

Chapter 6

Intellectual Property and the Efficient Allocation of Social Surplus from Innovations

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*The only patent that is valid is one which this Court has not been able to put its hands on. [Dissent by Jackson J. in **Jungerson v. Ostby and Barton Co.** 335 US 560, 80 USPQ 32 (1948).]*

1. Introduction

The times oh, have they changed, since Justice Jackson wrote his dissenting opinion in 1948. The world, it seems, is heading the opposite direction and it has officially entered the era of *Universal Intellectual Property* (UIP). Anyone doing any “thing” anywhere, who believes it to be “useful” and “novel”, can and should try to claim complete and exclusive monopoly power over said thing, its uses, its copies, its more or less related variants. The “thing” may be a manufactured object, a production process, a business method, a string of computer code, a plant seed, an animal species, or just any usable concept such as, for example, “how to swing a swing.” There will always be a court, most likely: a U.S. Court of Appeals for the Federal Circuit, willing to classify the thing as a “novel idea susceptible of commercial exploitation”. Universal Intellectual Property has acquired the status of a public religion, at the core of which stands the shockingly profound revelation: *Anything that can be monopolized ought to, by whoever lays claim to it first.* From this, economic prosperity will follow, as the high preachers of this new religion do not tire of reminding us.

Around the world, the tide is rising: India has just adjusted its patent laws to comply with TRIPS requirements, in the areas of pharmaceutical and biotechnologies in particular; China is slowly but surely doing the same for both copyright and patents; the EU pushes forward with the European Patent harmonization plan; Mexico, Brazil and other developing countries are hard pressed to follow soon. That the European Parliament, in a rare moment of wisdom and foresight, rejected the proposal to patent software to compensate Mr. Gates for the annoyances that a moderately diligent Competition Commissioner had brought upon Microsoft during the last six years, is only a temporary setback. The tide is rising, and nothing seems capable of stopping it; as a succesful pamphlet reminded us a few years ago “Rembrandts [are hiding] in the attic” and the “greatest untapped asset opportunity” is waiting to be tapped by dexterous users of patents and copyright. But, is there a reason to try stopping it? What’s wrong with the idea and the practice of Universal Intellectual Property?

To start seeing what is wrong with UIP, we may want to consider the basic metaphor that appears to be inspiring its current zealots. This beloved metaphor goes like this: the process of securing intellectual property over ideas is logically and economically equivalent to the establishment of well defined property rights on parcels of unowned land. Without well defined and secure property rights, the fertile lands of the Western frontier could not be efficiently cultivated or put to pasture, greatly reducing economic development. Similarly, if ideas are not the exclusive private property of someone, they cannot be developed and brought to fruition. The wide open and uncharted territories of profitable and appropriable ideas are there, just ahead of us - mostly lawyers - the brave colonizers of the Third Millenium. Ideas make up the green and productive fields of the new economy which we will conquer - court battle after court battle, lobbying raid after lobbying raid - and finally set to profitable use, ridding them, in due course, of Indians, undesirable outlaws, squatters and pirates of all kinds and races.

This is the new UIP movie, now playing at theaters around the globe and therefore certainly also near you. This article asks: May something be wrong with it? Our answer is quite radical, as we find that almost everything is in fact wrong with this vision. We focus on legal theories of Intellectual Property (IP) that have an economic underpinning, that is: on legal theories arguing that UIP is a desirable state of the world because it somehow maximizes social welfare and allocates it efficiently among potential claimants. As such, we are not concerned with legal theories of IP based on natural rights, axiomatic theories of justice, or other ethical and metaphysical principles. In particular, we cannot rule out the hypothesis that the foundation of UIP lies in its being a revealed truth, making it therefore irrefutable.

2. Ideas in the Public Domain

2.1 Eldred versus Ashcroft

A historical battle for the advancement of the UIP frontier was fought and won a few years ago in the Congress of the United States, and its result subsequently engraved in stone by the U.S. Supreme Court. In 1998 the U.S. Congress extended the term of copyright by 20 years (through the Copyright Term Extension Act, better known as the “Sonny Bono Act”), while simultaneously extending also its breadth and dramatically stiffening the penalties associated to its violation (through the Digital Millennium Copyright Act). The extension of copyright term has been retroactive, applying not only to new works, but also to existing ones. In spite of the obvious and well known economic argument¹ that extending copyright on existing works cannot

possibly increase their supply, a number of specious arguments² have been advanced as to how retroactive extension somehow serves to “promote the progress of [...] useful arts.”³ Subsequently, the U.S. Supreme Court acquiesced to these principles in its ruling *Eldred et al v. Ashcroft*, No. 01-618, January 15, 2003. The Court majority ruled that (Syllabus, pp.2-3)

*The court found nothing in the constitutional text or history to suggest that a term of years for a copyright is not a “limited Time” if it may later be extended for another “limited Time.”[...] In petitioners’ view, a time pre-scription, once set, becomes forever “fixed” or “inalterable.” The word “limited,” however, does not convey a meaning so constricted. At the time of the Framing, “limited” meant what it means today: confined within certain bounds, restrained, or circumscribed. Thus understood, a time span appropriately “limited” as applied to future copy-rights does not automatically cease to be “limited” when applied to existing copyrights. [...] History reveals an unbroken congressional practice of granting to authors of works with existing copyrights the benefit of term extensions so that all under copyright protection will be governed evenhandedly under the same regime. Moreover, because the Clause empowering Congress to confer copyrights also authorizes patents, the Court’s inquiry is significantly informed by the fact that early Congresses extended the duration of numerous individual patents as well as copyrights. Lower courts saw no “limited Times” impediment to such extensions. Further, although this Court never before has had occasion to decide whether extending existing copyrights complies with the “limited Times” prescription, the Court has found no constitutional barrier to the legislative expansion of existing patents. See, e.g., *McClurg*, 1 How., at 206. Congress’ consistent historical practice reflects a judgment that an author who*

sold his work a week before should not be placed in a worse situation than the author who sold his work the day after enactment of a copyright extension. The CTEA follows this historical practice by keeping the 1976 Act's duration provisions largely in place and simply adding 20 years to each of them.

