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- EDWARD F. MCCLENNEN      *Justice and the  
Problem of Stability* 3
- EDWIN C. HETTINGER      *Justifying Intellectual  
Property* 31
- DAVID LEWIS      *The Punishment  
That Leaves  
Something to Chance* 53
- GEORGE SHER      *Educating Citizens* 68
- PHILLIP MONTAGUE      *The Morality of  
Self-Defense:  
A Reply to Wasserman* 81
- JOHN E. ROEMER      *What Is Exploitation?  
Reply to Jeffrey Reiman* 90
- Notes on the Contributors* 2
- Subscription Information* 98

EDWIN C. HETTINGER

## Justifying Intellectual Property

Property institutions fundamentally shape a society. These legal relationships between individuals, different sorts of objects, and the state are not easy to justify. This is especially true of intellectual property. It is difficult enough to determine the appropriate kinds of ownership of corporeal objects (consider water or mineral rights); it is even more difficult to determine what types of ownership we should allow for noncorporeal, intellectual objects, such as writings, inventions, and secret business information. The complexity of copyright, patent, and trade secret law reflects this problem.

According to one writer "patents are the heart and core of property rights, and once they are destroyed, the destruction of all other property rights will follow automatically, as a brief postscript."<sup>1</sup> Though extreme, this remark rightly stresses the importance of patents to private competitive enterprise. Intellectual property is an increasingly significant and widespread form of ownership. Many have noted the arrival of the "post-industrial society"<sup>2</sup> in which the manufacture and manipulation of physical goods is giving way to the production and use of information. The result is an ever-increasing strain on our laws and customs protecting

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1. Ayn Rand, *Capitalism: The Unknown Ideal* (New York: New American Library, 1966), p. 128.

2. See, for example, John Naisbitt's *Megatrends* (New York: Warner Books, 1982), chap. 1.

intellectual property.<sup>3</sup> Now, more than ever, there is a need to carefully scrutinize these institutions.

As a result of both vastly improved information-handling technologies and the larger role information is playing in our society, owners of intellectual property are more frequently faced with what they call "piracy" or information theft (that is, unauthorized access to their intellectual property). Most readers of this article have undoubtedly done something considered piracy by owners of intellectual property. Making a cassette tape of a friend's record, videotaping television broadcasts for a movie library, copying computer programs or using them on more than one machine, photocopying more than one chapter of a book, or two or more articles by the same author—all are examples of alleged infringing activities. Copyright, patent, and trade secret violation suits abound in industry, and in academia, the use of another person's ideas often goes unacknowledged. These phenomena indicate widespread public disagreement over the nature and legitimacy of our intellectual property institutions. This article examines the justifiability of those institutions.

#### COPYRIGHTS, PATENTS, AND TRADE SECRETS

It is commonly said that one cannot patent or copyright ideas. One copyrights "original works of authorship," including writings, music, drawings, dances, computer programs, and movies; one may not copyright ideas, concepts, principles, facts, or knowledge. Expressions of ideas are copyrightable; ideas themselves are not.<sup>4</sup> While useful, this notion of separating the content of an idea from its style of presentation is not unproblematic.<sup>5</sup> Difficulty in distinguishing the two is most apparent in the more artistic forms of authorship (such as fiction or poetry), where style and content interpenetrate. In these mediums, more so than in others, *how* something is said is very much part of *what* is said (and vice versa).

A related distinction holds for patents. Laws of nature, mathematical formulas, and methods of doing business, for example, cannot be pat-

3. See R. Salaman and E. Hettinger, *Policy Implications of Information Technology*, NTIA Report 84-144, U.S. Department of Commerce, 1984, pp. 28–29.

4. For an elaboration of this distinction see Michael Brittin, "Constitutional Fair Use," in *Copyright Law Symposium*, no. 28 (New York: Columbia University Press, 1982), pp. 142ff.

5. For an illuminating discussion of the relationships between style and subject, see Nelson Goodman's *Ways of Worldmaking* (Indianapolis: Hackett, 1978), chap. II, esp. sec. 2.

ented. What one patents are inventions—that is, processes, machines, manufactures, or compositions of matter. These must be novel (not previously patented); they must constitute nonobvious improvements over past inventions; and they must be useful (inventions that do not work cannot be patented). Specifying what sorts of “technological recipes for production”<sup>6</sup> constitute patentable subject matter involves distinguishing specific applications and utilizations from the underlying unpatentable general principles.<sup>7</sup> One cannot patent the scientific principle that water boils at 212 degrees, but one can patent a machine (for example, a steam engine) which uses this principle in a specific way and for a specific purpose.<sup>8</sup>

Trade secrets include a variety of confidential and valuable business information, such as sales, marketing, pricing, and advertising data, lists of customers and suppliers, and such things as plant layout and manufacturing techniques. Trade secrets must not be generally known in the industry, their nondisclosure must give some advantage over competitors, and attempts to prevent leakage of the information must be made (such as pledges of secrecy in employment contracts or other company security policies). The formula for Coca-Cola and bids on government contracts are examples of trade secrets.

