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A World Without Intellectual Property? Boldrin and Levine, Against Intellectual Monopoly

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**A World Without Intellectual Property?**  
**Boldrin and Levine, *Against Intellectual Monopoly***

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Abstract

In their recent book, *Against Intellectual Monopoly*, Michele Boldrin and David Levine conclude that patents and copyrights are not necessary to provide protection for either innovation or creative expression and should be eliminated. The authors note the many flaws of the U.S. system of intellectual property protection and argue that other means are available to appropriate the benefits of invention and creative expression. However, the authors overlook important functions of intellectual property. Their efforts would be put to better use by more carefully analyzing policy proposals that may improve our system of intellectual property rights and have some potential to be implemented.

Keywords: intellectual property, patent, copyright

Economic protection in the United States for invention and creative expression traces its roots to the U.S. Constitution, which states that “The Congress shall have Power...To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries...”<sup>1</sup> Congress responded to this constitutional authority in 1790 by passing the first U.S. patent and copyright acts. Patent law creates an exclusive right to make, use or sell the invention claimed by the patent for a limited period of time. Copyright protection applies to original works of authorship embodied in a tangible medium of expression.

The Patent and Copyright Acts have been amended many times over the years, often to increase the length and scope of protection. The 1790 Patent Act provided for a patent term not to exceed 14 years. Currently the term is 20 years from the application date. The 1790 Copyright Act provided authors with an exclusive right to their work for a period of 14 years, with an option to renew for an additional 14 years. Numerous amendments extended the copyright term and broadened its reach to new areas, such as digital works transmitted over the Internet. The most recent amendment is the Copyright Term Extension Act of 1998 (CTEA), which extended the copyright term to 70 years after the death of the author, and for works for hire, the shorter of 120 years after creation or 95 years after publication.

Intellectual property is the term used to describe the legal regimes – including patents and copyrights – that assign limited exclusive rights to inventions, creations, trademarks, designs, and trade secrets. In their book, *Against Intellectual Monopoly*,<sup>2</sup> Michele Boldrin and David Levine object to the term “intellectual property” and instead propose “intellectual monopoly” to reflect the exclusionary nature of patents and copyrights. In this respect they share the good company of Thomas Jefferson, who wrote that “Inventions ... cannot, in nature, be a subject of

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<sup>1</sup> US Constitution, Article I, Section 8, clause 8.

<sup>2</sup> Boldren and Levine (2008). (Chapters can be downloaded without charge at <http://levine.sscnet.ucla.edu/general/intellectual/againstfinal.htm>).

property.” But Jefferson also acknowledged that “Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility...” and served as the first patent examiner of the newly created U.S. Patent Office.

Academics have not hesitated to point out the shortcomings of the U.S. patent system, employing terms such as “our broken patent system”, “patent failure”, and “the patent crisis”.<sup>3</sup> Copyright has abundant critics as well, particularly after the CTEA increased the copyright term and the Digital Millennium Copyright Act made it much easier to protect digital works.<sup>4</sup> Michele Boldrin and David Levine raise the intensity of criticism another notch. They conclude that intellectual property – specifically patent and copyright – is not necessary to provide protection for either innovation or creative expression and that intellectual property is – in their words – an “unnecessary evil”.

I focus most of my discussion on patents. While one can argue about whether a patent on the latest mousetrap is equivalent to a monopoly on rodent control, the intent of a patent is to allow an inventor to profit by reducing competition from imitation for a period of time. The limitation on competition typically raises the price and lowers the use of an invention (or creative expression in the case of copyright). This limitation of competition makes consumers worse off and, absent perfect price discrimination, incurs a deadweight loss. In return, society is supposed to get greater investment in innovative effort; i.e., promotion of the progress of science and the useful arts, which can ultimately benefit consumers.

Intellectual property can create net costs for consumers for at least two reasons. First, the incremental benefit from the increase (if any) in innovation or creative

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<sup>3</sup> Examples include Jaffe and Lerner (2006), Bessen and Meurer (2008), and Burk and Lemley (2009).

