

for sellers to search the registry in order to avoid infringing a registered mark.

§3.3 Intellectual Property: Patents, Copyrights, Trademarks, Trade Secrets, and Privacy

As the preceding section illustrated, the economist experiences no sense of discontinuity in moving from physical to intellectual property. In particular, the dynamic rationale for property rights is readily applied to the useful ideas that we call inventions. Suppose that it costs \$10 million to invent a new type of food blender, the marginal cost of producing and selling the blender once it is invented is \$50 (why is the \$10 million not a marginal cost?), and the estimated demand is for 1 million of the blenders (we can for present purposes ignore the fact that demand will vary with the blender's price). Unless the manufacturer can charge \$60 per blender, he will not recoup his costs of invention. But if other manufacturers face the same marginal cost as he, competition will (in the absence of patents) bid the price down to \$50, the effort at recoupment will fail, and anticipating this the manufacturer will not make the invention in the first place; he will not sow if he won't be able to reap. Moreover, in a world without patents, such inventive activity as did occur would be heavily biased toward inventions that could be kept secret, in just the same way that a complete absence of property rights would bias production toward things that involve minimum preparatory investment (as we saw in §3.1 *supra*). So we have patents. The law uses several devices to try to minimize the costs of duplicating inventive activity that a patent system invites. Here are five devices used:

1. A patent expires after 17 years, rather than being perpetual. This reduces the value of the patent to the owner and hence the amount of resources that will be devoted to obtaining patents. In addition, patents often are obtained before commercial development is complete, in which case the commercially valuable patent period will be shorter than 17 years. And the patentee must make public disclosure of the invention. Although competitors cannot copy the invention, they may get ideas from the disclosure as to how to invent around the patent.

2. Inventions are not patentable if they are "obvious." The functional meaning of obviousness is, discoverable at low cost.¹ The lower the cost of

¹ §3.3 1. Edmund W. Kitch, *Graham v. John Deere Co.*: New Standards for Patents, 1966 S. Ct. Rev. 293; *Roberts v. Sears, Roebuck & Co.*, 723 F.2d 1324, 1344 (7th Cir. 1983) (en banc) (concurring and dissenting opinion).

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discovery, the less necessary patent protection is to induce the discovery to be made, and the greater is the danger of overinvestment if patent protection is allowed. If an idea worth \$1 million costs \$1,000 rather than \$250,000 to discover, the amount of wasteful duplication to get a patent will be greater, perhaps \$249,000 greater.

3. Patents are granted early — before an invention has been carried to the point of commercial feasibility — in order to head off costly duplication of expensive development work.² If granted too early — before the inventor actually knows how to make the product or process embodying the invention — a patent may actually retard innovation, by discouraging other firms from developing the technology necessary to make the new invention commercially practicable.³

4. The patent applicant must show not only that his invention is non-obvious (as well as novel — why this requirement?), but also that it is “useful.” This requirement might be thought superfluous. If the invention is not useful, it will not generate significant monopoly rents. But screening out useless inventions reduces the cost of patent searches to subsequent inventors. However, it is fallacious to want to set a high standard of usefulness in order to limit the monopoly rents from patents;⁴ the more useful the product, the higher, not the lower, those rents will be.

5. Fundamental ideas (the laws of physics, for example) are not patentable, despite their great value. Until the advent of costly atomic-particle accelerators, basic research did not entail substantial expenditure, and patent protection might therefore have led to too much basic research. By confining patentability to “useful” inventions in rather a narrow sense, the patent law identifies (though only crudely) inventions likely to require costly development before they can be brought to market. The nonpatentability of basic discoveries, like the limited term of patents, reflects more than just a concern with costs of acquiring patents, however; there are also serious identification problems, as in the case of wild animals. An idea does not have a stable physical locus like a piece of land. With the passage of time it becomes increasingly difficult to identify the products in which a particular idea is embodied; and it is also difficult to identify the products in which a basic idea, having many and varied applications, is embodied. Here then is another example of how the costs of property rights limit their extent.

The costs of the patent system include (besides inducing potentially excessive investment in inventing) driving a wedge between price and mar-

2. Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 *J. Law & Econ.* 265 (1977). Notice the analogy to the “committed searcher” principle mentioned in the preceding section.

