The lengthening and strengthening of intellectual property rights (IPRs) over the last 30 years or so has generated an immense and expanding literature on the legitimacy and/or efficacy of intellectual property rights in general and the ‘optimality’ of the current intellectual property rights regime in particular. Legal scholars, social scientists, philosophers among others all have contributed to the this rich literature; this essay, however, focuses on the contribution by economists. I begin this essay by creating a typology of goods and services commonly treated as property based upon their rivalrousness and excludability. I then examine the (rather problematic) economic justification of intellectual property– focusing on copyrights and patents– provided by economists. Given the ‘underwhelming’ economic rationale behind patents and copyrights in general, it comes as no surprise that the lengthening and
There is the possibility of congestion, however; seating may be limited at a concert, or highways can be jammed.

A typology of property.

Economists typically divide goods and services into four types based upon their rivalrousness and excludability. A rivalrous good or service implies it cannot be consumed by two people at the same time; if I am consuming (e.g., wearing) a shirt, for example, you cannot be consuming (wearing) it at the same time. Non-rivalrous goods can, on the other hand, be consumed by many people simultaneously—think of a live concert or the national highway system.\(^1\) Excludability refers to whether or not one’s consumption of a good can be easily prevented. A lighthouse’s signal is essentially non-excludable as anyone on the water can see it, but a cable television broadcast is excludable as one must pay in order to receive it. Based upon a good or service’s rivalrousness and excludability, four types of goods emerge, which are presented in table one:

\(^{1}\) There is the possibility of congestion, however; seating may be limited at a concert, or highways can be jammed.
Table One:

<table>
<thead>
<tr>
<th></th>
<th>Excludable</th>
<th>Non-excludable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rivalrous</td>
<td><strong>Private goods:</strong> Classic private property (cars, food, shirts).</td>
<td><strong>Common goods:</strong> Ocean water, air</td>
</tr>
<tr>
<td>non-rivalrous</td>
<td><strong>Club goods:</strong> Cable TV, Theme parks, Country Clubs.</td>
<td><strong>Pure Public Goods:</strong> National defense; Public K-12 schools</td>
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</table>

It is beyond the scope of this essay to consider in detail the economic justifications of all types of property listed above, but a brief survey is warranted before moving on to ‘intellectual property’. The primary argument presented by mainstream economics for private goods in general rests upon the idea of the ‘tragedy of the commons’ and scarcity. Demsetz, for example, in his landmark and influential article “Toward a Theory of Property Rights” (1967), claims that private property rights over rivalrous and excludable goods will spontaneously emerge in society when the benefits of establishing and enforcing them outweigh the costs of doing so. Demsetz presents to us in this essay a tribe of rational hunters sharing common land who occasionally sell the pelts of their prey. We then consider an increase in the demand for pelts, which results in hunters receiving increased pecuniary benefits from them. If the hunters act upon their new financial incentives, however, they may collectively hunt the animals to extinction– a classic tragedy of the commons. Furthermore, even if a subset of the tribe began husbanding wild animals,
without clear property rights over them, the tribe as a whole will receive a positive externality (as they could hunt them as well) and those taking the time and effort to help raise animals will receive little if any gain.

If the hunters had property rights over specific tracks of land on the other hand, however, tribesmen would have incentives to husband animals and the tragedy could be avoided. But, establishing property rights is costly, as it entails (at a minimum) expending time to negotiate the land ownership and creating enforcement systems and means to settle disputes. Demsetz argues in effect that if the financial benefits from establishing property rights exceed the costs of creating and maintaining them, then the rational response is to create them; hence, private property ‘spontaneously’ emerges as a consequence of individual cost/benefit calculations when a tragedy of the commons situation arises. Variants of this theory underpin the ‘law and economics’ school of thought associated with Richard Posner among others and constitute the standard ‘textbook’ explanation of private property in general.