The CTEA is a rational exercise of the legislative authority conferred by the Copyright Clause. On this point, the Court defers substantially to Congress. Sony, 464 U. S., at 429. The CTEA reflects judgments of a kind Congress typically makes, judgments the Court cannot dismiss as outside the Legislature's domain. A key factor in the CTEA's passage was a 1993 European Union (EU) directive instructing EU members to establish a baseline copyright term of life plus 70 years and to deny this longer term to the works of any non-EU country whose laws did not secure the same extended term. By extending the baseline United States copyright term, Congress sought to ensure that American authors would receive the same copyright protection in Europe as their European counterparts. The CTEA may also provide greater incentive for American and other authors to create and disseminate their work in the United States.

Two points are worth noticing here.

- (1) That the extension of term that the CTEA implements is a “rational exercise” of legislative authority by Congress; which is certainly the case.
- (2) That the retroactive extension is justified by three reasons: (i) as a way of providing equal treatment to all copyright holders, (ii) as an “equilibrium” response to the EU move of extending copyright to 70 years, and (iii) because

it may provide greater incentive for the creation and dissemination of copyrightable work; none of which make any sense.

The copyright term has been repeatedly increased since its initial adoption in 1790 when a term of 14 years was established, with major increases taking place in 1831, 1909 and 1976; the last extension, in The Copyright Act of 1976, added 20 years to the then existing term. The CTEA retroactive provision, therefore, further extends the term for exactly those items for which the 1976 Act had already provided a retroactive extension. In spite of this obvious fact, the Court states rather incredibly (p. 7)

Concerning petitioners' assertion that Congress might evade the limitation on its authority by stringing together "an unlimited number of 'limited Times,'" the Court of Appeals stated that such legislative misbehavior "clearly is not the situation before us."

Let us forget the Court's peculiar interpretation of reality and of what Congress may or may not be planning to do – after all, we must wait until 2018 for a further extension to take place and, even in that case, the arithmetic fact that 90 is not an unlimited number will be available to our ingenious Justices. Let us try, instead, to see why the substantive reasons provide under (2) do not make any sense.

Consider, first, the equal treatment argument. The Court writes (p. 14)

[S]ince 1790, it has indeed been Congress's policy that the author of yesterday's work should not get a lesser reward than the author of tomorrow's work just because Congress passed a statute lengthening the term today.

This is quite fine, indeed. One wonders, though, if the same logic should not be applied whenever Congress passes a piece of legislation that, by affecting, say, the fiscal code impacts on the economic reward that private agents receive. Any income tax cut should, then, be retroactive as it clearly makes no sense to tax past income at a higher rate “just because Congress passed a statute” reducing the tax rate “today.” Quite obviously, the same applies to tax increases, social security contributions, tariffs, and what not, making for a rather interesting, if volatile, economic environment; not to speak of the very creative budgeting and national income accounting procedures this would bring about, very much to the delight of financial markets that, notoriously, thrive under volatility. Most interestingly, though, would be the case in which Congress – in an uncharacteristic act of economic rationality – decided to reduce copyright and patent terms at some future date. By the same token for which both Congress and the Supreme Court argued for retroactivity in 1998, we suppose, the copyright term’s reduction should also be retroactive in order to make sure that the *“Congress’s policy that the author of yesterday’s work should not get a”* larger *“reward than the author of tomorrow’s work just because Congress passed a statute”* shortening *“the term today”* be dutifully implemented. Maybe we are not properly trained in the subtleties of legal logic, and maybe there is a hidden paragraph somewhere in the Court’s ruling explaining why copyright holders are exceptional economic agents, so that the rule of uniformity applies to them in terms different from those it applies to other economic agents and, in particular, explaining why uniform treatment only applies when terms increase and not when they decrease. We just could not find such paragraph, hence the equal treatment justification for retroactive extension just reads like highly creative economic nonsense.

Move next to the motivation in (2.ii), i.e. reacting to the EU's decision to extend copyright term to life plus 70 years. Again, we quote from the majority opinion (p.15)

By extending the baseline United States copyright term to life plus 70 years, Congress sought to ensure that American authors would receive the same copyright protection in Europe as their European counterparts. [...] (“[M]atching th[e] level of [copy-right] protection in the United States [to that in the EU] can ensure stronger protection for U. S. works abroad and avoid competitive disadvantages vis-à-vis foreign rightholders.”