<sup>4</sup> The Digital Millennium Copyright Act heightens the penalties for copyright infringement on the Internet and criminalizes production and dissemination of technologies intended to circumvent measures that control access to copyrighted works.

expression that is stimulated by intellectual property can be less than the cost of the restriction of supply, leaving consumers worse off.<sup>5</sup> Second, by increasing the cost of new discoveries or expression, intellectual property can lower the rate of subsequent innovation or creative expression. Intellectual property is an *input* to the production of future innovation and expression. The latest microprocessor technology builds on many prior discoveries. The latest novel, film, or performance builds on a culture of creative expression. High costs for intellectual inputs or restrictions on the availability of these inputs make future innovation and creative expression more difficult and costly. Much of innovation and creative expression is cumulative – they build on the innovations and creations made by others. Even if patents and copyrights stimulate some innovation, the cost to subsequent innovators and creators may exceed these benefits.

Boldrin and Levine (2008) correctly point out that the costs of intellectual property should be weighed against the benefits from the extra innovation that intellectual property brings about. However, they find no evidence that intellectual property increases innovation and creative expression. They conclude that the owners of intellectual property benefit from the exclusion of competition, but society gets nothing in terms of greater progress of science and the useful arts.

There is ample evidence that patents restrict access to innovations. In a number of major industries, rapid technological progress followed the expiration of key patents or regulatory actions that compelled broad patent licensing. Boldrin and Levine (2008) note the surge in industrial activity that occurred after the expiration of the Watt patents. Aircraft technology progressed rapidly after the government coerced the Wright Brothers and others to license their patents as part of the Manufacturers Aircraft Association patent pool. The World War I *Trading With The*

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<sup>5</sup> Intellectual property also can incur net costs by encouraging too much investment in R&D. The private incentive to invest in R&D can exceed the social benefit because firms compete to be the first to win a patent and in doing so they ignore the effect of their investment on the probability of success for other investors. Like everything else, innovation can be excessive. This is an additional way in which intellectual property can create net costs, although not one that has generated significant policy concerns.

*Enemy Act* mandated royalty-free compulsory licensing of German patents. The result was an increase in innovation by U.S. companies that benefited from the compulsory license (Moser and Voena, 2009). The U.S. Department of Justice entered into consent decrees with AT&T and IBM that stimulated innovation by opening access to their broad patent portfolios. The U.S. Federal Trade Commission compelled Xerox to offer licenses to its plain paper copier patent portfolio. Rapid innovation followed in both small and large plain paper copiers (Bresnahan, 1985).

In support of their conclusions, Boldrin and Levine (2008) note that innovative and dynamic industries blossomed with no intellectual property or with intellectual property that was not effectively enforced. It is undoubtedly correct that large productivity increases occurred in agriculture without substantial patent protection, a robust software industry emerged without the benefit of software patents, and software innovation thrives within the open source movement. Other industries, such as microelectronics, developed when patent litigation was less common than it is today.

Boldrin and Levine (2008) acknowledge that inventors and creators should be able to earn a return on their discoveries and creations. Using entertainment as an example, they say “we worry ... how musicians are to make a living if their music is immediately given away for free.” Their answer is that “... there are many other ways [other than patents and copyrights] in which innovators are rewarded, even substantially, and most of them are better for society than the monopoly power that patents and copyright currently bestow.”

Boldrin and Levine (2008) cite surveys by Levin et al. (1987) and Cohen et al. (2000) that asked R&D managers how they obtain competitive advantage from their discoveries. High on the list is lead time (suggesting a first-mover advantage), followed by secrecy, complementary manufacturing capabilities, and complementary sales and service efforts. Averaged over all industries, patents and other legal mechanisms are near the bottom of the list of appropriation

mechanisms, although cross-industry variation is considerable. Cohen et al. (2000) found that patents were an effective appropriation mechanism for more than 50 percent of product innovations in pharmaceuticals and medical equipment and for 40 – 50 percent of product innovations in special purpose machinery, computers and auto parts.

Boldrin and Levine (2008) add other factors that can enable an inventor to benefit from an invention such as increasing marginal costs or capacity constraints, which allow an inventor to earn a quasi-rent, sunk costs that limit subsequent entry, and the difficulty and cost of transmitting information. This approach of evaluating alternative appropriation mechanisms to stimulate innovation has a long and respectable tradition. Kaplow (1984) proposed that public policy should rank alternatives according to the ratio of profit (the stimulus to innovation) to deadweight loss (the cost to society). It is not clear that patents and other forms of intellectual property would rank high on the list.

