. The person who first thought of dial-a-pizza had a good idea which very soon attracted lots of imitators. No doubt that person would have liked to have some means of preventing that imitation. Competitive markets are centrally to do with encouraging traders to imitate one another, while intellectual property rights are centrally concerned with preventing imitation. The tension between wanting to encourage imitative conduct and wishing to prevent it leads in turn to a fundamental tension between markets and intellectual property.<sup>50</sup>

The appeal that intellectual property rights hold for rational self interested traders can now be seen more clearly. Such rights offer the possibility of appropriation. Traders can also use them to shield themselves from the competitive process. Intellectual property rights offer individual traders the possibility of developing preventive strategies to protect their interests within markets. The kinds of preventive strategies intellectual property rights give rise to is an empirical matter, as are the costs and benefits those strategies generate. Here we have been concerned to show the conceptual link between prevention and intellectual property. Without pursuing the matter in detail we can make some observations about the kinds of preventive strategies that intellectual property holders might pursue. There seem to be two basic types. The first we might call a rights-expanding

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49 *Queensland Wire Industries Pty. Ltd. v. BHP Ltd.* (1988–89) 167 C.L.R., 177, 191 per Mason CJ and Wilson J.

50 There are different points of view about the existence of this tension. Some argue that intellectual property rights are pro-competitive because they promote the dynamic efficiency of an economy by encouraging innovation. See, for example, OECD, *Competition Policy and Intellectual Property Rights* (Paris, 1989), 11–12. The form of this kind of argument is misleading. There may sometimes be welfare gains from intellectual property if it does produce innovation, but the price of these welfare gains is an interference in the processes of competition. Once it is seen that intellectual property is about preventing imitative conduct and that competition is about a process that permits imitative conduct to take place, there is no escaping this conclusion.

strategy. Intellectual property rights can be expanded through the creation of new rights (for example, *sui generis* protection for semiconductor chips, data bases and plant varieties)<sup>51</sup> or a redefinition of existing rights (for example, bringing computer software under copyright protection,<sup>52</sup> recognising the possibility of subconscious copying<sup>53</sup> and expanding the meaning of copying by taking an unrestricted view of what constitutes indirect copying).<sup>54</sup> The second type of strategy involves using the rights as bargaining chips in order to make other traders do something they would otherwise not choose to do. The first kind of strategy, the rights-expanding strategy, relies in part on the fact that abstract objects do not have obvious boundaries, at least not in the way that physical objects have. Their very abstractness means that it is possible for their owners to assert relations of equivalence, isomorphism, identity, similarity or sameness between two physical objects in an attempt to expand the boundary of the abstract object which they own. The opportunity to alter the boundary of the property right is an option that has to be taken seriously by private actors within the marketplace because that alteration carries with it the possibility of preventing others from becoming direct competitors. The essential idea here is that, as the scope of the abstract object expands, it sets limits on the substitution possibilities that competitors can offer in the marketplace. In other words the degree of permissible imitation shrinks.

The second type of preventive strategy we mentioned was the use of intellectual property rights as a lever within the marketplace. A rich source of these kinds of strategies is to be found in the intersection between the licensing of intellectual property and competition law. Licensing essentially is simply a conditional permission by the intellectual property holder which gives somebody else access to the

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51 Examples of *sui generis* protection are the *Semiconductor Chip Protection Act 1984* (US); European Commission, *Amended Proposal for a Council Directive on the Legal Protection of Databases*, OJ 1993 C308/1 15 November 1993; *Plant Breeder's Rights Act 1994* (Aus.).

52 In the USA copyright protection for computer programs was 'firmly established after the 1980 amendment to the Copyright Act'. See *Williams Electronics, Inc., v. Artic Intern., Inc.*, 685 F.2d 870, 875 (3d Cir. 1982). In Australia the *Copyright Act 1968* was amended in 1984 to include 'computer program' in the definition of literary work.

53 *Francis Day & Hunter Ltd v. Bron* [1963] Ch 587 (United Kingdom Court of Appeal).

54 See, for example, *Frank M Winstone (Merchants) Ltd v. Plix Products Ltd* (1985) 5 IP 156 (Court of Appeal of New Zealand). For a discussion of the appropriate limits to the meaning of indirect copying, see Lord Griffiths in *British Leyland Motor Corporation Ltd v. Armstrong Patents Company Ltd* [1986] 1 All E.R. 850, 876–884 (House of Lords).



intellectual property. Jurisdictions that have both intellectual property and competition statutes have to make some decisions about the ways in which they will permit intellectual property owners to make use of the monopoly provided by their intellectual property and where, for reasons of competition policy, they will draw the line.<sup>55</sup> In the analytical terms of this chapter competition policy has to distinguish between permissible and impermissible preventive strategies.<sup>56</sup>

So far we have seen that intellectual property rights offer self-interested actors within market contexts certain strategic possibilities which are based on the adjustive, defensive and planning functions of property. The possibilities include using property to change the pay-off matrix to suit oneself and developing preventive strategies to stop one's opponent in the marketplace. These strategies do not exhaust the possibilities, but they do constitute examples of the way in which the collective interest which intellectual property is meant to serve can be defeated. It remains an empirical matter as to what strategic uses manifest themselves in relation to the use of intellectual property rights. Our task in the next section is to make good our claim that intellectual property rights have a dangerous inner logic.

