HAMLINE
LAW REVIEW

INTELLECTUAL PROPERTY: A NON-POSNERIAN LAW AND ECONOMICS APPROACH

Tom G. Palmer

VOLUME 12 SPRING 1989 NUMBER 2

INTELLECTUAL PROPERTY: A NON-POSNERIAN LAW AND ECONOMICS APPROACH*

*Tom G. Palmer***

This essay is divided into four main sections: a brief description of the "Posnerian" approach to intellectual property rights; a historical look at the origins of intellectual property rights and of the relationship between property rights and technology; an examination of the economics of property rights and of public goods, and criticism of some typical applications of this theoretical machinery to intellectual property; and a description of the functioning of markets for non-tangible economic goods in the absence of intellectual property rights.

I. POSNERIAN JURISPRUDENCE AND INTELLECTUAL PROPERTY

Recent decades have seen an explosion in the number of new ways of creating, storing, transmitting, and manipulating "ideal objects," or non-tangible economic goods.[1] The new technologies include personal computers, digital encoding, optical storage, virtually instantaneous electronic communication, photocopying, optical scanning, computerized databases, and many more. Like the introduction of millions of other inventions before them, their arrival on the economic scene has brought to many industries a storm of what economist Joseph Schumpeter called "creative destruction."

---

* I wish to thank many individuals for their helpful comments on individual drafts, including my colleagues at the Institute for Humane Studies at George Mason University Leonard P. Liggio, Walter Grinder and Jeremy Shearmur, Fred L. Smith, Jr. of the Competitive Enterprise Institute, and Milton Mueller, Wendy Gordon, M.L. Rantala, David Friedman, Mark Brady, Roger Meiners, Andrew Melnyk, Stephen Eagle, Hannes Gissurarson, Edward J. Damich, David Schmidtz, Timothy Brennan, Mario Rizzo, and the members of the Austrian Economic Colloquia at New York University and George Mason University. I am aware that I have missed others who provided useful comments or suggestions; to the many such people, I offer my sincere thanks. Financial support for the research was provided by the Competitive Enterprise Institute in Washington, D.C.

** Institute for Humane Studies, George Mason University.

1. Such goods include ideas and processes, lists and databases, algorithms and computer programs, and music and literary products and are contrasted with tangible objects like chairs, land, and apples in their capacity to be infinitely multiplied, or "instantiated," without concomitant diminution of size or quality. Despite this difference from tangible goods, such ideal objects remain economic goods because they are scarce, i.e., they must be produced, and they are valuable.

Not only have these new technologies radically changed many industries; they have contributed to the explosive growth of a new "industry" among economists and lawyers, as well. Much of this work is characterized by overtly utilitarian — even Benthamite — concerns. The assumption is that the principal or even sole criterion for evaluating intellectual property law is its contribution to aggregate utility, and that the legal regime governing ideal objects should aim explicitly at a utilitarian result, maximizing net utility by balancing off the welfare gain from innovations induced by intellectual property rights against the welfare losses resulting from the restrictions on the dissemination of such innovations.

One of the most explicit of the proponents of this view is Judge Richard Posner. In spite of his criticism of Jeremy Bentham,[2] Posner remains in his jurisprudence strongly indebted to Bentham. Although Posner significantly parts company with Bentham over the common law,[3] with Bentham he sees the law's function as maximization of some quantity: in place of the norm of utility maximization, Posner offers "wealth maximization."[4] This change, however, takes place within a framework that remains decidedly Benthamite; judges are still exhorted to aim at an explicit overall goal other than seeking justice in particular cases. Wealth is substituted for utility as the maximand, but the jurisprudential approaches remain consistent. As Posner remarks, "The basic function of law in an economic or wealth-maximization perspective is to alter incentives."[5] In other words, the role of law is constructivistic and interventionistic, an attempt to reorder economic institutions to attain a particular end.

Posner and his colleague William M. Landes have applied this model to the development of copyright in an attempt to explain "to what extent the principal features of copyright law can be explained as devices for promoting an efficient allocation of resources" and to show that "the principal legal doctrines" are "reasonable efforts to maximize the benefits from creating additional works minus both the losses from limiting access and the costs of administering and enforcing copyright

---

2. R. POSNER, THE ECONOMICS OF JUSTICE 13-47 (1981).

3. For Bentham's attitudes to the common law, see G. POSTEMA, BENTHAM AND THE COMMON LAW TRADITION (1986).

4. R. POSNER, *supra* note 2, 48-87, 88-115. For criticism of wealth maximization as a normative principle, see J. COLEMAN, MARKETS, MORALS, AND THE LAW 95-132 (1988). For a criticism (from a contractarian perspective) of the principle of wealth maximization as a descriptive principle, see K. SCHEPPELLE, LEGAL SECRETS: EQUALITY AND EFFICIENCY IN THE COMMON LAW (1988).

5. R. POSNER, *supra* note 2, at 75.

protection."[6] Landes and Posner offer both explicit positive analysis of the law (purporting to show how it promotes economic efficiency) as well as exhortations to judges to apply the law so as to attain this end. For example, in discussing difficulties in applying the "idea versus expression" distinction central to copyright law to computer programs (to which the distinction is problematic), they state:

> We hope the debate will be resolved not by the semantics of the words 'idea' and 'expression' but by the economics of the problem, and specifically by comparing the deadweight costs of allowing a firm to appropriate what has become an industry standard with the disincentive effects on originators if such appropriation is forbidden.[7]

As Jules Coleman responds, "The alternative and I believe commonsense view is that the responsibility of a judge is to determine which of the litigants in a dispute has a relevant legal right."[8] Further, "adjudication primarily — or always — concerns rights rather than the promotion of some useful social policy while at the same time it provides a substantial and meaningful role for economic argument."

In the course of this essay, I will present a "non-Posnerian" law and economics approach to intellectual property rights; patents and copyrights are forms, not of legitimate property rights, but of illegitimate state-granted monopoly. In so far as my approach is a law and economics approach, it is influenced by the more mainstream law and economics of the jurist Bruno Leoni[9] and the economist F. A. Hayek,[10] rather than by the "wealth maximization" approach of Judge Posner. Although the bulk of the article offers an alternative model of the development of intellectual property, it is implicitly a criticism of the Posnerian/Benthamite approach.

---

6. Landes & Posner, *An Economic Analysis of Copyright Law*, 17 J. LEGAL STUD. ___ (forthcoming June 1989).

7. *Id.* at 52. Landes and Posner also describe the distinction between standards in literary and musical copyright as being made by the courts "correctly from the economic standpoint." *Id.* at 41.

8. J. COLEMAN, *supra* note 4, at 131.

9. B. LEONI, FREEDOM AND THE LAW (1972). *See also* Aranson, *Bruno Leoni in Retrospect*, 11 HARV. J.L. & PUB. POL'Y 661 (1988) *and* Liggio & Palmer, *Freedom and the Law: A Comment on Professor Aranson's Article*, 11 HARV. J.L. & PUB. POL'Y 714 (1988).

10. *See, e.g.*, LAW, LEGISLATION, AND LIBERTY (1973, 1976, 1979). In contrast to Judge Posner's pursuit of the clearly articulated goal of wealth maximization, Hayek and Leoni argue that a liberal legal order is a spontaneous order that aims at no particular end, but rests on general rules that emerge out of the adjudication of specific claims.

Preliminary Remarks

Intellectual property rights in the United States are generally classified into four kinds: patents, copyrights, trade secrets, and trademarks. Patents govern "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." Patents may be granted when the subject matter satisfies the criteria of utility, novelty, and non-obviousness. Copyright protects the creative expression of ideas in tangible form; copyrights may be granted when a work is not a copy but originates with the creator; it need not be novel. Trade secrecy laws, like patents, also protect ideas but rely entirely on private measures, rather than on state action, to maintain exclusivity. Finally, trademark law protects words, marks, and symbols that serve to identify and differentiate goods and services in the market. The analysis in this paper will focus on the first two categories of intellectual property rights, for reasons that should become clearer as the paper proceeds. (The term "intellectual property rights" will also be reserved for patents and copyrights.) At this point, I will merely assume a contractual interpretation of the protections governing trade secrets and trademarks (e.g., in the former case the relationship between principal and agent, and in the latter between buyer and seller) to differentiate them from the clearly non-contractual protections governing patents and copyrights.[11]

II. Historical Origins of Intellectual Property Rights

American intellectual property law, while diverging in many respects from that of the United Kingdom, is rooted in the English system of patents and copyrights. Patents for new inventions were issued by the English Crown with the aim of raising funds through the granting of monopolies or of securing control over industries perceived to be of political importance, while copyrights functioned to ensure governmental control over the press in a time of great religious and political dissent. Monopoly privilege and censorship lie at the historical root of patent and copyright.[12]

---

11. Such hybrids as the Semiconductor Chip Protection Act, 17 U.S.C. 901 (1984), which combines elements of both patents and copyright, will be subject to the same criticisms levelled at patents and copyrights.

12. Bruce W. Bugbee, in his Genesis of American Patent and Copyright Law (1967), takes issue with the identification of patents and copyrights with monopoly. Bugbee cites Supreme Court decisions distinguishing between monopoly and patent, all of which rely ultimately on Lord Coke, who wrote in his Institutes of the Laws of England (1628): "A monopoly is an institution, or allowance by the king by his grant, commission, or otherwise to any person or persons,

Patents

Grants of monopoly over industrial processes were often used as inducements to the introduction of new arts to a realm (importation franchises), often with little or no concern for originality of invention.[13] To take a prominent example, Venice, in one of the earliest cited patents, in 1469 granted a monopoly over the art of printing itself to John of Speyer, awarding him exclusive rights to print books in Venetian territory and forbidding the importation of books into the realm.[14] Fortunately for the future growth of the Venetian printing industry, John of Speyer died the next year.

Such privileges often extended to the granting of exclusive rights to produce certain classes of items, regardless of whether the grantee had originated them (e.g., glass, printed works by specified classical authors, bibles and prayer books, ammunition, and so forth). This practice characterized England as much as it did the other European states awarding such privileges at the time. Even the prohibition on monopolies set forth in the Statute of Monopolies (1624), a significant influence on the development of intellectual property rights, in addition to

---

bodies politique, or corporate, of or for the sole buying, selling, making, working, or using of any thing, whereby any person or persons, bodies politique, or corporate, are sought to be restrained of any freedome, or liberty that they had before, or hindered in their lawfull trade." Subsequent decisions placed great weight on the phrase "that they had before," arguing that no one had any freedom to use an invention prior to its invention, and that the granting of an exclusive right to use of such an invention therefore does not constitute a monopoly. It should be pointed out, however, that for economic purposes such distinctions are moot and that, further, the publication of Coke's work came just four years after the STATUTE OF MONOPOLIES (1624), which declared illegal all monopolies except for "patents and Graunts of Priviledge for the tearme of one and twentie yeares or under, heretofore made of the sole workinge or makinge of any manner of newe Manufacture within this Realme, to the first and true Inventor or Inventors of such Manufactures, which others at the tyme of the makinge of such Letters Patents and Graunts did not use, soe they be not contrary to the Lawe nor mischievous to the State. . . ." Bugbee and others have seen this exemption as providing "a firmer legal basis for clearing away the bad company with which patents of invention had been forced to travel." *Id.* at 39-40.

It is notable, however, that also exempted from the prohibition of monopolies were defense-related activities, such as "the production of ordnance, shot, gunpowder, and saltpeter and such industries as the manufacture of glass, the production of alum, and—significantly enough—printing." *Id.* at 40. The last in the list provided the rationale for the continuing use of grants of privilege by the crown to censor religious and political dissenters. Rather than distinguishing patents and copyrights from monopolies, then, they could be seen as a class of monopolies considered especially important to the maintenance of the power of the crown, and therefore as exempted from the blanket condemnation of the STATUTE OF MONOPOLIES.

13. Thus, the traditional practice of granting monopoly rights over industrial and other creative processes for multiples of seven years was based on the seven-year duration of apprenticeship, the time during which native craftsmen could learn the art newly introduced into the realm. *Id.* at 34.