Common goods are defined as being rivalrous but non-excludable, and consist of things like air or ocean water. Two people cannot breath the exact same air at the same time, or put the exact same ocean water in a bottle, which makes these goods rivalrous. Nonetheless, my breathing or collecting water does not impair your ability to do the same, making the goods non-excludable. Fish stocks in international waters possess these traits to provide another
example. Economists only tend to get interested in common goods when a tragedy of the commons situation arises, such as the ocean’s fish stocks becoming depleted. Since common goods are by definition non-excludable, the typical response to their impending exhaustion is some sort of communal regulation; in 1986, for example, the UN placed a moratorium on the commercial whaling industry.

Pure public goods are inherently non-excludable and non-rivalrous– it is difficult if not impossible to exclude people from consuming them and one’s consumption of the good does not impair someone else’s ability to consume it either. Furthermore, pure public goods typically possess ‘positive externalities’, or in other words, have social benefits that outweigh their costs of provision. Although public goods are often valuable and/or necessary for society, private for-profit enterprises have no incentive to provide them given their non-excludable nature– if you cannot exclude people from consuming them, charging individuals for their use becomes impossible, and hence there is no profit motivation for their provision. Any ship at sea (within range), for example, can see a lighthouse’s beacon, hence, it is non-rivalrous, and one ship’s sighting of it does not exclude others from seeing it either. The lack of excludability of a lighthouse implies little incentives for the private sector to provide one– how could they recover their investment? Regarding the positive externality aspect of public goods, the cost of erecting and maintaining a
lighthouse may be offset by fewer shipwrecks and decreased shipping costs. Because of the non-rivalrous and non-excludable nature of public goods, economists have long argued for the public provisioning of these types of goods since at least the time of Adam Smith. Classical examples of public goods are national defense, lighthouses, police and fire departments, public schools, highways and so forth.

‘Classic’ club goods consist of non-rivalrous things like theme parks, country clubs, cinemas and cable television that are all capable of being made excludable with relative ease. Many people can enjoy Disney’s Magic Kingdom as the same time, for example, making it non-rivalrous, and since Disney provides this entertainment as a means for generating profits, fences and walls surrounding the Magic Kingdom to create excludability— to pass through the gates, you must purchase a ticket. Classic club goods are relatively easy to make excludable: country clubs are typically by invitation only; cable television requires lines running to one’s abode and payment to the company to make the ‘dead cable’ live; cinemas are enclosed buildings that you need a ticket to enter. Finally, another characteristic of club goods is that they are typically luxuries rather than necessities, which implies their exclusion is not fundamentally

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2 A healthy debate does exists over what exactly constitutes public goods. Public K-12 education has long been seen as a public good, as society as a whole gains from an educated population (e.g., education has large positive externalities), but some people have challenged the public provisioning of it; see for example Young, A., and W. Block (1999).
problematic on an economic level, no matter how entertaining one might believe Disney to be.

**Justifying patents and copyrights.**

The creation of patents and copyrights in effect serve to transform certain ideas and expressions of the mind, which by themselves are inherently non-rivalrous into excludable club goods via statutory monopoly. Patents and copyrights are in effect walls and fences, albeit legal ones, surrounding certain ideas and expressions of the mind *designed* to enable their ‘owners’ to control their distribution, and increasingly, their consumption as well.³ The non-rivalrous nature of ideas and expressions of the mind is obvious—many people can simultaneous consume the same idea or view an image without impairing another’s consumption of it. If I create a new way of making pins or shoes, for example, someone else can emulate the process without depriving me of it. Making creations and expressions of the mind excludable via legal fiat entails a wide range of costs, however, besides being extremely difficult. Enforcing excludablity of ‘intellectual property’⁴ today requires evermore sophisticated

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³ Consider various aspects of the Digital Millennium Copyright Act (DMCA) which prohibits the circumvention of access controls on certain copyrighted ideas, even if there is no violation of the copyright itself.