In case you were wondering from where our Supreme Court gets its economic wisdom, footnote 12 of the Opinion reports that “The author of the law review article cited in text, Shira Perlmutter, currently a vice president of AOL Time Warner, was at the time of the CTEA's enactment Associate Register for Policy and International Affairs, United States Copyright Office.” Let us leave the political economy of UIP for later, and stick to the logical argument for the time being. Hence, what is the logic here? From the Court's own words it seems purely a redistributive concern: if the U.S. does not raise its copyright term the U.S. author publishing in Europe will receive less money, in that market, than their European counterparts. Again, this is quite fine, in the sense that the U.S. Constitution does not prevent Congress from redistributing income, by various statutory means, from one subgroup of the population to another. In this case, clearly, Congress must have feared that writers, musicians and assorted movie “stars” who are citizens of the U.S. would have faced poverty and denutrition lacking the *additional* 20 years of copyright revenues from the European markets. So being it, there is no point in quarelling: redistributing to the poor and indigent movie stars from the rich and powerful consumers is certainly a

commendable aim of Congress, if not one explicitly stated by the Founding Fathers in the Bill of Rights. Redistribution being redistribution, though, one wonders why a lump sum transfer has not been chosen by Congress and recommended by the Court: it would have achieved the same egalitarian aim while sparing us the distortionary effect of 20 additional years of monopoly in the markets for copyrighted materials. True, the median voter may have found a new tax to finance Hollywood stars' Colombian cocaine habit somewhat un-patriotic.⁴

The substantive economic point here being that the EU decision to extend the length of copyright term for its citizens is perfectly immaterial to the well being of either U.S. citizens or authors; if anything, it makes them better off as long as the copyright term is not extended also in the United States. Let us see why. Consider first the fundamental economic reason for providing copyright – the details of which are critically examined later. This says that copyright is given to allow creators to collect enough revenue to compensate for their creative effort. Consumers, therefore, benefit indirectly from copyright because, while paying a monopoly price to creators, receive the creation in exchange, while lacking copyright they would receive nothing. The EU move increases such rents for European creators, and leave them unaltered for everyone else as copyright terms for citizens of other countries were not lowered, either in the EU or anywhere else. This implies: (a) EU creators are richer, (b) EU consumers may or may not be better off (supposedly, they get more creations but, certainly instead of supposedly, get also more monopoly distortions), (c) US creators are not poorer as they receive at least the same rents they received before⁵, (d) US consumers are better off as they pay the same price as before for creative work but enjoy the – supposedly – higher number of EU creations. In plain words, by extending its copyright by 20 years, the EU had forced its consumers to face a risky proposition – more distortions for sure, more culture maybe – in order to make its creators richer. It had also done a somewhat equal favor to US creators and consumers by strengthening their market position. With

the CTEA, the U.S. Congress has made sure that also American consumers are forced to face a risky proposition, making them worse off than they were in the interim period; this is the price paid to transfer additional rents to US creators. We therefore reach the same conclusion as before, i.e. that the CTEA is explained by a desire to transfer income from the U.S. consumers to the U.S. producers of copyrighted materials, and neither it improves economic efficiency nor it is the appropriate equilibrium response to the EU's move. In particular, the "competitive disadvantages" that the AOL vice-president mentions remain completely mysterious. What could they be? If the U.S. had not extended its term, U.S. publishers of books, movies and music could have put on the U.S. market lots of European creations with an expired (in the U.S.) copyright, while their European counterparts would have been unable to do so for other 20 years. This seems to us an advantage, not a disadvantage. At the same time, in the EU markets, the EU subsidiaries of the U.S. publishers could have exploited the longer copyright term to earn more monopoly profits at the expense of the European consumers. At worst, should the EU not have allowed the European subsidiaries of American companies to use the additional 20 years of copyright protection, they would have had the same competitive stance they had had until 1998.

Finally, comes the third, and more substantive economic point (p. 16)

In addition to international concerns, Congress passed the CTEA in light of demographic, economic, and technological changes, Brief for Respondent 25–26, 33, and nn. 23 and 24, and rationally credited projections that longer terms would encourage copyright holders to invest in the restoration and public distribution of their works, id., at 34–37; see H. R. Rep. No. 105–452, p. 4 (1998) (term extension “provide[s] copyright owners generally with the incentive to restore older works and further disseminate them to the public”).

Which “rationally credited projections” the Court refers to we do not know and, frankly, we do not care; there is always someone somewhere with some PhD in economics from some place, who is willing to forecast that elephants will eventually fly if the tax code is appropriately changed as recommended by the lobby that financed his research. As the Court reports no numbers, and nowhere in the literature are serious numbers to be found that support such a forecast, we will move on to the theoretical underpinnings of this motivation. To be honest, these are not very clearly spelled out in the Court’s opinion. In particular, the various footnotes one can find between page 16 and page 19 - supposed to substantiate the incentive effect – are rather disappointing. Apparently, the Supreme Court of this land believes that life expectancy for creators has increased of about 20 years since 1976, which is about ten times the actual value. Equally apparently, the same Court, also believes that Quincy Jones, Bob Dylan, Carlos Santana and Don Henley wrote what they wrote and played what they played because of the (p. 17, footnote 15)

belief that the copyright system’s assurance of fair compensation for themselves and their heirs was an incentive to create.

No further argument is given in support of the incentive theory, hence, out of respect for the Supreme Court of the United States, let us move on to debate those academics that, in a somewhat more articulated form, have argued that such an incentive exist, is substantial, and follow from well founded and well reasoned microeconomic theory. As William M. Landes and Richard A. Posner appear to have been the two most prolific and most coherent supporters of this view within the law and economics literature, it is to their recent writings, Landes and Posner [1989, 2003], Posner [2004], that we turn.

2.2 Scholarly Pursuits

The two most significant arguments are that creations of any kind should not be left in the public domain, because the public domain suffers from congestion and overuse, and that intellectual property rights are necessary to provide appropriate incentives not just to “create” but also to “maintain” existing works. Notice the similarity with the “land ownership is good” argument, and notice also what this argument says: IP are not just good for creating new things, but also for maintaining them. Hence, in the case of copyright at least, this line of reasoning often ends up arguing that an unlimited copyright term may be desirable. Notice that this line of argument rests on the principle that a normative foundation for the law is the maximization of social wealth, i.e. the achievement of economic efficiency in the sense of Pareto – irrespective of its redistributive consequences among heterogeneous economic agents. We are not questioning this principle here, in fact – and in spite of personal and philosophical misgivings with both its logical foundations and moral implications – we will use it as a yardstick in all that follows.