The key message in *Against Intellectual Monopoly* is that only abstract ideas are non-rival public goods, which can be consumed by many without diminishing their value. It is the non-rival and particularly the non-excludable nature of public goods that provides justification for protection from imitation in order to create incentives to produce the goods in the first place. But Boldrin and Levine (2008) emphasize that *copies* of ideas (or the objects made with them) are both rivalrous and excludable – they are not public goods. They are rivalrous because the use of my machine by a competitor reduces its value to me, and they are excludable because (often) there are appropriation mechanisms such as first-mover advantages that allow me to profit from the use of my machine.

The surveys and other evidence and anecdotes cited by Boldrin and Levine (2008) show that patents are only one piece of a broader strategy to protect inventions and raise deep questions about the value of intellectual property as a stimulus for innovation. But they are not sufficient to make the case that patents and copyrights

should be eliminated. The authors of these surveys and other studies caution that situations exist, even in industries according only modest weight to patent protection, in which at the margin patents are decisive in inducing R&D investments.

Patents are clearly important to some technological developments. Genetically modified soybeans, corn and cotton now account for more than half of the total harvest of these crops.<sup>6</sup> These innovations required large investments in R&D and are relatively easy to copy by an R&D establishment that is skilled in gene splicing techniques. While agriculture made enormous advances without patent protection, it is doubtful whether these innovations in genetic engineering would have progressed at the same rate without effective patent protection (although one can argue about whether genetically modified crops are desirable innovations and whether patent laws give patentees too much control over the use of genetically modified seeds).

Intellectual property is indeed unnecessary if other mechanisms exist that provide sufficient incentives for R&D and creative expression at lower costs. However, by denying any positive role for intellectual property, Boldrin and Levine (2008) go further than the evidence can support without providing new evidence to justify their conclusions. The survey results reported in Levin et al. (1987) and Cohen et al. (2000) do not conclude that patents play no role to appropriate the value of investment in R&D and thereby stimulate innovative efforts, but only that other mechanisms are often cited more frequently. Even if other market mechanisms exist to protect the useful fruits of ideas or creative expression, Boldrin and Levine (2008) have not established that they are sufficient to motivate socially desirable levels of innovation and creative effort. Furthermore, they have not shown that policy measures such as direct subsidies would be superior to intellectual property to encourage investment in R&D and the useful arts.

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<sup>6</sup> U.S. Department of Agriculture (2009).



Patents are clearly an important mechanism to appropriate value for some industries, notably pharmaceuticals. Boldrin and Levine (2008) acknowledge this, but still press for the elimination of all patents. They argue that a better world would have the government underwrite the expensive process of clinical testing for new drugs. This would sharply reduce the up-front costs of developing new pharmaceuticals and lower the need for patents as a means to appropriate value. Furthermore, without patents, the cost of drugs would drop sharply and their utilization would correspondingly increase.

In Boldrin and Levine's (2008) hypothetical alternative world, new drug R&D is not reduced and access to pharmaceuticals is increased, which is a Pareto improvement compared to the present state of the pharmaceutical market. Unfortunately, the authors stop short of considering the potential hazards in their preferred world. Appointing the government, through the National Institutes of Health or some other body, as the arbiter of drug research and development (or R&D for any other activity) raises significant concerns. It is not clear that any agency, even one as informed as the NIH, would have the knowledge of technological opportunities and demand possessed by private firms and eliciting this information from private firms would be difficult. Moreover, a public agency would be subject to political influence to steer R&D toward diseases that have more vocal representatives. Expanded federal subsidies for new drug R&D coupled with a lessening of exclusionary protection for drugs could move policy in the right direction.<sup>7</sup> However, eliminating exclusivity as Boldrin and Levine (2008) suggest would create new challenges to reveal and act on information about innovation opportunities. This is a policy recommendation that begs for a more extensive analysis of the potential costs and benefits.

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<sup>7</sup> The Bayh-Dole Act provides for "march-in rights" to allow compulsory licensing of drugs developed with federal support, but the government has not exercised these rights as of 2009. See U.S. Government Accountability Office (2009).