Trade secret subject matter includes that of copyrights and patents: anything which can be copyrighted or patented can be held as a trade secret, though the converse is not true. Typically a business must choose between patenting an invention and holding it as a trade secret. Some advantages of trade secrets are (1) they do not require disclosure (in fact they require secrecy), whereas a condition for granting patents (and copyrights) is public disclosure of the invention (or writing); (2) they are protected for as long as they are kept secret, while most patents lapse after seventeen years; and (3) they involve less cost than acquiring and defending a patent. Advantages of patents include protection against reverse engineering (competitors figuring out the invention by examining the product which embodies it) and against independent invention. Pat-

6. This is Fritz Machlup's phrase. See his *Production and Distribution of Knowledge in the United States* (Princeton: Princeton University Press, 1962), p. 163.

7. For one discussion of this distinction, see Deborah Johnson, *Computer Ethics* (Englewood Cliffs, N.J.: Prentice-Hall, 1985), pp. 100–101.

8. What can be patented is highly controversial. Consider the recent furor over patenting genetically manipulated animals or patenting computer programs.

ents give their owners the *exclusive* right to make, use, and sell the invention no matter how anyone else comes up with it, while trade secrets prevent only improper acquisition (breaches of security).

Copyrights give their owners the right to reproduce, to prepare derivative works from, to distribute copies of, and to publicly perform or display the “original work of authorship.” Their duration is the author’s life plus fifty years. These rights are not universally applicable, however. The most notable exception is the “fair use” clause of the copyright statute, which gives researchers, educators, and libraries special privileges to use copyrighted material.<sup>9</sup>

#### INTELLECTUAL OBJECTS AS NONEXCLUSIVE

Let us call the subject matter of copyrights, patents, and trade secrets ‘intellectual objects’.<sup>10</sup> These objects are nonexclusive: they can be at many places at once and are not consumed by their use. The marginal cost of providing an intellectual object to an additional user is zero, and though there are communications costs, modern technologies can easily make an intellectual object unlimitedly available at a very low cost.

The possession or use of an intellectual object by one person does not preclude others from possessing or using it as well.<sup>11</sup> If someone borrows your lawn mower, you cannot use it, nor can anyone else. But if someone borrows your recipe for guacamole, that in no way precludes you, or anyone else, from using it. This feature is shared by all sorts of intellectual objects, including novels, computer programs, songs, machine designs, dances, recipes for Coca-Cola, lists of customers and suppliers, management techniques, and formulas for genetically engineered bacteria which digest crude oil. Of course, sharing intellectual objects does prevent the original possessor from selling the intellectual object to others,

9. What constitutes fair use is notoriously bewildering. I doubt that many teachers who sign copyright waivers at local copy shops know whether the packets they make available for their students constitute fair use of copyrighted material.

10. ‘Intellectual objects’, ‘information’, and ‘ideas’ are terms I use to characterize the “objects” of this kind of ownership. Institutions which protect such “objects” include copyright, patent, trade secret, and trademark laws, as well as socially enforced customs (such as sanctions against plagiarism) demanding acknowledgment of the use of another’s ideas. What is owned here are objects only in a very abstract sense.

11. There are intellectual objects of which this is not true, namely, information whose usefulness depends precisely on its being known only to a limited group of people. Stock tips and insider trading information are examples.

and so this sort of use is prevented. But sharing in no way hinders *personal* use.

This characteristic of intellectual objects grounds a strong *prima facie* case against the wisdom of private and exclusive intellectual property rights. Why should one person have the exclusive right to possess and use something which all people could possess and use concurrently? The burden of justification is very much on those who would restrict the maximal use of intellectual objects. A person's right to exclude others from possessing and using a physical object can be justified when such exclusion is necessary for this person's own possession and unhindered use. No such justification is available for exclusive possession and use of intellectual property.

One reason for the widespread piracy of intellectual property is that many people think it is unjustified to exclude others from intellectual objects.<sup>12</sup> Also, the unauthorized taking of an intellectual object does not feel like theft. Stealing a physical object involves depriving someone of the object taken, whereas taking an intellectual object deprives the owner of neither possession nor personal use of that object—though the owner is deprived of potential profit. This nonexclusive feature of intellectual objects should be kept firmly in mind when assessing the justifiability of intellectual property.

#### OWNING IDEAS AND RESTRICTIONS ON THE FREE FLOW OF INFORMATION

The fundamental value our society places on freedom of thought and expression creates another difficulty for the justification of intellectual property. Private property enhances one person's freedom at the expense of everyone else's. Private intellectual property restricts methods of acquiring ideas (as do trade secrets), it restricts the use of ideas (as do patents), and it restricts the expression of ideas (as do copyrights)—restrictions undesirable for a number of reasons. John Stuart Mill argued

<sup>12</sup> Ease of access is another reason for the widespread piracy of intellectual property. Modern information technologies (such as audio and video recorders, satellite dishes, photocopiers, and computers) make unauthorized taking of intellectual objects far easier than ever before. But it is cynical to submit that this is the major (or the only) reason piracy of information is widespread. It suggests that if people could steal physical objects as easily as they can take intellectual ones, they would do so to the same extent. That seems incorrect.

that free thought and speech are important for the acquisition of true beliefs and for individual growth and development.<sup>13</sup> Restrictions on the free flow and use of ideas not only stifle individual growth, but impede the advancement of technological innovation and human knowledge generally.<sup>14</sup> Insofar as copyrights, patents, and trade secrets have these negative effects, they are hard to justify.