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55 In Australia the intersection between intellectual property and competition is governed by section 51 of the *Trade Practices Act 1974*. For the Trade Practices Commission's view on the balance to be struck between the two areas of policy, see Trade Practices Commission, *Application of the Trade Practices Act to Intellectual Property* (Commonwealth of Australia, July 1991). In Europe the Treaty Establishing the European Economic Community (Treaty of Rome – renamed the European Community Treaty in 1992) contained rules on competition (articles 85–86) and the free movement of goods (articles 30–36). These articles have given rise to a jurisprudence surrounding the relationship between intellectual property and competition policy. For a discussion, see V. Rose (ed.), Bellamy and Child, *Common Market Law of Competition* (4th edn, London, 1993), chapter 8. Similarly in the United States the Supreme Court, through an interpretation of its antitrust laws (beginning with the Sherman Act of 1890 and the Clayton Act of 1914), has worked out principles of coexistence for competition and intellectual property policy. For a discussion, see A.D. Neale and D.G. Goyder, *The Antitrust Laws of the USA* (3rd edn, Cambridge, 1980). See also S.W. Waller and N.J. Byrne, 'Changing View of Intellectual Property and Competition Law in the European Community and the United States of America', *XX Brooklyn Journal of International Law*, 1 (1993).

56 One example of a preventive strategy that has sometimes run into trouble with the courts in the United States has been the practice of patent pooling ('if you can't beat them join them' strategy). This involves two or more patent owners agreeing to cross-license (pool) their patents, the aim very often being to achieve monopoly power in a market. See *United States v. Krasnov* 143 F. Supp 184 (E.D. Pa. 1956), *aff'd per curiam*, 355 U.S. 5 (1957).

## Intellectual Property Factions

That intellectual property rights have a dangerous inner logic has in part been shown, for we have provided reasons why rational actors might use them to plan against the market. In this section we want to go further and suggest that this planning against markets is more likely to be carried out by powerful factions. We use 'faction' here in the way that Madison does in *The Federalist Papers* to convey the idea of a group of individuals organised on the basis of some common interest that is 'adverse to the rights of other citizens, or to the permanent and aggregate interests of the community'.<sup>57</sup> We begin our argument with a claim made by Madison that property is the source of factions within a society:

But the most common and durable source of factions has been the various and unequal distribution of property. Those who hold and those who are without property have ever formed distinct interests in society. Those who are creditors, and those who are debtors, fall under a like discrimination. A landed interest, a manufacturing interest, a mercantile interest, a moneyed interest, with many lesser interests, grow up of necessity in civilized nations, and divide them into different classes, actuated by different sentiments and views.<sup>58</sup>

Madison's claim is a historical generalisation but it is a plausible one. Human beings probably have been more inclined to organise to protect their property interests than they have been to free slaves or protect whales. Economic interests, generally speaking, have proved to be powerful motivators of human conduct. There is, as we indicated at the outset, much more to say about motives and human nature than just this, and in fact *The Federalist Papers* present a more nuanced picture of human motivation.<sup>59</sup> But our purpose is not to show this, but rather to show that economic self-interest, because it is a powerful motivator of conduct, makes intellectual property a dangerous institution for a society to rely on too extensively.

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57 *The Federalist Papers* (1788 edn, I. Kramnick ed., Harmondsworth, 1987), Number X, 123.

58 *Id.*, 124.

59 For a discussion, see M. White, *Philosophy, the Federalist, and the Constitution* (New York, Oxford, 1987).

Our question is: why should intellectual property owners organise into factions? The obvious answer is that they would do so in order to protect their interests. Madison suggests that men are more likely to divide into factions on the basis of their interests and passions than to cooperate for the common good. But in one respect this is an incomplete answer, for not all groups that have interests organise. What reasons do we have for thinking that intellectual property owners will organise? The answer lies in the logic of collective action.<sup>60</sup>

Olson's analysis of collective action problems begins uncontroversially by claiming that organisations serve to further the common interests of the group they represent. When groups achieve a common goal they in effect provide a public or collective good for that group. When it comes to the provision of public goods, not all groups behave in the same way. Small groups can produce collective goods for their members without relying on coercion or extra incentives because at least some of the members of the small group would be better off by having the public good and so are prepared to bear the cost of providing it.<sup>61</sup> The problem facing large groups is that the cost of organisation exceeds the benefits to any one individual. This is not to say that large groups do not get organised.<sup>62</sup> They do, trade unions and environmental groups being examples. The logic which Olson identifies suggests reasons for large groups being less likely to organise.

