

Demystifying intellectual property issues (including a minimal and a moderate alternative to the current IP regime)

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Abstract

The creation of IP rights in modern history can be portrayed as a very nice illustration of the influence of various pressure groups grazing the commons. This view invalidates the natural right theory of intellectual property (IP) and leaves contract theory - however economists often found specific IP rights difficult to justify. A minimal alternative (trademarks only) and a moderate alternative (trademarks, industry-specific patents and short copyright) are discussed. Concluding are some speculations on the comparative neglect IP has received politically.

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1 Introduction

”Efforts should be made, making full use of information technology, to ensure that all creators and users, in all parts of the world, are knowledgeable about their rights, through ongoing efforts to enhance public awareness of intellectual property rights and to demystify intellectual property issues.” World Intellectual Property Declaration [7, Section 6, iv]

In the last twelve months, the growth of a global intellectual property regime has been sharply criticized in petitions and politics originating in Europe (patentability of software), Africa (global validity of AIDS patents) and the US (scholars are petitioning to open copyright for scholarly journals). In the entertainment sector, Napster and its followers (e.g. Gnutella) technically challenge the copyright doctrine. In the area of domain names, ICANN conceived the need for a global democratic legitimation. ”The extreme lightness of questions arising from pirating the Rolling Stones thanks to Napster cannot well compare to the unbearable pain of the AIDS victims. But it is often the property of revolutions to unite in a view radically different horizons.” [5]

2 Recurrent patterns in the emergence of IP rights (an attempt to apply ’proofs by induction’ to history)

In 1961 Machlup argued that the debate on patents was nothing than a repetition of older arguments (”Indeed one would not be able to quote a 20th century author if one wanted always only quote the first and true inventor of an argument on the value of the patent system” [19]). I think that with the advent of modern reproduction technology the bias has shifted considerably against strong IP protection but I agree that at least most philosophical arguments in favor of IP have not changed, so I would like to use history to deconstruct the ”natural rights” notion of IP (so that only contract theory is left). Many accounts of IP history treat patents, copyright and trademarks separately (or exclusively). Because our aim is simply to deconstruct the natural law theory as a mixture of ’tragedy of the commons’ plus domino effect, the liberty is taken to mix everything up - after all it is not accidental that the first fixed durations in copyright and patents began both with 14 years.

2.1 "Please grant me some privileges"

Unlike many other topoi of the political discourse (such as e.g. freedom, taxes), intellectual property apparently had no role in the antique cosmos and emerged in early modern times.

In medieval Europe, the idea of asking a political power to grant exclusive rights for developing a business has evolved apparently independently in various times and places. In the literature on the history of patents one normally begins with the general history of guilds (such as Renouard [28]) or with what now would be called "utility models" in Venice (14th century) granted by glass-makers guilds. Patents evolve e.g. in 16th century England and in the 16th century German states. At that time, of course, grants of privileges were obtained individually from the local sovereigns: "So we ask Sigmund von Maltitz carefully to give us upon our letter the ducal mercy that during his lifetime nobody in our country can make a waterworks of said art," [13, p. 90] an entrepreneur writes in a 1512 letter. Hoffmann [13] also shows that already the early patent applicants were aware of the modern justification for granting patents: reward for labor as natural right, contract theory as well as disclosure and motivation effects.

Originally the term "patent", coined in 16th century England, in addition to inventions, was also used for all other kind of crown-granted monopolies, or simple exploitation of businesses (such as e.g. lighthouses) or printing of books (the regulation of the book market being politically important):

"The event in the history of Anglo-American copyright that led to the shaping events of the seventeenth and eighteenth centuries was the Charter of the Stationers' Company granted in 1556 by Philip and Mary, the Roman Catholic successors to Henry VIII's Protestant son, Edward VI. The Charter gave the stationers the power to make ordinances, provisions, and statutes for the governance of the art or mystery of stationery, as well as the power to search out illegal presses and books and things with the power of seizing, taking, or burning the foresaid books or things, or any of them printed or to be printed contrary to the form of any statute, act, or proclamation." [23]. The term "copyright" refers to the rule that in order to print ("copy") a book, a publisher had to register his publication with the Stationers Company.