Since a condition for granting patents and copyrights is public disclosure of the writing or invention, these forms of intellectual ownership do not involve the exclusive right to possess the knowledge or ideas they protect. Our society gives its inventors and writers a legal right to exclude others from certain uses of their intellectual works in return for public disclosure of these works. Disclosure is necessary if people are to learn from and build on the ideas of others. When they bring about disclosure of ideas which would have otherwise remained secret, patents and copyrights enhance rather than restrict the free flow of ideas (though they still restrict the idea's widespread use and dissemination). Trade secrets do not have this virtue. Regrettably, the common law tradition which offers protection for trade secrets encourages secrecy. This makes trade secrets undesirable in a way in which copyrights or patents are not.<sup>15</sup>

#### LABOR, NATURAL INTELLECTUAL PROPERTY RIGHTS, AND MARKET VALUE

Perhaps the most powerful intuition supporting property rights is that people are entitled to the fruits of their labor. What a person produces with her own intelligence, effort, and perseverance ought to belong to her and to no one else. "Why is it mine? Well, it's mine because I made it, that's why. It wouldn't have existed but for me."

John Locke's version of this labor justification for property derives

13. For an useful interpretation of Mill's argument, see Robert Ladenson, "Free Expression in the Corporate Workplace," in *Ethical Theory and Business*, 2d ed., ed. T. Beauchamp and N. Bowie (Englewood Cliffs, N.J.: Prentice-Hall, 1983), pp. 162-69.

14. This is one reason the recent dramatic increase in relationships between universities and businesses is so disturbing: it hampers the disclosure of research results.

15. John Snapper makes this point in "Ownership of Computer Programs," available from the Center for the Study of Ethics in the Professions at the Illinois Institute of Technology. See also Sissela Bok, "Trade and Corporate Secrecy," in *Ethical Theory and Business*, p. 176.

property rights in the product of labor from prior property rights in one's body.<sup>16</sup> A person owns her body and hence she owns what it does, namely, its labor. A person's labor and its product are inseparable, and so ownership of one can be secured only by owning the other. Hence, if a person is to own her body and thus its labor, she must also own what she joins her labor with—namely, the product of her labor.

This formulation is not without problems. For example, Robert Nozick wonders why a person should gain what she mixes her labor with instead of losing her labor. (He imagines pouring a can of tomato juice into the ocean and asks whether he thereby ought to gain the ocean or lose his tomato juice.)<sup>17</sup> More importantly, assuming that labor's fruits are valuable, and that laboring gives the laborer a property right in this value, this would entitle the laborer only to the value she added, and not to the *total* value of the resulting product. Though exceedingly difficult to measure, these two components of value (that attributable to the object labored on and that attributable to the labor) need to be distinguished.

Locke thinks that until labored on, objects have little human value, at one point suggesting that labor creates 99 percent of their value.<sup>18</sup> This is not plausible when labor is mixed with land and other natural resources. One does not create 99 percent of the value of an apple by picking it off a tree, though some human effort is necessary for an object to have value for us.

What portion of the value of writings, inventions, and business information is attributable to the intellectual laborer? Clearly authorship, discovery, or development is necessary if intellectual products are to have value for us: we could not use or appreciate them without this labor. But it does not follow from this that all of their value is attributable to that labor. Consider, for example, the wheel, the entire human value of which is not appropriately attributable to its original inventor.<sup>19</sup>

16. John Locke, *Second Treatise of Government*, chap. 5. There are several strands to the Lockean argument. See Lawrence Becker, *Property Rights* (London: Routledge and Kegan Paul, 1977), chap. 4, for a detailed analysis of these various versions.

17. Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974), p. 175.

18. Locke, *Second Treatise*, chap. 5, sec. 40.

19. Whether ideas are discovered or created affects the plausibility of the labor argument for intellectual property. "I discovered it, hence it's mine" is much less persuasive than "I made it, hence it's mine." This issue also affects the cogency of the notion that intellectual objects have a value of their own not attributable to intellectual labor. The notion of mixing one's labor with something and thereby adding value to it makes much more sense if the object preexists.

The value added by the laborer and any value the object has on its own are by no means the only components of the value of an intellectual object. Invention, writing, and thought in general do not operate in a vacuum; intellectual activity is not creation *ex nihilo*. Given this vital dependence of a person's thoughts on the ideas of those who came before her, intellectual products are fundamentally social products. Thus even if one assumes that the value of these products is entirely the result of human labor, this value is not entirely attributable to *any particular laborer* (or small group of laborers).

Separating out the individual contribution of the inventor, writer, or manager from this historical/social component is no easy task. Simply identifying the value a laborer's labor adds to the world with the market value of the resulting product ignores the vast contributions of others. A person who relies on human intellectual history and makes a small modification to produce something of great value should no more receive what the market will bear than should the last person needed to lift a car receive full credit for lifting it. If laboring gives the laborer the right to receive the market value of the resulting product, this market value should be shared by all those whose ideas contributed to the origin of the product. The fact that most of these contributors are no longer present to receive their fair share is not a reason to give the entire market value to the last contributor.<sup>20</sup>

Thus an appeal to the market value of a laborer's product cannot help us here. Markets work only after property rights have been established and enforced, and our question is what sorts of property rights an inventor, writer, or manager should have, given that the result of her labor is a joint product of human intellectual history.