Let us start from the fundamental metaphor according to which *ideas=pasture*;

The counterpart to the common pasture in intellectual property is the public domain [...] The term refers to the vast body of ideas and expression that are not copyrighted, patented, or otherwise propertized. [Landes and Posner, 2003, p. 13]

One reason for rights in ordinary property is indeed to prevent congestion and overuse. For example, if a pasture is public, I do not take account of the negative effect my grazing sheep have on the availability of grass for your sheep. Because roads are public, I do not consider that my driving on the road makes it more difficult for you to get to work. Because the ocean is

public, I do not consider that catching fish leaves fewer for you. This is the “tragedy of the commons” and in each case it means that the pasture, road or ocean will be overused.

Contrary to common wisdom, most common - if not wisdom - in legal circles, the public domain for ideas is the logical and practical *opposite* of the common land/pasture/ocean. The public domain of ideas is the necessary (not sufficient, but strictly necessary) precondition for competition in these markets, and social efficiency therein. On this we focus, and this is the content of the present section.

Is the public domain for ideas like a common? Does my using ideas in the public domain have an adverse effect on your ability to use them? Certainly common sense suggests “there can be no overgrazing of intellectual property...because intellectual property is not destroyed or even diminished by consumption.”⁶ That I might make use of an idea does not make you less able to use it. Indeed it seems obvious that welfare is increased when more people become cognizant of a useful idea, whereas overall productive capacity is not increased when more sheep try to eat from the same square foot of pasture or when different rescue teams compete in salvaging first a given sunken ship.

As we have already seen, Congress and the Supreme Court apparently do not agree, and Landes and Posner⁷ also claim that “Recognition of an 'overgrazing' problem in copyrightable works has lagged.” In fact it has not, because there is no coherent theory or evidence that points to such a problem.

There are three key elements to understanding why the arguments in favor of retroactive copyright are incoherent. Understand first, only copies of ideas matter from an economic standpoint; in fact: only copies of ideas matter from any practical stand point! If all the copies – in books and minds alike – were to vanish, the abstract existence of the idea would be of no use, at least to the practical real man, while it may be of some, undefined, use to the impractical

metaphysical men that seem to populate legal journals. Understand second, the public domain is not a common of unowned ideas or public property. When an idea is in the public domain, someone still *owns* each copy of the idea or work. To make copies you will have to own or purchase a copy of the idea first. Rather than being like a common, the public domain is like the ideal of a competitive market – such as that for wheat – with many owners/producers of essentially the same product competing with each other. Understand finally, although my using an idea does not make you less able to use it, it may well make you less able to sell it. Which means, my owning a copy of the same idea as you does not make the idea less valuable from a social point of view, but certainly reduces the market price of your copy of the idea. Economists call this phenomenon “pecuniary externality”, my selling to a customer changes his demand for your product, and find it a valuable feature of competitive economies. Consumers are made better off by the fact that very many copies of a given good exist, as the market price of such good is set by the marginal consumer, i.e. the one that values it the least, thereby allowing all those that value it more to acquire a substantial surplus by purchasing their copies of the good at less than their marginal utility.

Consider the case of food. If my restaurant sells Richard a large meal, he is not likely to go across the street to your restaurant and buy another; my selling him a large meal does not prevent you from using your food, but it does prevent you from selling it to Richard. So too with ideas. If I sell Richard a copy of my Bible, I do not prevent you from making copies of your Bible, but I will reduce your profit because Richard will not buy from you. This is a pecuniary externality. By way of contrast, by taking fish from the sea I am not merely taking your customers, I am taking an economically useful good or service. Economists refer to the former as a “pecuniary” externality, and the latter as a “technological” externality. Pecuniary externalities are a good thing – the incentive to steal customers is an essential part of the normal and efficient

functioning of the competitive system. Technological externalities are a bad thing, leading to overuse.

Supporters of intellectual property, and of copyright extension in particular, seem to be blind to such distinction. Landes and Posner, who provide the least incoherent exposition of why retroactive extension of copyright might be a good thing, acknowledge that the “assessment of welfare effects of congestion requires distinguishing technological from mere pecuniary externalities.” They then go on to say concerning the Mickey Mouse character “If because copyright had expired anyone were free to incorporate the Mickey Mouse character in a book, movie, song, etc., the value of the character might plummet.” The value for whom? It cannot be the social value of the Mickey Mouse character that plummets – this increases when more people have access to it. Rather it is the market price of copies of the Mickey Mouse character that plummets. As Landes and Posner admit, “If this came about only...as the ordinary consequence of an increase in output, aggregate value would actually increase.” They then assert “however, the public might rapidly tire of Mickey Mouse.” But this is in fact the ordinary consequence of an increase in output. If I eat a large meal, I am less hungry – the value to me of a meal is diminished, and restaurants will find I am not willing to pay them much money. No externality is involved: as more of a good is consumed, the more tired people become of it. For there to be an externality, it would have to be the case that my consumption of Mickey Mouse made you more tired of it – an improbability, to say the least.