2.2 The Lets-clean-up-that-mess pattern

After this first phase, the IP generation lifecycle sometimes halted (as with the decline of Venetian power or in the German thirty years war), but where political development avoided disastrous downturns the growing jungle of patents evoked some counterreactions, such as when patents on gambling cards were banned in a court decision (case of monopolies 1603). In England a clean-up on trade patents ("Statute of Monopolies 1623") finally decided to grant trade patents only to the first and true inventor of a new invention - Machlup [19] considers this document the Magna Charta of inventors. However, in addition to the reaffirmed inventors' IP also the printers' IP remained untouched because it

was so useful to the both government and the publishers' guild:

"William Crosskey points out that Philip and Mary incorporated the Stationers' Company to set up a mode of regulating the English printing trade that would facilitate the efforts of the Romish clergy to stamp out the Protestant Reformation. But the motives of the stationers were of a less exalted kind. Thus, Elizabeth, relying on the stationers' self-interest, confirmed the Charter to turn the stationers to support the English, rather than the Romish, church, and the Stationers' Company became, in turn, the instrument of the Stuarts against the Puritans, in the early seventeenth century; the instrument of the Puritans, against their royalist enemies, when the Puritans came to power; the instrument of the royalists against the Puritans, after the Restoration; and, for a brief time, the instrument of the triumphant Whigs, after the glorious Revolution, of 1688. But through all these vicissitudes, the stationers themselves steadfastly remained, what they had always been, eminently practical men; and they consistently protected their monopoly." [23]

Of course, the stationers chose a more noble wording to defend their monopoly "Books (except the sacred Bible) are not of such general use and necessity, as some staple commodities are, which feed and clothe us, nor are they so perishable, or require change in keeping, some of them being once bought, remain to children's children, and many of them are rarities only and only useful to only very few, and of no necessity to any, few man bestow more in Books than what they can spare out of their superfluities ... And therefore property in Books maintained among stationers cannot have the same effect, in order to the public, as it has in other Commodities of more public use and necessity." [26]. Naturally they also mentioned that market regulation would result in less confusion. The "piracy" metaphor (for copying without permission) also can be traced back into the 18th century [11].

A recent instance of the "Lets-clean-up-that-mess" pattern can be found in the EU Green Paper [6, p. 19] asking for the ex post legalization of European software patents after some 13,000 software-related inventions had been granted and case law been spoken against the wording of the European Patent Convention (Par 52).

2.3 The The-others-have-it pattern

United States: The patent system was exported to the colonial empire and (e.g. some American British colonies such as Carolina) and thus made its way into the US constitution "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" (U.S. Constitution, Article I, Section 8). This formulation had not been included in the first draft and there is also evidence that its inclusion may have been facilitated by well-administered lobbying effort: "A quaint but perhaps important early instance involves the efforts of John Fitch, one of the persons who claimed to have invented the steamboat, to obtain patent protection for his invention. During the week of August 20, 1787, Fitch invited at least three (and perhaps many more) members of the Constitutional Con-

vention to see a demonstration (and perhaps to ride upon) his invention. What exactly was discussed during this demonstration we will never know, but the chances are good that he pressed on the delegates the need for firmer, national patent laws. Fitch's timing was either shrewd or fortuitous. On August 18, the first draft of what ultimately became the intellectual-property clause had first been presented to the delegates. By September 5, they had settled on the language that was ultimately incorporated into the Constitution." [8].

France: When Boufflers presented a petition of inventors for patents to the National Assembly in 1791 the US were already shining example: "They didn't have these vain scruples, these strong and wise Americans, these friends worthy of all freedom, who, in their new constitution, have adopted the legislation of the English industry" [28].

Germany: Huge lobbying efforts were necessary to implement patents in Germany in 1877. "The generation of the patent law is an early example how a pressure group is formed in relatively short time generating an opinion change in ministries and public opinion and mould it fastly into legislation" [3]. Again in Germany, the comparison with Britain that assert patents rights in 1872 played a role [3].

Vertical extension: The "the-others-have-it" pattern also has played a role in the vertical extension of IP, e.g. in the extension of copyright to musical recordings (US 1971), computer programs (US 1980) and architecture (US 1990). It can also be observed in the discussion on software patents in Europe: "The US patent system dominates the world, and if we had the same system here then Siemens would apply for more patents, for our engineers concentrate rather on the home market. Of course we could just apply for the patents in the US but this makes it more difficult to motivate our people for patent development" [24]. or "Although when agreeing on standards in international standardization authorities it is customary that involved patent holders must agree to grant licenses to adequate non-discriminatory conditions. Nonetheless a company that does not possess any relevant patents is disadvantaged." [15].

