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Introduction

A lot has been written about the theory of property. Property has been and remains one of the bedrock subjects of social science theorising. In its rights form (the idea that property is a bundle of rights)¹ property continues to be a key target for philosophical analysis. While the literature on property is vast, relatively little of it has explicitly dealt with intellectual property. It may be that the assumption has been that any general theory of property illuminates all property forms, including intellectual property. Perhaps this assumption is correct and perhaps not. Like other property rights, intellectual property rights are relations between individuals. Unlike real property law, intellectual property law posits rights in abstract objects. An algorithm and the formulae for penicillin and its derivatives are examples of abstract objects. Many people need, use and depend on such objects. Many of the relationships of interdependence that characterise social life and work in modern ‘online’ societies are linked to such objects. A property form that allows private hands to capture important abstract objects creates, amongst other things, many person-dependent relationships in a society. It swells the growth of private power. The negative liberty of individuals, the right not to be interfered with, faces greater dangers. There is a lot at stake when property extends its reach to abstract

¹ The bundle of rights view of property is nicely captured by Kevin Gray in the following passage: ‘When I sell you a quantum of airspace the whole point is that – apart from molecules of thin air – there is absolutely *nothing* there. The key is, of course, that I have transferred to you not a thing but a “bundle of rights”, and it is the “bundle of rights” that comprises the property.’ K. Gray, ‘Property in Thin Air’, 50 *Cambridge Law Journal*, 252, 259 (1991).

objects. For these reasons at least it seems worth asking whether we can accommodate intellectual property within one or more of the existing general accounts of property or whether we should develop a distinctive theory of intellectual property.

This book represents the beginnings of an answer to this question. It takes the writings of three important thinkers on property, Locke, Hegel and Marx, and concludes, not surprisingly, that these writings help us to understand a great deal about the phenomenon of intellectual property. No comprehensive theory of intellectual property is proposed here. Instead the final chapter argues that a philosophical attitude of instrumentalism should be our guide in constructing interdisciplinary approaches and theories of intellectual property. Amongst other things, this means that in the case of intellectual property the language of privilege should replace the existing language of property rights. Privilege-bearing duties, the final chapter argues, should form the core of intellectual property theory.

Some Distinctions

Theorising within the liberal tradition about property has usually taken the form of theorising about property rights. This treatment of property as a species of rights has, predictably, resulted in a considerable cross-pollination between general rights theory and property theory. It has led to questions like: are all rights property rights?²

There are some distinctions which inquiries within rights based property theory typically use to demarcate their scope and subject matter. The classifying distinctions are those between the ontological, linguistic, analytical (or conceptual) and normative. We need quickly to say something about where the present work stands in relation to these distinctions. But first a word about the distinctions themselves.

Ontological analyses focus on the question of whether rights exist and, if so, in what way. The debate over the existence of natural rights or natural rights of property is an example of an ontological issue.

2 For a discussion, see G.F. Gaus, 'Property, Rights, and Freedom', 11 *Social Philosophy and Politics*, 209, 211–216 (1994).

Linguistic approaches try to settle the meaning of property or right by reference to the meanings and distinctions to be found in ordinary language use.³ It is hard to distinguish between linguistic and analytical approaches in a short space.⁴ Very roughly, we might say that analytical approaches do not confine themselves to ordinary language as a resource but propose and construct, under the restraints of reason and established deductive techniques, various stipulative distinctions and models of the concepts under scrutiny. Analytical approaches tend to focus on the logical qualities of concepts like property and right. They strive through the process of definition and conceptual analysis for a better model, or structural and relational understanding of a concept. Working analytically, philosophers ask questions such as who can have rights and under what conditions? They draw distinctions between, for example, what it is to have a right and what rights we ought to recognise. An example of a very influential analytical approach in the rights and property area is Hohfeld's model of rights as a set of jural correlatives, contradictories and contradictories of correlatives that is, between interdefinable concepts such as right, duty, privilege and no-right.⁵ (We will discuss the scheme and its implications for intellectual property in Chapter 7.) Finally, normative approaches in property and rights theory bring into play values in one way or another so as to reach ought conclusions of some kind. They concern themselves with either prescription or justification. Rules of conduct are proposed or defended.

Much of normative property theory has examined the justifiability of the right of private property.⁶ The preoccupation with this particular enterprise is not just modern. Like most philosophical questions, it has a history. The continuing interest in private property

3 A. Reeve, *Property* (London, 1986), 10–12.

4 One of the reasons is that the attempt to do so leads rapidly into questions about the nature of philosophical analysis itself. For readings on this issue, see R. Rorty (ed.), *The Linguistic Turn* (Chicago, London, 1967).