Although Landes and Posner make the verbal distinction between pecuniary and technological externality, they do not appear to understand it. They quote from a book on Disney marketing: “To avoid overkill, Disney manages its character portfolio with care. It has hundreds of characters on its books, many of them just waiting to be called out of retirement...Disney practices good husbandry of its characters and extends the life of its brands by not overexposing

them...They avoid debasing the currency.”⁸ This is of course exactly how we would expect a monopolist to behave. If Disney were to be given a monopoly on food, we can be sure they would practice “good husbandry” of food, most likely leaving us all on the edge of starvation. This would be good for Disney, since we would all be willing to pay a high price for food. But the losses to the rest of us would far outweigh the gain to Disney. It is a relief to know that, after all, Mickey Mouse is not such an essential ingredient of the American diet.

In passing, notice here a serious problem with the interpretation of economic efficiency that seems to have become common among legal scholars writing in this field. In the example above, taking the monopoly power over food away from Disney is often interpreted as not necessarily efficient. This is because, while consumers are better off, the entity called “Disney” is worse off after competition in the market for food is established. This is not the appropriate place to go through the theorems of modern welfare economics, but it is the appropriate place to mention the faulty argument to the interested reader, just in case.

Landes and Posner also express concern that Mickey Mouse's “image might also be blurred or even tarnished, as some authors portrayed him as a Casanova, others as catmeat, others as an animal rights advocate, still others as the henpecked husband of Minnie.” Since in common parlance calling something “Mickey Mouse” is not intended as a compliment, one might wonder how Mickey Mouse's reputation could be more tarnished than it is. Regardless, bear in mind that the only thing that matters are copies of the idea of Mickey Mouse. If Mickey Mouse falls into the public domain, someone might well use his or her copy of the idea of Mickey Mouse to produce, say, a pornographic film starring Mickey Mouse. But would this tarnish the copies of the idea of Mickey Mouse in the minds of millions of 6-year-old children? It is hard to see how: ordinarily children of this age are not allowed to see pornographic films. Presumably those people that choose to see the film are those who benefit from this portrayal of Mickey Mouse.

How does their doing so interfere in any way with anyone else's enjoyment of their vision of Mickey Mouse? To put things in perspective, one of us considers a sign of bad taste to spread Parmigiano-Reggiano cheese on any pasta with a sauce based on sea food. Nevertheless, this does not prevent him from being married to, and having often pleasant dinners with, a spouse that has exactly the opposite preference: as long as there is pasta, Parmigiano-Reggiano is welcome, no matter what the sauce is. In the rare occasions in which only one dish of pasta with a clam sauce is available, this clearly creates a little debate that reduces overall welfare. Which should make it painfully clear why it is socially good to have as many copies as possible of Mickey Mouse, and of pasta dishes alike.

To understand the distinction between a pecuniary and technological externality more clearly, consider the case of music. By and large, my listening to my copy of my music does not interfere with your listening to your copy of your music – there is no externality. But if I play my music very loudly, it may in fact interfere with your enjoyment. One solution to this very real technological externality would be to give a monopoly on the sale of stereo equipment to the Disney Corporation. As a good monopolist, they would limit the supply and raise the price of stereos. As a result, I would not be able to afford such powerful equipment, and would be forced to play my music less loudly, thereby reducing the externality. Mild negative externalities are common in everyday life. One “solution” is the creation of monopolies that will limit supply of the ingredients used to produce externalities. But most of us understand that this “cure” is worse than the disease. Cars are major generators of negative externalities, from air to noise pollution, but nobody has yet advocated solving the problem by creating a world monopoly on cars.

Landes and Posner go on to say “One purpose of giving the owner of a copyright a monopoly of derivative works is to facilitate the scope and timing of the exploitation of the copyrighted work – to avoid, as it were, the ‘congestion’ that would result if once the work was

published anyone could make and sell translations, abridgements, burlesques, sequels, versions in other media from that of the original (for example, a movie version of a book), other variants...The result would be premature saturation of the market, consumer confusion (for example, as to the source of the derivative works,) and impaired demand for the original work because of the poor quality of some of the unauthorized derivative works.” This seems to us to be both at odds with reality and profoundly anti-market and anti competition. Yes, the competitive market is full of interesting products. We can buy many brands, styles and colors of shirts, jackets and shoes. Yet apparently consumers are not so profoundly ignorant as to be unable to figure out which brands, styles, colors and products they wish to purchase; they apparently do not need the Disney Corporation to work this out for them. In the competitive markets of the free world there are lots of good products, lots of excellent products, and even more cheap and low quality products. So what? Seabright [2004] celebrates the diversity produced by competition; Lindsey [2001] warns us against those who do not trust the decentralization of the free market and wish to bring the “dead hand” of central authority to sort out the confusion. Unlike Landes and Posner, we do not see the need for the organizing authority of the monopolist to substitute for the diversity of the marketplace.

In an effort to give substance to their argument, Landes and Posner point to three examples of “works of...elite culture that have been damaged by unlimited reproduction:” the Mona Lisa, the opening of Beethoven's Fifth Symphony, and several of Van Gogh's most popular paintings. We would like to know what evidence Landes and Posner have for this assertion. Searching Amazon for “Beethoven” in classical music brings up three items as most popular. The first is a collection of all 9 symphonies; the second is a compilation of the 5th and the 7th. So apparently, despite the damage done by unlimited reproduction, the 5th is still well liked by many people – or are we to imagine that they skip the opening because it has been so damaged by

unlimited reproduction? Or are Professors Landes and Posner suffering from the snobbish European tendency to consider works of art “debased” once they become known and appreciated by the “unrefined” masses?