The logic of collective action operates at its strongest when the gains of the small group are economic. For example, pharmaceutical companies chasing drug patents all have a common interest in seeing that the drug patents which they obtain are enforced or that the patent term is as long as possible, to cover the costs of development. When a drug company successfully sues an infringer or a pharmaceutical lobby group manages to gain a more favourable deal on the patent term it provides a public good for members of the group. Because the pharmaceutical market is global and worth billions of dollars, private players have enormous economic incentives individually to defend their interests as well as to organise collectively. The diffuse interests of large groups are also present in the intellectual property arena. All members of society could be said to have an interest in an inclusive

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60 M. Olson, *The Logic of Collective Action* (Cambridge, Mass., 1965).

61 *Id.*, chapter 1.

62 See *Id.*, chapter 6 for reasons why.

intellectual commons of the kind we described in our discussion of Locke. But one would expect that organisations supporting the maintenance of an intellectual commons would be in short supply, for the kinds of reasons that Olson gives. Amongst other things, the costs of organising such a large amorphous group would act as a massive disincentive.

So far we have suggested reasons why intellectual property holders are likely to be factions. The logic of collective action provides us with one reason, but it is a reason which is not inherent to property. One possibility that seems implicit in Madison's observation about property being the most persistent cause of factions is that property has a distinctive inner logic that promotes factionalism. A way into this issue is to consider the role that property rights play in determining opportunity sets of individuals in the market. The notion of opportunity set refers to that set of actions from which an individual may actually choose.<sup>63</sup> The choices that individuals can make vary from being more or less unconstrained to fully constrained. One constraint which individuals face is the property rights of others. But property rights are not just constraints on choice: they are also constraint-shifting, for they confer opportunities on their holders to control resources. Property rights operate both to set constraints and to confer opportunities. Clearly when property rights shift constraints they do so at the expense of reducing the opportunity sets of other individuals. This, from a market perspective, is not a problem providing that constraints set by property are part of an 'invisible hand' process. In other words, the constraint-setting nature of property will operate in favour of the collective interest for as long as no one individual has the total power to set constraints for others within the market. The power to set constraints is itself a function of the ownership of property rights. (This does not entail, however, that property rights are the exclusive source of power.) When it comes to intellectual property rights the constraint-setting possibilities that owners have increase dramatically. The constraint-setting process operates in relation to abstract objects which have no natural boundaries. This offers, as we shall see in Chapter 7, the promise of enormous power to individuals, for now it becomes possible for a few to own a form of capital on

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63 See A.K. Dragun, 'Externalities, Property Rights, and Power', *XVII Journal of Economic Issues*, 667, 668 (1983); Jon Elster, *Nuts and Bolts for the Social Sciences* (Cambridge, 1989), 13.

which there is a global dependence. Property rights in abstract objects push the invisible hand away; self-interest is released in ways that threaten the negative liberties of others.

Perhaps one reason why property and factions have such an intimate connection is that property provides the power to shift constraints in the market and this kind of power is the best form of power to have in the market. Factions form naturally around property because it sustains their power and way of life. Intellectual property, because it offers the possibility of preventive strategies in such a strong way, could be expected, if we are right, to have strong factions promoting its extension.

## Conclusion

Adam Smith presented an argument explaining why property rights, opportunity and self-interest combined to produce beneficial social outcomes. His invisible hand mechanism provides powerful reasons for relying on property rights and markets. The effectiveness of this mechanism depends on the existence of clearly defined property rights. The four functions of property identified in this chapter are all aided when property rights provide their holders with an expectation of security concerning their possession of goods. However when property rights take the form of privileges in abstract objects the invisible hand mechanism may cease to be a reliable guide to the collective good. In the market players are intent on winning. As rational, opportunistic actors they seek winning strategies. Changing the pay-off matrix by changing the nature of the privilege that they have been granted is one generic strategy. The preventive function of intellectual property rights also grounds such strategies. Powerful factions are more likely to promote such strategies. These strategies, we have suggested, operate against markets. They are part of the cost of intellectual property rights. It is a cost the dimensions of which are yet to be fully realised. And it is a cost which will continue to grow as more and more of economic life becomes entangled in privileges over abstract objects. Perhaps, somewhat ironically, this entanglement will produce less security of possession for, as we argued in Chapter 2, through the ownership of abstract objects many more material objects can be reached.

Our argument is one to which Smith might have been receptive. He would have been no more sympathetic to private sovereigns interfering in the marketplace than he was to public sovereigns. The connection between power and intellectual property which has been suggested in the last section of this chapter is the subject-matter of the next.

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