Patents arguably have benefits other than the appropriation of value from R&D that indirectly contribute to incentives for innovation. These benefits include facilitating the transmission of know-how and the monitoring of R&D effort. Intellectual property also can provide benefits by making it easier for new competitors to attract venture capital and by providing ammunition for start-up firms to deal with incumbent competitors. The existence and magnitude of these benefits are controversial, as is the extent to which these alleged benefits motivate innovation as opposed to merely funding new competitors.

A recent survey conducted by Stuart et al. (forthcoming) focused on the benefits and costs of patent protection for new start-up firms. The role of patents reported by the survey respondents differ greatly across industry sectors. Biotechnology companies reported that patents generally provide moderate incentives for innovation, whereas software firms reported that they generally provide at best slight incentives. Respondents in the biotechnology and medical device industries ranked patents high on the list of appropriation mechanisms. Among the industry sectors covered in this survey, patents were relatively unimportant as an appropriation mechanism only for software and Internet firms. These results suggest a greater role for patents as motivators of investment in R&D for new start-ups compared to the more established firms that were surveyed in Levin et al. (1987) and Cohen et al. (2000).

Most of the respondents in this survey reported that patents were important to prevent copying and promote the transmission of know-how. Furthermore, venture capital and other investors reported that a significant patent portfolio was an important factor in the decision to invest in a start-up. In addition to securing investment funds, a patent portfolio increased the odds and quality of a successful exit capitalization event such as an IPO and served strategic roles in cross-licensing and defending against patent infringement suits.

The survey by Stuart et al. (forthcoming) sends mixed signals about the value of intellectual property. It does not prove that patents are working well for entrepreneurial start-ups and some of the “benefits” from patents are merely the flip side of the costs that they impose on new competitors. For example, in the Boldrin and Levine (2008) world without intellectual property, start-up companies would have no need for patents to engage in cross-licensing and to use patents to defend against infringement suits. While the findings in this survey are decidedly mixed, they suggest that the role of patents in promoting innovation is more complex than the one described by Boldrin and Levine (2008).

Chapter Seven of *Against Intellectual Monopoly* explores the tradeoff between intellectual property and the use of secrecy to protect innovations. The discussion, which ranges from the purely theoretical to empirical observations of invention in countries with different or non-existent patent laws, is thoughtful and informative. A benefit from patents is that the inventor must reveal the information about the patent in exchange for temporary property rights. Revealing the information rather than attempting to rely on secrecy can facilitate other inventions. Boldrin and Levine (2008) acknowledge the notion that, absent patent protection, inventors likely would exert greater efforts to use secrecy to protect their technical knowledge or shift investment in the direction of innovations for which patent protection is less important. But they hesitate to credit this effect as a benefit from intellectual property, or enough of a benefit to offset its costs. This is in part because they fault the disclosure function of patents, which is notoriously inadequate for some industries such as software and business methods. While there are grounds to doubt the value of patent disclosure for some industry sectors, innovation in other sectors likely would suffer if a lack of patent protection forced firms to rely more heavily on trade secrets.

There is no doubt that the U.S. patent system is in need of reform. There is little relationship between inventive effort and the reward from a patent. Ideally, the reward from intellectual property should be high when the up-front cost of

inventing or creating is high relative to the cost of imitation. There is little evidence that the scope of patent or copyright protection generally conforms to this condition.

Patent quality, or rather the absence of quality, is a common criticism. For many who peruse the records of the U.S. Patent and Trademark Office, their first reaction is: “Someone got a patent for *that?*” It is easy to find patents that are plainly silly. These include examples such as the method to move a swing quoted in Boldrin and Levine (2008). Among many others are: Patent number 5,443,036, “A method for inducing cats to exercise consists of directing a beam of invisible light produced by a hand-held laser apparatus onto the floor or wall or other opaque surface in the vicinity of the cat, then moving the laser so as to cause the bright pattern of light to move in an irregular way fascinating to cats, and to any other animal with a chase instinct” and Patent number 6,742,293, “A method of advertising by affixing an advertisement on the back of a person’s skin.”