3. See Robert P. Merges & Richard R. Nelson, *Market Structure and Technical Advance: The Role of Patent Scope Decisions*, in *Antitrust, Innovation, and Competitiveness* 185 (Thomas M. Jorde & David J. Teece eds. 1992).

4. The fallacy committed in *Brenner v. Manson*, 383 U.S. 519 (1966).

ginal cost, with results explored in Part III of this book. Once an invention is made, its costs are sunk; in economic terms, they are zero. Hence a price that includes a royalty to the inventor will exceed the opportunity cost of the product in which the invention is embodied. This wedge, however, is analytically the same as the cost of a fence to demarcate a property right in land; it is an indispensable cost of using the property rights system to allocate resources.

Intellectual property furnishes many other interesting examples of the economics of property law. Only a few can be discussed here. Let us begin with trade secrecy,⁵ because it is frequently an alternative to patenting. A manufacturer who is confident that he can keep his manufacturing process a secret for longer than the period for which he could protect it by a patent may decide to rely on trade secrecy law and forgo seeking a patent. He will save the costs and avoid the uncertainties of the patent route; and he will not have to disclose the process, as he would in a patent application, thereby enabling his competitors to duplicate it once the patent expires.

There is no time limit on a trade secret — and this despite the fact that the holder of the secret need not prove that it meets patent law's criteria of novelty, nonobviousness, and the rest. The result will seem a loophole in patent law as well as an invitation to devote excessive resources to maintaining secrecy — unless we realize that a trade secret is a severely limited right. For the most part, all that trade secrecy law prevents is the wrongful appropriation (e.g., by tort or breach of contract) of the secret; competitors are free to duplicate it by independent discovery or even by reverse engineering of the secret holder's product, as well as to take advantage of any accidental disclosure of the secret by its holder. In effect, competition is substituted for patent law's proof requirements and durational limitation as a check on excessive investment in maintaining or in unmasking trade secrets. For if the secret is readily discoverable by independent inventive efforts, the holder of the secret will have little to gain from expending resources on keeping it a secret, while if the secret is so original and ingenious that it could not be discovered by independent effort within the period of patent protection, the longer protection that trade secrecy will confer in such a case provides an appropriately enhanced reward for extraordinary creativity. As for the risk that secrecy will lead to duplication of inventive efforts, if the secret is easily unmasked by minimal independent efforts the secret holder will have little incentive to keep it a secret, as we have noted; but in any event the waste of resources in duplication will be slight. If the secret can be unmasked only by a substantial investment, but the expense would be worthwhile given the expected benefits, the secret holder will have to worry that if he does not patent his secret product or process a competitor will. For after the expiration of the one-year grace

5. See David D. Friedman, William M. Landes & Richard A. Posner, *Some Economics of Trade Secret Law*, 5 *J. Econ. Perspectives* 61 (Winter 1991).

period for applying for a patent on an invention that the inventor has already begun to use, the inventor can neither patent the invention himself nor (if he has kept it secret) prevent an independent discoverer from patenting it. So we can expect a secret holder to expend substantial resources on keeping his secret only in those rare cases where a competitor is unlikely, even at great expense, to be able to discover it independently — and if the futility of the endeavor is obvious, the competitor will not incur the expense, and there will be no waste of resources.

Secrecy figures in privacy law, which is conventionally treated as a branch of tort law but, which is, in part, functionally a branch of property law.⁶ A typical issue of privacy law is whether a person should have a right to conceal discreditable facts about himself, for example that he is an ex-convict. There is some, but not much, judicial support for such a right. The economist sees a parallel to the efforts of sellers to conceal defects in their products. A person “sells” himself by trying to persuade potential transacting partners — an employer, a fiancée, even a casual acquaintance — that he is honest, loyal, trustworthy, and, in short, virtuous. Should he be encouraged to deceive these people by being given a right to sue anyone who reveals his lack of virtue? It would be different if what was revealed was not a discreditable fact but a recipe for some superb dish. This would be a case for protection as a trade secret in order to encourage investing in the creation of a worthwhile bit of intellectual property. In between these cases is the disclosing of a fact that is embarrassing but not discreditable, such as a sexual proclivity unrelated to any potential transaction with the persons to whom the fact is revealed. How should the law treat that case? We shall return to this question when we take up blackmail in Chapter 6.

