

Intellectual Property

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Abstract: Intellectual property is a propaganda term used by proponents of copyrights and patents to promote the idea that government enforced monopolies over ideas and parts of ideas share the beneficial effects of property. In fact economic research shows that both copyrights and patents do more economic harm than good. In many areas, including copyright and software patents the only reasonable policy conclusion is abolition. In other areas such as pharmaceutical products a complex web of regulation and laws have grown around patent protection, and the best method of unraveling this web is still to be found.

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Disciplines: Economics, History, Political Science, Medicine

Introduction

Intellectual property is a propaganda term used by proponents of copyrights and patents - and to a lesser extent trademarks - to promote the idea that government enforced monopolies over ideas and parts of ideas share the beneficial effects of property. In fact both copyrights and patents do more economic harm than good and are more akin to the crony capitalism that ran rampant in the monarchies of old than to modern property rights.

Let us unpack this one bit at a time. First: what do copyrights and patents do? They do not give the creator or inventor the right to profit or sell - you do not need a grant of monopoly from the government to do that. They give the creator or inventor the right to tell other people - who may have legally purchased the idea or recreated it on their own - how they can and cannot make use of copyrighted works or patented ideas. There is plentiful evidence that creators and inventors can profit and profit well without the need for this monopoly or downstream use (“copying”, “imitation”) of their work. A pretty good example of this would be Walmart: the biggest employer in the world. Their owners - the Walton family - is the richest family in the world - so they seem to have profited mightily. From what? From innovation. From one-stop shopping, to the internal design of stores, to improvements in methods of shipping and inventory management Walmart has become a success by relentlessly out-thinking competitors. Yet, according to *Honoring the Inventor* [2009] competitor Target had 209 patents Walmart only 37. They got rich by and successful by innovating not by patenting.

But this is but one of many examples: in technology ranging from pharmaceuticals, to steam engines, to books and literature, innovation thrives without the artificial monopoly of intellectual “property.”

Recall that according to the U.S. Constitution the power of Congress to issue laws on copyright and patents is “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.” Of course if copyright and patents do not promote that progress then the proper length of time should be zero. So: do copyrights and patents lead to more creation and innovation? The theory is ambiguous and the evidence suggests not.

Foundational Research

On the face of it the theory that copyright and patents increase creation and innovation is compelling: how can the added incentive of granting a creator or innovator a monopoly not give more reason to create and innovate and so lead to more creation and innovation? But this overlooks a crucial point: creation and innovation builds on existing creations and innovation. In the case of copyright we need look no further than the many successful adaptations by the Disney Corporation of public domain works - Pocahontas, Cinderella, Pinocchio. In the case of patents: do you suppose the development of rocket ships did not benefit from the technology of jet aircraft? So in practice there is a trade-off. Stronger copyright and patent protection means creators and innovators can earn more from their work - but it also makes it more costly for them to do that work as they have to pay the owners of existing copyrights and patents. So in the end theory is useless and we must turn to the evidence.

To summarize: our concern is with the impact of copyright and patent laws on the motivation to innovate in the first place – and the evidence is that on the balance this motivation is not enhanced by copyright and patent laws.

Copyright

There are not a great many empirical studies of the impact of copyright. In part this is because to analyze the impact of copyright it is necessary to compare systems with copyright to those without, and in modern times copyright is relatively ubiquitous. Moreover, as is always the case with empirical work there is the problem that in any comparison “everything else except copyright is probably not equal.” That said, we are aware of three pieces of evidence about the impact of copyright.

1. The recent study by Eckhard Höffner [2010] comparing 19th Century England (with copyright) to 19th Century Germany (without copyright). The per capita production of literary works (titles) was considerably higher in Germany.
2. The book by Frederic Scherer [2012] on classical music in the 18th Century comparing countries with copyright to those without - he finds that countries with copyright were no more productive in the output of classical music than those without.
3. Less formal evidence from the modern era concerning databases: compilations of fact can be copyrighted in Europe but not the United States. However the evidence suggests that the United States has been far more active in creating databases of facts.

All this evidence indicates that creative output is if anything greater without copyright than with it. Given that copyright may not serve the intended purpose, it is worth reiterating the theoretical elements that may discourage rather than encourage creation.

1. The income effect - copyright by enriching creators may make them less inclined to produce new works. The extreme example of this is the Italian composer Verdi (see the Scherer book) who after getting the law changed so that his work was under copyright ceased producing new operas in favor of collecting royalties on old ones.
2. The downstream discouragement effect - existing copyright holders may employ their copyrights to discourage creation by others; indeed the mere existence of these copyrights may

have this effect without an active effort on the part of existing rights holders. One good example of this is the need to acquire music rights in order to produce movies - the expense is sufficiently substantial that in one famous case the cost of obtaining music rights vastly exceeded the cost of making the movie. This problem has manifested itself in the controversy of sampling in hip-hop music, but is relevant more broadly to the “remix” culture described by Larry Lessig among others. It arises not just in the case of music in movies but often also when expression is moved from one medium to another - the rights to stories for movies, sequels and so forth. While it is sometimes said that copyright is narrow in scope protecting merely the expression of ideas, in practice it is something else - preventing the reuse of such things as characters in novels and short musical segments.

