There are obvious difficulties with the notion that one has property rights in an idea or in similar abstract entities, because this would mean there is a legal prerogative to exclude others from using and building upon those ideas. This problem is overcome by making a distinction between the idea and its expression, and in most cases granting copyright protection to the expression of an idea but not the idea itself. If we can make these important distinctions and develop property rights with reasonable limits, it might be possible to protect individual authors without damaging the public interest.

## Legal Protection for Intellectual Property

In the United States, the roots of intellectual property law can be traced back to the Constitution. The Founding Fathers recognized that such protection was necessary for commercial and artistic advancement. Consequently, the U.S. Constitution confers upon Congress the power "to promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[5] Specifically, Congress has traditionally chosen to follow this mandate by granting limited copyright and patent protection. We review next how copyright and patent protection applies in cyberspace, and we include in this résumé a third category of trademark protection, because it is pertinent for many of the property conflicts that have surfaced on the Net.

### *Copyright Laws*

Copyright laws give authors exclusive rights to their works, especially the right to make copies. Copyrights now last for an author's lifetime plus 70 years. Copyright protects a literary, musical, dramatic, artistic, architectural, audio, or audiovisual work from being reproduced without the permission of the copyright holder. Copyright law also gives the copyright holder the right to "to prepare derivative works based upon the copyright works," and "in the case of literary musical, dramatic, choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly."[6]

To be eligible for copyright protection, the work in question must be original, that is, it must be independently created by its author. Originality does not mean that the work has to be novel or possess any aesthetic merit. The work must also be fixed in some tangible medium of expression. Thus, a dance such as the tango cannot be copyrighted, but a visual recording of that dance is eligible for copyright protection. Also, it is important to underscore that copyright protection extends to the actual concrete expression of an idea, but not to the idea itself. Copyright laws, therefore, do not protect ideas, concepts, facts, generic plots or characters, algorithms, and so forth.

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Copyright protection has certain limitations considered to be in the public interest. One such limitation or "safety valve" is the "fair use" provision.[7] For example, copyrighted literary works can be quoted and a small segment of a video work can be displayed for limited purposes, including criticism, research, classroom instruction, and news reporting. Fair use would probably allow a teacher to reproduce and distribute several pages from a book to her students, but it would not allow reproduction and distribution of the whole book. Parody is another form of fair use. In *Campbell v. Acuff-Rose* the Court ruled that a rap parody of "Pretty Woman" constituted fair use.[8] Also, making private copies of certain material is considered fair use. For example, in *Sony v. Universal*[9] the U.S. Supreme Court affirmed that consumers can engage in "time shifting," that is, making a video copy of a television program to watch at another time.

Another restriction is the first sale doctrine. The first sale provision allows the purchaser of a copyrighted work to sell or lend that copy to someone else without the copyright holder's permission. These limits on copyright law are designed to balance the rights of the copyright holder with the public's interest in the broad availability of books and other artistic works.

### Patents

Whereas copyright protection pertains to literary works, patents protect physical objects like machines and inventions along with the inventive processes for producing some physical product. A *patent* is "a government grant which confers on the inventor the right to exclude others from making, using, offering for sale, or selling the invention for what is now a period of 20 years, measured from the filing date of the patent application."[10]

To be eligible for a patent, the invention must be novel, that is, unknown to others or unused by others before the patent is awarded; also, it cannot be described by others in a printed publication. It must also satisfy the criterion of "non-obviousness," that is, it cannot be obvious to anyone "skilled in the art" or it is not patentable. The invention must also be useful in some way. The proper subject matter for a patent is a process, machine, or composition of matter. Laws of nature, scientific principles, algorithms, and so forth belong in the public domain and are not eligible for patent protection.

The scope of patent protection has been expanded significantly over the last several decades. For example, patents are now awarded for new plant varieties developed through experimentation. Patents are also awarded for surgical procedures under certain circumstances. Although software was previously considered ineligible for patent protection, thanks to the case of *Diamond v. Diehr*, that has changed. In that landmark case, the court ruled that a patent claim for a process should not be rejected merely because it includes a mathematical algorithm or computer software program. In

this case "the majority opinion of the Court concluded Diehr's process to be nothing more than a process for molding rubber products and not an attempt to patent a mathematical formula."[11] In other words, the process itself (in this case one for curing rubber) must be original and hence patentable, and if computer calculations are part of the process, then they are included in the patent protection. Subsequent cases have affirmed that any software program is patent eligible.