Copyright law⁷ resembles patent law in granting time-limited rights, but resembles trade secret law in allowing independent discovery. The reason for the latter feature may be that patents protect only inventions, which can be and are indexed in the Patent Office, while copyrights protect an infinitude of sentences, musical phrases, details of architectural blueprints, and other minutiae of expression, making it impossible to search the entire body of pertinent copyrighted materials in order to make sure that one is not infringing; some amount of inadvertent copying is thus inevitable.

The durational limitation on copyrights is now so generous (the author's life plus 50 years) that one may wonder why the law doesn't go the whole hog and grant perpetual copyrights. The danger of attracting excessive resources into the production of copyrighted works cannot be the explanation; as a result of discounting to present value (see §6.11 *infra*), the

6. On the economics of the law of privacy, see Richard A. Posner, *The Economics of Justice*, chs. 9-10 (1981); Posner, *Overcoming Law*, ch. 25 (1995); Richard S. Murphy, *Property Rights in Personal Information: An Economic Defense of Privacy*, 84 *Geo. L.J.* 2381 (1996).

7. See William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 *J. Leg. Stud.* 325 (1989); Wendy J. Gordon, *Fair Use as a Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Procedure*, 82 *Colum. L. Rev.* 1600 (1982).

knowledge that you may be entitled to a royalty on your book 50 to 100 years after you publish it is unlikely to affect your behavior today. Yet, property rights in land are perpetual; why not in books? One reason is that it is more inefficient to have unowned land lying around (say, as the result of the expiration of a time-limited property right) than to have unowned intellectual property. Ideally, *all* land should be owned by someone, to prevent the congestion externalities that we discussed in connection with the natural pasture from arising. With an important exception to be noted shortly, there is no parallel problem concerning information and expression. A's use of some piece of information will not make it more costly for B to use the same information.

Second, while it is natural to suppose that the scope (including duration) of intellectual property rights represents the striking of a balance between the interests of the creators and of the users of intellectual property, the creators themselves may benefit from the limiting of those rights. Most poems, novels, plays, musical compositions, movies, and other creative works (including inventions) build heavily on earlier creative works—borrowing plot details, stock characters, metaphors, chord progressions, camera angles, and so forth from the earlier works. The greater the scope of copyright protection of the earlier works, the higher the cost of creating the subsequent works. So while an increase in the scope of copyright protection will enhance an author's expected revenues from the sale or licensing of his own copyrights, it will also increase his cost of creating the works that he copyrights. The tradeoff favors a durational limitation because, while the increment in present value from an increase in revenues in the distant future is apt to be negligible, the increase in an author's cost could be great if, because of perpetual copyright, no earlier works were in the public domain and thus available to be used in the creation of new works without copyright expense.

Here is another example of how limiting a copyright owner's rights can actually increase the value of the copyright. The fair use doctrine of copyright law allows a book reviewer to quote passages from the book without getting the copyright holder's permission. This reduces the cost of book reviews and hence increases the number of reviews, and authors as a group benefit, since book reviews are free advertising. Even unfavorable reviews stimulate sales, at least when the alternative would be no review at all. But most reviews are favorable.

Book reviews are particularly *credible* advertising, moreover, because they are not controlled by the advertiser (i.e., the publisher of the book). If authors could censor the reviews of their books by denying permission to quote from them, book reviews would be no more credible than paid advertising. Authors as a group thus would suffer from a rejection of fair use for book reviews, even if an occasional author gained.

When a book review does reduce the sales of a book, it does so not because, like a routine copyright infringement, it supplies the demand for

the book — rarely is a book review a close substitute for the book being reviewed — but because it points out flaws in the book and thus provides valuable information without undermining the rewards for creating *worth-while* intellectual property. The harm to an author that comes from drawing attention to the *lack* of value of the intellectual property he has created is not the kind of harm that a law intended to encourage the production of intellectual property should seek to prevent.