2.4 Economists on patents

Machlup [19] observed that after patents had withstood the hot debates of the 1860s and 1870s in Britain and Germany economists mostly turned to other topics. In the 20th century, Plant [26] and Arrow [2] were outspoken critics of the patent system as such but even well-known defenders such as Schmookler [31] or Nordhaus have been at best lukewarm: "The existence of a patent system reduces the uncertainty that inevitably surrounds inventive activity. Without a patent system there is not only technological uncertainty, but also uncertainty about whether the firm can appropriate and license the invention. A patent system is alleged to reduce the second kind of uncertainty, and to the extent that inventors are risk averse, this will increase the level of inventive activity. There is however, an additional uncertainty created by the patent system, namely, whether the firm will be the first to arrive at the Patent Office with the invention. It is not clear which of these influences is more important." [22, p. 89].

Empirical studies also tend to show that the influence of the patent system on company inventiveness is weak: "Taken together, the empirical evidence suggests that firm responsiveness to even significant changes in patent design is limited". [30], "According to detailed data obtained from a random sample of 100 firms from 12 manufacturing industries, patent protection was judged to be essential for the development or introduction of one-third or more of the inventions during 1981-83 in only 2 industries pharmaceuticals and chemicals. On the other hand, in 7 industries (electrical equipment, office equipment, motor vehicles, instruments, primary metals, rubber, and textiles), patent protection was estimated to be essential for the development and introduction of less than 10 percent of their inventions. Indeed, in office equipment, motor vehicles, rubber, and textiles, the firms were unanimous in reporting that patent protection was not essential for the development or introduction of any of their inventions during this period." [20] or outright harmful "our preliminary evidence suggests that the pro-patent shift in the 1980s has altered the patent strategies of semiconductor firms, but in ways that go beyond the classic incentives provided of the patent system. On the one hand, stronger patent rights may have facilitated specialization in the industry and may well have supported a market for know-how exchange involving entrant firms. On the other hand, such positive effects are countered by a socially inefficient process whereby firms amass vast patent portfolios simply as bargaining chips." [12]

One should be aware that studies on the economics of IP tend to focus on producers (which do have accounting departments), not consumers (which usually do not have accounting departments). A notable exception from this are studies on the economics of libraries that are dependent on the monopoly of journal publishers [32].

3 (Just) yet another IP crisis ?

In the introduction it was noted that IP is under critique from quite different sides. One might argue that IP has already survived well the attacks of 1623, 1710, the 1860/70s so nothing seems new here.

3.1 Marginal information distribution costs approaching zero

Unlike the age of the printing press (where making copies was still an expensive job) the (theoretical) costs of distributing information approaches zero. Assume that you want to read 1,000 pages of text daily (to allow for extensive browsing) the total data volume data volume is 2 MB daily and 700 MB annually (the cost of which are well below 50 Euro). Of course this does not apply to downloading films, software distro full CD images but it shows that the needs which a few years ago would have sounded utopian now can be satisfied very cheaply. Moore's prediction also still holds so that even for most of today's 'expensive' applications bandwidth will probably quite cheap. For a publisher of informa-

tion, expensive "distribution" arrangements (such as keeping a stock of paper copies, opening distribution channels etc.) can be saved which greatly reduces the cost of publishing as well.

"What is wrong is that we have invented the technology to eliminate scarcity, but we are deliberately throwing it away to benefit those who profit from scarcity. We now have the means to duplicate any kind of information that can be compactly represented in digital media. We can replicate it worldwide, to billions of people, for very low costs, affordable by individuals. We are working hard on technologies that will permit other sorts of resources to be duplicated this easily, including arbitrary physical objects (nanotechnology). The progress of science, technology, and free markets have produced an end to many kinds of scarcity. A hundred years ago, more than 99% of Americans were still using out-houses, and one out of every ten children died in infancy. Now even the poorest Americans have cars, television, telephones, heat, clean water, sanitary sewers – things that the richest millionaires of 1900 could not buy. These technologies promise an end to physical want in the near future." [9]

Notably, artificial scarcity goes against traditional justifications of property: "The significance of private property was enunciated long ago with great clarity by David Hume in his Enquiry Concerning the Principles of Morals. Property, he argued, has no purpose where there is abundance; it arises, and derives its significance, out of the scarcity of the objects which become appropriated, in a world in which people desire to benefit from their own work and sacrifice. When the security of property is adequately assured, property owners generally see to it, that scarce "means" are directed to those uses which, within their knowledge and judgment, are most productive of what they want. Such is the diffusion of private property and of the desire to use it, that it is at any rate generally true that there is not a sufficient concentration of ownership of the supplies of a particular good, and of all the easily substitutable alternatives for it, to enable the owner to control prices of the property they own." [26, p. 30].