⁴ The term intellectual property was first coined in 1967, although it did not enter into common vocabulary until the early 1980s. Infringements of a statutory monopoly granted to holders of patents or copyrights are treated very differently than material theft. Dowling v. United States (1985), for example, distinguished between bootleg phonorecords and stolen property: “interference
surveillance and the numerous concerns about digital ‘piracy’ speak volumes about the difficulties inherent in making digital media excludable.\textsuperscript{5}

Given that creations and expressions of the mind are by their very nature non-rivalrous and very difficult (and costly) to make excludable, what is the economic logic behind legally erecting fences and walls around certain ones? Whatever one’s thoughts on the ‘tragedy of the commons’ argument as a justification for private goods in general, the goods under consideration in these theories are rivalrous; hence, they do not apply to inherently non-rivalrous goods like creations and expressions of the mind. Demsetz, for example, predicates his argument for the spontaneous emergence of private property upon the incentives and costs associated with limited, or scarce, resources— if I take the fur off an animal, you cannot. What if, however hypothetical this may be, my hunting did not impact your hunting one iota? Pelts in this hypothetical would no longer be subject to a tragedy of the

\textsuperscript{5} For a lucid (and entertaining) survey of the digital piracy debate, see John Gantz and Jack Rochester (2005).
commons and therefore no incentives would exist for rational individuals to develop property rights over them.

Economists have long recognized that ‘traditional’ arguments in support of private property do not support making intangible creations of the mind excludable by legal fiat and in fact a wide range of justifications for intellectual property have been produced over time, but the economic rationale behind them primarily relies on utilitarian, social welfare arguments, which arguably are the rationale for copyright and patent protection as stated in article one of the US constitution. The economic logic runs like this: new ideas and technology improve social welfare because they possess positive externalities, such as a better utilization of scarce resources, an increase in productivity for society as a whole, and new techniques and ideas that improve our quality of life. Without out some way to ‘recoup’ the time and effort spend undertaking socially beneficial creative work– what patents and copyrights provide

6 William Fisher (2001) for example recently elaborated four loose schools of thought/theories that justify intellectual property: utilitarian social welfare, Lockean labor-desert, human need/personality, and social planning. Mazzoleni and Nelson (1998) explicate four economic theories for patents: invention motivation, invention dissemination, induce commercialization, and exploration control. Nonetheless, they also state most empirical and theoretical work has focused on invention motivation, which is part of the social welfare approach discussed here.

7 Art. 1, § 8, cl. 8 gives the Congress the authority 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.”
Edith Penrose (1951) notes that “If national patent laws did not exist, it would be difficult to make a conclusive case for introducing them” (41). Although other means have been proposed which will be considered below—people have no incentive to perform creative labor. In other words, without the incentives provided by legal fiat, society as a whole will be less creative than optimal. Nordhaus articulated this argument nicely in his landmark text *Invention, Growth, and Welfare* (1969), where he states that because “information is expensive to produce, cheap to reproduce, and difficult to profit from,” without some form of incentives, a market economy “is unable to generate new knowledge efficiently” (1969, 70). Although the logic seems quite simple, utilitarian social welfare arguments in support of intellectual property in the form of patents and copyrights suffer from some serious theoretical problems that economists have long struggled with.\(^8\)

The primary problem of this approach largely stems from the cost/benefit framework utilized to justify copyrights and patents itself. To reiterate, the primary rationale given for copyright and patent protection is to provide incentives for creativity which will in turn increase social welfare. The very existence of intellectual property, however, creates losses in social welfare known as ‘dead weight’. The *objective* of patents and copyrights is, after all, to make certain creations of the mind excludable, rendering them ‘less cheap’ to reproduce; hence, consumers of these ideas must purchase them from

\[^8\] Edith Penrose (1951) notes that “If national patent laws did not exist, it would be difficult to make a conclusive case for introducing them” (41).
monopolies, creating a loss of consumer surplus. Economists of course recognize the ‘dead weight loss’ patents and copyrights create, but supporters of these statutory monopolies argue that they ideally encourage creativity to such an extent that the positive externalities from the new ideas and knowledge generated will at a minimum offset the dead weight loss their existence creates.

An effective intellectual property regime therefore must straddle a fine line– it must provide enough incentives to facilitate a positive contribution to social welfare while also ensuring that the associated social welfare losses of the regime do not outweigh the resulting social welfare gains. Rephrasing this in terms of broader cost/benefit analysis, an effective patent and copyright regime must entail more social benefits than costs to justify its existence. One of the first economists to struggle with trying to specify an optimal intellectual property rights regime was Nordhaus (1969), who considered (and explicated) this problem in detail in his study on the economics of patents and innovation and it remains the core issue for those utilizing a social welfare perspective to justify patents and copyrights.