5 W.N. Hohfeld, *Fundamental Legal Conceptions* (Westport, Connecticut, reprinted 1978).

6 Modern discussions include L.C. Becker, *Property Rights – Philosophic Foundations* (London, Boston, 1977); A. Ryan, *Property and Political Theory* (Oxford, New York, 1984); J.O. Grunebaum, *Private Ownership* (London, New York, 1987); J. Waldron, *The Right to Private Property* (Oxford, 1988); S.R. Munzer, *A Theory of Property* (Cambridge, 1990). For an overview, see A. Reeve, 'Property', in R.E. Goodin and P. Pettit (eds), *A Companion to Contemporary Political Philosophy* (Oxford, 1993), chapter 31.

stems from an inquiry that mattered to those working in the natural law tradition. It consisted of the search for the origin and foundation of the right of property.

For natural law theorists, an investigation into the origins of property could have threatened the legitimacy of all established individual property holdings. That such a revolutionary conclusion might have been possible came from taking the existence of God and the contents of the Bible seriously. Blackstone in his *Commentaries* nicely captures the nature of the problem. He points out that, strictly speaking, 'there is no foundation in nature or in natural law, why a set of words upon parchment should convey the dominion of land'.⁷ In the Christian God-centred universe this problem was especially worrying because there was no doubt that God had given the earth to its inhabitants in common. How then could one justify the 'sole and despotic dominion' which individual proprietors in the world had come to exercise over its contents?⁸ Actually, Blackstone does not use the word 'justify'. Rather, he assumes that private ownership, which is widespread and widely accepted by the general populace, is something that requires explanation. Private property is a phenomenon that law, operating as a rational science, must explain.

The importance of this explanatory mode of analysis in the natural law theories of property can be seen in Grotius' discussion of property. For Grotius, one of the causes of war is injury to those things which belong to us.⁹ This leads him to investigate the conditions under which something can be said to belong to somebody, which in turn leads him to state that 'it will be necessary to know the origin of proprietorship'.¹⁰ The knowledge which Grotius has in mind is historical knowledge. Drawing on 'sacred history', poets and philosophers, he proceeds to give a description of the way private ownership evolved out of the world which God had given to men in common.¹¹ This historical investigation establishes certain fundamental principles. These are

7 Sir William Blackstone, *Commentaries on the Laws of England* (1765 (1783 edn, reprinted by Garland Publishing, New York, London, 1978)), Book 2, chapter 1, 2.

8 Ibid.

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

10 Ibid.

11 Id. at Book II, chapter 2, II, 3.

used by Grotius to generate specific prescriptive conclusions (rights to the sea, the rights of refugees and so on). At least in Grotius the natural law theory of property has both explanatory and justificatory aims.

Over time, the emphasis on providing an explanation from factual axioms for the origin of the right of private property has, within the context of first order ethical theorising, faded. The interest in providing a justification for the right of private property – in offering an account of the legitimacy of acquiring property – has remained strong. The task of explaining the origin of property rights seems to have become the province of the empirical sciences such as psychology, sociology and economics.¹²

With this brief sketch of some of property theory's fundamental distinctions in place, we can now set out the way in which this book develops its analysis of intellectual property. The analytical parts of the present work rest on some assumptions. Two crucial ones need to be specified at the outset. First, analytical property theory takes property in its rights form as the object of conceptual analysis. The object of clarification is the right of property (sometimes used interchangeably with the right of ownership). Following Hohfeld, we shall not treat rights as a base term, but as a generic term which can be decomposed into a series of more fundamental categories. Rights, including property rights, have a logical architecture. This logical architecture takes the form of a deontic logic.¹³ There is more than one deontic logic to choose from in specifying an architecture for property rights.¹⁴ Within property theory, Hohfeld's system is usually chosen to do the job.¹⁵ This fashion is followed here.

The view that property is a thing is nowadays seen as quaint and false, or at least not helpful. Property is thought to be a rights relation between one person and another (that is, a single-place relation)

12 For an interesting psychological account of the appropriation of ideas, see R.A. Wicklund, 'The Appropriation of Ideas', in P.B. Paulus (ed.), *Psychology of Group Influence* (2nd edn, Hillsdale, NJ; Hove, London, 1989). For an economic account of property rights which in part deals with their origins using some game theory, see D. Friedman, 'A Positive Account of Property Rights', 11 *Social Philosophy and Policy*, 1 (1994).