3.2 Ubiquity of artificial scarcity

What is different from the situation e.g. in the not-so-industrialized 19th century is that the situation of artificial scarcity is penetrating far more deeper into everyday's lives. In the 19th century far less persons had the educational foundation nor the material resources to do research. Far less persons had access to journal or scientific information. Modern (copiable) media such as photography, cinema or television were not existent. Copying machines did not exist. Reproduction of a printed article required (considerable) investment into a printing press (or a scribe / secretary). So intellectual property protection was only directly infringing with the liberties of a few thousand persons.

Today in Germany more than 20% of the population have internet access, around 20% of the population got (some) university education and virtually everybody can be reached via mass media).

Also in the 19th century the amount of infringeable intellectual property generated was far lower (indicated by patent statistics such as Schmookler [31] or

publication indexes) and due to higher transaction costs for internationalization (transportation) far more localized.

The total amount of artificial scarcity is the product of infringeable intellectual property and potential infringers has thus grown quadratically. Arguably, a third orthogonal dimension can be added by taking into account the vertical expansion of the IP system.

3.3 The minimal alternative

From a theoretical point of view, there are at least two imaginable equilibrium states for IP. One is maximal protection (what is coming rather close to what we do have) and the other would be a state without any patents or copyrights at all. As the liberalisation of the utility or telephony sector has shown even in such a scenario content providers are not likely to lose their market position (but are of course under higher competitive pressure). It is not clear whether a total minimal competition scenario will be more useful to medium- or large-sized businesses but it can be assumed that it could be useful to end users and small enterprise (which is sometimes close to end users).

On the other hand, trade secrets can hardly be banned (though one could limit the time for non-disclosure agreements) nor would it be a good idea to give up unique internet protocol addresses (or domain names). From this I would think that if even under the minimalist model certain kinds of trade marks (such as domain names) are useful. At least in a non-mathematical sense, the namespace of typable or memorable IDs is obviously more limited (scarce) than the space of writeable texts or the space of patentable ideas. So this real scarcity also justifies its political importance (which explains why bodies such as ICANN receive so much attention). A good thing of a once-welldefined namespace (such as the current domain name space) is that "land reforms" are still comparatively cheap (e.g. remap company.com to company.com.tm). Remapping the trade mark system onto a unique global name space would also make it non-ambiguous and be better enforceable and bring it back to its origins - consumer protection ("Initially, for example, most courts (and the leading commentator) insisted that, to be protected, a trademark had to include the name of the manufacturer.").[8].

3.4 A moderate alternative

This would mean the same on trademarks, plus:

Restriction of copyright to a very short term (one could think of one year - this is also the difference Peter Deutsch and the Ralph Levien [17] have used for their different ghostscript licenses - and five years (librarians estimate that 50% of books go out of print within 5 years [21])) so that news and entertainment providers as well as software developers are not touched.

It could also be demanded that copyright is not granted per default but only after registering the document (and maybe deposition of its electronic version) with a unique document object identifier (librarians would be happy about this and surely put up a web-interfaced registry).

Patents are far more difficult and proposing optimizations can easily backfire [35, p. 109] quotes an SPI representative that the institution has failed; the same arguably applies to the simplified jurisdiction at the CAFC (Court of Appeal for the Federal Circuit).

Probably it is best to treat different industries differently (make e.g. patent duration variable on patent classification); this may mean to continue non-patentability for software and finance or even extend non-patentability to other areas. One could think about dropping the examination (which consumes time and resources; furthermore granted patents are more lucrative to the offices which of course also corrupts the examination process [1]).

Also one of the compromises that Lutterbeck [18, p. 132] proposes such as to allow distribution but not commercial distribution of source code (source code privilege) is problematic in that it hinders commercial usage of open source and commercial usage of non-open source software in general.

Personally, I could imagine the minimal alternative as a long-term option and the moderate alternative as a more realistic political agenda.

4 Political neglect

4.1 Challenging the IP system in general does not help the specific agendas of involved interest groups

One cannot expect any particular professionals' group suffering from IP expansion to become very vocal on IP in general for anybody doing this risks being blamed for making illicit generalizations both from within the group and out of it.