14. B. BUGBEE, *supra* note 12, at 21-22.

exempting specified industries such as printing and glass and alum production, exempted from the prohibition grants to "any Corporacions Companies of Fellowshipps of any Art Trade Occupation or Mistery, or to any Companies or Societies of Merchants within this Realme, erected for the mayntenance enlargement or ordering of any Trade of Merchandize . . . ."[15]

Some writers, taking a notably "Whiggish" view of the development of intellectual property law, have argued that the present system of granting property rights to originators of ideal objects emerged through a gradual winnowing process, whereby intellectual property emerged from a background of monopoly and privilege. As legal historian Bruce Bugbee writes:

> the ancient institution of monopoly, which was also used to reward royal favorites or to increase state treasuries through the sale of exclusive privileges to individuals, continued to flourish in spite of long-standing legal prohibitions. Such grants came to be confused with patents of invention when the latter appeared, and the onus of monopoly was unjustly shared . . . . The exclusive character of both monopolies and patents of invention, and the elaborate common procedure by which both were granted, notably in England, encouraged this confusion. Compounding the difficulty, importation franchises have also been mistaken for true patents of invention by writers on the subject, partly because the distinction was not always made clear at the time the grant was made.[16]

One might respond that if the grantors of such privileges saw no difference, then the distinction drawn by contemporary writers may be an imposition on the actual character of the legal institutions. An alternative interpretation would be to see the current system of intellectual property as the remnant of a system of monopoly privileges; rather than emerging spontaneously, like other property rights, as responses to scarcity, they could be seen as deliberate creations of scarcity through state action.

The identification of patent privileges with "property rights" has provided a powerful form of legitimation for these privileges. As Fritz Machlup and Edith Penrose write, "those who started using the word property in connection with inventions had a very definite purpose in mind: they wanted to substitute a word with a respectable connotation,

---

15. *Id.* at 40.
16. *Id.* at 14.

'property,' for a word that had an unpleasant ring, 'privilege.' "[17]

Copyright

Copyright, too, emerges from the exercise of state power, rather than from a concern with the property rights of authors. As Barbara Ringer (no enemy of intellectual property rights) has argued:

> The pro-copyright theologians argue that copyright as a natural property right emerged from the mists of the common law and took definite form as the result of the invention of the printing press and the increase in potential and actual piracy after 1450. They dismiss the historical ties between copyright and the Crown's grants of printing monopolies, its efforts to suppress heretical or seditious writing, and to exercise censorship control over all publications. This line of argument tends to infuriate the anti-copyright scholars who point out that the first copyright statute in history, the Statute of Anne of 1710, was a direct outgrowth of an elaborate series of monopoly grants, Star Chamber decrees, licensing acts, and a system involving mandatory registration of titles with the Stationers' Company.[18]

The chartering of the Company of Stationers by Queen Mary in 1557, with its monopoly over printing and the registration of titles with the Company, was an attempt to exercise control over a threatening new technology, with the particular purpose of suppressing Protestantism.[19] The Star Chamber decree of 1586 called for the repression of the "greate enormities and abuses" of "dyvers contentyous and disorderlye persons professinge the arte or mystere of Pryntinge or sellinge of bookes . . . ."[20] In 1637, the Company of Stationers was authorized by a Star Chamber decree to seize and destroy unauthorized books and

---

17. Machlup & Penrose, *The Patent Controversy in the Nineteenth Century*, 10 J. ECON. HIST. 1, 16 (1950).

18. Ringer, *The Demonology of Copyright*, in PERSPECTIVES ON PUBLISHING 38 (P. Altbach & S. McVey eds. 1976).

19. B. BUGBEE, *supra* note 12, at 50:

> As on the Continent, the tremendous power of the press in this period of religious controversy was appreciated by those in authority. Consciously or otherwise, Mary and her Spanish husband Philip were following Venetian precedent when they chartered the Stationers' Company in 1557 . . . . All of England's printers and publishers were required to join this association, organized to facilitate the control of the press for the suppression of Protestant literature. As compensation for royal supervision, censorship, and licensing of books to be printed, the approximately 100 members of the Company were given what amounted to a monopoly of all printing in England.

20. *Quoted in* Lawrence, *Copyright Law, Fair Use, and the Academy: An Introduction*, in FAIR USE AND FREE INQUIRY: COPYRIGHT LAW AND THE NEW MEDIA 4 (J. Lawrence & B. Timberg eds. 1980).

presses, eliminating both economic competition and threats to established political and religious authorities at one blow.

With the abolition of the Star Chamber by the Long Parliament in 1641, the basis for this monopolistic system of control was temporarily removed, only to be quickly replaced by a series of licensing acts, beginning in 1643. As one legal scholar has commented, the only real change was in the "political and religious biases of the licensers."[21] The last of the licensing acts expired in 1694, and with it the monopoly powers of the Company of Stationers.

The first significant mentions in Engish history of the rights of authors, in addition to the interests of the Crown and of its obedient company of printers, are found after the temporary lapsing of controls over the press in 1641. At that time, in a petition presented to Parliament, the Company of Stationers made their case for a renewal of their monopoly privileges. As Arnold Plant remarks: "the case against unregulated competition was argued by the Company with a skill which our present-day trade associations hardly excel."[22] Complaining of "Too great multitudes of presses" set up by "Drapers, Carmen and others," the Stationers pointed to the resulting indiscriminate printing of "odious opprobrious pamphlets of incendiaries."[23] Buried among six economic reasons offered, including overproduction, underproduction, "confusion" and risk, securing the livelihood of the Stationers' families, and preference of domestic products over imports, were found the following words: "Fourthly, Community as it discourages stationers, so it is a great discouragement to the authors of books also; many men's studies carry no other profit or recompense with them, but the benefit of their copies; and if this be taken away, many pieces of great worth and excellence will be strangled in the womb, or never conceived at all for the future."[24]

As the need to suppress dissenting religious and political literature abated, the Company of Stationers began to place greater weight on other reasons for perpetuation of their privileges. These included alleged authorial rights and the sad plight of their families at a time when country presses were issuing rival editions of works and cutting seriously into their trade. Thus, Lord Camden, in debate over the case

---

21. Abrams, *The Historic Foundations of American Copyright Law: Exploding the Myth of Common Law Copyright*, 29 WAYNE L. REV. 1137, 1138 (1983).

22. Plant, *The Economic Aspects of Copyright in Books*, [1934] in ARNOLD PLANT, SELECTED ECONOMIC ESSAYS AND ADDRESSES 64-65 (1974).

23. *Id.* at 65.

24. *Id.* at 67.

of *Donaldson v. Beckett*, in which the Law Lords, sitting as the highest court of the land, rejected any common law right of copyright, remarked of the Stationers' petition:

> They—the stationers (whose property by that time) consisted of all the literature of the Kingdom, for they had contrived to get all the copies into their own hands—came up to Parliament in the form of petitioners, with tears in their eyes, hopeless and forlorn, they brought with them their wives and children to excite compassion, and induce Parliament to grant them a statutory security.[25]

Parliament responded by passing the Statute of Anne in 1710, stating in the Preamble that, "Printers Booksellers and other Persons have of late frequently taken the Liberty of printing reprinting and publishing or causing to be printed reprinted and published Books and other Writings without the Consent of the Authors or Proprietors of such Books and Writings to their very great Detriment and too often to the Ruin of them and their Families."[26] A shift in the legitimating argument for copyright monopolies had led to a subtle change in the law itself. The Statute of Anne shifted emphasis away from publishers to authors, thus feeding modern myths that copyright originated to secure the rights of authors and thereby to provide incentives for them to produce what would otherwise be a public good (and therefore underproduced on the market).[27]

As legal scholar Benjamin Kaplan has argued:

> Although references in the text of the statute to authors, together with dubious intimations in later cases that Swift, Addison, and Steele took some significant part in the drafting, have lent color to the notion that authors were themselves intended beneficiaries of parliamentary grace, I think it nearer the truth to say that publishers saw the tactical advantage of putting forward authors' interests together with their own, and this tactic produced some effect on the tone of the statute.[28]

Drawing on the English pattern, but with somewhat diminished emphasis on the usefulness of copyright and patent grants for furthering state power, the American colonies — and later states — awarded

---

25. *Quoted in* U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, INTELLECTUAL PROPERTY RIGHTS IN AN AGE OF ELECTRONICS AND INFORMATION 35 (1986).

26. *Quoted in* B. BUGBEE, *supra* note 12, at 53-54.

27. The theme of underproduction due to the public nature of the good will be dealt with later at greater length.

28. B. KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 8 (1967).

grants of monopoly to inventors and authors. This experience culminated in the writing and unanimous acceptance of Article I, Section 8 of the Constitution at the Constitutional Convention of 1787 and the passage of the first Federal Copyright Act in 1790. As was made clear with the passage of the first Copyright Act, however, the statutory rights granted involved no claim of *natural rights* by originators of ideal objects. The rationale presented was purely one of incentives to "Promote the Progress of Science and useful Arts."

Two more issues deserve to be considered before leaving this brief historical examination of the origins of copyright. First is the issue of whether there existed a common law copyright that was statutorily superseded by the Parliament's action of 1710. Second is the relation between new technologies and the emergence of patent and copyright privileges.

Common Law Copyright

It is a commonplace that statutory rights to intellectual property merely superseded, and indeed limited, common law rights. (In this context, "common law rights," refers to more than the right generally recognized in the common law of an author to prevent publication of his or her *unpublished* manuscript and refers to rights allegedly retained *after* the act of publication.) As recent scholarship has shown, however, this commonplace is based on a misreading of the reporting procedures of the English court system.[29] The decision of *Millar v. Taylor*,[30] by the Court of King's Bench did indeed declare a perpetual copyright to have existed in common law, a copyright that was not superseded by the Statute of Anne.[31] This decision was overturned, however, in the case of *Donaldson v. Beckett*.[32] The Law Lords, sitting as the highest court of appeal, voted by twenty-two to eleven against perpetual common law copyright. The practice of forbidding reporting of remarks made by members of the House of Lords has led to a confusion of the vote of the Lords with the advisory opinions solicited from eleven judges, whose remarks were submitted to the Lords and which were legally reproducible.

---

29. Abrams, *supra* note 21.

30. 4 Burr. 2303, 98 Eng. Rep. 201 (1769).

31. The inclusion of the word "perpetual" in this context is important, for if the common law truly recognized a property right in ideal objects, then such a right, like other property rights, would not be limited in duration by the Statute of Anne, but would extend beyond the period specified in the statute.

32. 1 Eng. Rep. 837 (1774).

Examination of the reports of the debates from the time shows, however, that the true import of the decision has been widely misunderstood. During the debate in the House of Lords Lord Camden (who, in the words of Arnold Plant, "wiped the floor with the London booksellers"), successfully argued against the claims of the booksellers, finding all claims of precedent for any common law right to be "founded on patents, privileges, Star-chamber decrees, and the bye laws of the Stationers' Company; all of them the effects of the grossest tyranny and usurpation; the very last places in which I would have dreamt of finding the least trace of the common law."[33] As Camden pointed out, during the fifteen years between the expiration of the last licensing act and the passage of the Statute of Anne, "no action was brought, no injunction obtained, although no illegal force prevented it; a strong proof, that at that time there was no idea of a common law claim."[34]

The confusion in this area stems from taking the merely advisory opinions of the judges to be the finding of the Law Lords. Thus, Bugbee confuses the two when he writes, "Although the perpetual common law copyright supported in *Millar v. Taylor* was again held to exist, and was held to be unaffected by mere publication, a majority of the eleven judges in Donaldson v. Becket asserted that the Statute of Anne had terminated the common law right of action to enforce it."[35] Thus, the advisory opinions of the judges are conflated with the action and reasons of the Law Lords. A careful examination of the advisory answers to the questions placed by the Lords to the judges shows, however, that even the weaker claim that the advice of the judges supported a pre-existing common law right is highly questionable.[36]

Technology and Intellectual Property Rights

Critical discussion of patents and copyrights has focused too little attention on the historical interdependence of changing technologies and the legal concepts underlying intellectual property rights. One need not be a historical materialist or economic determinist to realize that not only the economic circumstances that might prompt movement toward recognition of "new" property rights,[37] but also the very concepts

33. *Quoted in* Abrams, *supra* note 21, at 1162.

34. *Id.*

35. B. BUGBEE, *supra* note 12, at 55.

36. Abrams, *supra* note 21, at 1119-171.

37. B. BUGBEE, *supra* note 12, at 43: "Rights of literary property remained legally unprotected until the fifteenth century, when the introduction of the printing press to Europe made the rewards of publishing—or plagiarism—far greater than ever before."

by which these rights would be structured are contingent upon technology.