More or less the opposite of the “overgrazing” argument is the “maintenance” argument. Here it is argued that only with a monopoly is there adequate incentive to “maintain” ideas. The extreme example of the “maintenance” argument is the argument that providing a copyright monopoly will actually increase availability, the registrar of copyrights going so far as to say “lack of copyright protection...restrains dissemination of the work.”⁹ Lemley [2004], who criticizes what he refers to as *ex post* arguments for copyright along lines that parallel our own,¹⁰ puts it succinctly: “It is hard to imagine Senators, lobbyists, and scholars arguing with a straight face that the government should grant one company the perpetual right to control the sale of all paper clips in the country, on the theory that otherwise no one will have an incentive to make and distribute paper clips.” Lemley also cites empirical evidence showing, not surprisingly, that public domain works are far more widely available than works from the same time period that are still under copyright.¹¹

A bit less ridiculous is the following type of argument: we can imagine that Disney might have less incentive to produce new Mickey Mouse movies if they face competition in the market for Mickey Mouse dolls – some of the good feeling for Mickey Mouse generated by the movie will spillover into increased demand for other producers Mickey Mouse dolls. This would appear to be, indeed, a case of real externality, albeit positive instead of negative; lacking a way of compensating Disney for the positive effect it is having on the demand for Mickey Mouse dolls, Disney’s movie output would be too low. The problem with this analysis is that it is wrong. Mickey Mouse movies and Mickey Mouse dolls are examples of goods that are complements – increasing the quantity of one raises the demand for the other. But many goods are complements:

for example, peanut butter and jelly. And quite rightly no one worries that there won't be enough peanut butter produced because part of the effect of producing more peanut butter is that it will raise the demand for jelly. Basically what this argument overlooks is the reciprocal effect: when the competition produces more Mickey Mouse dolls, it will also raise the demand for the Mickey Mouse movie.

This fallacy can be seen again in Landes and Posner's example of "the Disney Corporation [spending] tens of millions of dollars refurbishing the Mickey Mouse character, both by subtle alterations in the character and by situating it in carefully selected entertainment contexts in an effort to increase the appeal of Mickey Mouse to the current generation of young children." This is a classical example of complementary goods – the release of the "improved" Mickey Mouse raises the demand for "unimproved" Mickey Mouse – but again, there is no adverse incentive as the increased supply of "unimproved" Mickey Mouse in turn raises the demand for the improved version.¹²

Landes and Posner also try a more subtle tack. They focus not so much on tie-ins between related goods, but rather on "promotional" efforts. "Consider an old movie on which copyright had expired that a studio wanted to issue in a colorized version...Promoting the colorized version might increase the demand for the black and white version, a close substitute...the studio would have to take into account, in deciding whether to colorize, the increase in demand for the black and white version." Here it seems that promotion of the colorized film, is a complement to both consumption of the colorized film and the black and white version; insofar as it is merely a statement about goods being complements, we have already seen there is no economic issue. But more to the point: in all competitive markets producers lack incentives to promote the industry. Individual wheat producers do not have much incentive to promote the healthy virtues of wheat, fisherman do not have much incentive to promote the healthy virtues of fish and so on.¹³ It is

hard to see that the problem with old movies, books and music is different either qualitatively or quantitatively than in these other competitive markets. Yet quite rightly no one argues that we need grant wheat or fish monopolies to solve the “problem” of under promotion.

It is worth reflecting briefly on promotional activities in competitive industries. Surely information about, say the health benefits of fish, is useful to consumers; equally surely no individual fisherman has much incentive to provide this information. Is this some form of market failure? No – in a private ownership economy consumers will have to pay for useful information rather than having it provided for free by producers. And pay they do – doctors, health advisors, magazine publishers all provide this type of information for a fee. There is no evidence that competitive markets under provide product information. Rather in the case of monopolist, because the value of the product mostly goes to the monopolist rather than the consumer, the consumer has little incentive to acquire information, while the monopolist has a lot of incentive to see that the consumer has access to it. So we expect different arrangement for information provision (“promotion”) in competitive and non-competitive markets. In the former, the consumer pays and competitive providers generate information. In the latter, firms will subsidize the provision of information.¹⁴

Ironically, Landes and Posner give their own arguments only a tepid endorsement. Referring to the ill effects of overgrazing, they point out “there are counterexamples: the works of Shakespeare seem unimpaired by the uncontrolled proliferation of performances and derivative works, some of them kitsch, such as Shakespeare T-shirts and the movie Shakespeare in Love.” We would point out that comparing someone to Winston Churchill, unlike Mickey Mouse, is a compliment not an insult. They go on to the resounding conclusion that “there is potentially a legitimate concern here, one that economic analysis should not ignore completely.” Well, we have taken their advice, as we have not ignored them completely. What is most striking about this

halfhearted conclusion is that Landes and Posner begin their book with a list of arguments against copyright and reach a rather stronger conclusion:¹⁵ “The foregoing nine points constitute the case against an incentive-motivated need for copyright...and especially against the incentive motivated need for long copyright terms. For even with regard to expressive works especially vulnerable...copyright protection lasting [no] more than a few years [should be adequate] to recover the reasonable cost of creating the work.” This is ironic, as we have seen that the non-incentive based arguments that they themselves give only tepid endorsement too are in fact wrong.

2.3 Losers

The Supreme Court opinion in 01-618 contains only two dissenting opinions, one by Justice Stevens and the other by Justice Breyer. While we agree with most, but not all, of what they say, we will not quote from them, but quote instead from Breyer [1970]. This is, in part, because the dissenting opinions – in particular that of Justice Stevens – focus mostly on the retroactive extension of term, and in part because words of wisdom are worth repeating, even when, and especially when, they are going around unlistened.