9 Kitch (2000) argues too much effort has been spent trying to explicate intellectual property using a monopoly framework, distracting people from the range of other costs associated with patents.

10 Nordhaus does argue, however, that in the case of ‘large’ inventions, a subsidy system would be better as the inventions would reach the public domain faster. We will return to this argument below.
According to Nordhaus, as patent lives are extended, the incentives are greater for innovation and hence contribute more to social welfare. On the other hand, ‘strong and long’ patent protection implies more dead weight losses from the inefficiencies monopolies on knowledge create (e.g., reduced competition, loss in consumer surplus, etc.), and may also stifle innovation by restricting the intellectual commons– the ‘raw materials’ of creators.\textsuperscript{11}

Nordhaus concluded that determining the optimal life and strength of a patent system is crucial to ensure a positive social welfare impact, but he also stated that it would be is “extremely difficult” (1969, 86) to specify exactly what the optimal life and strength of a patent regime should be. Nordhaus seriously understated the difficulty in calculating the optimal patent regime, however, for the computations involved are in effect impossible.

To illustrate why calculating the optimal regime is more than ‘extremely difficult’, consider what measuring the both the social welfare gains and losses any intellectual property rights regime would entail. To start with, consider the social benefit computations. The ostensible purpose of patents and copyrights is to create incentives to produce ideas and inventions that will increase social welfare. The logic again is quite straightforward– a patent and copyright system will spur creativity. \textit{Measuring} the impact of these legal monopolies over certain ideas and expressions is not so simple, however, for a variety of reasons. First,

\textsuperscript{11} See for example Scotchmer (1991) or Heller and Eisenberg (1998).
even if creativity increased after instituting a patent and copyright regime, we cannot know that the increase was a result of the new regime or not as we have no ‘counter-factual’ to compare it with: as with most public policy, we cannot track what would have happened if we did not implement the change. Some intrepid economists have explored this problem, using historical examples of pre and post copyright and patent regimes and/or surveying firm managers, but the evidence is, at best, ambiguous “because of the absence of real experiments” (Hall 2007, 573). Secondly, even if we assume that patents and copyrights induce innovation and creativity, to design an optimal regime, we would have to test and measure regimes of varying length and strength to see which combinations manage to yield greater benefits than costs. All of this does not even bring us to the intractable problem of actually measuring the benefits from a intellectual property regime, e.g., the supposed social welfare gains from the creative labor the regime induces.

The ‘cost’ side of the equation is equally difficult to specify, as a close look at all the costs involved with patents and copyrights demonstrates. One cost already mentioned is the ‘dead weight loss’ of monopoly pricing and the

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12 Bronwyn Hall (2007) provides an excellent, contemporary survey of this literature.

13 The ‘incentive theory’ of patents and copyrights has been roundly criticized in that innovation will not end without this from of statutory monopoly. See, for example Yochai Benkler’s (2002) discussion of the open-source software software movement, or Lessig (2004).
loss of consumer surplus, which can be approximated (roughly) by the size and impact of the ‘rents’ accruing to the owners of patents and copyrights (see Baker and Chatani (2002) for one methodology for doing so), but the costs do not stop there. Perhaps the most significant costs stemming from any intellectual property regime are the ones associated with the enforcement of the regime, which come in both direct and indirect forms. Direct costs of enforcement include judicial resources (lawyer fees and courtroom time for example) and criminal investigations, which are by no means insubstantial. Indirect enforcement costs comprise a wider array of things related to opportunity costs, including surveillance costs, the time involved to ensure compliance with the regime, filing and registration fees just to name a few.\textsuperscript{14} We also have the social welfare costs of potentially less invention and creativity Nordhaus mentioned that arise from the enclosure of the intellectual commons from patents and copyrights themselves.\textsuperscript{15} Just as for the benefit side, in order to determine the optimal regime, we would need to calculate these costs for a wide range of length and strength of the legal protection awarded. The difficulty

\textsuperscript{14} Kitch explores the issues of costs of any property rights regime in general, stating that “Any system of property rights involves costs in defining the scope of the rights, detecting and preventing trespass, and in foreclosing particular productive opportunities that might be possible if the property system did not exist” (2000, 1732).