Even if one could separate out the laborer's own contribution and determine its market value, it is still not clear that the laborer's right to the fruits of her labor naturally entitles her to receive this. Market value is a socially created phenomenon, depending on the activity (or nonactivity) of other producers, the monetary demand of purchasers, and the kinds of property rights, contracts, and markets the state has established and enforced. The market value of the same fruits of labor will differ greatly with variations in these social factors.

Consider the market value of a new drug formula. This depends on

20. I thank the Editors of *Philosophy & Public Affairs* for this way of making the point.

the length and the extent of the patent monopoly the state grants and enforces, on the level of affluence of those who need the drug, and on the availability and price of substitutes. The laborer did not produce these. The intuitive appeal behind the labor argument—"I made it, hence it's mine"—loses its force when it is used to try to justify owning something others are responsible for (namely, the market value). The claim that a laborer, in virtue of her labor, has a "natural right" to this socially created phenomenon is problematic at best.

Thus, there are two different reasons why the market value of the product of labor is not what a laborer's labor naturally entitles her to. First, market value is not something that is produced by those who produce a product, and the labor argument entitles laborers only to the products of their labor. Second, even if we ignore this point and equate the fruits of labor with the market value of those fruits, intellectual products result from the labor of many people besides the latest contributor, and they have claims on the market value as well.

So even if the labor theory shows that the laborer has a natural right to the fruits of labor, this does not establish a natural right to receive the full market value of the resulting product. The notion that a laborer is naturally entitled as a matter of right to receive the market value of her product is a myth. To what extent individual laborers should be allowed to receive the market value of their products is a question of social policy; it is not solved by simply insisting on a moral right to the fruits of one's labor.<sup>21</sup>

Having a moral right to the fruits of one's labor might also mean having a right to possess and personally use what one develops. This version of the labor theory has some force. On this interpretation, creating something through labor gives the laborer a *prima facie* right to possess and personally use it for her own benefit. The value of protecting individual

21. A libertarian might respond that although a natural right to the fruits of labor will not by itself justify a right to receive the market value of the resulting product, that right plus the rights of free association and trade would justify it. But marketplace interaction presupposes a set of social relations, and parties to these relations must jointly agree on their nature. Additionally, market interaction is possible only when property rights have been specified and enforced, and there is no "natural way" to do this (that is, no way independent of complex social judgments concerning the rewards the laborer deserves and the social utilities that will result from granting property rights). The sorts of freedoms one may have in a marketplace are thus socially agreed-upon privileges rather than natural rights.

freedom guarantees this right as long as the creative labor, and the possession and use of its product, does not harm others.

But the freedom to exchange a product in a market and receive its full market value is again something quite different. To show that people have a right to this, one must argue about how best to balance the conflicts in freedoms which arise when people interact. One must determine what sorts of property rights and markets are morally legitimate. One must also decide when society should enforce the results of market interaction and when it should alter those results (for example, with tax policy). There is a gap—requiring extensive argumentative filler—between the claim that one has a natural right to possess and personally use the fruits of one's labor and the claim that one ought to receive for one's product whatever the market will bear.

Such a gap exists as well between the natural right to possess and personally use one's intellectual creations and the rights protected by copyrights, patents, and trade secrets. The natural right of an author to personally use her writings is distinct from the right, protected by copyright, to make her work public, sell it in a market, and then prevent others from making copies. An inventor's natural right to use the invention for her own benefit is not the same as the right, protected by patent, to sell this invention in a market and exclude others (including independent inventors) from using it. An entrepreneur's natural right to use valuable business information or techniques that she develops is not the same as the right, protected by trade secret, to prevent her employees from using these techniques in another job.

In short, a laborer has a *prima facie* natural right to possess and personally use the fruits of her labor. But a right to profit by selling a product in the market is something quite different. This liberty is largely a socially created phenomenon. The "right" to receive what the market will bear is a socially created privilege, and not a natural right at all. The natural right to possess and personally use what one has produced is relevant to the justifiability of such a privilege, but by itself it is hardly sufficient to justify that privilege.

#### DESERVING PROPERTY RIGHTS BECAUSE OF LABOR

The above argument that people are naturally entitled to the fruits of their labor is distinct from the argument that a person has a claim to

labor's fruits based on desert. If a person has a natural right to something—say her athletic ability—and someone takes it from her, the return of it is something she is *owed* and can rightfully demand. Whether or not she deserves this athletic ability is a separate issue. Similarly, insofar as people have natural property rights in the fruits of their labor, these rights are something they are *owed*, and not something they necessarily deserve.<sup>22</sup>

The desert argument suggests that the laborer deserves to benefit from her labor, at least if it is an attempt to do something worthwhile. This proposal is convincing, but does not show that what the laborer deserves is property rights in the object labored on. The mistake is to conflate the created object which makes a person deserving of a reward with what that reward should be. Property rights in the created object are not the only possible reward. Alternatives include fees, awards, acknowledgment, gratitude, praise, security, power, status, and public financial support.

Many considerations affect whether property rights in the created object are what the laborer deserves. This may depend, for example, on what is created by labor. If property rights in the very things created were always an appropriate reward for labor, then as Lawrence Becker notes, parents would deserve property rights in their children.<sup>23</sup> Many intellectual objects (scientific laws, religious and ethical insights, and so on) are also the sort of thing that should not be owned by anyone.