13 The study and development of formal arguments and language in the field of moral imperatives and concepts.

14 For a survey and discussion, see L. Lindahl, *Position and Change* (Dordrecht, Boston, 1977).

15 For a recent example, see S.R. Munzer, *A Theory of Property* (Cambridge, 1990).

or between one person and many others (a many-place relation).¹⁶ Property is a contest for the control of objects that people need or want and sometimes upon which their very survival, either individually or as a group, depends. As Honoré reminds us, 'the idiom which directly couples the owner with the thing owned is far from pointless; where the right to exclude others exists, there is indeed (legally) a very special relation between the holder of the right and the thing'.¹⁷

Without further argument, our second assumption is that property rights entail relations between two people and between a person and an object. In the case of intellectual property law, the objects in question are abstract objects. As it happens, abstract objects do not exist, or so we claim. Abstract objects in intellectual property law take the form of a convenient legal fiction. The argument for this is to be found in chapters 2 and 7. The psychological operation of this fiction is probably best explained in terms of a theory of performative utterances, but this is not a matter we pursue here.¹⁸

Many texts on intellectual property law begin by saying something about the definition of intellectual property.¹⁹ Definitions can proceed by extension or intension. An extensional definition of intellectual property would list certain traditional core areas of intellectual property: copyright, patents, trademarks, designs, protection against unfair competition and the protection of trade secrets. (A brief explanatory note of these areas is contained in the last section of this introduction.) Over time new subject areas have appeared on this list. Protection for integrated circuits and plant varieties are two examples.²⁰ Intensional definitions of intellectual property are harder

16 As to why the latter view is logically flawed, see L. Lindahl, *Position and Change* (Dordrecht, Boston, 1977), 37.

17 A.M. Honoré, 'Ownership', in A.G. Guest (ed.), *Oxford Essays in Jurisprudence* (Oxford, 1961), 106, 134.

18 Theorists within the Scandinavian Realist tradition used the theory of performative utterances to give an account of the true nature of legal language. See K. Olivecrona, 'Legal Language and Reality', in R.A. Newman (ed.), *Essays in Jurisprudence in Honor of Roscoe Pound* (Indianapolis, New York, 1962), 151; K. Olivecrona, *Law as Fact* (2nd edn, London, 1971).

19 It was customary to refer to industrial and intellectual property rights. The term 'industrial' was used to cover technology-based subject areas like patents and designs. 'Intellectual property' was used to refer to copyright and its cultural subject matter. Many people now use 'intellectual property' generically to cover all the different parts of industrial and intellectual property. This modern convention is adopted here.

20 Both are the subject of international conventions. See the International Convention for the Protection of New Varieties of Plants of 2 December 1961 as revised and the Treaty on Intellectual Property in Respect of Integrated Circuits (Washington, 1989).

to formulate.²¹ We shall say that intellectual property rights are rule-governed privileges that regulate the ownership and exploitation of abstract objects in many fields of human activity. This definition is more a conceptual conclusion. It rests on a particular theoretical view of intellectual property that is presented in the following chapters.

The normative conclusion to which the argument in this book leads is that intellectual property rights are liberty-intruding privileges of a special kind. It is argued that they promote factionalism and dangerous levels of private power. From the point of view of distributive justice, their scope should be limited. The way to think about such rights is through the lenses of a naturalistic empiricism. The arguments for these claims are to be found in chapters 6, 7, 8 and 9. There is in this book no attempt to search for a new justification for private property. As Epstein observes, the 'desirability of private property has been endlessly debated across the disciplines'.²² There is no shortage of coherent philosophical proposals in favour of private property. There may be, as Becker has recently suggested, too many.²³ Perhaps, as Becker hints, we should be more concerned with the empirically determinable consequences of private property in various areas of social life than with multiplying the available number of moral justifications for private property. There are strong reasons for supporting private property rights, but we should do so in a contingent, consequentially minded way. If it turns out that intellectual property rights, a species of private property rights, stimulate patterns of organisation and practices that threaten negative liberty there is a case for severely limiting the scope of these rights, or eliminating some of them altogether. This book provides reasons for thinking that intellectual property rights pose

21 An example of a rather broad one couched in inclusive form is to be found in Article 2 (viii) of the Convention Establishing the World Intellectual Property Organization, signed at Stockholm on 14 July 1967. It provides that "intellectual property" shall include the rights relating to:

literary, artistic and scientific works,
performances of performing artists, phonograms, and broadcasts,
inventions in all fields of human endeavor,
scientific discoveries, industrial designs,
trademarks, service marks, and commercial names and designations,
protection against unfair competition,
and all other rights resulting from intellectual activity in the industrial, scientific,
literary or artistic fields.'