Patents have been the subject of some scorn and criticism in certain circles. Because a patent gives the patent holder virtual monopoly power for a long period of time, it enables the producer to charge high prices and reap monopoly rents. This has been a serious source of contention for costly pharmaceutical products, which are sometimes unavailable to indigent patients owing to monopoly pricing practices. On the surface, patent protection may seem anticompetitive, but, without it, would companies have the incentive to invest hundreds of millions of dollars to invent breakthrough drugs or other innovations? The assumption in the Anglo-American capitalist system is that by creating powerful incentives for companies and individuals, which take the form of strongly protected monopolies for their innovations, there will be a greater number of breakthrough inventions that will benefit society in the long run.

### *Trademarks*

The final form of legal protection for intellectual property objects is the *trademark*, which is a word, phrase, or symbol that pithily identifies a product or service. Examples abound: the Nike "swoosh" symbol, names like Pepsi and Dr. Pepper, and logos such as the famous bitten apple image crafted by Apple Computer. To qualify for the strongest trademark protection, the mark or name must be truly distinctive. In legal terms, *distinctiveness* is determined by several factors, including the following: Is the trademark "arbitrary or fanciful," that is, not logically connected to the product (e.g., the Apple Computer logo has no connection to a computer); and is the trademark powerfully descriptive or suggestive in some way?

A trademark is acquired when someone is either the first to use the mark publicly or registers it with the U.S. Patent Office. Trademarks do not necessarily last in perpetuity. They can be lost if one squanders a trademark through excessive or improper licensing. They can also become lost if they eventually become generic and thereby enter the public domain. According to the terms of the Federal Trademark Act of 1946 (the Lanham Act), trademarks are generally violated in one of three ways: infringement, unfair competition, or dilution. *Infringement* occurs when the trademark is used by someone else in connection with the sale of its goods or services. If an upstart athletic shoe company tried to sell its products with the aid of the "swoosh" symbol, it would

be violating Nike's trademark. The general standard for infringement is the likelihood of consumer confusion. Trademark owners can also bring forth legal claims if their trademarks are diluted. *Dilution* is applicable only to famous trademarks that are distinctive, of long duration, and usually known to the public through extensive advertising and publicity. Dilution is the result of either "blurring" or "tarnishment." *Blurring* occurs when the trademark is associated with dissimilar products—for example, using the Disney trademark name to sell suits for men. *Tarnishment* occurs when the mark is portrayed in a negative or compromising way or associated with products or services of questionable value or reputation.

Trademark law does allow for fair use of trademarks and also use for purposes of parody. In fair use situations the trademark name normally assumes its primary (vs. commercial) meaning; for example, describing a cereal as comprised of "all bran" is different from infringing on the Kellogg's brand name "All Bran." Parody of trademarks is permitted as long as it is not closely connected with commercial use. Making fun of a well-known brand in a Hollywood skit is probably acceptable, but parodying that brand to sell a competing product would most likely not be allowed.[12]

## Moral Justifications for Intellectual Property

We have considered the various forms of legal protection for intellectual property, and we now turn to the underlying philosophical and moral justifications for these laws. It is important to understand the foundation for the legal infrastructure supporting intellectual property rights. Certainly many theories of property have been put forth, but those with the greatest intellectual resonance can be found in the philosophical writings of Locke and Hegel and in the philosophy of utilitarianism. Locke is credited with providing the philosophical underpinnings of the labor desert theory and aspects of Hegel's thought form the basis for the so-called "personality theory." Utilitarianism provides the most pragmatic philosophical approach that has been particularly appealing to economists and legal theorists. We next briefly review the main tenets of each of these theoretical frameworks.

### *Locke's Labor Desert Theory*

Locke's theory of property has undoubtedly been one of the most influential in the entire philosophical tradition. He defends private property rights on purely normative grounds without consideration of utility issues. What are the essential elements of Locke's theory? According to Locke, a person has a property right, that is, the right to exclude others, in his person, in his actions and labor, and in the products of that labor.