Furthermore, as Becker also correctly points out, we need to consider the purpose for which the laborer labored. Property rights in the object produced are not a fitting reward if the laborer does not want them. Many intellectual laborers produce beautiful things and discover truths as ends in themselves.<sup>24</sup> The appropriate reward in such cases is recognition, gratitude, and perhaps public financial support, not full-fledged property rights, for these laborers do not want to exclude others from their creations.

Property rights in the thing produced are also not a fitting reward if the value of these rights is disproportional to the effort expended by the

22. For a discussion of this point, see Joel Feinberg, *Social Philosophy* (Englewood Cliffs, N.J.: Prentice-Hall, 1973), p. 116.

23. Becker, *Property Rights*, p. 46.

24. This is becoming less and less true as the results of intellectual labor are increasingly treated as commodities. University research in biological and computer technologies is an example of this trend.

laborer. 'Effort' includes (1) how hard someone tries to achieve a result, (2) the amount of risk voluntarily incurred in seeking this result, and (3) the degree to which moral considerations played a role in choosing the result intended. The harder one tries, the more one is willing to sacrifice, and the worthier the goal, the greater are one's deserts.

Becker's claim that the amount deserved is proportional to the value one's labor produces is mistaken.<sup>25</sup> The value of labor's results is often significantly affected by factors outside a person's control, and no one deserves to be rewarded for being lucky. Voluntary past action is the only valid basis for determining desert.<sup>26</sup> Here only a person's effort (in the sense defined) is relevant. Her knowledge, skills, and achievements insofar as they are based on natural talent and luck, rather than effort expended, are not. A person who is born with extraordinary natural talents, or who is extremely lucky, *deserves* nothing on the basis of these characteristics. If such a person puts forward no greater effort than another, she deserves no greater reward. Thus, two laborers who expend equal amounts of effort deserve the same reward, even when the value of the resulting products is vastly different.<sup>27</sup> Giving more to workers whose products have greater social value might be justified if it is needed as an incentive. But this has nothing to do with giving the laborer what she deserves.

John Rawls considers even the ability to expend effort to be determined by factors outside a person's control and hence a morally impermissible criterion for distribution.<sup>28</sup> How hard one tries, how willing one

25. Becker, *Property Rights*, p. 52. In practice, it would be easier to reward laborers as Becker suggests, since the value of the results of labor is easier to determine than the degree of effort expended.

26. This point is made nicely by James Rachels in "What People Deserve," in *Justice and Economic Distribution*, ed. J. Arthur and W. Shaw (Englewood Cliffs, N.J.: Prentice-Hall, 1978), pp. 150-63.

27. Completely ineffectual efforts deserve a reward provided that there were good reasons beforehand for thinking the efforts would pay off. Those whose well-intentioned efforts are silly or stupid should be rewarded the first time only and then counseled to seek advice about the value of their efforts.

28. See John Rawls, *A Theory of Justice* (Cambridge: Harvard University Press, 1971), p. 104: "The assertion that a man deserves the superior character that enables him to make the effort to cultivate his abilities is equally problematic; for his character depends in large part upon fortunate family and social circumstances for which he can claim no credit." See also p. 312: "the effort a person is willing to make is influenced by his natural abilities and skills and the alternatives open to him. The better endowed are more likely, other things equal, to strive conscientiously."

is to sacrifice and incur risk, and how much one cares about morality are *to some extent* affected by natural endowments and social circumstances. But if the ability to expend effort is taken to be entirely determined by factors outside a person's control, the result is a determinism which makes meaningful moral evaluation impossible. If people are responsible for anything, they are responsible for how hard they try, what sacrifices they make, and how moral they are. Because the effort a person expends is much more under her control than her innate intelligence, skills, and talents, effort is a far superior basis for determining desert. To the extent that a person's expenditure of effort is under her control, effort is the proper criterion for desert.<sup>29</sup>

Giving an inventor exclusive rights to make and sell her invention (for seventeen years) may provide either a greater or a lesser reward than she deserves. Some inventions of extraordinary market value result from flashes of genius, while others with little market value (and yet great social value) require significant efforts.

The proportionality requirement may also be frequently violated by granting copyright. Consider a five-hundred-dollar computer program. Granted, its initial development costs (read "efforts") were high. But once it has been developed, the cost of each additional program is the cost of the disk it is on—approximately a dollar. After the program has been on the market several years and the price remains at three or four hundred dollars, one begins to suspect that the company is receiving far more than it deserves. Perhaps this is another reason so much illegal copying of software goes on: the proportionality requirement is not being met, and people sense the unfairness of the price. Frequently, trade secrets (which are held indefinitely) also provide their owners with benefits disproportional to the effort expended in developing them.

#### THE LOCKEAN PROVISOS

We have examined two versions of the labor argument for intellectual property, one based on desert, the other based on a natural entitlement to the fruits of one's labor. Locke himself put limits on the conditions under which labor can justify a property right in the thing produced.

29. See Rachels, "What People Deserve," pp. 157–58, for a similar resistance to Rawls's determinism.

One is that after the appropriation there must be “enough and as good left in common for others.”<sup>30</sup> This proviso is often reformulated as a “no loss to others” precondition for property acquisition.<sup>31</sup> As long as one does not worsen another’s position by appropriating an object, no objection can be raised to owning that with which one mixes one’s labor.