22 R.A. Epstein, 'On the Optimal Mix of Private and Common Property', 11 *Social Philosophy and Policy*, 17 (1994).

23 L.C. Becker, 'Too Much Property', 21 *Philosophy and Public Affairs*, 196 (1992).

this threat. Ultimately, however, this is not a matter that can be decided on the basis of *a priori* justifications of private property. The approach we have in mind is guided by a philosophically defensible view of the role of property in social life and democratic culture. Our suggestion in this regard comes in the form of an instrumentalism that subscribes to a principle of humanism.

Economic Theory

Intellectual property rights are intimately related to markets. They play a crucial role in constituting markets in information. Economic theory is too important a resource to ignore in a philosophical treatment of intellectual property. It is also too big a resource to cover in one work. Economics is a discipline which is rich in approaches. There is nothing narrow about its scope. For instance, the new economic history exemplified by the work of Douglass North is a stern critic of neoclassical approaches.²⁴ Information economics seems to play the role of the dangerous supplement to the neoclassical paradigm.²⁵ Institutional economics recognises that power is a more complex notion than just market power.²⁶ Public choice theory has proved to be a fruitful venture, at least in the eyes of its exponents, into political theory.²⁷ The Chicago School continues to generate important and

24 Works by North include D.C. North and R.P. Thomas, *The Rise of the Western World: A New Economic History* (Cambridge, 1973); D.C. North, *Structure and Change in Economic History* (New York, 1981); D.C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge, New York, 1990).

25 For sources of important contributions in information economics, see D.M. Lamberton (ed.), *The Economics of Information* (Harmondsworth, UK, 1971); D.M. Lamberton (ed.), *The Economics of Communication and Information* (Cheltenham, UK, 1996).

26 A classical source of inspiration for this kind of work is J.R. Commons, *Institutional Economics* (New York, 1934).

27 See I. McLean, *Public Choice: An Introduction* (Oxford, 1991); D.A. Farber and P.P. Frickey, *Law and Public Choice: A Critical Introduction* (Chicago, 1991).

provocative theses about the nature of law.²⁸ There is also an important body of empirical work, much of which happens to be on the patent system.²⁹

There is a lot therefore for the non-economic theorist of property to draw on. Given that this book is about the philosophy of intellectual property rather than its economics, it has been necessary to be selective.

Given the overtly economic character of much intellectual property legislation, one possibility worth investigating is that economic theory of one kind or another provides a justification for the enactment of intellectual property rights. Of course, these rights are very different from each other in terms of legal detail and character. A patent monopoly gives the owner rights against the independent discoverer of the same invention, while copyright offers rights against copying but does not prohibit the independent creation of the same work. Despite important differences like these, intellectual property rights share a fundamental character – they are rights in abstract objects. This similarity allows the economist and the philosopher to ask the same question, what are the justifications for creating property rights in abstract objects?

The economist coming to this question starts with some fundamental intuitions or, if you like, a metaphysic of human nature. People respond positively to incentives and rewards. If there is to be individual profit in the creation of these objects then they have to be locked up in some way, at least temporarily. This leads the economist to consider

28 R.A. Posner, *Economic Analysis of Law* (4th edn, Boston, 1992) is emblematic of this approach.

29 One classical study 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). There are other important studies including E.T. Penrose, *The Economics of the International Patent System* (Baltimore, 1951). J. Schmookler, *Patents, Invention, and Economic Change* (Z. Griliches and L. Hurwicz eds, Cambridge, Mass., 1972); C.T. Taylor and Z.A. Silbertson, *The Economic Impact of the Patent System* (Cambridge, 1973). For a discussion of the economics of patents from an Australian perspective, see T. Mandeville, D. Lamberton and J. Bishop, 'The Use of Patent Information: Economics of Disclosure', in *The Economic Implications of Patents in Australia* (Canberra, 1981), 271. For a discussion of the impact of the patent system on developing countries, see A.S. Oddi, 'The International Patent System and Third World Development: Reality or Myth?' *Duke Law Journal*, 831 (1987).

the possibility that property rights might be the best way in which to ensure that individuals devote sufficient resources to the creation of abstract objects. Here we have in outline an economic argument that provides a reason for the creation of intellectual property rights. We examine it in Chapter 6.