The concept of personal and individual authorship, as we understand it today, was dependent upon the "invention" of the typographically fixed title page. Typographical fixity was also necessary to fix the identity of the text itself. Before the introduction of printing, works were copied and recopied, often introducing a multiplicity of minor errors,[38] additions, or deletions by scribes. The proliferation of works attributed to classical authors (many now often cited with the prefix "Pseudo" before the name under which the work appeared) was a natural outcome of scribal culture.

Additional problems arise in ascribing modern notions of authorship to scribal culture. Thus, as Daniel Boorstin argues:

> There were special problems of nomenclature when books were commonly composed as well as transribed by men in holy orders. In each religious house it was customary for generation after generation of monks to use the same names. When a man took his vows, he abandoned the name by which he had been known in the secular world, and he took a name of one of the monastic brothers who had recently died. As a result, every Franciscan house would always have its Bonaventura, but the identity of 'Bonaventura' at any time could only be defined by considerable research.
>
> All this, as we have seen, gave a tantalizing ambiguity to the name by which a medieval manuscript might be known. A manuscript volume of sermons identified as *Sermones Bonaventurae* might be so called for any one of a dozen reasons . . . . Was the original author the famous Saint Bonaventura of Fidanza? Or was there another author called Bonaventura? Or was it copies by someone of that name? Or by someone in a monastery of that name? Or preached by some Bonaventura, even though not composed by him. Or had the volume once been owned by a Friar Bonaventura, or by a monastery called Bonaventury? Or was this a collection of sermons by different preachers, of which the first was a Bonaventura? Or were these simply in honor of Saint Bonaventura?[39]

As Elizabeth Eisenstein has demonstrated, "[s]cribal culture could

---

38. At one point in the copying of the Greek of Aristotle's POSTERIOR ANALYTICS, for example, *dia mesou*—"through the middle term"—became *di' amesou*—"through no middle term"—in the version used by St. Thomas to write his commentary, a very small error which directly reversed the meaning of the text and led St. Thomas to some philosophical acrobatics to justify his reading.

39. D. BOORSTIN, THE DISCOVERERS: A HISTORY OF MAN'S SEARCH TO KNOW HIS WORLD AND HIMSELF 530 (1985).

not sustain the patenting of inventions or the copyrighting of literary compositions. It worked against the concept of intellectual property rights."[40] With the typographical fixity and attribution made possible by printing, authorship became a matter of personal responsibility, and respect for the "wisdom of the ages" correspondingly declined.[41] Authorship and invention, the very acts to be rewarded by intellectual property law, may not be timeless concepts plucked from Heaven but may emerge in conjunction with — and be inextricably intertwined with — the technology that makes them possible.

The relationship between intellectual property rights and technology poses a very important question: If laws are dependent for their emergence and validation upon technological innovations, might not succeeding innovations require that those very laws pass back *out* of existence? Today this question should be considered in the context of drastically lowered costs of reproduction and transmission, increased costs of enforcement, problems arising from indeterminate or collective authorship due to new applications of computer technology, and similar issues. One need not conclude from such considerations that copyright did not emerge legitimately in a world of typography, but one should at least be led to question whether it fulfills a legitimate role in a world of electronics.

Further, as succeeding sections of this essay should make clear, merely to point to the unsavory origins of an institution, or to its dependence on other factors, is not in itself a condemnation of that institution (in this case, intellectual property rights). Nor does such pointing tell us much about the actual operations, social function, or significance of the institution. These issues are raised simply to "demystify" the institution and to separate such issues of function and moral validity from any alleged historical validation of the institution.

III. Economics of Property Rights and Public Goods

The issues of property rights and of public goods are closely related. Since the publication in 1960 of Ronald Coase's essay on *The Problem of Social Cost*,[42] the attention of economists has been focused

40. E. Eisenstein, The Printing Press as an Agent of Change 229 (1979).

41. *Id.* at 122: "The new forms of authorship and literary property-rights undermined older concepts of collective authority in a manner that encompassed not only biblical composition but also texts relating to philosophy, science, and law. Veneration for the wisdom of the ages was probably modified as ancient sages were retrospectively cast in the role of individual authors—prone to human error and possibly plagiarists as well."

42. Coase, *The Problem of Social Cost*, 3 J.L. Econ. 1 (1960).

on the institution of property, previously taken as simply given in economic analysis. Coase's work on externalities and transaction costs has brought the problem of property rights into focus, allowing greater attention to be paid to the *emergence* and structure of property rights. As Coase has shown, external (or third-party) effects can be "internalized" through the assignment of property rights. (As we shall see, public goods have been defined to be accompanied by external effects.)

Based on Coase's insight, Harold Demsetz has proposed a theory of the emergence of property rights. As Demsetz writes,

> [w]hat converts a harmful or beneficial effect into an externality is that the cost of bringing the effect to bear on the decisions of one or more of the interacting persons is too high to make it worthwhile . . . . 'Internalizing' such effects refers to a process, usually a change in property rights, that enables these effects to bear (in greater degree) on all interacting persons . . . A primary function of property rights is that of guiding incentives to achieve a greater internalization of externalities.[43]

By making possible negotiations among parties whose actions create external effects, property rights allow them to attain higher levels of satisfaction (or lower levels of dissatisfaction) than would otherwise be possible.

Property rights can emerge when changes in technology, demand, or other factors create externalities that were previously absent. To use Demsetz's example, property rights in hunting territories emerged among certain North American Indian communities when greater demand for furs in European markets led to intensified hunting of certain animals. When one hunter or group of hunters captured a beaver, that meant fewer beavers for others. Without property rights in animals or their territories, no individual or group finds it worthwhile to invest in increasing the animal stock or in restricting the harvest. Before the rise in the demand for furs, "these external effects [diminution of the stock available to others] were of such small significance that it did not pay for anyone to take them into account;" after the rise in demand and the concomitant increase in hunting, the significance of the externalities associated with hunting rose, triggering a process that led to the spontaneous evolution of property rights among competing claimants to the previously unowned resources.[44] Thus, in Demsetz's words, "property

---

43. Demsetz, *Toward a Theory of Property Rights*, in THE ECONOMICS OF PROPERTY RIGHTS 32 (E. Furobotn & S. Pejovich eds. 1974).

44. *See* Anderson & Hill, *The Evolution of Property Rights: A Study of the American*

rights develop to internalize externalities when the gains of internalization become larger than the costs of internalization."[45]

Externalities also accompany public goods. Various approaches to the definition of public goods have been developed, but most share two related characteristics: jointness of consumption (also known as nonrivalrous consumption) and nonexcludability of would-be consumers.[46] Jointness of consumption means that one person's consumption of a good does not diminish another person's consumption of the same good.[47] (The applicability of this notion to ideas should be obvious.) Nonexcludability means that if one person consumes the good, it cannot feasibly be withheld from some other person(s).[48] For example, if a lighthouse sends out a beam of light, its services cannot be selectively withheld from nonpaying passers-by. (In a somewhat weaker version, it is simply asserted that, given a good for which the marginal cost of exclusion is greater than the marginal cost of provision, it is *inefficient* to expend resources to exclude nonpurchasers.) Thus, the effect of these two attributes is that for goods so characterized each person has an incentive to "free-ride" off of the contributions toward the purchase of the good made by others. Under such conditions, consumers can be expected to under-reveal their "true" preferences for the good and an inadequate supply will be produced.

Both of these two characteristics are applied to ideal objects. My consumption of an idea or of a process, for example, does not in the least diminish the consumption of another, while, since the cost of reproduction of an idea is virtually zero (as it need only be thought), it can be very difficult, if not impossible, to exclude nonpurchasers from enjoying the benefits of their production. Thus, ideal objects may qual-

---

West, 18 J.L. ECON. 163 (1975): "Establishing and protecting property rights is very much a productive activity toward which resources can be devoted. But, like any other activity, the amount of this investment will depend upon the marginal benefits and costs to investors of allocating resources to these endeavors."

45. Demsetz, *supra* note 43, at 34.

46. Some economists distinguish between jointness of consumption and jointness of supply. This distinction is not relevant to our case, however.

47. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. OF ECON. & STATISTICS 387, 389 (1954): collective consumption goods are those "which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction of any other individual's consumption of that good, so that $X_{n+j} = X^{i}_{n+j}$, simultaneously for each and every nth individual and each collective good."

48. M. OLSON, THE LOGIC OF COLLECTIVE ACTION 14 (1965): "A common, collective, or public good is here defined as any good such that, if any person X_i in a group $X_1, \ldots, X_i, \ldots, X_n$ consumes it, it cannot feasibly be withheld from the others in that group."

ify as truly archetypical cases of pure public goods.[49] (Note, however, that the existence of opportunity costs to acquisition of ideas, e.g., to learn organic chemistry or Sanskrit or to sit through a play, indicate that 1) there do exist costs of acquisition for ideas, 2) there often exist opportunities for exclusion (e.g., refusing to give Sanskrit lessons), and 3) such "public goods" are not equivalent to "free goods." Further, the "public" element of many goods must be "embedded" in a tangible substrate before they can be consumed or enjoyed, e.g., the movie *Jaws* in a videocassette or the poems of John Donne on the pages of a book.)

Being a public good means that the production of ideal objects entails the creation of external effects. My act of publishing or in some other way revealing an idea, for instance, means that that ideal object is appropriable by any and all who wish to think it. They receive positive externalities from my act. According to many accounts, such positive externalities might be internalized either through provision by the state, which (some people persist in believing) has the interests of all at heart, or by assignment of property rights and negotiation among interested parties, bringing to bear upon one another the interests of both generators and recipients of the externalities in question. Most writers on intellectual property rights, to their credit, prefer the decentralized property rights approach, rather than the state provision approach, with all its attendant inefficiencies and horrors.

While much recent thinking on the subject is informed by the externalities and property rights analysis described above, such attempts to explain intellectual property rights fail to take into account adequately the central role of scarcity in the emergence of property rights and the difficulties inherent in any attempt to apply the economic notion of scarcity to ideal objects.[50] Further, too little attention is focused

---

49. *See* T. Brennan, *Harper & Row v. The Nation: Copyrightability and Fair Use*, U.S. DEPARTMENT OF JUSTICE, ECONOMIC POLICY OFFICE DISCUSSION PAPER (EPO 84-5) 8 (May 11, 1984): "Intellectual property is a 'public good,' in that once the intellectual property is produced it can in principle be consumed by an additional user at virtually zero marginal cost."

50. At this point it may be useful to introduce a distinction between two kinds of scarcity: static scarcity and dynamic scarcity. The focus of most literature on intellectual property rights has been on the latter; if intellectual property rights are not recognized and legally enforced, then incentives for innovation and creativity will be diminished, if not eliminated outright. As we shall see later, the function of creating and maintaining exclusivity that characterizes property rights in tangible objects can be attained for ideal objects in other ways. Both tangible and ideal objects are scarce in the dynamic sense; only the former are scarce in the static sense. Further, scarcity does apply to the tangible instantiation or embodiment of ideal objects, e.g., the tangible and material "book" which serves as the substrate for the author's immaterial product, for his "book." For this distinction, see I. KANT, WAS IST EIN BUCH, in his DIE METAPHYSIK DER SITTEN (1798); and in his essay, *Von der Unrechtsmässigkeit des Büchernachdrucks* in COPYRIGHT AND PATENTS FOR

on alternative means of internalizing externalities; assignment of property rights is not the only means available to this end.

In the Landes-Posner model, for example, the assumption is made that "For a new work to be created the expected return — typically, and we shall assume exclusively, from the sale of copies — must exceed the expected costs."[51] As we shall see, this assumption (that the exclusive source of revenue is sale of copies) in effect rigs the game; had such an assumption been employed in attempting to understand the market for radio broadcasting, it would have overlooked the most significant form of income for broadcasters: advertising. This would have naturally led to the conclusion that either state monopoly or some system of coerced collection of tolls on radio sets was the only way to produce an "efficient" quantity of radio broadcasting. This would, in fact, have been the fate of broadcasting but for the serendipitous discovery of advertising.[52]

In what follows I will criticize the application of the legal category of property to ideal objects and will explore other methods of achieving internalization of externalities. In addition, some attention will be paid to the overly static approach taken by some proponents of intellectual property rights (e.g., attempts are made to mimic real market processes by constructing incentives which will equalize marginal social cost and marginal social benefit).