\textsuperscript{15} See Michael Heller and Rebecca Eisenberg (1998) for one clear example of how patents can deter innovation, or Scotchmer (1991).
in even attempting to compute all the costs and benefits any intellectual property regime serves as an immense theoretical hurdle to those relying upon this framework and to my knowledge, such an undertaking has never been undertaken in totality, let alone conclusively.

Another difficulty with this perspective arises with the ‘incentive framework’ for creativity itself. In Hall’s survey of the economic literature, she also concludes that the models collectively produced “ambiguous results with respect to incentives provided by patents” (2007, 572). Penrose, as usual, states the problem eloquently: “it seems that the argument that patents are necessary to induce innovation and to encourage the exploitation of invention is difficult to evaluate and impossible to test adequately” (1951, 39). Lemley (2004) compellingly argues that innovation will not end without the creation of legal monopolies over knowledge and ideas, and many other monetary and non-monetary rewards may be sufficient to induce innovation, such as prestige, tenure, curiosity, or even extra profits for lead time innovations.16 In conclusion, even within the utilitarian perspective, there is by no means a consensus on the desirability of any statutory monopoly system to illicit creativity.17 Indeed, even Posner (2005), who certainly would not be considered

16 Yung (2009) does an excellent job illustrating this; also, see Fisher (2001) and Mazzoleni and Nelson (1998).

17 See Scotchmer (2004) for a lucid survey of this debate. I will return to alternatives utilitarians provide to the existing IP regime later in the essay.
a radical, recently stated that not only is deciding the optimal balance
intractable, so is the “broader issue of trading off incentive and access
considerations at the level of abstract analysis” (57).\textsuperscript{18}

Given the lack of definitive empirical or theoretical support for patents
and copyrights in general, it does not come as a surprise that the vast
extension of their scope and scale in the last thirty years has little support by
economists. On this issue, Hall notes: “(a)s one reflects on the results of
economic research in this area, one is struck by the not inconsiderable tension
between what we know about patents as an innovation incentive and the
general thrust of contemporary patent policy” (2007, 583). In effect, since we
cannot even compellingly make an economic argument for the existence of
patents and copyrights in general, it stands to reason that economists
employing a social welfare analysis also cannot without any certainty argue for
an extension of the scope and scale for these rights.

None-the-less, we have witnessed a vast extension of the scope and scale
of copyrights and patents in the last thirty years. Copyrights are now
enforceable for the life of the author plus 70 years, and for works of corporate

\textsuperscript{18} Posner goes even further in his criticism later in the article, where he
states that “Unfortunately, economists do not know whether the existing
system of intellectual property rights is, or for that matter whether any other
system of intellectual property rights would be, a source of net social utility,
given the costs of the system and the existence of alternative sources of
incentives to create such property” (2005, 59).
Our current copyright extension stems from the Copyright Term Extension Act (CTEA) of 1998, which added another 20 years to the life of copyrights; this act is also known as the Sony Bono copyright extension act and/or the Mickey Mouse Protection Act as Disney lobbied for the act, which was sponsored by Bono, to keep the statutory monopoly on Mickey and friends.

The first major revision of US copyright law occurred with the Copyright Act of 1976 and the next major changes took place in 1998 with both the Sony Bono copyright extension act and the Digital Millennium Copyright Act.

Mazzoleni and Nelson note that “Since the early 1980s, patent policy in the United States has been strengthened, broadened, and extended to areas and actors where earlier patenting was relatively rare” (1998, 1031).
Although I argued above that a cost/benefit approach to patents and copyrights is inherently problematic, numerous scholars have nonetheless concluded that our current intellectual property rights regime has gone ‘too far’, or become ‘unbalanced’, meaning that the costs of the regime exceed the benefits. Economist critics of our current IP regime come in two basic flavors—those who wish to modify the system to achieve a better cost/benefit ratio and those who desire to abolish patents and copyrights altogether. The following section presents a brief, critical survey of the range of alternatives proffered by leading economic critics, emphasizing the logic behind their reforms. It seems as if everyone writing about patents and copyrights has some proposal to improve our current regime. Because of the different legal nature of copyrights or patents, people tend to focus on one or the other, hence, the following is divided into two parts to examine each separately.