3. Monopolization by large firms - the need to acquire clear rights to avoid lawsuits favors large organizations with legal and copyright search departments over the small creator.

In addition to the issue of incentives, there are two other issues often raised in connection with copyright law: plagiarism and the moral rights of authors. Plagiarism is taking credit for somebody else's work, something that we do not condone. However, what is not commonly understood is that sanctions against plagiarism are not enforced through copyright law – in fact the sanctions against plagiarism (generally enforced through contract law) are far more severe. For example, we might lose a law suit and be forced to pay damages for violating a copyright – but if we were to be caught plagiarizing – regardless of the state of copyright law – we would lose our tenured jobs, our careers would be destroyed and we would be subject to public humiliation.

With respect to moral rights of authors, economists perhaps have not so much to say on the subject – except this: the "right" in question is that of a creator to have control of how other people make use of his creation after it has been sold. Insofar as such a right is "moral" we expect it is rather overshadowed by the right of relatively poor consumers not to be forced to pay monopoly prices to relatively rich creators.

Patents

In Boldrin and Levine [2008] we analyzed the 24 studies we could find in 2006 that examined whether introducing or strengthening patent protection leads to greater innovation. “These studies find weak or no evidence that strengthening patent regimes increases innovation; they find evidence that strengthening the patent regime increases patenting! They also find evidence that, in countries with initially weak IP regimes, strengthening IP increases the flow of foreign investment in sectors where patents are frequently used.”

Three of the studies were themselves surveys, and they reached similar conclusions to ours. After failing to find a single study claiming that innovation increased as a consequence of the strengthening of U.S. patent protection in the 1980s,

Gallini writes

Although it seems plausible that the strengthening of U.S. Patents may have contributed to the rise in patenting over the past decade and a half, the connection has proven difficult to verify.

Jaffe writes

... despite the significance of the policy changes and the wide availability of detailed data relating to patenting, robust conclusions regarding the empirical consequences for technological innovations of changes in patent policy are few.

There is widespread unease that the costs of stronger patent protection may exceed the benefits. Both theoretical and, to a lesser extent, empirical research suggest this possibility.

Lerner study examined all significant changes in patent law in all countries over the last 150 years and finds

Consider, for instance, policy changes that strengthen patent protection. Once overall trends in patenting are adjusted for, the changes in patents by residents of the country undertaking the policy change are negative, both in Great Britain and in the country itself. Subject to the caveats noted in the conclusion this evidence suggests that these policy changes did not spur innovation.

Already in 1958 Fritz Machlup wrote in a report to Congress

If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.

Cutting Edge Research

Copyright

It is important to understand that there are a variety of harms of copyright that go beyond the issue of creation.

1. Free speech - copyright and especially its manifestation in laws such as the DMCA can be used to discourage free speech. The Electronic Frontier Foundation has extensive documentation¹ of these abuses. One example is the use of the DMCA by the Diebold corporation in an effort to prevent defects in its voting machines from becoming public. Abuse of the legal system is not limited to copyright law of course; but copyright is a particularly large problem because the suppression of copying by others is intrinsically abusive. For example, copyright originated at the time of printing presses as an effort of monarchs to suppress critical speech and the Soviet Union tightly controlled xerox machines in an effort to prevent the distribution of critical samizdat literature.

2. Mandated technical means of protection (DRM in hardware or software) - arguments are constantly made - and for example in the case of Digital Audio Tapes with success - that laws

¹ See for example <https://www.eff.org/takedowns>.

should mandate the implementation of hardware or software digital rights management. This has the potential for widespread economic harm. Such systems rarely work perfectly - and for the mandate to be effective they must be installed not only on personal computing devices that might be used for copyright violation but also on business and scientific machines that are unlikely to be used for these purposes. When these systems malfunction they can cause the loss of both time and data. By ceding control of general purpose computing devices to outsiders (who must be able to erase offending material) they provide a vector of invasion for malicious software. This consideration is especially important in light of the fact that claims by the "copyright" industry about its size and economic importance are vastly exaggerated.²

3. Discouragement of small businesses - innovation by small businesses in consumer electronics has been greatly hampered by the litigious activity of large media companies. The Replay TV lawsuit in particular was enormously discouraging. Gary Shapiro, head of the Consumer Electronics Association has written eloquently about this problem.³