Under current law, patents clearly run afoul of this proviso by giving the original inventor an exclusive right to make, use, and sell the invention. Subsequent inventors who independently come up with an already patented invention cannot even personally use their invention, much less patent or sell it. They clearly suffer a great and unfair loss because of the original patent grant. Independent inventors should not be prohibited from using or selling their inventions. Proving independent discovery of a publicly available patented invention would be difficult, however. Nozick’s suggestion that the length of patents be restricted to the time it would take for independent invention may be the most reasonable administrative solution.<sup>32</sup> In the modern world of highly competitive research and development, this time is often much shorter than the seventeen years for which most patents are currently granted.

Copyrights and trade secrets are not subject to the same objection (though they may constitute a loss to others in different ways). If someone independently comes up with a copyrighted expression or a competitor’s business technique, she is not prohibited from using it. Copyrights and trade secrets prevent only mimicking of other people’s expressions and ideas.

Locke’s second condition on the legitimate acquisition of property rights prohibits spoilage. Not only must one leave enough and as good for others, but one must not take more than one can use.<sup>33</sup> So in addition to leaving enough apples in the orchard for others, one must not take home a truckload and let them spoil. Though Locke does not specifically mention prohibiting waste, it is the concern to avoid waste which underlies his proviso prohibiting spoilage. Taking more than one can use is wrong because it is wasteful. Thus Locke’s concern here is with appropriations of property which are wasteful.

Since writings, inventions, and business techniques are nonexclusive,

30. Locke, *Second Treatise*, chap. 5, sec. 27.

31. See Nozick, *Anarchy*, pp. 175–82, and Becker, *Property Rights*, pp. 42–43.

32. Nozick, *Anarchy*, p. 182.

33. Locke, *Second Treatise*, chap. 5, sec. 31.

this requirement prohibiting waste can never be completely met by intellectual property. When owners of intellectual property charge fees for the use of their expressions or inventions, or conceal their business techniques from others, certain beneficial uses of these intellectual products are prevented. This is clearly wasteful, since everyone could use and benefit from intellectual objects concurrently. How wasteful private ownership of intellectual property is depends on how beneficial those products would be to those who are excluded from their use as a result.

#### SOVEREIGNTY, SECURITY, AND PRIVACY

Private property can be justified as a means to sovereignty. Dominion over certain objects is important for individual autonomy. Ronald Dworkin's liberal is right in saying that "some sovereignty over a range of personal possessions is essential to dignity."<sup>34</sup> Not having to share one's personal possessions or borrow them from others is essential to the kind of autonomy our society values. Using or consuming certain objects is also necessary for survival. Allowing ownership of these things places control of the means of survival in the hands of individuals, and this promotes independence and security (at least for those who own enough of them). Private ownership of life's necessities lessens dependence between individuals, and takes power from the group and gives it to the individual. Private property also promotes privacy. It constitutes a sphere of privacy within which the individual is sovereign and less accountable for her actions. Owning one's own home is an example of all of these: it provides privacy, security, and a limited range of autonomy.

But copyrights and patents are neither necessary nor important for achieving these goals. The right to exclude others from using one's invention or copying one's work of authorship is not essential to one's sovereignty. Preventing a person from personally using her own invention or writing, on the other hand, would seriously threaten her sovereignty. An author's or inventor's sense of worth and dignity requires public acknowledgment by those who use the writing or discovery, but here again, giving the author or inventor the exclusive right to copy or use her intellectual product is not necessary to protect this.

Though patents and copyrights are not directly necessary for survival

34. Ronald Dworkin, "Liberalism," in *Public and Private Morality*, ed. Stuart Hampshire (Cambridge: Cambridge University Press, 1978), p. 139.

(as are food and shelter), one could argue that they are indirectly necessary for an individual's security and survival when selling her inventions or writings is a person's sole means of income. In our society, however, most patents and copyrights are owned by institutions (businesses, universities, or governments). Except in unusual cases where individuals have extraordinary bargaining power, prospective employees are required to give the rights to their inventions and works of authorship to their employers as a condition of employment. Independent authors or inventors who earn their living by selling their writings or inventions to others are increasingly rare.<sup>35</sup> Thus arguing that intellectual property promotes individual security makes sense only in a minority of cases. Additionally, there are other ways to ensure the independent intellectual laborer's security and survival besides copyrights and patents (such as public funding of intellectual workers and public domain property status for the results).

Controlling who uses one's invention or writing is not important to one's privacy. As long as there is no requirement to divulge privately created intellectual products (and as long as laws exist to protect people from others taking information they choose not to divulge—as with trade secret laws), the creator's privacy will not be infringed. Trying to justify copyrights and patents on grounds of privacy is highly implausible given that these property rights give the author or inventor control over certain uses of writings and inventions only after they have been publicly disclosed.

Trade secrets are not defensible on grounds of privacy either. A corporation is not an individual and hence does not have the personal features privacy is intended to protect.<sup>36</sup> Concern for sovereignty counts against trade secrets, for they often directly limit individual autonomy by preventing employees from changing jobs. Through employment contracts, by means of gentlemen's agreements among firms to respect trade secrets by refusing to hire competitors' employees, or simply because of the threat of lawsuits, trade secrets often prevent employees

35. "In the United States about 60 per cent of all patents are assigned to corporations" (Machlup, *Production*, p. 168). This was the case twenty-five years ago, and I assume the percentage is even higher today.