INVENTIONS 581-586 (R. Macfie trans. 1883).

51. Landes & Posner, *supra* note 6.

52. Dr. Frank Conrad, Assistant Chief Engineer of Westinghouse Electric in Pittsburgh, a leader among early amateur radio enthusiasts, was the founder of what later became station KDKA. On October 17, 1919, bored by discussing radio equipment, Conrad "placed his microphone before a phonograph and substituted music for voice. The song was Old Black Joe. The music saved Dr. Conrad's voice, but more—it delighted and amazed 'hams' all over the country. Mail, heavy previously, now became a deluge with requests that music be played at special times so that the writer might convince some skeptic that music really could be transmitted through space . . . . These broadcasts soon exhausted Dr. Conrad's supply of records, and the Hamilton Music Store in Wilkinsburg, Pa. offered a continuing supply of records if he would announce that the records could be purchased at the Hamilton store. Dr. Conrad agreed and thus gave the world its first radio advertiser—who promptly found that records played on the air sold better than others."

FIFTIETH ANNIVERSARY GOLDEN YEARBOOK 6 (1959). It was the teen-age members of the Junior Wireless Club of America who succeeded in blocking state monopolization of the airwaves through their testimony and lobbying in 1910. *See Congressional Record*, 1910, Hearings of April 28, 1910 before the Committee on Commerce of the Senate of the United States. Thanks to them and to the owner of the Hamilton Music Store, Americans were spared complete state monopolization of broadcasting. I am indebted to Milton Mueller for alerting me to this history.

Objections to the Property Model for Ideal Objects

The first problem with applying the kind of property rights analysis described above to ideal objects is that such goods are not characterized by the same kind of scarcity as tangible goods, such as land, game animals, or water rights. As Thomas Jefferson wrote:

> If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.[53]

---

53. Thomas Jefferson, "Letter to Isaac McPherson, Monticello, August 13, 1813," in XIII THE WRITINGS OF THOMAS JEFFERSON 326-338 (A. Lipscomb ed. 1904). Jefferson does admit purely statutory — as opposed to natural — intellectual property rights "as an encouragement to men to pursue ideas which may produce utility," although he is ambivalent on this issue:

> it is a fact, as far as I am informed, that England was, until we copied her, the only country on earth which ever, by a general law, gave a legal right to the exclusive use of an idea. In some other countries it is sometimes done, in a great case, and by a special and personal act, but, generally speaking, other nations have thought that these monopolies produce more embarassment than advantage to society; and it may be observed that the nations which refuse monopolies of invention, are as fruitful as England in new and useful devices.

When this letter was written, Jefferson had already spent some years as a member of the patent board. Notably, he had earlier proposed an amendment as a part of the Bill of Rights which would have nullified the patents and copyrights clause of Article I, section 8 of the Constitution:

> I sincerely rejoice at the acceptance of our new constitution by nine States. It is a good canvass, on which some strokes only want retouching. What these are, I think are sufficiently manifested by the general voice from north to south, which calls for a bill of rights. It seems pretty generally understood, that this should go to juries, habeas corpus, standing armies, printing, religion and monopolies . . . . The few cases wherein these things may do evil, cannot be weighed against the multitude wherein the want of them will do evil . . . . The saying there shall be no monopolies, lessens the incitements to ingenuity, which is spurred on by the hope of a monopoly for a limited time, as of fourteen years; but the benefit of even limited monopolies is too doubtful, to be opposed to that of their general suppression.

Id. at "Letter to James Madison, Paris, July 31, 1788," Volume VII at 93-99. One year later he proposed strictly limiting the power of Congress to grant monopolies in literature and inventions, and forbidding all other monopolies altogether:

> I must now say a word on the declaration of rights, you have been so good as to send to me. I like it, as far as it goes; but I should have been for going further. For instance, the following alterations and additions would have pleased me: . . . . Article 9. Monopolies may be allowed to persons for their own productions in literature, and their own inventions in the arts, for a term not exceeding —— years, but for no longer term, and no other purpose.

The central element in the spontaneous emergence of property rights is scarcity, or the possibility of conflicting uses. As Arnold Plant observes, "It is a peculiarity of property rights in patents (and copyrights) that they do not arise out of the scarcity of the objects which become appropriated. They are not a *consequence* of scarcity. They are the deliberate creation of statute law; and, whereas in general the institution of private property makes for the preservation of scarce goods, tending (as we might somewhat loosely say) to lead us 'to make the most of them,' property rights in patents and copyright make possible the *creation* of a scarcity of the products appropriated which could not otherwise be maintained."[54]

According to Nobel Laureate F. A. Hayek:

> The slow selection by trial and error of a system of rules delimiting individual ranges of control over different resources has created a curious position. Those very intellectuals who are generally inclined to question those forms of material property which are indispensable for the efficient organisation of the material means of production have become the most enthusiastic supporters of certain immaterial property rights invented only relatively recently, having to do, for example, with literary productions and technological inventions (i.e., copyrights and patents).
>
> The difference between these and other kinds of property rights is this: while ownership of material goods guides the use of scarce means to their most important uses, in the case of immaterial goods such as literary productions and technological inventions the ability to produce them is also limited, yet once they have come into existence, they can be indefinitely multiplied and can be made scarce only by law in order to create an inducement to produce such ideas. Yet it is not obvious that such forced scarcity is the most effective way to stimulate the human creative process.[55]

As will be shown later, there are means of internalizing the externalities involved in the creation of public goods other than through statutory grant of monopoly privileges over them. The mere existence of

---

Id. at "Letter to James Madison, Paris, August 28, 1789," Volume VII at 444-453. Note also the remarks of James Madison in *Federalist No. 43* (in defense of the patents and copyright clause of the new constitution):

> The utility of this power will scarcely be questioned. The copyright of authors has been solemnly adjudged, in Great Britain, to be a right of common law. The right to useful inventions seems with equal reason to belong to the inventors. The public good fully coincides in both cases with the claims of individuals.

54. PLANT, THE ECONOMIC THEORY CONCERNING PATENTS FOR INVENTIONS 36 (1934).

55. F. A. HAYEK, THE FATAL CONCEIT: THE ERRORS OF SOCIALISM 6 (1988).

externalities, in the absence of scarcity, does not justify state creation of enforceable property rights.

Further, to the detriment of attempts to apply the Demsetz model to intellectual property rights,[56] such rights are creatures of the state, and not the product of an evolutionary process of interaction among interested parties that is later ratified through legal sanctions. (Trademark and trade secrecy laws, however, do emerge from the actions taken in the common law. While they are often lumped together with patents and copyrights, my approach would separate them and recognize their legitimacy in a market order.) While the work of Coase and his followers has highlighted the importance of the proper definition and enforcement of property rights for the solution of many externalites problems (notably pollution, land use patterns, and so on), this need not imply that the state can simply define property rights in any way at all and then let the market so defined perform its magic.

A definition of property rights that would require massive and continual state interference in the market, for example, is not consistent with a market system, the beauty of which is its self-governing character. State enforcement of intellectual property rights, especially in an age of high speed electronics and computer technology, requires just such a pattern of state intervention into social processes.

Law in a liberal society is a "horizontal," rather than a "vertical," creation. It emerges out of contract and interaction among interested parties, and not as a result of state edicts handed down from on high, as in the case of intellectual property rights. As the noted jurist and early pioneer of law and economics Bruno Leoni pointed out, law is a matter of "individual claim": "The legal process always traces back in the end to individual claim. Individuals make the law, insofar as they make claims."[57] Rights are not creations of the state, bestowed as gifts upon the people by wise and beneficient legislators, but simultaneously the spontaneous product and the ground—both the *definiendum* and the *definiens* — of the system of voluntary interactions we call the

---

56. Demsetz himself questions whether his model is applicable to intellectual property rights. *Supra* note 43, at 42. *See also* Demsetz, "Commentary on Market and Meta-Market," 1986 Mont Pelerin Society General Meeting (September 1-5, 1986). Demsetz says that his essay on property rights was "stimulated by, but different than, Coase's perspective" and that it "sought to explain the evolution of private rights as a social response to emerging scarcity problems. Land once superabundant becomes scarce and in need of more careful conserving. This leads to the development of rights in land that provide the incentives necessary for a proper response to this new scarcity problem."

57. B. LEONI, LECTURES GIVEN DECEMBER 2 - 6, 1963 (Freedom School Phrontistery, Colorado Springs, Colorado). *See also* B. LEONI, FREEDOM AND THE LAW (1972).

market.[58]

Finally, any system of "property rights" that requires the violation of other property rights, e.g., the right to determine the peaceful use in one's home of one's own videocassette recorder or to purchase blank tapes without paying a royalty to a third party, is no system of rights at all. In short, a system of intellectual property rights is not compossible with a system of property rights to tangible objects, especially one's own body, the foundation of the right to property in alienable objects.[59]

As journalist and Jacksonian political theorist William Leggett argued,

> The mental process by which [the author] contrived those results are not, and cannot properly be rendered, exclusive property; since the right of a free exercise of our thinking faculties is given by nature to all mankind, and the mere fact that a given mode of doing a thing has been thought of by one, does not prevent the same ideas presenting themselves to the mind of another and should not prevent him from a perfect liberty of acting upon them.[60]

Proposals to ban or cripple entire technologies (i.e., technologies capa-

---

58. For a game-theoretic treatment of the spontaneous emergence of property rights, see R. SUGDEN, THE ECONOMICS OF RIGHTS, CO-OPERATION AND WELFARE (1986). Sugden criticizes the "U.S. Cavalry model of government," according to which "the government stands ready to rush to the rescue whenever the market 'fails', and the economist's job is to advise it on when and how to do so." *Id.* at 3. *See also* Sugden, *Labour, Property and the Morality of Markets*, in THE MARKET IN HISTORY (B. Anderson & A. Latham, eds. 1986)(the morality of market arrangements). On the hubris of "designing" property rights systems and then imposing them on the market, see V. Smith, *Comment*, in PROGRESS IN NATURAL RESOURCE ECONOMICS 414 (A. Scott ed. 1985):

> 'Can We Consciously Design New and Better Property Rights Systems?' Based on my interpretation of the origin and process of property right formation, I am skeptical about whether, as professionals, any of us as yet knows and understands enough about our subject matter to allow an affirmative answer to this question. . . . What we lack is the knowledge that comes from practice, from trying, failing, and learning from the results. It is one thing to articulate an ex post property right interpretation of the mining district, the oil lease, or the fact that the individual members of OPEC combined the right to unrecovered oil with the right to recovered oil in the 1970s; it is quite another to design ex ante property right institutions that will operate in the way that we claim that these 'natural experiments' have operated. For one thing, our claims and interpretations may be wrong; for another, we may not permit our designs to be reshaped by the opportunity cost challenges that operate in less structured environments.

59. For a derivation of rights to tangible objects based on self-ownership, see J. LOCKE, SECOND TREATISE OF GOVERNMENT; for a derivation of property rights from body rights, see S. WHEELER, NATURAL PROPERTY RIGHTS AS BODY RIGHTS (1980); for a theory of contract based on transfer of rights to alienable property, see Barnett, *A Consent Theory of Contract*, 86 COLUM. L. REV. 269 (1986).