Contrary to other legal scholars Breyer understands economics, as he can figure out that positive consumer surplus is not a bad outcome, at least from a social view point (pp. 285-286)

It is often said that the author should receive the “value” of his work to society - a value that might be measured in terms of what those who benefit from the book

would be willing to pay rather than do without it. But few workers receive salaries that approach the total value of what they produce. [...] workers in competitive industries make products that sell at prices well below what many of their buyers would be willing to pay for them. We do not feel that owners, managers, or workers in such industries are for this reason morally entitled to higher wages. Indeed, when a worker without competition - perhaps because he is the only doctor in the area, or the only engineer capable of building a certain bridge - could charge a price close to the total value of his services to the buyer, we normally encourage competition, which will force him to charge less.

His conclusive policy recommendations in 1970 were already the following, very actual ones (pp. 350-351)

- 1. The period of copyright protection is at present too long and should not be extended beyond fifty-six years.*
- 2. The law should allow individuals to make single copies of magazine articles and extracts from books without obtaining permission to do so from copyright owners. The details of this exemption can be determined by the study commission which the Revision Bill would establish.*
- 3. The law should allow individuals and small groups to store copyrighted material in computers and to use it for research purposes without obtaining permission from copyright owners.*
- 4. Computer programs should not receive copyright protection at the present time.*

And the very final conclusion

The generally unsatisfactory nature of the congressional hearings on the Copyright Revision Bill underlines the importance of these conclusions. The hearings reveal little critical analysis of industry claims that protection is needed. They show little awareness of the possible harms of extending protection. Rather, the data amassed at the hearings is unsifted, often irrelevant, fact and opinion, and many critical facts about affected industries, are missing. Of course the hour is late: the revisors have long been hard at work. Yet one cannot escape the conclusion that more empirical work and more thoughtful analysis is needed before the Copyright Law is significantly revised.

3. More Common Fallacies

Additional theoretical and empirical work is certainly needed, as Breyer advocated thirty five years ago, to better understand the impact that IP has on innovation, creation and overall economic welfare. In the thirty five years since those words were written, abundant research, indeed a gigantic amount of research, has been produced on the subject of which, though, very little has taken a critical approach. In fact, and until the events of the late 1990s have somewhat helped to re-open the debate, most research has supported the general principle that IP is good for society at large, not bad as we actually claim here and in related work (see, e.g. Boldrin and Levine [2005a, 2005b] and references therein.) This is due to one, fundamental, reason: common legal and economic wisdom argues that competitive markets are not suitable for trading copies of

ideas, as ideas are intrinsically different from other economic commodities. For the most part these arguments are incorrect, and to their common fallacy we now turn.

Instead of arguing if IP protection should be extended or not, if its term should be of 20 years for patents and 75 for copyright, or possibly viceversa, we would like to question the very same idea that IP is necessary and useful for fostering invention. Our basic contention is the following: exception made for a few, and altogether minor, exceptions, IP is not necessary for efficient innovation. The efficient allocation of surplus from innovation can and would be achieved by properly regulated competitive markets, and such distribution of surplus among inventors, imitators, and consumers could provide, on average, the correct incentives for the efficient amount of creation to take place in society. Therefore, as a matter of legislative principles, IP should be abolished and replaced with the opposite system of property rights. A system in which creators have the same rights as other producers, that is: the right to own and sell the fruits of their work, and in which legal monopoly power is not assigned to them over their ideas, unless a substantial case is made that the innovation could not materialize lacking the specific monopoly privilege.

To understand the common fallacy one needs to start from the examining the basic principle, put forward long ago by Kenneth Arrow [1962], according to which ideas and information constitute a very peculiar kind of commodities, unsuitable to be traded in competitive market. This is not true: along most dimensions, ideas are not different from other commodities, and those few dimensions along which ideas are different do not generally affect the functioning of competitive markets. Here are some often-heard arguments, which we have shown to be fallacious.

(I) *It is argued that in competitive markets innovators would be unable to appropriate more than an infinitesimal share of the social value of their ideas.*

This is a recurrent theme in much business, managerial, and industrial organization literature, where it is apparently believed that economic efficiency requires innovators (or producers more generally, we would believe) to appropriate all the social value of their products. Where this to be the case, any market transaction in which some positive social surplus is realized would be inefficient as producers are “leaving something on the table”, to consumers in fact. This, as our earlier quotation shows, was already very clear to Breyer in 1970, still a large literature, written by self-proclaimed economists and management strategy experts, keeps assuming or stating the opposite. But, obviously, socially efficient provision of ideas/goods requires, instead, that all ideas/goods with a positive social surplus (i.e. social value larger or at most equal than social cost) be produced. How such surplus is split between producers, consumers, and other entities (suppliers of intermediate inputs, government, etcetera) may, and in general will, affect if all goods with positive social surplus are produced, but there is no general presumption that too few goods will be created unless producers appropriate the whole social surplus. In general, in fact, we would expect producers to bring goods, or ideas, to the market, as long as the private costs of doing so is exceeded by the private gains.