Let us illustrate this with software developers:

"There is a striking lack of discussion from the usual leaders with regards to the application of copyright in areas other than software. Raymond is mute, and Stallman mumbles. They both seem to view software as a special case: Raymond tacitly, and Stallman explicitly. [...] The question of software as a special case remains unresolved (and probably unresolvable) in my opinion. We are left to ponder for ourselves whether we should apply our free software attitudes to other works as well. "[34]. The same of course more intensively applies to software patents where the issues at stake are even higher: "No Politics - Do not include in your emails any political analysis. Otherwise, certain civil servants at the European Commission will pretend that you are politically biased and claim that your arguments are irrelevant." [33] and even [29] is very careful about his thoughts on the economy of the patents: "Finally, I do not in any way represent the whole movement of people against software patents. In this movement are people who approve of patents in general except for software, people who think that patents are useful in some specific cases outside of the software industry but not in general, people without opinion on patents in general but against software patents, and people who oppose patents in general. As far as I know, most people in the movement against software patents are in the third category without an

opinion in general, and most of the remaining are in the first two categories. As far as I know, the reason is that they don't have a clear understanding of how patents in general work or do not work, so they tend to accept the legitimacy of existing laws a priori, until proven incorrect. Such was also my opinion (or lack thereof) about patents, until I undertook to untangle the economic issues behind patents. I am now most definitely in the last category, a posteriori, after a lot of hard thought, the conclusion of which I'm presenting in current document. I do not claim to represent anyone but myself, and I expect my arguments to be considered a posteriori, after pondering them, for what they are, good or bad, and not a priori, without pondering them, for the number or quality of people who back them."

4.2 Political parties ?

Most of the aforementioned economists writing or criticizing IP were liberals (such as Plant or Machlup; for a detail of libertarian perspectives see Kinsella [14, p. 8]) and it is interesting that also on the political left there is little criticism on intellectual property (a notable albeit isolated exception, Proudhon, [27], but nothing can be found e.g. in the works of Marx. Ironically, socialist parties rather seem have to become defenders of e.g. patents on behalf of the inventors, e.g. "The inventor, if he wishes to defend his intellectual property against capitalist pirates, must begin by buying that right, taking out a patent, which he must renew every year; on the day he misses a payment, his intellectual property becomes the lawful prey of the robbers of capitalism. Even if he pays, he can secure that right only for a time: in France, fourteen years. And during these few years, not long enough generally to get his invention fully introduced into practical industry, it is he, the inventor, who at his own expense has to set in motion the machinery of the law against the capitalist pirates who rob him." [16] (Lafargue, son-in-law to Marx, was in the French socialist party).

Also Lafargue's next conclusion is diametrically opposed to the author's conclusions: "The trade-mark, which is a capitalistic property that never required any intellectual effort, is on the contrary indefinitely protected by law like material property." [16].

Gispen [10] writing on the genesis of the employee inventors law created in Nazi Germany gives a nice example how bipartisan these overtones can be "Especially on the forefront of the movement there were many voices that not only the working masses but also the knowledge workers are exposed to capitalist domination. For these aspects the Fuhrer doubtless had great interest".

Still today even social democrat governments in Europe still push IPization of academic research for better marketization (e.g. German's minister of education Bulmahn "To generate new patents and market-ready products the results of public research must be better utilized. By a new marketization initiative the process from idea generation to patenting shall be recognized and strengthened. With over 100 million DM networks of patent and utilization agencies are founded and patent subsidies for creating enterprises are provided". [25]

Now that the problems with software IP have become visible, parties, philosophers and politicians should back a broader dialogue. (The fact that some IP laws are governed by international treaties such as TRIPS is no counterargument; at least one can try to change the treaties.) I would like to finish this section with a quote from an MPAA copyright press release: "For in the end, this is not only a fight about the protection of music or movies, software code or video games. Nor is it a fight about technology's promise or its limitations. This is, at its core, quite simply about right and wrong. Thank you for letting me speak from the heart." [4]

4.3 Academic research

Some additional areas where research might be interesting: interoperability vs patents, as demanded by Lutterbeck [18] comparative research on innovation in different industries ("for years I have been arguing for studies (not opinions) to be done of the quality of issued patents in a variety of fields" (Aharonian [1]), a study on the conspicuous absence of IP in philosophy and / or the political left and of course game theory of the generation of IP rights.

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