Economists, like social and political theorists, are interested in power. Very often they are most concerned with market power: in a nutshell, the capacity to price above marginal cost. Within institutional economics, power seems to be more broadly conceived of as something that shapes and creates markets rather than just something that is delivered through the pricing mechanism. In Chapter 7 we draw on the work of one classical institutional theorist, Veblen, in order to develop an analysis of the links between intellectual property and power.

Economists are also interested in logical relations, formal properties and deductive truths. The justificatory economic argument for intellectual property which we have just sketched is an example of a deductive or analytical argument. One can go further and construct formal models of intellectual property protection which explain how these rights promote overall welfare gains.³⁰ While formalisation can deliver interesting analytical truths, statistical quantification and/or empirical work are required to confirm truths about the world. There is a hard-edged empirical side to economics by which the normative output of its formal theorising must live or die. It is possible to develop an *a priori* economic argument for having intellectual property rights. But that is not an end of the matter. Economic judgement on intellectual property rights ultimately has to be based on the outcome of a cost–benefit calculation. Take a simple example. Imagine, which is the case in many jurisdictions, that design law does not extend to the protection of spare parts for motor vehicles.³¹ An economist hired by the motor vehicle manufacturer’s association develops a model which shows that there would be a net gain to design innovation if design protection were extended to spare parts. The same economist now tests

30 For examples, see W.M. Landes and R.A. Posner, ‘An Economic Analysis of Copyright Law’, 18 *Journal of Legal Studies*, 325 (1989); W.M. Landes and R.A. Posner, ‘Trademark Law: An Economic Perspective’, 30 *Journal of Law and Economics*, 265 (1987).

31 For a survey, see Australian Law Reform Commission, *Designs* (DP 58, Australia, 1994), chapter 14.

some of the assumptions of the model. He finds that certain key ones are wrong. In particular, he finds that what motivates manufacturers to continue to invest in design is market pressures rather than the given level of design protection. Furthermore, the actual level of design investment represents a small part of car manufacturers' costs, less than one per cent, in fact. This means that the cost effect which free-riders generate in terms of a loss in design activity is very small. It turns out that there are no real efficiency gains to be had from extending design protection.³² The motor vehicle manufacturers leave disappointed, muttering something about getting a lawyer to do a 'proper job'.

There are many other illustrations of this cost–benefit approach in intellectual property. The debate over the optimal length of the patent term is one.³³ Probably, the greatest service that economics can perform in the area of intellectual property is to track empirically the consequences of various intellectual property arrangements. The instrumentalism we propose in the final chapter relies heavily on such an economic contribution. Without the cost–benefit approach intellectual property would remain an opaque institution. Amongst other things, we would not know who the real winners and losers are when states, legislatures and judges shift the boundaries of abstract objects and draw new enclosure lines in the intellectual commons.

Overview of the Chapters

We begin with a very compressed treatment of the history of abstract objects in intellectual property law. The purpose is to show how English law came to invent the category of the abstract object or, in lawyer's language, incorporeal rights. The source of this invention is Roman law. Chapter 2 also deals with those justifications for intellectual property that are to be found in common law judicial discussions. The common law had to deal with the question of justification for copyright and patents because, especially in their pre-statutory form, they cut across a fundamental principle of the common law:

32 See Industry Commission, *Report on Vehicle and Recreational Marine Craft Repair and Insurance Industries* (Australia, 1994), 123.

33 See the discussion of this in L. Kaplow, 'The Patent–Antitrust Intersection: A Reappraisal', 97 *Harvard Law Review*, 1815, 1823–1829 (1984).

the right of subjects to trade or, more accurately, the right to enter the marketplace of trades: The conceptual apparatus for dealing with this problem was provided by the natural law tradition. It was within this tradition that contrasting justificatory approaches were worked out.

One member of that tradition was John Locke. The first half of Chapter 3 is devoted to an exposition of two very different interpretations of Locke's writing on property. These interpretations are used to establish that so-called Lockean labour theories of property depend more for their plausibility on a concept of community than on labour. We claim that labour is too indeterminate a basis upon which to build a strong justificatory theory of intellectual property. The real relevance of Locke to intellectual property lies in the link he and other natural law thinkers made between property and the idea of positive and negative community, that is between a community in which the commons is owned by all and a community in which the commons is open to ownership by all. The second half of the chapter explores the connections between community, the intellectual commons and intellectual property.