**Patent reform.**

Economists advocating for a reform of the current patent system employ a range of arguments, although they can be sorted into three basic ‘camps’. The first line of thought is exemplified by Jaffe and Lerner (2004), who argue that we basically need to change our patent system to something more akin to what we had prior to 1982. A second strand of thinking puts forth the idea that

22 Besides covering different forms of creativity, patents are a ‘harder’ form of protection than copyrights, as the latter contain things such as ‘fair use’; essentially, there is more ‘wiggle room’ with copyrights.
we need to either supplement or replace our patent regime with a prize and/or subsidy system. Although the latter strand receives more attention by economists, both are attempts to make the patent system more efficient, and therefore stem directly from a social welfare perspective. The last school of thought contends that the entire patent system needs to be abolished, with its proponents arguing that there are enough economic incentives for innovation via the marketplace that not only are patents inefficient, but their primary result is the promotion of ‘rent-seeking’ behavior. Obviously, these three perspectives toward reform overlap to some degree, but I will treat them separately below.

Jaffe and Lerner (2004) serve as ideal representatives of those who argue that patents can serve to increase social welfare, but also that our current regime no longer serves that purpose. Their basic argument states that patents today are too easy to get and are too strictly enforced. The bulk of their claims rests with two important changes to the patent system, that while perhaps not intentionally, have served to strengthen the rights of patent holders at the expense of innovation and increased costs. I mentioned the first change already, namely, the creation of the Court of Appeal for the Federal Circuit (CAFC) in 1982 to adjudicate intellectual property disputes; this replaced having court cases tried before the twelve regional courts of appeal. The change was originally argued to provide consistency as the twelve regional courts
varied dramatically in their interpretation of patent law. The (perhaps) unintended consequence of the change, however, was that “(t)he new court of appeals has interpreted patent law to make it easier to get patents, easier to enforce patents against others, easier to get large financial awards from such enforcement, and harder for those accused of infringing patents to challenge the patents’ validity” (Jaffe and Lerner 2004, 2).

The second change mentioned concerns the U.S. Patent and Trademark Office (PTO). In the early 1990s, the PTO was transformed by congress from basically a government financed operation to “a kind of service agency whose costs of operation are covered by fees paid by its clients (the patent applicants)” (Jaffe and Lerner 2004, 2). For a variety of reasons, this resulted in it being much easier to get a patent. Taken together, by the early 1990s a new business environment had been created— not only was obtaining a patent much easier, but the new specialized court of appeals strongly enforced intellectual property, making patents “much more potent legal weapons” (ibid) to harass competitors. One aspect of the new business environment involves ‘patent trolling’, where companies buy/acquire patents not to make products, but to use legal motions and so forth to reap large sums of money from either licensing fees or lawsuits.\textsuperscript{23} Although patent trolling is a debated concept, we have definitely witnessed an explosion of patents and legal machinations over the last 20

\textsuperscript{23} See for example Bilton (2010).
Jaffe and Lerner propose an entire range of reforms, but the common thrust involved making patents more difficult to get and creating more flexibility in their enforcement. Specifics....

Another approach, one mentioned if not specifically endorsed by several scholars, including Posner (2005), Baker (2005), and Nordhaus (1969), involves a public financing system for research as more efficient alternatives to patents to elicit new inventions. Such proposals vary quite dramatically, but two basic variants of public financing are common in the literature: a ‘prize’ system for specified inventions or public funding of research. The attractiveness of these options for utilitarians resides in that innovators would still be provided with incentives to create (receiving a prize or having your research funded), but after discovery, the innovation would immediately fall into the public domain. In effect, these proposal would treat some forms of what is now considered intellectual property as public goods and fund them accordingly from the public till.