36. Very little (if any) of the sensitive information about individuals that corporations have is information held as a trade secret. For a critical discussion of the attempt to defend corporate secrecy on the basis of privacy see Russell B. Stevenson, Jr., *Corporations and Information* (Baltimore: Johns Hopkins University Press, 1980), chap. 5.

from using their skills and knowledge with other companies in the industry.

Some trade secrets, however, are important to a company's security and survival. If competitors could legally obtain the secret formula for Coke, for example, the Coca-Cola Company would be severely threatened. Similar points hold for copyrights and patents. Without some copyright protection, companies in the publishing, record, and movie industries would be severely threatened by competitors who copy and sell their works at lower prices (which need not reflect development costs). Without patent protection, companies with high research and development costs could be underpriced and driven out of business by competitors who simply mimicked the already developed products. This unfair competition could significantly weaken incentives to invest in innovative techniques and to develop new products.

The next section considers this argument that intellectual property is a necessary incentive for innovation and a requirement for healthy and fair competition. Notice, however, that the concern here is with the security and survival of private companies, not of individuals. Thus one needs to determine whether, and to what extent, the security and survival of privately held companies is a goal worth promoting. That issue turns on the difficult question of what type of economy is most desirable. Given a commitment to capitalism, however, this argument does have some force.

#### THE UTILITARIAN JUSTIFICATION

The strongest and most widely appealed to justification for intellectual property is a utilitarian argument based on providing incentives. The constitutional justification for patents and copyrights—"to promote the progress of science and the useful arts"<sup>37</sup>—is itself utilitarian. Given the shortcomings of the other arguments for intellectual property, the justifiability of copyrights, patents, and trade secrets depends, in the final analysis, on this utilitarian defense.

According to this argument, promoting the creation of valuable intellectual works requires that intellectual laborers be granted property rights in those works. Without the copyright, patent, and trade secret

37. U.S. Constitution, sec. 8, para. 8.

property protections, adequate incentives for the creation of a socially optimal output of intellectual products would not exist. If competitors could simply copy books, movies, and records, and take one another's inventions and business techniques, there would be no incentive to spend the vast amounts of time, energy, and money necessary to develop these products and techniques. It would be in each firm's self-interest to let others develop products, and then mimic the result. No one would engage in original development, and consequently no new writings, inventions, or business techniques would be developed. To avoid this disastrous result, the argument claims, we must continue to grant intellectual property rights.

Notice that this argument focuses on the users of intellectual products, rather than on the producers. Granting property rights to producers is here seen as necessary to ensure that enough intellectual products (and the countless other goods based on these products) are available to users. The grant of property rights to the producers is a mere means to this end.

This approach is paradoxical. It establishes a right to restrict the current availability and use of intellectual products for the purpose of increasing the production and thus future availability and use of new intellectual products. As economist Joan Robinson says of patents: "A patent is a device to prevent the diffusion of new methods before the original inventor has recovered profit adequate to induce the requisite investment. The justification of the patent system is that by slowing down the diffusion of technical progress it ensures that there will be more progress to diffuse. . . . Since it is rooted in a contradiction, there can be no such thing as an ideally beneficial patent system, and it is bound to produce negative results in particular instances, impeding progress unnecessarily even if its general effect is favorable on balance."<sup>38</sup> Although this strategy may work, it is to a certain extent self-defeating. If the justification for intellectual property is utilitarian in this sense, then the search for alternative incentives for the production of intellectual products takes on a good deal of importance. It would be better to employ equally powerful ways to stimulate the production and thus use of intellectual products which did not also restrict their use and availability.

<sup>38</sup> Quoted in Dorothy Nelkin, *Science as Intellectual Property* (New York: Macmillan, 1984), p. 15.

Government support of intellectual work and public ownership of the result may be one such alternative. Governments already fund a great deal of basic research and development, and the results of this research often become public property. Unlike private property rights in the results of intellectual labor, government funding of this labor and public ownership of the result stimulate new inventions and writings without restricting their dissemination and use. Increased government funding of intellectual labor should thus be seriously considered.

This proposal need not involve government control over which research projects are to be pursued. Government funding of intellectual labor can be divorced from government control over what is funded. University research is an example. Most of this is supported by public funds, but government control over its content is minor and indirect. Agencies at different governmental levels could distribute funding for intellectual labor with only the most general guidance over content, leaving businesses, universities, and private individuals to decide which projects to pursue.