60. W. LEGGETT, DEMOCRATICK EDITORIALS: ESSAYS IN JACKSONIAN POLITICAL ECONOMY 399 (1984).

ble of rendering existing intellectual property rights nugatory) would wipe out whole areas of property rights altogether, and cannot be defended in the name of property rights.[61]

The immediate jump from identifying potential externalities to advocating creation of new property rights is unjustified, as has been indirectly shown by two prominent writers on intellectual property rights. Richard P. Adelstein and Steven I. Peretz have suggested a model for the evolution of property rights in ideal objects that draws on the Demsetz model but supplements it with an entrepreneurial evolutionary dynamic to explain the emergence of rights.[62] Adelstein and Peretz identify two dimensions of the process of market exchange: (1) identifying and exchanging information with prospective buyers, negotiating mutually agreeable terms of trade, and (2) transferring control over the resources, on the one hand, while on the other protecting "this channel of exchange with buyers against the constant threat of those who would, where possible, breach the channel so as to extract the value of the commodity being traded without purchasing it from the seller . . . ."[63] Thus, one element of the market process is the exclusion of potential "free riders" from enjoying the good without paying for it. Adelstein and Peretz see the process of technological innovation being driven, at least in part, by the competition between potential sellers and potential free riders either to fence the goods or to be free riders on their production: "[h]ence the competition of technologies, in which entrepreneurs attempt simultaneously to overcome the obstacles separating them from willing buyers and to place corresponding impediments in the path of free riders, who are constantly in search of ways to dissipate them."[64] In the case of intellectual goods (or what I have called "ideal objects"), changes in technology may allow sellers to embed the good in tangible or "impure" goods (e.g., a book in the corporeal sense), at the same time that they may allow free riders to extract and "purify" the intellectual good from its tangible embodiment, or "host." The former reflects "the essential properties of private goods," while the latter takes on "some of the attributes of public goods." Thus, "intellectual goods can be traded in markets as private goods only so long as the governing

61. See, for example, Thomas, *Record Makers May Ban Digital Audio Tape to Protect Copyright*, Financial Times, May 8, 1987; Sanger, *Vexed by Tape Technology*, The New York Times, May 13, 1987, at D1, col. 3.

62. Adelstein & Peretz, *The Competition of Technologies in Markets for Ideas: Copyright and Fair Use in Evolutionary Perspective*, 5 INT'L REV. OF LAW & ECON. 209 (1985).

63. *Id.* at 213.

64. *Id.* at 215.

technology renders them impure and . . . technological change which purifies the intellectual good will require some kind of collective action to ensure that the incentives to produce and purchase the good in markets are maintained."[65] This framework is used to explain the introduction of intellectual property rights when new technologies, such as movable type, made it easier to extract and reproduce intellectual goods than was the case under older methods, such as hand reproduction on animal skins (when it could take a full year to copy a single book).

Unfortunately, the authors are hoist on their own petard. In a paragraph that begins by suggesting that "the creation of new property rights favoring the seller may be the only way to ensure the continued production of intellectual goods in such a technological environment," the authors bring up the case of professional magicians, who

> successfully embed their intellectual good within an illusion. To reveal the trick is thus to enable consumers to produce their own illusions, reducing the 'magic' to mere physical dexterity, and so magicians have long refused to share their secrets freely with one another or with their audiences. Yet here, too, the relentless advance of technology takes its toll; the rapid spread of high resolution video recorders with slow motion capability threatens to drive magicians from television screens, depriving them of an important source of revenue and denying vast audiences the enjoyment of their talents.[66]

Adelstein and Peretz argue that the code that has "bound the fraternity of magicians for generations" no longer adequately protects the channel between sellers and buyers of such illusions. In cases where this channel has been breached, they argue for creation of property rights. But do they really want to create property rights to the illusions of magicians, and enforce them by restraining VCR owners from using the playback feature in slow motion? Surely, their own example illustrates the folly of creating property rights whenever the spectre of free riding on externalities generated by others arises. In fact, as I demonstrate in the next major section of this article, there are many mechanisms other than enforceable property rights for internalizing externalities, many of which are already in current use.

Rethinking Public Goods Theory

In order to understand the manner in which public goods can be and are produced on the market, a short return to the theory of public

65. *Id.* at 217.
66. *Id.* at 222.

goods is necessary. The first point, as Adelstein and Peretz hint, is that "publicness" is not a characteristic inherent to goods, but is a function of the manner in which they are produced, and even of the choice of the relevant marginal unit. As economist Tyler Cowen argues, "publicness is an attribute of institutions, not of abstract economic goods. Every good can be made more or less public by examining it in different institutional contexts."[67] The choice of the relevant marginal unit of analysis (e.g., the road in front of my house or "the interstate highway system") is a determining factor of whether something is a public good, as is the choice of the method of production. Thus, the choice of a production and distribution system that allows private consumption or of a system that allows public consumption antedates the classification of a good as private or as public. As economist Kenneth Goldin writes:

> The evidence suggests that we are *not* faced with a set of goods and services which have the inherent characteristics of public goods. Rather, we are faced with an unavoidable choice regarding every good or service: shall everyone have *equal access* to that service (in which case the service will be similar to a public good) or shall the service be available *selectively*: to some, but not to others? In practice, public goods theory is often used in such a way that one overlooks this important choice problem.[68]

Thus, the cost of producing any service or good includes not only labor, capital, marketing, and other cost components, but also fencing (or exclusion) costs as well. Movie theaters, for example, invest in exclusion devices like ticket windows, walls, and ushers, all designed to exclude noncontributors from enjoyment of service. Alternatively, of course, movie owners could set up projectors and screens in public parks and then attempt to prevent passers-by from watching, or they could ask government to force all noncontributors to wear special glasses which prevent them from enjoying the movie. "Drive-ins," faced with the prospect of free riders peering over the walls, installed — at considerable expense — individual speakers for each car, thus rendering the publicly available visual part of the movie of little interest. (This may explain why pornographic movies are rarely shown at drive-

---

67. Cowen, *Public Goods and Their Institutional Context: A Critique of Public Goods Theory*, 43 REV. OF SOC. ECON. 53 (1985). See also his introduction to COWEN, THE THEORY OF MARKET FAILURE: A CRITICAL EXAMINATION (1988)(collects together numerous useful essays on the theory of public goods).

68. Goldin, *Equal Access vs. Selective Access: A Critique of Public Goods Theory*, 29 PUB. CHOICE 53 (1977)(emphasis in original).

in theaters.)

The costs of exclusion are involved in the production of virtually every good imaginable. There is no compelling justification for singling out some goods and insisting that the state underwrite their production costs through some sort of state-sanctioned collective action, simply because of a decision to make the good available on a nonexclusive basis. This decision is itself the relevant factor in converting a potential private good into a public good.

The politicization of goods, i.e., is the decision to provide them on a nonexclusive and available-on-demand basis (for "free") in "exchange" for the payment of taxes, initiates a vicious cycle, creating free riders and then demonstrating that private market forces cannot satisfy their demands.[69] Further, state provision does not *eliminate* the costs of exclusion, although it can change the structure of their imposition. Tax collectors, state surveillance of economic transactions of every sort, and jails replace ticket booths and other voluntary arrangements.

Moreover, the argument for state provision of public goods or for enforcement of intellectual property rights is framed in purely static, rather than dynamic, terms: it is inefficient to expend resources to exclude non-purchasers if the marginal cost of making a given good available to one more person is zero (or less than the cost of exclusion). But this begs the question. We do not live in a world where goods are given; they have to be produced. Therefore, the problem is how best to produce these goods, taking all of the relevant costs and benefits into account.[70] An argument for a method of provision that assumes that the good is already produced is no argument at all.

Exclusion devices should be seen as endogenous to the market, as a regular part of its operation. The introduction of barbed wire in the 1870s, for example, allowed the enforcement of property titles in the prairies, a process that proceeded rapidly despite a federal law of 1885 forbidding the erection of stretched fences upon the "public domain."[71] Similarly, encryption and encoding devices (economically roughly equivalent to "electronic barbed wire") and other mechanisms can serve to fence the "public domain" of ideas and should be considered endogenous elements of the production process.

---

69. *See* Boudewijn Bouckaert, The Historical Evolution of Public Goods and State Monopolies (unpublished manuscript on file with the author).

70. For the discussion of public goods and public goods production from a "dynamic," rather than a "static," perspective see A. ALCHIAN & W. ALLEN, UNIVERSITY ECONOMICS 147-48, 245-47 (3rd ed. 1972).

71. Anderson & Hill, *supra* note 44, at 169-72.

Discussions of ideal objects reveal a failure to apply insights into dynamic market processes; these discussions assume that efficiency is a state of the market in which, among other things, marginal revenue and marginal cost are equalized.[72] Schedules of costs and benefits are hypostatised in such analyses, leading to very peculiar and often counter-intuitive results, as well as to "constructivist" impulses to mimic the results of the market, rather than allow it to function.[73]

This discussion is not, however, meant to denigrate the very important problem of demand revelation implicit in discussions of public goods and their provision. Indeed, this is a problem in the production of all goods, and a challenge to the entrepreneurial abilities of potential producers. Textbook writers commonly offered the light house as an example to demonstrate the necessity of government action to produce certain goods. Their writings were often prefaced by phrases such as "Even Adam Smith believed . . . ." Such examples became more problematic, however, after the publication of Ronald Coase's examination of the history of lighthouse provision in the United Kingdom. It was shown that navigational services were in fact provided privately, funded by the fees charged for using ports served by lighthouses.[74] As Kenneth Goldin commented, "Lighthouses are a favorite textbook example of public goods, because most economists cannot imagine a method of exclusion. (All this proves is that economists are less imaginative than lighthousekeepers)."[75]

Decisions regarding the proper method of providing goods for market, including the appropriate means of exclusion of potential free riders, are, fortunately, made by entrepreneurs, who are alert to finding ways of exploiting such profit opportunities, rather than by economists, whose interest is often merely academic. The next section of this paper will focus on means of providing ideal objects on the market without

---

72. *See, e.g.*, Besen, New Technologies and Intellectual Property: An Economic Analysis, The RAND Corp., IST-8415297-NSF at 4 (May 1987):"efficient distribution of a public good requires that it be made available to all consumers for whom its value at least equals the marginal cost of distribution."; Brennan, *Taxing Home Audio Taping*, Economic Analysis Group Discussion Paper (EAG 86-6), U.S. Department of Justice, Antitrust Division 26 (April 15, 1986): "Looking solely at the efficiency of the copyright markets, however, the pertinent standard is to bring the marginal social return to investments in producing copyrighted works and improving their quality closer to the marginal costs of those investment."

73. For a criticism of this implicitly "teleological" approach to market processes, see Buchanan, *Order Defined in the Process of its Emergence*, 5 LITERATURE OF LIBERTY (1982), *reprinted in* LIBERTY, MARKET, AND STATE: POLITICAL ECONOMY IN THE 1980S 73-74 (1985).

74. Coase, *The Lighthouse in Economics*, 17 J. L. & ECON. 357 (1974).

75. Goldin, *supra* note 68, at 62. For a discussion of provision of public goods through free markets, see Palmer, *Infrastructure: Public or Private*, Pol'y Rep., May 1983, at 5.

recourse to intellectual property rights or other forms of state intervention.

IV. MARKETS FOR IDEAL OBJECTS IN THE ABSENCE OF INTELLECTUAL PROPERTY RIGHTS

That markets for ideal objects can and do function in the absence of enforceable intellectual property rights is demonstrated by the fact that many innovations that are not accorded copyright or patent protection are nevertheless produced on the market. Among the valuable ideal objects unprotected in the U.S. are fashions; business, accounting, management, and marketing strategies; discoveries of naturally occurring substances; scientific principles and mathematical formulae;[76] jokes and magic tricks; useful mental processes (e.g., techniques for discovering natural gas deposits); new words and slogans; and designs or applications for atomic weapons(!).[77] Included are also large classes of nonpatentable inventions, as well as works on which copyrights have expired or are not applicable (ranging from the poems of Sappho and Virgil to the works of Arthur Conan Doyle and even the Congressional testimony of Lt. Colonel Oliver North).

Further, functioning markets existed in the nineteenth century in the United States for the works of foreign authors. This free market situation included payment of royalties to British writers, even though those authors received no copyright protection in the U.S. until the extension of copyright protection to foreigners in 1891. American publishers who paid royalties to British authors for their works in order to receive advance galleys also had no legal protection against competitors who could legally copy their products and sell them on the market, without paying any royalty either to the author or to the first publisher. As the English author T.H. Huxley testified to the Royal Commission of 1876-1878, "I myself am paid upon books which are published there: my American publisher remits me a certain percentage upon the selling price of the books there, and that without any copyright which can protect him."[78] In the absence of state protectionism, both publishers and authors utilized a number of the voluntary and contractual mechanisms for internalization of externalities to be discussed below.

---

76. Note that this exception is being weakened, as patents are being awarded to the creators of useful algorithms. *See Equations Patented; Some See a Danger*, New York Times, February 15, 1989.