4. Excessive length of copyright - The period of a copyright's validity has been repeatedly lengthened. This makes no sense in terms of promoting science and the useful arts. In economics, the present value of a future return needs to be discounted at a current interest rate which reflects the long term rate on a security of comparable quality. After ten years the stream of revenue has essentially no present value. In the Eldred case, a friends of court brief by a group of distinguished economists carefully runs through the computations. Moreover, copyright extensions have applied retroactively to existing works - something that obviously provides no incentive for the creation of new works - but of course a large benefit to those whose copyrights are about to expire.⁴

5. The degradation of "fair use" - Fair use is a legal doctrine developed by the courts to allow public use of copyrighted material, for example, as literary criticism or as factual discussion of scientific results or to teach language or literary composition. To do so, one must be able to quote the original to make sense to an extent that may be viewed by the copyright holder as excessive. Large rights holders have successfully degraded these rights. A good example is in the publishing industry where copyright clearance is demanded by publishers for every use of quoted material, photographs and the like - despite the fact that they are clearly covered by fair use. In part this is due to conservatism on the part of publishers - it is safer to get permission, but it also reflects the fact that publishers are themselves copyright holders and wish to preserve their own rights to file lawsuits. Of course it is expensive not only to ask permission, but also to process requests for permission - and it is often easier for copyright holders simply to ignore requests. This creates a variety of harms - one familiar to scholars is the increased length of time required to publish and disseminate scholarly works.⁵

6. Network disruptions - Large rights holders have attempted to disrupt the internet in a variety way ranging from imposing requirements on ISPs for deep packet inspection, banning

² See Boldrin and Levine [2008] Chapter 5.

³ See <http://www.usatoday.com/story/opinion/2013/01/30/cbs-cnet-ces-hopper-sling/1877291/> for his discussion of the Hopper Sling, for example.

⁴ See the brief filed by seventeen economists to the Eldred case <http://cyber.law.harvard.edu/openlaw/eldredvashcroft/supct/amici/economists.pdf>.

⁵ <http://chillingeffects.org/> documents many of the problems with current "fair use."

anonymous access to the internet, denying access to the internet, denial of service attacks, to the poisoning of peer-to-peer networks. They have sought legal immunity from the damages they cause and have made and are attempting to make the internet less useful. Much of this is an attempt to shift the burden of copyright enforcement to third parties: ISPs and the government in particular.⁶

7. The growth of litigation and its costs - For followers of copyright developments, it is constantly entertaining to find out who is suing whom for some new wrinkle on infringement. The effort - related to the problem of network disruption - is to find a way to extend the range of the copyright holders rights and to constrain those of the public. Less entertaining are the many cases where someone is sued in large measure because the plaintiff knows he lacks the resources to fight back and will settle for a modest amount. An entire new business of the “copyright troll” has emerged - these are law firms without clearly established rights who threaten legal action and attempt to extort small settlements from individuals who may or not be violating copyright.⁷

Patents

The story of the past six decades is the opposite of abolishing patents. In new industries such as biotechnology and software where innovation was thriving in the absence of patents – patents have been introduced. Has this led to an explosion of innovation? No economist has been able to find a corresponding increase in aggregate productivity.

The software industry is a good example. Bessen and Meurer [2009] have studied the consequences of the judge-made law allowing a new category of software patents starting in the early 1990s. The title of their book is *Patent Failure*, which is also a summary of their findings.

Like copyright, patents are also associated with significant harms. Patent litigation is driven by dying firms who in their heyday patented everything in sight. As they decline they sue their innovative rivals. A famous example of this is Texas Instruments. A once successful and highly innovative firm, TI could not make the transition to the PC revolution and for a while tried to stay alive by suing the newcomers. Similarly Microsoft has been unable to make the transition to portable devices. Unable to produce a product of their own that can succeed in the marketplace, they instead attempt to use patent claims to garner a share of the profits from the Android Market.

The sad fact is that the vast bulk of patents are not only useless, they do not represent innovation at all. They are part of an arsenal used to fend off - patent lawsuits! This creates large barriers to entry. For example, in the smartphone market the incumbent - Apple - has a large patent portfolio. The new firm on the block - Google - does not. Hence Apple has had some success in slowing down Google’s entry into the market through a series of frivolous patent lawsuit. If this tactic is effective against a giant - albeit a giant lacking a large patent portfolio - such as Google - what are the prospects for a lesser firm that wants to enter the market?

Key Issues for Future Research

While the basic theoretical and empirical elements of copyrights and patents are known, there are several issues still to be investigated. Empirical research in copyright is still relatively weak. In the case of patents there are several missing ingredients. First, independent measures of research output are crucial – here the work of Novolari [2004] and Moser [2005] points the way. Second,

⁶ See Boldrin and Levine [2008] chapter 5.

⁷ For discussion of litigation see Depoorter and Vanneste [2006].

the pharmaceutical industry is a complex web of regulation beyond merely patents, and this needs to be studied as a whole, as for example in Grootendorst et al [2010].

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