The Supreme Court has held that the fair use doctrine allows the sale of video recorders for use in recording television programs, even though no royalty was paid to the copyright owners for the privilege of recording.⁸ Many people use their video recorders to record programs that are being shown at an inconvenient time or that they want to watch more than once. Such uses benefit the copyright owner even though no royalty is paid. Most programs are bought by advertisers, who pay more the more viewers they reach; by enlarging the effective audience for a program, a video recorder enables the copyright owner to charge more to the advertisers. However, since the evidence was compiled on which the Supreme Court based its decision, devices have come on the market that make it easy for the owner of a video recorder to erase the commercials in a program he records before he watches it. What does this imply about the current economic validity of the Court's decision? Is not the benefit of the legal protection of property rights inverse to the cost of infringement to the infringer? The costs of copying intellectual property are plummeting as a result of the Internet and related technologies. What does this imply about the likely future scope of copyright protection?

One more example is public performances of a copyrighted work. It may seem obvious that the copyright on a recorded song should extend to any performance of the song, for example by a singer at a wedding, but it is not obvious.⁹ If the guests at the wedding haven't heard the song before, the performance may lead them to go out and buy the recording of the song. Of course, the copyright holder would be better off if they did this *and* in addition the host at the wedding paid a royalty for the performance right. But suppose that, because plenty of wedding music is in the public domain, the host would not pay any royalty, and would simply be deterred from playing the song by knowing that there are heavy penalties for copyright violations. Then the copyright holder would be better off if copyright protection did not extend to such performances.

8. *Sony Corp. of America v. University City Studios, Inc.*, 464 U.S. 417 (1984). The defendants were the companies who made the recorders; they were sued as "contributory infringers." The people who bought the recorders at retail would have been "direct infringers." What is the economic rationale of the doctrine of contributory infringement?

9. See Bruce H. Kobayashi & Ben T. Yu, *An Economic Analysis of Performance Rights: Some Implications of the Copyright Act of 1976*, 17 *Research in Law & Econ.* 237 (1995).

We can generalize these examples with the aid of the economist's distinction between complements and substitutes. A product is a complement of another product if a fall in its price will cause the quantity demanded of the other product to rise, and the product is a substitute if a fall in its price will cause the quantity demanded of the other product to fall. A screwdriver and a screw are complements; a screwdriver and a hammer are substitutes. A favorable book review is a complement of the book reviewed (and we have seen that there is no way to confine the fair use privilege to favorable reviews); the video recorder and the public performance are both complements and substitutes. Which effect is dominant will determine whether copyright holders will gain or lose from the invocation of the fair use privilege to curtail the scope of copyright protection.¹⁰

The right of privacy abuts trade secret law on one side and trademark law on another. The earliest judicial recognition of an explicit right of privacy came in a case in which the defendant had used the plaintiff's name and picture in an advertisement without the plaintiff's consent. Paradoxically, this branch of the right of privacy is most often invoked by celebrities avid for publicity (and therefore is sometimes called the "right of publicity"); they just want to make sure they get the highest possible price for the use of their name and picture in advertising. It might seem that creating a property right in such use would not lead to any socially worthwhile investment but would simply enrich already wealthy celebrities. However, whatever information value a celebrity's endorsement has to consumers will be lost if every advertiser can use the celebrity's name and picture. Just as in the grazing case, the value of associating the celebrity's name with a particular product will be diminished if others are permitted to use the name in association with their products.

The existence of a congestion externality provides an argument that rights of publicity should be perpetual and thus inheritable (a matter of legal controversy today). We don't want this form of information or expression to be in the public domain, because it will be less valuable there, whether the celebrity is dead or alive.

From an economic standpoint, rights of publicity are similar to trademarks; both involve property rights in information used to identify and promote a product or service. Trademarks involve a host of interesting economic issues,¹¹ some of which are deferred to later sections of this chapter and to the discussion of consumer protection in Chapter 13. The economic function of trademarks is, by giving assurance of uniform quality, to economize on consumer search costs. Strictly speaking, all a trademark

10. Where does parody fit in this analysis? See Richard A. Posner, *When Is Parody Fair Use?* 21 *J. Leg. Stud.* 67 (1992).

11. See William M. Landes & Richard A. Posner, *Trademark Law: An Economic Perspective*, 30 *J. Law & Econ.* 265 (1987).