If the goal of private intellectual property institutions is to maximize the dissemination and use of information, to the extent that they do not achieve this result, these institutions should be modified. The question is not whether copyrights, patents, and trade secrets provide incentives for the production of original works of authorship, inventions, and innovative business techniques. Of course they do. Rather, we should ask the following questions: Do copyrights, patents, and trade secrets increase the availability and use of intellectual products more than they restrict this availability and use? If they do, we must then ask whether they increase the availability and use of intellectual products more than any alternative mechanism would. For example, could better overall results be achieved by shortening the length of copyright and patent grants, or by putting a time limit on trade secrets (and on the restrictions on future employment employers are allowed to demand of employees)? Would eliminating most types of trade secrets entirely and letting patents carry a heavier load produce improved results? Additionally, we must determine whether and to what extent public funding and ownership of intellectual products might be a more efficient means to these results.<sup>39</sup>

39. Even supposing our current copyright, patent, and trade secret laws did maximize the availability and use of intellectual products, a thorough utilitarian evaluation would have to weigh all the consequences of these legal rights. For example, the decrease in

We should not expect an across-the-board answer to these questions. For example, the production of movies is more dependent on copyright than is academic writing. Also, patent protection for individual inventors and small beginning firms makes more sense than patent protection for large corporations (which own the majority of patents). It has been argued that patents are not important incentives for the research and innovative activity of large corporations in competitive markets.<sup>40</sup> The short-term advantage a company gets from developing a new product and being the first to put it on the market may be incentive enough.

That patents are conducive to a strong competitive economy is also open to question. Our patent system, originally designed to reward the individual inventor and thereby stimulate invention, may today be used as a device to monopolize industries. It has been suggested that in some cases "the patent position of the big firms makes it almost impossible for new firms to enter the industry"<sup>41</sup> and that patents are frequently bought up in order to suppress competition.<sup>42</sup>

Trade secrets as well can stifle competition, rather than encourage it. If a company can rely on a secret advantage over a competitor, it has no need to develop new technologies to stay ahead. Greater disclosure of certain trade secrets—such as costs and profits of particular product lines—would actually increase competition, rather than decrease it, since with this knowledge firms would then concentrate on one another's most profitable products.<sup>43</sup> Furthermore, as one critic notes, trade secret laws often prevent a former employee "from doing work in just that field for which his training and experience have best prepared him. Indeed, the mobility of engineers and scientists is often severely limited by the reluctance of new firms to hire them for fear of exposing themselves to a lawsuit."<sup>44</sup> Since the movement of skilled workers between companies is a vital mechanism in the growth and spread of technology, in this important respect trade secrets actually slow the dissemination and use of innovative techniques.

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employee freedom resulting from trade secrets would have to be considered, as would the inequalities in income, wealth, opportunity, and power which result from these socially established and enforced property rights.

40. Machlup, *Production*, pp. 168–69.

41. *Ibid.*, p. 170.

42. See David Noble, *America by Design* (New York: Knopf, 1982), chap. 6.

43. This is Stevenson's point in *Corporations*, p. 11.

44. *Ibid.*, p. 23. More generally, see *ibid.*, chap. 2, for a careful and skeptical treatment of the claim that trade secrets function as incentives.

These remarks suggest that the justifiability of our intellectual property institutions is not settled by the facile assertion that our system of patents, copyrights, and trade secrets provides necessary incentives for innovation and ensures maximally healthy competitive enterprise. This argument is not as easy to construct as one might at first think; substantial empirical evidence is needed. The above considerations suggest that the evidence might not support this position.

#### CONCLUSION

Justifying intellectual property is a formidable task. The inadequacies of the traditional justifications for property become more severe when applied to intellectual property. Both the nonexclusive nature of intellectual objects and the presumption against allowing restrictions on the free flow of ideas create special burdens in justifying such property.

We have seen significant shortcomings in the justifications for intellectual property. Natural rights to the fruits of one's labor are not by themselves sufficient to justify copyrights, patents, and trade secrets, though they are relevant to the social decision to create and sustain intellectual property institutions. Although intellectual laborers often deserve rewards for their labor, copyrights, patents, and trade secrets may give the laborer much more or much less than is deserved. Where property rights are not what is desired, they may be wholly inappropriate. The Lockean labor arguments for intellectual property also run afoul of one of Locke's provisos—the prohibition against spoilage or waste. Considerations of sovereignty, security, and privacy are inconclusive justifications for intellectual property as well.

This analysis suggests that the issue turns on considerations of social utility. We must determine whether our current copyright, patent, and trade secret statutes provide the best possible mechanisms for ensuring the availability and widespread dissemination of intellectual works and their resulting products. Public financial support for intellectual laborers and public ownership of intellectual products is an alternative which demands serious consideration. More modest alternatives needing consideration include modifications in the length of intellectual property grants or in the strength and scope of the restrictive rights granted. What the most efficient mechanism for achieving these goals is remains an unresolved empirical question.

This discussion also suggests that copyrights are easier to justify than

patents or trade secrets. Patents restrict the actual usage of an idea (in making a physical object), while copyrights restrict only copying an expression of an idea. One can freely use the ideas in a copyrighted book in one's own writing, provided one acknowledges their origin. One cannot freely use the ideas a patented invention represents when developing one's own product. Furthermore, since inventions and business techniques are instruments of production in a way in which expressions of ideas are not, socialist objections to private ownership of the means of production apply to patents and trade secrets far more readily than they do to copyrights. Trade secrets are suspect also because they do not involve the socially beneficial public disclosure which is part of the patent and copyright process. They are additionally problematic to the extent that they involve unacceptable restrictions on employee mobility and technology transfer.

Focusing on the problems of justifying intellectual property is important not because these institutions lack any sort of justification, but because they are not so obviously or easily justified as many people think. We must begin to think more openly and imaginatively about the alternative choices available to us for stimulating and rewarding intellectual labor.