Penrose, in her early survey of international patent law, noted that in many countries, medical and pharmaceutical products were unpatentable as “the restriction of their use was considered undesirable” (1954, 29). Patents awarded to medical and pharmaceutical products have, therefore, long been
debated. The question becomes then, if one employs an ‘incentive framework’, how to induce innovation without the use of patents? One possibility is the direct funding of research by the state with the results being immediately placed in the public domain. The rationale for such a switch rests with the monopoly rents that accrue to ‘big pharma’ under a patent regime serve to distort the direction of medical research— “roughly 70 percent of new drug approvals are for drugs that do not represent qualitative improvements over existing drugs” (Baker 2005, 2), but these ‘copycat drugs’ do, however, represent a vast source of profits. Besides serving to direct research into new drugs with little added social value, Baker and Chatani (2002) highlight a range of other ways patent rents lead to wasteful and/or harmful behavior by drug companies. Besides a prize system, another potential alternative discussed by Baker would involve having the state fund drug research and making the results public knowledge (Baker notes that over half of research and development in this area is already paid for by the state). Private drug corporations would still play a role in producing the final products (under

24 The patenting of AIDS medications and (hence their exorbitant prices) essentially made them unavailable to the developing world; this engendered a massive debate (see....)... 

25 The other ways they note rent-seeking behavior manifest themselves include: excessive advertising budgets; restrictions on research and/or falsifying research results; legal actions; political lobbying; and the proliferation of generic drugs under dubious quality control standards.
license).

Norhaus. When the social benefits are large, makes sense to get it public as soon as possible. Nordhaus considered a subsidy regime... and concluded subsidies rather than patents would be optimal for ‘large’ inventions, e.g., ones with an array of positive spillovers. Why? In societies interest to add to intellectual commons in order to further more innovation.

Another variant of the public subsidy for research involves a ‘prize’ system where the government announces a specified prize for an invention, say, for example, a drug to cure malaria, or certain green technologies. Dean Baker (2005), for example, proposed an ‘ex-post’ prize system for medical research to overcome the ‘inefficiencies’ drug patents induce. Once the invention is seen to meet the criteria specified, the inventor (or corporation) receives the prize in exchange for the invention. From a social welfare approach, a prize system would solve the problems Baker identified with copycat drugs and other forms of rent-seeking activity patents facilitate while still providing the pecuniary incentives for undertaking research on socially useful innovations. The primary problems of this approach involve specifying the size of the reward, especially since the ‘real value’ of the discovery is only apparent after the fact (Posner 2005, 59). In most of its variants, a prize system is typically seen as a complement to an existing patent regime.

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26 See Posner (2005) for a lucid discussion of a prize and subsidy system.
3. Abolishing Patents

The final solution under consideration here involves the abolition of the patent system altogether. Why would this work? First mover advantage,...

**Copyright reform.**

Similar to patent reform, a wide array of proposals exist for transforming our current copyright regime, from minor/major reform to the abolition of copyrights altogether. In what follows, I focus on just two approaches, the first being a modification of the ‘one-size fits all’ nature of copyright protection (e.g., “all rights reserved”) to the one proposed by Posner among others, which essentially would change the length and nature of copyright agreements.

Current debate heavily influenced by the work of Lessig. Balance between public and private domain. Lessig not an opponent of copyright per se, but he does have a range of issues with our current system.

1. End ‘one-size fits all’ Copyleft, creative commons, etc.

Getting rid of ‘one size fits all’ on patents and copyrights. Copyright modification. Role back length and strength of existing copyright law; alternatives such as Copyleft and open source movements. These vary, but typically allow people to use material freely, add it, but cannot copyright the resulting product. Also, typically require later users to acknowledge originator.

2. Posner’s approach.
Interesting, but also in an efficiency framework. Most copyrights have little value, but all given the same protections....
Conclusion:

Innumerable scholars have questioned our intellectual property regime and as argued here, economists have not been able to justify the existence of our regime compellingly. This begs the question of why policy makers have both vastly expanded the scope and scale of statutory monopoly protections as well as why no serious reforms of our current regime are being proposed. Obviously, lots on this topic. Posner and Penrose here.

Many schools of economic thought, such as Austrians and Libertarians, reject the existing intellectual property rights regime almost entirely due to its statutory nature and that it curtails freedom of expression. Marxists and other radicals see the current intellectual property rights regime as basically a modern enclosure of the commons; a ‘privatization’ of the public. Obviously, more than just economists have had some say in this struggle...
References