Unlike Locke, Hegel is not concerned to know just the origins of property but also its evolutionary fate within the context of a social system. Property for Hegel is in the first instance a fundamental mechanism of survival for individuals. But it also has the potential to rupture community in various ways. Intellectual property particularly poses dangers of this kind.

Marx, more than Hegel, offers an explanatory perspective on property forms. Chapter 5 argues that his theory of class will not help us to understand much about intellectual property, but that his analysis of the competitive pressures facing individual capitalists will. Marx's obsession with the materiality of production leads him to ignore the importance of the abstract object to capitalism's processes of commodity accumulation. But his recognition of the importance of creative labour to capitalism's survival, combined with his understanding of capitalists as the individual subjects of the competition, allows us, we argue, to identify clearly the tasks of intellectual property.

Chapter 6 carries a serious charge against economists: they do not take the self-interested behaviour of individuals seriously enough – at least not when it comes to intellectual property. As a result the real-world

costs of intellectual property are likely to be much higher than might be first thought. The source of these costs lies in the preventive strategies adopted by opportunistic actors in the marketplace. Intellectual property rights are a source of these strategies. Intellectual property more than other property forms leads to the problem of factions.

Implicit in Chapter 6 is the connection between intellectual property and power. The nature of this connection is analysed in Chapter 7. Property, we claim, is a sovereignty mechanism and in the case of intellectual property it has sovereignty effects. This chapter offers a more detailed analysis of the nature of the abstract object than is given in Chapter 2. Abstract objects are an important kind of capital. They also create 'person dependency' relationships. In doing so they make feasible certain kinds of coercion claims.

Abstract objects are a primary good. We should think about their distribution normatively. Chapter 8 asks how intellectual property rights fare under Rawls' theory of justice. The final chapter argues that proprietorism is a creed that has come to dominate the evolution of intellectual property law. The chapter proposes a replacement for proprietorism: instrumentalism. Instrumentalism conceives of intellectual property rights as a distinct kind of liberty-intruding privilege. Under the influence of proprietorism, these privileges come to pose grave threats for negative liberty. The instrumentalism which is presented takes the form of a naturalistic empiricism that is guided by a principle of humanism.

A Note on the Subject Areas of Intellectual Property

For readers who are not familiar with the traditional core areas of intellectual property, an oversimplified description follows. These areas are usually governed by statute. While the content of these statutes is a matter of national policy, increasingly international conventions prescribe minimum standards of protection for intellectual property. Typically, intellectual property statutes create rights of personal property in the relevant subject matter. This means, for example, that a patent may be assigned or licensed. Some rights, such as patent rights, are of limited duration; other rights, trademarks

being an example, are not. Copyright deals with the rights of authors in traditional cultural works like literary and artistic works. Examples of the rights that authors gain are the right to reproduce the work and the right to perform the work in public. Copyright protection has been progressively extended through an expansion of traditional rights (for example, computer software is protected as a literary work) and to new subject areas (for example, sound recordings and films).

Patent statutes protect inventions. Protection is conditional upon satisfying various criteria of which novelty and inventiveness are two important examples. Design deals with the appearance of articles in the industrial sphere. (The appearance of a toilet bowl can be the subject of design registration. The shape of a statue is a matter of copyright protection.) Trademarks protect signs that traders use to distinguish their goods or services from those of other traders. 'Signs' now has a broad meaning: it includes smells and sounds.

Unfair competition is a nebulous area. Article 10 *bis* of the Paris Convention for the Protection of Industrial Property (1883) as revised says that any act of competition contrary to honest practices in industrial or commercial matters constitutes an act of unfair competition. More than most areas of intellectual property, the law relating to unfair competition has evolved in very different directions in various countries.

Trade secret law provides protection for commercially valuable technical information which a person has chosen not to disclose. The same abstract object may be protected under more than one head of intellectual property protection. Algorithms are potentially protectable under patent, copyright and trade secret law. A sign may be a trade mark and an artistic work. The choice of protection for an object is a matter of business strategy. Each regime has different disadvantages and advantages. A product which is easy to reverse engineer (a machine, for example) is better protected by patent than by trade secret law since the latter does not offer rights against the independent originator. One problem with patent protection is that it is of limited duration. If the product is not easily reverse engineered (the recipe for Coca Cola, it is said, falls into this category) it is better to rely on trade secret protection because, provided certain conditions are satisfied, such protection is not limited by time.

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