For the most part, these truly silly patents cause little damage because they typically have no commercial value or, if they do, they are unlikely to survive a validity challenge in court.<sup>8</sup> A greater problem is uncertainty in the applications that a patent may cover. Patent scope, which is determined by the claims in a patent, is the analogy of a property map that determines the title boundary of a piece of real property. But patent claims are often fuzzy, particularly for software and business methods that do not refer to a particular apparatus, but instead describe a way to accomplish some end that may not even have been foreseen by the “inventor”. Bessen and Meurer (2008) offer the example of a patent on a “System for reproducing information on material objects at a point of sale location” (patent number 4,528,643). The patent, which issued in 1985, refers to the transmission of authorization codes for sales at remote locations, such as a kiosk. But the patent has

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<sup>8</sup> Silly patents differ from patents that may be valid and infringed with some probability. Patents whose infringement is uncertain are not harmless, particularly when a patentee has an effective threat of an injunction that prevents the sale of a product that may infringe the patent. See, e.g., Farrell and Shapiro (2008).

been asserted against companies engaged in e-commerce, which did not even exist when the patent was issued and was unlikely to have been anticipated by the inventor.

Another symptom of crisis in the patent system is the rising tide of damage awards and out-of-court settlements for patent infringement. The number of very large awards and settlements for patent infringement has been rising rapidly over the past several decades. Large awards or settlements for patent infringement were rare before 1980 and infrequent throughout the 1980s. The number of patent damage awards or settlements larger than \$100 million (in year 2000 dollars) increased in the 1990s and exploded after the turn of the century. From 2000 to 2007, infringement awards or damages larger than \$100 million (in year 2000 dollars) averaged about eight per year.<sup>9</sup>

The increase in the number of very large awards and settlements for patent infringement suggests that there has been shift in the monetization of patent rights that exceeds the growth in the economy. This trend alone does not imply that the patent system is broken if the increase in awards and settlements coincides with a more significant role for patent rights in providing incentives for innovation. However, there is no clear evidence to support a conclusion that patents have become more effective in recent years as a driver of innovation.

Bessen and Meurer (2008) argue that for some industry sectors, patenting is a prisoners' dilemma game in which competition to file patents leads to costly outcomes for all the parties. They calculate that in sectors such as software and information technology, the private value that firms derive from patents is less than the private cost of defending against infringement suits. According to this analysis, firms in these sectors patent not because patents are profitable, but because they

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<sup>9</sup> Gilbert (forthcoming). These numbers are calculated from awards and settlements collected from publicly available data. While they may include some compensation that is not strictly related to intellectual property, they understate the total to the extent that some awards and settlements are not publicly disclosed.

would be even worse off if they had to compete without patents when others have them. It is difficult to know whether this conclusion survives when all of the benefits (as well as costs) of patents are accounted for. But even if including these other factors tips the scale in favor of the private benefits from patents, there are additional reasons to doubt whether social value of patent protection is worth its social costs in some industry sectors.

A patent confers an exclusive right to make, use or sell the invention claimed by the patent for 20 years from the application date. For some industries, it is likely that this exclusivity term is excessive relative to the value of the patent as a stimulus for invention. Boldrin and Levine (2008) note that simultaneous invention is not unusual. Alexander Graham Bell beat Elisha Gray to the patent office with his claimed invention of the telephone by a matter of hours (though at least one investigator alleges that the opposite was true<sup>10</sup>). Curtiss soon followed the Wright Brothers' inventions with superior designs, but could not lawfully manufacture or sell aircraft with these designs because they infringed the Wright patents.<sup>11</sup> In addition to anecdotal evidence of simultaneous innovation, Cotropia and Lemley (2009) find additional support from litigation data. In a sample of 193 complaints alleging patent infringement, only 10.9% even alleged that the defendant copied the patented invention. Furthermore, in 1,871 published patent infringement decisions, the court found that the defendant copied the patented invention in only 33 cases. Independent invention appears to be much more common than imitation in patent infringement cases.

Independent invention raises doubts about whether lengthy patent protection is socially desirable. The expected benefit from patent protection is the production of an innovation sooner than it would have occurred without the patent protection. If the natural progress of science means that a particular invention will be duplicated in at most a few years and possibly much less, then the benefit from the patent is

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<sup>10</sup> Schulman (2008).

<sup>11</sup> Additional examples of near-simultaneous invention can be found in Gladwell (2008).

limited to whatever acceleration in the arrival of the invention can be attributed to the patent compared to what would otherwise occur. This is not an easy calculation because the possibility of being the first to win a patent may have been a motivation for inventors who came second.<sup>12</sup> Nonetheless, the widespread occurrences of independent and often simultaneous invention makes one question the marginal benefit from awarding lengthy exclusive patent protection to the first inventor.