77. Most of these are discussed in E. KINTNER & J. LAHR, AN INTELLECTUAL PROPERTY LAW PRIMER 18-22, 364-368 (1982).

78. Evidence of T. H. Huxley, Question 5610, *quoted in* PLANT, *supra* note 54, at 84.

Thus, the problem shifts to one of marketing. As Armen Alchian remarked in a comment on a paper quite critical of copyright: "I am sure that most publishers are so used to operating with a copyright monopoly that they will think Hurt's analysis strikes at the foundations of the publishing business. Not at the foundation; just at the present selling methods."[79]

Technological Fences

Most performance arts, including musical concerts, plays, movies, and circuses, rely to one degree or another on fencing. Tickets are sold and checked at the door. Others, however, rely on different means to garner support. Street musicians, breakdancers, magicians, and puppeteers, for instance, pass the hat following their performances, relying on the donations of passers-by. Still others perform for the simple pleasure of it, with little or no expectation of financial gain.

Most television programs are broadcast, meaning that anyone with a television can receive them. Revenues are generated by advertising, a method that will be discussed at greater length later. Other stations "narrowcast" their signals, sometimes in scrambled forms that require descrambling devices available from the station for a fee, and sometimes over dedicated cables, access to which is available only upon payment of a fee. Thus, television signals, which would seem to be a strong candidate for a pure public good, can be and are provided on the market without government protection.[80]

In the case of prerecorded video cassettes, technological fencing devices are available to prevent unauthorized reproduction. Thus, a firm in California has developed a process called "Macrovision," which tricks VCRs into making virtually unviewable copies of prerecorded cassettes carrying a certain code. The cassette tape is encoded with strong electronic pulses, which lead the recording mechanism to expect a stronger signal than is available from the cassette's audio and visual information. When played, the resulting copy has colored splotches across it and becomes alternately too dim or too loud.[81]

Unauthorized photocopying can also be thwarted by use of a spe-

---

79. Alchian, *Comment on Robert M. Hurt and Robert M. Schuchman, "The Economic Rationale of Copyright,"* 56 AMER. ECON. REV. 421, 439 (1966).

80. Recent legislation (17 U.S.C. 111) requiring compulsory royalty payments for cable retranmissions of television signals does not significantly alter the analysis presented here. In their absence revenues might be greater due to the increased audience available for advertising.

81. *Word from the Front in War Against Unauthorized Copying*, Wall Street Journal, Feb. 20, 1987.

cial uncopyable paper produced by Nicopi International of Canada. Boise Cascade has developed a paper which, when photocopied, splashes "Unauthorized Copy" across the result.[82]

Some computer programs available on the market include "worms," which detect efforts to copy the program and erase the program or "counterattack" by erasing files on the copying computer's memory. (I am assured that such forms of protection are rapidly being removed from programs by software producers, due to consumer dissatisfaction. Merely to identify a possible solution to potential problems of "publicness" is not to assert that it will be widely adopted on the market.) Others simply place the words "Unauthorized Copy" in the resulting copy. Still other firms offer "dedicated" software, which can only be run on computers that they manufacture (an example of a "bundled" good, which will be discussed at greater length later).

Not all of these technological fencing mechanisms will prove effective at discouraging the dedicated copier, just as music concert promoters do not manage to exclude all fans from listening in with special eavesdropping devices or from simply standing outside of a concert hall in the hopes of hearing some of the music performed inside. In many cases, however, it is sufficient merely to exclude a large enough percentage of potential free riders to sell the good profitably on the market. In other cases, a particular technological fence may fail to achieve even that, and incentives will exist to come up with a better exclusion system. Additionally, some technological fences may be profitably employed only in conjunction with other devices, such as special marketing plans or contractual relations.

Tie-Ins and Complementary Goods

Another way to exclude nonpurchasers from enjoying a good is to "bundle" it together with another good, for which the costs of exclusion may be lower. This bundled good can either be complementary to the "public" good, such as program guides sold in conjunction with television broadcasts, or noncomplementary but appealing to market segments that are sufficiently coextensive, such as health insurance sold to farmers through the Farm Bureau, which also provides the "public good" of lobbying for programs that benefit all farmers.[83]

This method of providing collective goods is more common than

82. *Id.*

83. For an extensive discussion of bundled noncomplementary goods, see M. OLSON, *supra* note 48, at 132-67.

one might at first think. Economist Daniel Klein points out:

> The price of a ticket to a ball game may be seen as the total payment for two goods, a seat in the stands (a noncollective good) and the spectacle on the playing field (a joint good). The ball park is like a one-day club, with members enjoying free and exclusive access to the game on the field. Similar tie-in interpretations can be given for shows, concerts, transportation services, recreation facilities, education, and cable television.[84]

Thus, television stations can tie one good, the broadcast of an electromagnetic signal, with another, the dissemination of information from (excludable) sellers to potential buyers (advertising).[85] Alternatively, sale of program guides, a product complementary to a television broadcast, can be used to finance television programs. This is often the case with non-commercial stations that do not accept advertising (except in their program guides). Many magazines and newspapers are also financed through advertising revenues. In the absence of copyright privileges, more goods might be provided in this way.

Computer programs may be "fenced" in the manner described above. They may also be (and very often are) "bundled" together with other goods, such as manuals, periodic updates, and toll-free numbers and passwords that give purchasers access to expert advice on the use of the program. As Ithiel de Sola Pool predicted, "Perhaps we should stop speaking about 'copyright' and start speaking about 'service-right.' The tie that makes it worthwhile for the customer to pay the vendor rather than try to copy a disk is the need for a continuing service relationship."[86] "Shareware" programs, produced with the intention of realizing a profit, are distributed with the explicit understanding and request that users copy them and give them to friends and colleagues. Users are then offered the opportunity to pay for the program and receive a manual and other complementary goods, as well as the knowl-

---

84. Klein, *Tie-Ins and the Market Provision of Collective Goods*, 10 HARV. J.L. & PUB. POL'Y 452 (1987).

85. *See* Besen, *supra* note 72, at 15-18:

> Early radio stations did not possess the technical means to exclude nonpaying listeners. An enterprising station owner decided to experiment with advertising to see whether revenues might be generated in this manner. The result was far more successful than anyone had anticipated, and advertising remains today the principal basis on which commercial radio and television stations are supported. Where exclusion of nonpayers is a problem, advertising may be an effective alternative means of support.

As noted above, the "experiment" was even more of an accident than Besen indicates.

86. Ithiel de Sola Pool, *Whither Electronic Copyright*, in MARTIN GREENBERGER, ELECTRONIC PUBLISHING PLUS 226 (1985).

edge (and satisfaction) of having paid for a useful good.

As with the other methods of goods provision discussed in this section, the possibilities for bundling of goods are not finite, but are subjects for human entrepreneurship and creativity. No one could have predicted that an early radio enthusiast in Pittsburgh in 1919 would have discovered that bundling advertising with radio broadcasts provides a successful method of satisfying consumer demands.[87] We are fortunate, however, that this discovery provided an effective means for provision of radio and television broadcasts at such an early stage in radio technology's development, thus saving Americans from the monotony, boredom, and tyranny of a state broadcast system (or from bogus property rights assignments to broadcast signals).[88]

Contractual Arrangements for Internalization of Externalities

Decentralized, private, contractual remedies are also available for the internalization of externalities. One means of using contract rather than monopoly privilege is through exploitation of other legal remedies for copying. For example, due to the often cumbersome nature of the patent system and the shortened product cycle of many new inventions, such as drugs, microelectronics, and biologically engineered "bugs," many producers are switching to other systems for protecting their interests in innovations.[89]

While some firms are expending more resources on exploiting

---

87. For a discussion of entrepreneurship and of competition as a "discovery procedure," see F. A. Hayek, *Competition as a Discovery Procedure*, in HAYEK, NEW STUDIES IN PHILOSOPHY, POLITICS, ECONOMICS AND THE HISTORY OF IDEAS 179 (1978); G. O'DRISCOLL & MARIO RIZZO, THE ECONOMICS OF TIME AND IGNORANCE 95-129 (1985).

88. Instead, we must suffer from the somewhat less monotonous and boring tyranny of a system of state management of the broadcast spectrum, licensing, and regulation. Freely transferable property rights to use of the electromagnetic spectrum, however, offer an alternative to state control. For an illuminating discussion of property rights in this field, see M. Mueller, *Reforming Telecommunications Regulation*, in E. DIAMOND, N. SANDLER, & M. MUELLER, TELECOMMUNICATIONS IN CRISIS: THE FIRST AMENDMENT, TECHNOLOGY, AND DEREGULATION 95-100 (1983). Such transferable rights are based on rights to unhampered use of tangible broadcasting and receiving equipment, as Mueller explains.

89. *See Patently Outdated: Changes in the Way Drugs are Invented Are Making Patents Unworkable*, The Economist, July 18, 1987:

> The product cycle of new drugs is becoming significantly shorter than the period covered by a patent (8-12 years of shelf life). Manufacturers know that biotechnology makes it likely that another firm will shortly find a better or cheaper product that will make theirs as outdated as the leech. The shorter the life cycle, the less the point in getting patents. In the microelectronics industry, where product cycles have also shortened dramatically, patents have become less and less used. The rewards for invention for drug firms will increasingly come from being first to market.

other features of their product (such as being first to market, about which more later), others are relying on legal remedies rooted in the common law and utilizing their property rights in the tangible goods in which their "ideal objects" are instantiated. Thus, bailments are being more widely used by biotechnology firms. As Blackstone writes,

> [P]roperty may also be of a qualified or special nature, on account of the peculiar circumstances of the owner, when the thing itself is very capable of an absolute ownership. As in case of *bailment*, or delivery, of goods to another person for a particular use; as to a carrier to convey to London, to an innkeeper to secure in his inn, or the like. Here there is no absolute property in either the bailor or the bailee, the person delivering, or him to whom it is delivered: for the bailor hath only the right, and not the immediate possession; the bailee hath the possession, and only a temporary right. But it is a qualified property in them both; and each of them is entitled to an action, in case the goods be damaged or taken away: the bailee on account of his immediate possession; the bailor, because the possession of the bailee is, immediately, his possession also.[90]

Thus, firms seeking to market new inventions may release them to others through a kind of lease, whereby the property title is retained by the originating firm (the bailor) while possession and use are transferred to the bailee. Remedies in the event of release of the goods to others or of unauthorized use can be contractually specified. In the case of biologically engineered products, ownership rights to both the "starter cells" and their progeny are retained by the originating firm. Thus, "Using a bailment not only ensures that the cells and their progeny will be returned once the license to use the process has run out, but it protects the company that developed the biological material in case its licensee runs into financial trouble."[91]

In addition, performance bonds can be posted by the bailee to ensure compliance with the terms of the mutually agreeable contract. If, for example, "bugs" licensed to the bailee for a specific use turn up in another use or in the hands of another firm, the bailee could be held liable for the resulting damages suffered by the bailor.

Such contractual remedies can be used in conjunction with trade secrecy law, which offers a broad spectrum of protection against unauthorized disclosure of any guarded or contractually governed secret "used in one's business and which gives him an opportunity to gain an

---

90. 2 W. BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND* 395.

91. *Bailments May Be the Answer to a High-Tech Problem*, Washington Post, Mar. 23, 1987.

advantage over competitors who do not know or use it."[92] While trade secrecy laws do not offer protection identical to patent or copyright law, there are many cases in which it is preferable to either.[93] The example of Coca-Cola, the formula for which was never patented, indicates one of the advantages of reliance on trade secret law, as opposed to patents. Had the Coca-Cola formula been patented, protection would have lasted only seventeen years, rather than the decades enjoyed by the firm's stockholders thanks to the protection of trade secrecy.

The objection is often heard, of course, that patents are preferable to trade secret protection because under patent protection the holder of the patent is induced to reveal the innovation to the public. Without patents, it is alleged, the process of scientific and technical advance would stall, with each innovator jealously guarding his or her secrets and refusing to share them with the world. Patents, thus, rather than retarding the spread of new knowledge, actually advance it.

This thinking rests, however, on dubious economic premises. Only in cases where one believes that a secret is unlikely to remain so would one trade the protection of trade secrecy for patent. Patent protection is sought only in cases where the the patentee fears that the secret will become known. As Fritz Machlup comments, "the patent system cannot be said to serve the purpose of eliciting any secrets that would not in any event become known in the near future. People patent only what they cannot hope to keep secret."[94] Indeed, patents may discourage the spread of knowledge, not only by granting monopolies, but by discouraging innovators from collaborating during the period prior to the filing of a patent. A small time lead on one's competitors leading to an earlier filing date can mean the difference between winning or losing the entire monopoly right to exploit the technology. It is an advantage one would be less likely to trade for the advantages of cooperation, given the all-or-nothing character of patent protection. Patents may, in fact, actually act to inhibit, rather than encourage, the spread of knowledge.