There are yet other costs from the patent system. The art and science of winning a patent from the patent office encourages strategic conduct by potential patentees. In addition to racing to the patent office, this strategic conduct includes the filing of continuation applications that may allow a patentee to claim an invention that she did not anticipate when she filed the original patent application. The scope for costly gaming of the patent office expands considerably when a patent claims technologies that are incorporated in a standard, because delays can allow a patentee to exploit sunk investments made by consumers and firms that rely on the standard. Boldrin and Levine (2008) cite questionable conduct by Jerome Lemelson and Rambus, Inc. with respect to continuation applications and the assertion of patents that cover standards.

The extension of patentable subject matter into areas such as software, business methods, and life forms also expands the scope for strategic conduct. Because the patent office has less experience in these technical areas, it can be easier for applicants to convince the patent office that their claims are novel and non-obvious. Furthermore, patent applications in these areas often have claims that are difficult to define. These characteristics add up to more patents that are problematic either because they do not represent truly new and non-obvious discoveries or because they claim applications that the inventors did not actually anticipate, and hence could not have motivated their efforts.

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<sup>12</sup> See, e.g., Maurer and Scotchmer (2002) and Denicolò and Franzoni (forthcoming).

Boldrin and Levine (2008) expose many real and costly flaws of the US system of patents and copyrights. But is the elimination of all intellectual property the right answer? Perhaps patent protection should be curtailed for some sectors, such as software and business methods. But it is often difficult to draw a line between a “software patent” and a patent that covers a practical application but happens to include software as a critical component. In some cases the same might be said about business methods.

Boldrin and Levine’s (2008) proposal to abolish intellectual property is provocative and intriguing. It is worth consideration if not for the fact that unilateral disarmament of all intellectual property is the political equivalent of eliminating all weapons of mass destruction along with replacing Congress and the Senate with a group of enlightened political scientists. As an aside, it would also violate a number of international treaties. Reforming our system of patent and copyrights is a more feasible alternative and almost certainly superior to the outright elimination of intellectual property.

While Boldrin and Levine’s (2008) long-term goal is the elimination of intellectual property rights, they offer some more modest suggestions as interim improvements. One proposal is to shorten the length of patent and copyright protection, which they argue is justified by the growth in the size of the global economy and the speed of communication, both of which make it easier to profit from invention. The many economists and legal scholars who responded negatively to the Copyright Term Extension Act of 1998 would likely welcome a shortening of the copyright term. A shorter patent term also makes sense for rapidly changing industries such as computer hardware and software, especially given the relatively modest role of patents as motivators of invention in those industries. But any attempt to shorten the length of intellectual property protection would have to confront the politics of protectionism with its relentless demands for longer and broader exclusive rights.



Boldrin and Levine (2008) suggest other ways to wean the economy of intellectual property rights. Some of their proposals are relatively familiar, such as an expanded public role to oppose patent applications before patents are granted. Others are much more controversial. These include mandatory licensing of innovations at regulated cost-based royalties and the replacement of intellectual property with private contracting. The latter is not really a proposal, as the authors do not challenge private contracting (other than to impose limits on restraints of trade), and private contracting will live on with or without intellectual property.

Mandatory licensing at cost-based rates is a fundamental change in the structure of the reward for innovation. It is similar to the regulation of privately-owned public utilities, such as those that supply electricity and natural gas at regulated cost-based rates. Setting prices that both encourage the right amount of investment and constrain monopoly profits is difficult even with good information and much more difficult in the real world with significant asymmetric information. The number of innovations that would have to be regulated under the Boldrin and Levine (2008) proposal is vastly greater than the number of regulated public utilities and the accounting of R&D that would be necessary to appropriately compensate inventors is arguably more difficult to fathom than the operations of a public utility. Given the dismal record of cost-based regulation for public utilities, the mere thought of extending this regulatory approach to millions of innovations is the stuff of migraines and could hardly represent an improvement over the current system of intellectual property rights.

The authors' intense desire to see significant change in the protection of invention and creative expression is laudable. Fortunately there has been some recent progress from the judiciary in the form of appellate opinions that direct the courts to change the ways that they enforce the intellectual property laws. These opinions fall far short of Boldrin and Levine's (2008) goal to abolish intellectual property, but they do address some serious problems with the patent system and for the

optimists among us they may signal the start of a policy shift away from decades of increasing proliferation and protection of intellectual property.