Another means of contractually securing the interests of innovators is through self-enforcing voluntary trade association agreements. Thus, though unprotected by any form of enforceable intellectual property rights, the Fashion Originator's Guild successfully campaigned

---

92. RESTATEMENT OF THE LAW OF TORTS, *quoted in* E. KINTNER & J. LAHR, *supra* note 77, at 134.

93. See the discussion in Holcombe & Meiners, *Market Arrangements Versus Government Protection of Innovative Activity*, 5 THE SOC. SCIENCE REV. 1, 3-6 (1983).

94. F. MACHLUP, THE POLITICAL ECONOMY OF MONOPOLY 281 (1952).

against "style piracy" in the 1930s. The Guild organized producers to refuse to sell to retail stores that also carried unauthorized copies of works created by their members. The Guild also used an internal system of arbitration to penalize members of the Guild who violated their contractual obligations. This system allowed Guild members to protect their investments in innovative fashion designs, at the same time that free entry into the market allowed competition from nonmembers to restrain Guild members from monopolizing the market.[95]

Finally, the example of pre-1891 America may illustrate how the use of retaliatory action functioned in markets for ideal goods unprotected by intellectual property rights. As mentioned earlier, prior to 1891, foreign authors and their publishers received no protection from American copyright law. American publishers, seeking to secure their interests in books by foreign authors, would occasionally issue "fighting editions" of such works to undercut editions of the same works published by rival houses. As T. H. Huxley explained to the Royal Commission of 1876-8, "the practice of all the great houses in America (there are some three or four large publishing houses with very great capital), if anybody publishes one of their books, is to publish a largely cheaper edition at any cost, and they would make any pecuniary sacrifice rather than not cut out a rival."[96] Such a policy, combined with the

---

95. *See* Holcombe & Meiners, *supra* note 93, at 8: "The protection was not as great as the monopoly power that the holder of a patent has over his innovation, but the social benefits from the lower monopoly power of the innovator may outweigh the social costs (if any) of the lower protection of the innovator's invention."

The arrangement was ruled a violation of the Sherman Antitrust Act by the Supreme Court in *Fashion Originator's Guild of America v. Federal Trade Commission*, 312 U.S. 457 (1941), but, as Holcombe and Meiners argue, "without patent law and without antitrust law, the market would be better able to serve consumers." *Id.* at 6. While such arrangements have been ruled in violation of antitrust law, the new climate of judicial opinion on antitrust, especially if combined with diminution or elimination of monopoly patent or copyright privileges, could lead to a new stance toward such contractual arrangements on the part of the judiciary.

96. *Quoted in* PLANT, *supra* note 54, at 63. *See also* Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 299-302 (1970).

For a helpful explanation of such retaliatory behavior and its role in generating and sustaining cooperation, see Witt, *Evolution and Stability of Cooperation Without Enforceable Contracts*, 39 KYKLOS 245-266 (1986). Witt uses a game-theoretic approach, adding to the standard prisoner's dillema game an additional move "which allows agents to respond to the opponent's choice post festum. . . .[this captures] an important feature of reality: that in most cases people have the option of making trouble for someone who has upset them. This option, the basis of threat, can be utilized to affect the opponent's decision strategically ex ante." *But see* McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J. L. & ECON. 137 (1958)(the model of "predatory pricing" is incoherent). This issue deserves more careful historical and economic examination.

possibility of free entry, encouraged publishers to lower prices as a discouragement to competitors. Thus, "In such circumstances, the American public enjoyed cheap books, the American publishers found their business profitable, and the English authors received lump sums for their advance sheets and royalties on American sales."[97]

Marketing Strategies

Entrepreneurship extends to marketing just as it does to production techniques. Indeed, marketing is an integral part of the entire process of production; without some anticipation that goods will be successfully sold at prices yielding a profit, the act of production will not be undertaken in the first place. Here again the evidence indicates that marketing strategies can overcome many of the problems associated with the potential "publicness" of the final product.

To begin with, there is very often a substantial advantage to being "first to market" with a product, especially in the case of ideal objects. Currently, in the fields of microelectronics, biotechnology, and videocassettes, to take but a few examples, exploitation of the status of being first to market is often far more valuable than patent or copyright protection.[98]

Such exploitation of being first in the market with a product played an important role in the pre-1891 American market for books by foreign authors.[99] It also induced English authors to deliver manuscripts to American publishers prior to publication in England and only after contracts had been written securing their interest. As Sir Louis Mallet, a member of the Royal Commission of 1876-1878 concluded in his report, "it will always be in the power of the first publisher of a work so to control the value, by a skilful adaptation of the supply to the demand, as to avoid the risk of ruinous competition, and secure ample remuneration both to the author and to himself."[100]

Price discrimination provides another method of providing many goods. In the case of videocassettes, producers have been able to engage in temporal price discrimination, initially offering movies at high prices to enthusiasts (who desire copies immediately) or to rental-store owners (who will rent the tape many times), then dropping the price after sev-

---

97. PLANT, *supra* note 54, at 63.

98. *Patently Outdated*, The Economist, July 18, 1987: "The rewards for drug firms will increasingly come from being first to market."

99. *See* Breyer, *supra* note 96, at 299-302; PLANT, *supra* note 54, at 62-63; *Separate Report by Sir Louis Mallet, C.B.* in REPORT OF THE ROYAL COMMISSION ON COPYRIGHT, 1878.

100. PLANT, *supra* note 54, at 81.

eral months to capture less enthusiastic segments of the market, followed by very low prices to capture the remainder of the market.[101] This form of temporal price discrimination also extends to the way movies are now marketed through theaters prior to being released on videocassette: the result has been an explosion in the number of new movies released and an increase in the genre once known as "art films" (e.g., *A Room With a View*).[102] Other forms of price discrimination currently being used by producers of ideal objects include the issuance of both hardcover and paperback editions of books, differential prices for magazines and journals sold to individuals or to libraries, and, in the case of the arts, special rates based on age, school enrollment, or ability to pay.

Such marketing strategies may also be combined with forward and backward market integration, allowing originators of ideal objects to ensure markets for their goods. Thus, publishers may arrange with bookstores (through contracts with individual stores or with chains, or through outright ownership of stores) to offer their works to the public on an exclusive basis. Movie producers and theaters may also make similar arrangements, and similarly for other goods.

Another marketing strategy that may be utilized is fairly simple: lower prices. The fixed costs of underwriting research or of paying royalties to authors can be "spread over" a larger number of copies if production is increased, diminishing any advantage that copiers might otherwise enjoy.[103] Subjecting producers of ideal objects to the ever-present possibility of entry by competitors has the added advantage of lowering prices for consumers, with a corresponding increase in the consumption of the ideal object. The possibility of competition and the rivalrous pursuit of temporary "monopolies," often based on creation of new products or markets, is one of the engines of the market system.[104]

---

101. For an illuminating discussion of the evolution of the videocassette sales and rental markets, see J. LARDNER, FAST FORWARD: HOLLYWOOD, THE JAPANESE, AND THE VCR WARS (1987).

102. Martin, *Boffo Box Office from Videocassettes*, Insight, Nov. 23, 1987.

103. *See* Breyer, *supra* note 96, at 294-299. For criticism of this view, see Tyerman, *The Economic Rationale for Copyright Protection for Published Books: A Reply to Professor Breyer*, 18 UCLA L. REV. 1100, 1108-1112 (1971). Breyer responds in *Copyright: A Rejoinder*, 20 UCLA L. REV. 75 (1972).

104. *See* S. C. LITTLECHILD, THE FALLACY OF THE MIXED ECONOMY 36 (2d ed. 1986):

> Some firms may be producing products or varieties thereof which other firms have not seen as profitable, or whose potential profitability they have recognized only belatedly. Providing competitors can enter, the monopoly position is then only temporary, and 'monopoly profits,' are more accurately described as 'entrepreneurial profits,' for they result from the successful exploitation of an opportunity which others have not yet seen.

The granting of statutory monopolies tends to have, on the other hand, the effect of decreasing flexibility and alertness to consumer demand and production possibilities on the part of market participants.

Quality control and assurance offer another advantage to originators of new products and ideas. Milton Friedman, having come up with and publicly explained and defended a monetary theory of business cycles, did not thereby dissipate all of the rents accruing to this discovery. He still commands public speaking fees in the thousands of dollars to explain a theory that is publicly available and explainable by any of thousands of economists, most of whom would certainly charge far less. Nevertheless, organizers of conventions and other public events still demand Milton Friedman as a speaker, presumably because of the assurance of quality his "name brand" brings. Similar processes can be seen in markets for other goods, where innovators often enjoy advantages over copiers deriving from their position as innovators.

In addition, the introduction of copying technology can often increase the demand for originals, in some cases leading to unambiguous increases in profits for the producers of originals (when, for example, the publisher's marginal cost of producing originals exceeds the marginal cost of copying), indicating that "the interests of consumers and those of publishers may be congruent, rather than divergent, with respect to the effects of copying."[105] Congruence of benefits for producers and consumers are clearest in cases where purchasers of originals make copies for their own use, as in the case of recordings of telecasts for later viewing, known as "time shifting." In free markets, without state imposition of intellectual property rights, firms are able to arrange technological, marketing, and other factors to set the difficulty of copying so as to maximize the demand for originals. In the field of computer software, the enormous costs of state enforcement of intellectual property rights against individual copying has led to minimal state action against copyers. This has left software manufacturers to their own devices to thwart copying, and many firms, rather than increasing technological copy protection in response, have instead reduced it. This stems from a recognition that the demand for originals is often tied to

---

Littlechild also suggests abolition of patents, arguing that research and innovation would continue in the absence of such protection, for "there is still a gain (a temporary monopoly profit) to be made from being first in the field. Moreover, abolishing patent protection would encourage the early exploitation and improvement by competitors of those innovations made by others" *Id.* at 49.

105. Besen, Private Copying, Reproduction Costs, and the Supply of Intellectual Property, The RAND Corporation, IST-8216474-NSF at 18-19 (December 1984).

the possibility of making copies.[106]

Yet another advantage innovators have over copiers that is related to their status of being first on the market is that they possess what amounts to "inside information" regarding their product. Anticipations of the value of their innovation may provide innovators with opportunities to invest in factors complementary to their innovation, thus reaping some of the benefits of the increased social product made possible by their creativity.[107] Indeed, the general problem of non-rivalrous consumption of information is a major factor in explaining the emergence of firms and of horizontal or vertical integration of production processes.

An integral element of marketing is the determination of consumer demand. The problem of demand revelation is present for every good, but it can be especially acute for some. Indeed, the central core of the older theory of public goods is the belief that in the absence of coercion consumers will "underreveal" their "true" preferences for goods and producers will "underinvest" in their production. This problem is intimately related to the possibility of exclusion, discussed in the section above on technological fences. Here the problem is taken up in relation to marketing techniques, such as pre-sale and other forms of pre-contract excludability.

The most obvious way to exclude a nonpurchaser from enjoyment of a good is not to produce the good. The standard response from orthodox public goods theory would be that pre-contract excludability would make no difference to a potential purchaser, as the good still either will or will not be produced, regardless of whatever course of action (purchasing or "free riding") the consumer takes. But as economist Earl Brubaker argues, given the benefits that will accrue to members of a group if the good is produced,

---

106. See the discussion of the relationship between the demand for originals and the demand for copies in Novos & Waldman, *The Emergence of Copying Technologies: What Have We Learned?*, 5 CONTEMP. POL'Y ISSUES 34 (1987).

107. *See* Hirschleifer, *The Private and Social Value of Information and the Reward to Inventive Activity*, 61 AMER. ECON. REV. 561, 573 (1971):

> [The standard literature] overlooks the consideration that there will be, aside from the technological benefits, pecuniary effects (wealth redistributions due to price revaluations) from the release of the new information. The innovator, first in the field with information, is able through speculation or resale of the information to capture a portion of these pecuniary effects. This fact is socially useful in motivating release of the information. Even though practical considerations limit the effective scale and/or resale, the gains thus achievable eliminate any a priori anticipation of underinvestment in the generation of new technological knowledge.

> The typical individual may decide . . . that he would, after all, be quite willing to make an offer reflecting the worth of the good to him, provided only that he receive some assurance that the remainder of the community would make an appropriate 'matching' offer, so that he doesn't waste his own scarce resources supporting an ineffectual collective effort.[108]

Brubaker proposes an alternative to the "Free Rider" model, i.e., the "Golden Rule" of model demand revelation, in which pre-contractual arrangements are made committing potential purchasers to the purchase of a collective good only in the event that a sufficient number of others also agree to contribute. This is precisely what happens in the event of pre-sale contracts for books and similar goods.[109] Book and record clubs also operate on this basis, and we could reasonably expect an increase in such forms of organization in markets without intellectual property rights.

The use of conditionally binding assurance contracts (CBACs) is already widespread in a number of fields, including charitable fund raising (e.g., "matching pledges") and magazine and book sales. Demand is "revealed" only in those cases where there is some assurance that at least a large enough number will "reveal" their demand to make production of the good worthwhile. Externalities are internalized by exploiting pre-contract excludability to include within the group enjoying the good a sufficient number to ensure its production.[110] In the absence of intellectual property rights, one might expect to see a greater use of such marketing devices.

Finally, complementary technological innovations may allow new marketing techniques to capture the residuals accruing to innovation. For example, the advent of digital audio technology (DAT) could lead to an entirely new system of distribution for musical recordings. Rather than selling "hard copies" of musical recordings (records, tapes, and compact disks) in stores, music recording firms could offer digitally encoded versions through electronic databases. Subscribers would pay a fee and in exchange would receive a personal identification code that they could use to access a database, perhaps through a toll-free num-

---

108. Brubaker, *Free Ride, Free Revelation, or Golden Rule?*, 18 J. L. & ECON. 147 (1975), *reprinted in* COWEN, THE THEORY OF MARKET FAILURE: A CRITICAL EXAMINATION

109. *See* Breyer, *supra* note 96, at 302-306.

110. For an extremely illuminating discussion of the dynamics of pre-contract excludability, see Schmidtz, *Contracts and Public Goods*, 10 HARV. J.L. & PUB. POL'Y 475 (1987). Schmidtz uses a game-theoretic approach to show how conditionally binding assurance contracts reduce the payoffs of both cooperation and defection to zero in all cells of the payoff matrix save the lower right cell, in which both parties cooperate.

ber. Upon entering the code over the phone, they would be allowed to "download" some determinate number of musical works per month directly from the database to their DAT machines. (Alternatively, they could be charged on a per-use basis, through invoices or through credit cards.) The technology for such a distribution and marketing system already exists. The advantage to recording firms would be a reduction in inventory costs, one of their major costs of doing business, to virtually zero.

Another innovation, already being tested on the market, is to produce customized audio tapes in music stores. This system allows music sellers to cut into the "home recording" market, composed largely of teenagers who create specialized tapes of songs from many different sources to match their own preferences. The machines that make this possible are the product of Personics Corporation of California. Drawing on a digitally recorded disk capable of storing up to 15,000 songs, the customer selects a mix of tunes, the machine is programmed, and a customized audio cassette is produced in one-eighth the normal playing time.[111] Thus, technological innovations at first believed to represent a grave threat to an industry may in fact represent new opportunities for profits, just as recording technology, rather than wiping out the incomes of performance artists, as was widely expected at the time, allowed them to soar to heights never before imagined.

Are Patents and Copyrights Efficient?

Having shown that voluntary mechanisms other than intellectual property rights are available to externalize the internalities of production of ideal objects, it is worthwhile at this point to review briefly the question of whether there is any strong evidence to suggest that patent and copyright protection in fact actually do result in an increase in innovation and creativity.

The available evidence is, by and large, ambiguous. As Fritz Machlup, reflecting an understandable caution, concluded his classic economic study of the patent system:

> No economist, on the basis of present knowledge, could possibly state with certainty that the patent system, as it now operates, confers a net benefit or a net loss upon society . . . . If one does not know whether a system 'as a whole' (in contrast to certain features of it) is good or bad, the safest 'policy conclusion' is to 'muddle

111. *Custom Audio Tape-Recording System To Be Introduced in Retail Record Stores*, Wall Street Journal, May 5, 1987.

> through'— either with it, if one has lived long with it, or without it, if one has lived without it. If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.[112]

Whether patents, on net, increase or suppress innovation is not at all clear. A recent survey of 650 research and development executives in 130 industries indicated that, when given a choice of patents to prevent duplication, patents to secure royalty income, secrecy, lead time, moving quickly down the learning curve, and sales and service efforts, "In general, patents were viewed by R&D executives as an effective instrument for protecting the competitive advantages of new technology in most chemical industries, including the drug industry, but patents were judged to be relatively ineffective in most other industries."[113] (Notably, the pharmaceutical industry could be one in which lead time would be more significant, were it not for the requirements of the 1962 amendments to the Pure Food and Drug Act, which require publication of information on new drugs years prior to their final approval for sale in the United States, thus giving foreign producers a healthy head start in the competition in foreign markets. The perceived usefulness of patents in the pharmaceutical industry may result from the competitive disadvantages imposed by federal drug regulations.)

Another study of data obtained from "a random sample of 100 firms in 12 manufacturing industries" indicated that:

> patent protection was judged to be essential for the development or introduction of one-third or more of the inventions during 1981-1983 in only 2 industries — pharmaceuticals and chemicals. On the other hand, in 7 industries (electrical equipment, office equipment, motor vehicles, instruments, primary metals, rubber, and textiles), patent

---

112. F. Machlup, An Economic Review of the Patent System, Patent Studies, No.l 15, Sub-Committee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary, United States Senate, 85th Congress, Second Session.

113. Levin, *A New Look at the Patent System*, 76 AMER. ECON. REV. 199-202 (1986). In answer to the question, "Why do firms use patents," Levin suggests that "patents are useful for purposes other than establishing property rights. Patents may be useful to measure the performance of R&D employees, to gain strategic advantage in interfirm negotiations or litigation, or to obtain access to foreign markets where licensing to a host-country firm is a condition of entry." All of these functions could be performed by other, non-patent, mechanisms. *See also Will Software Patents Cramp Creativity?: Growing Threat of Litigation Worries Firms*, Wall Street Journal, Mar. 14, 1989: " 'We use patents principally as trading material for our own freedom of action in the marketplace,' says Roger S. Smith, IBM's director of intellectual property law. He says IBM will license all its patents for up to 5% of the sales price of a patent."

> protection was estimated to be essential for the development and introduction of less than 10 percent of their inventions. Indeed, in office equipment, motor vehicles, rubber, and textiles, the firms were unanimous in reporting that patent protection was not essential for the development or introduction of any of their inventions during this period.[114]

Indeed, patents may in many cases present serious obstacles to innovation. The conflict between the Wright brothers and Glenn Curtis over patent rights to aircraft stabilizing devices, for example, may have seriously hampered the development of airplane design.[115] Patents can also create serious roadblocks to innovation, as monopoly claims are made in strategic areas.[116]

In addition, the incentives offered by patents for "inventing around" the protected intellectual property rights diminish the compatibility of manufactured goods.[117] The recently concluded (in the U.S.) fight between competing videocassette standards — JVC's "VHS" system and Sony's "Beta" system — was a direct result of the patents held by Sony on the Beta system and their initial reluctance to licence rival producers.

Finally, it is clear that a good deal of great art would not have been produced under a strict copyright regime. William Shakespeare, for example, took the works of others and created greater works; under today's copyright regime, his legal bills would have been staggering.

---

114. Mansfield, *The R&D Tax Credit and Other Technology Policy Issues*, 76 AMER. ECON. REV. 190-94 (1986).

115. *See* Bittlingmayer, *Property Rights, Progress, and the Aircraft Patent Agreement*, 30 J. L. & ECON. 227 (1988). The solution to the conflict (engineered by the U.S. government in order to facilitate aircraft production for the war) was a patent pooling system, in which members of the pool licensed patents to other members in exchange for similar access to their patents. This system lasted from 1917 until it was challenged by the Justice Department on antitrust grounds in 1972 and dismantled in a consent decree in 1975. One wonders whether such a system would prove so stable unless the members reaped greater benefits from access to the innovations of others than they lost from making their own patents freely available to their competitors, thereby losing their exclusive rights. (As Bittlingmayer shows, the pool did not allow members to curb competition or reap monopoly rents by slowing down innovation.)

116. *Will Software Patents Cramp Creativity? Growing Threat of Litigation Worries Firms*, Wall Street Journal, March 14, 1989.

117. *See* Bresnaham, *Post-entry Competition in the Plain Paper Copier Market*, 75 AMER. ECON. REV. 15 (1985): "When IBM and Litton entered the PPC market in 1972, Xerox sued to block entry under literally hundreds of patents. IBM had spent millions to 'invent around' Xerox's major patents — with 25 percent of the budget going for patent counsel, not R&D." Patents may also lead to distortion of research and development incentives, see Beck, *Patents, Property Rights, and Social Welfare: Search for a Restricted Optimum*, 43 S. ECON. J. 1045 (1976).

CONCLUSION

Regimes that foster innovation and creativity can and do emerge through the market process without legislative or judicial intervention. The legal system of a free society, based on the right to self-ownership and the voluntary transference of alienable rights,[118] allows entrepreneurs to generate solutions to problems that many theorists find intractable. It may be difficult, for example, to imagine how entrepreneurs might create technological or contractual "fences" around their works, but create them they do. As in many other cases, the economic incentives facing actual market participants offer greater inducements to creativity than do the idle curiosity or speculation of the academics who study them. Violating those rights of self-ownership and control over tangible alienable property that ground the market system in pursuit of elusive efficiency gains is ultimately inconsistent with both economic efficiency and the free market.

A jurisprudence that claims to be based on "law and economics" but that would constructively assign or rearrange rights as part of a strategy to achieve some pre-determined outcome (maximization of utility or of wealth, for example) overlooks the analogy between the spontaneous order of the market and the spontaneous order of a legal system. As Bruno Leoni remarked, "*there is much more than an analogy between the market economy and a judiciary or lawyers' law, just as there is much more than an analogy between a planned economy and legislation.*"[119] Leoni could have included constructivistic judicial intervention with legislation as systemically inconsistent with the market economy.[120] By focusing on desirable *specific* outcomes (efficiency and wealth maximization), the "Posnerian" approach ignores the broader economic understanding of the legal system as an order derived from the adjudication of individual claims rather than from a public policy blueprint.[121] Patents and copyrights, both deliberately state-cre-

---

118. *See* Barnett, *supra* note 59; *see also* Barnett, *Contract Remedies and Inalienable Rights*, 4 SOCIAL PHILOSOPHY AND POL'Y 179 (1986); Barnett, *Pursuing Justice in a Free Society: Power v. Liberty*, 4 CRIMINAL JUSTICE ETHICS (1985).

119. B. LEONI, FREEDOM AND THE LAW 22 (emphasis in original).

120. See the comparison between the law and economics of Leoni and that of Judge Posner in Peter Aranson, *supra* note 9, at 692-701.

121. As Hayek points out:

> The preservation of a free system is so difficult précisely because it requires a constant rejection of measures which appear to be required to secure particular results, on no stronger grounds than that they conflict with a general rule, and frequently without knowing what will be the costs of not observing the rule in a particular instance . . . [The judge] is not concerned with any ulterior purpose which somebody may have in-

ated monopolies that did not emerge through common law or otherwise spontaneous legal processes, are unjustifiable interventions into voluntary market processes.

Investigation of the real workings of markets shows how a voluntary regime based on rights to tangible property generates institutions and mechanisms — whether through technology, contract, or other means — of rewarding innovation and creativity. Patents and copyrights have no place in a regime based on individual rights and are insupportable on either the grounds of (utilitarian) efficiency or of a jurisprudence of law and economics.

> tended the rules to serve and of which he may be largely ignorant; and he will have to apply the rules even if in the particular instance the known consequences will appear to him wholly undesirable . . . . What must guide his decision is not any knowledge of what the whole of society requires at the particular moment, but solely what is demanded by general principles on which the going order of society is based.

Supra note 10 (1973), at 57, 87.