The Supreme Court raised the bar on the non-obvious standard for patentability in the case of *KSR Int'l Co. v. Teleflex, Inc.*<sup>13</sup> Teleflex claimed that one of KSR's products infringed a Teleflex patent on connecting an adjustable vehicle control pedal to an electronic throttle control. KSR countered that the combination of the two known elements (the adjustable pedal and the electronic throttle) was obvious, and therefore the patent should be held to be invalid. A district court agreed with KSR, but the Court of Appeals of the Federal Circuit (the appellate court for patent cases) reversed the district court and ruled that the patent was valid. KSR appealed the decision to the Supreme Court, which granted the appeal. The Supreme Court concluded that the pedal was a design step well within the grasp of a person of ordinary skill in the relevant art and did not meet the non-obvious requirement for a patent. More importantly, the Court criticized the Federal Circuit for addressing the obviousness question in a narrow and rigid manner. Although it is too early to tell, this opinion may lead to fewer numbers of patents that do not represent significant innovations.

One of the most troublesome issues in patent law arises when a product infringes a patent that covers only one aspect of the product. An example is a patent on an aspect of a microprocessor design that is also covered by hundreds or even thousands of other patents. Under traditional patent law, the patentee is entitled to injunctive relief, which can give the patentee the ability to negotiate for large infringement damages. When patents are known to be valid and infringed, the patents have no stand-alone value, and a patent holder can obtain injunctive relief to block any activity that infringes its patent, Nash bargaining suggests that the allocation of value corresponds to the number of owners of intellectual property rights rather than to the number of patents that each firm owns. In this scenario, if

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<sup>13</sup> *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007).

there are two firms that own the patent rights that cover a product, each firm should claim one-half of the value, even if one firm has only a single patent and the other firm has ten.<sup>14</sup> This bargaining power can allow a patentee to negotiate for a large share of the value of a product covered by the patent even if its patent represents only one of many technological elements that are necessary to produce the product.

In *eBay, Inc. v. MercExchange, L.L.C.*,<sup>15</sup> the Supreme Court ruled that injunctive relief should not be automatic in patent cases, but should follow the standard set in other litigation. MercExchange sued eBay for infringing its patents related to eBay's "Buy-it-Now" feature. The District Court found that eBay had infringed MercExchange's patents but denied its request for an injunction. The Court of Appeals for the Federal Circuit reversed the District Court, stating that there was a "general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances."

The Supreme Court overturned the Federal Circuit's approval of the injunction and instructed the Court to apply the equitable factors considered in determining whether an injunction should issue in non-patent cases. Of particular interest is a separate concurring opinion written by Justices Kennedy, Stevens, Souter and Breyer in which they state that "An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. ... For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. ... When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest."

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<sup>14</sup> See, e.g., Lemley and Shapiro (2007) and Gilbert and Katz (2009).

<sup>15</sup> *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).

The Supreme Court's ruling can erode excessive bargaining power for patentees by removing the presumption that a patentee is entitled to injunctive relief for patent infringement. But it is too early to tell how lower courts will apply this guidance. Furthermore, the Supreme Court's ruling does not preclude courts from awarding large damages for patent infringement under a theory that the patent is essential to make or use a product even if it is only a small component of the product the companies seek to produce. The problem of disproportionate infringement awards cannot be fully addressed unless courts apply reasonable measures to allocate product values to infringed patents in their evaluation of damage claims.

These opinions are a step in the right direction, but much more needs to be done to bring patents and copyrights into balance with their contribution to the progress of science and the useful arts. Boldrin and Levine's (2008) preferred world is one without patents or copyrights. They make their case with numerous citations and anecdotes that make for a provocative and entertaining read. Their analysis is less than balanced, but that is not their objective. The authors are trying to convince the reader that the world would be better off without intellectual property. The many flaws of the present system of patents and copyrights are their best allies in this crusade. In the end, however, one has to wonder whether their quest is on the right track or whether their efforts would be put to better use by more carefully analyzing policy proposals that may improve our system of intellectual property rights and have some potential to be implemented. Like a world without people, a world without intellectual property is an interesting subject for speculation. But it is also largely irrelevant, as we will never see it.

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