Hence, from a social perspective, one should ask: for all ideas with a positive social surplus, is it the case that competitive pricing allows producers to appropriate enough revenues to compensate for their *private* opportunity cost? Strangely enough, this question is seldom asked in the theoretical literature on innovations, and never, to the best of our knowledge, in the empirical one. This fallacy, as we have shown, e.g., in Boldrin and Levine [1999, 2004a], misses the fact that ideas combine attributes of both consumption and capital goods. They can be used directly

for consumption, such as reading a book, or watching a movie, or they can be used as an input in production, by making copies of a book or movie, or by producing other goods, for example, by using the idea for an improved production process. That the original copy of an idea is the capital good (the tree) from which all other copies (the fruits) must originate enables innovators to appropriate the net present value of all future copies through competitive pricing. Corn seeds, for example, can be eaten or used for producing additional corn, so also combine characteristics of consumption and capital goods. Competitive markets for corn generate the appropriate incentive to invest in corn seed. The initial copy (or copies, when simultaneous innovation occurs) of an idea are generally produced through a process which is different from the one used to make subsequent copies, as in the case of original research versus teaching. Most capital goods (original research) are used to produce commodities other than themselves - but the fact that capital goods might be used to reproduce themselves poses no particular problem for competitive markets. In the semi-conductor industry, for example, reduction in chip size makes it possible to construct capital equipment that can be used to produce even smaller chips.

(II) There are suggestions that ideas are subject to "spillover externalities," or what we might call informational leakage. That is, the existence of the idea enables people to learn it and make use of it without the permission of the owners.

Some even argue that ideas can be copied for free. In practice, few ideas are subject to informational leakage, and in all cases are costly to reproduce. In the case of copyrightable creations, where the ideas are embodied in physical objects such as books, informational leakage is not an issue. In the case of scientific advances, reflection shows that it is also not the case. While in some sense scientific ideas are widely available, usable copies of scientific ideas are not so easy to come by. Even Newton's laws, our example in the next section, require a substantial

amount of time and effort to understand. For all practical purposes copies are limited to those people who understand the laws and books that explain them. Without paying someone to teach you or buying a book that explains Newton's laws, you are not terribly likely to learn them merely because they are in the public domain. As teachers and professors we earn our living by our ability to communicate ideas to others, and in doing so creating new copies of them. Overwhelming historical evidence shows that diffusion and adoption of innovations is costly and time consuming.

(III) Leaving ideas in the public domain, as it would be the case under a system where IP were ruled illegal, is socially inefficient and leads to a "tragedy of the commons" for creative activity.

We have already argued in section 2.2. why this claim is fundamentally incorrect. Once copyright or patent have expired, there are many copies of an idea, each a good substitute for the other, and each owned by someone. If you want to use the idea, make copies, or turn it into something else, you must first acquire a copy of it from one of the current owners. If there are many owners, each competing with each other to sell you the copy of the idea, you may be able to obtain it relatively cheaply, even though you intend to turn it into a highly valued new good. But the fact that you can buy ingredients cheaply is a good consequence of competitive markets, not a bad one. In fact, the evidence suggests that the market for goods in the public domain functions well, with copies widely available and reasonably priced: finding a copy of a book by Dickens, for example, is no great problem.

4. Thinking Out of the UIP Box

We have worked out elsewhere – see Boldrin and Levine (1999, 2002, 2004a) - formal, mathematical and quantitative models of why creative activity can thrive under conditions of competition and does not require, at least in principle but also in practice, the monopoly privileges that current IP legislation attributes to creators and inventors. Here we illustrate verbally the basic intuition underlying our analysis, using a well-known historical example to fix ideas.

Economic, and more generally social, progress is the long run, and altogether surprising, result of the continuous creation of new commodities, of their free exchange among individuals, and of the competition among producers of different goods, be they creators or imitators. Economists have long realized that there would be but a slow and possibly inconsequential improvement in human living standards without sustained innovation. This point was argued, most forcefully, by Joseph Schumpeter in *The Theory of Economic Development* (1911). With constant technology and a constant set of goods, the process of capital accumulation, when based only on the saving of a share of the yearly income flow, would generate but a fraction of the growth in per capita income we have witnessed since the inception of human history. Accumulation of capital under a constant technology, history and common sense conjure to suggest, cannot go very far due to the presence of fixed resources and the diminishing returns they bring about. Innovation is the engine of change and economic development, hence understanding its nature, internal mechanisms, and the social and institutional factors that bring it about or impede it, is, we believe, the single most important problem faced by the social sciences. It is our contention that understanding innovation is tantamount to understanding competition, that the latter is a necessary condition for the former and that, under very general circumstances, it is also sufficient. If innovation is the flow that enriches us all, then competition is the spring from which it erupts.

Innovation, for us, is the creation of the first copy of a good/process/idea that did not exist before. As the word “idea” is used here to denote all innovations, its usage should be briefly clarified. In our terminology, Isaac Newton’s innovation did not consist just in “thinking” the gravitational laws, but in the process of embodying them in his mind first, and in formulas and written expositions later. When, in 1687, he completed the manuscript of his *Philosophiae naturalis principia mathematica* and had it published, “Newton’s innovation” was completed. All subsequent copies of the *Principia* were reproduction of that first copy of his idea, and they were produced with a technology different from the one he had to use to obtain his first manuscript. Notice, that with “copy” here we refer here to either a physical copy of the actual book or the (equally physical, if less visible) copy of the gravitational laws embodied in the brain of another scientist or layman, i.e. a piece of socially valuable human capital. Indeed, and this is something crucial, the social value of Newton’s innovation is more properly measured by the number of copies of his laws existing in the second form (actual human capital) than in the first (copies of the book.) All such copies stemmed from Newton’s original copy and the social value of the latter would have been much smaller, or even negligible, without them. Newton’s reward, either in terms of intellectual prestige or in terms of actual wealth and social status, became so high because very many copies (of either type) of the *Principia* were eventually reproduced. In our terminology, the first copy of the gravitational laws is the “prototype” and it embodies, for the first time, Newton’s idea; the *innovation technology* is the one Newton adopted to figure out the gravitational laws and write the *Principia*. The *imitation technology* is the one used by subsequent publishers of the book and by whoever learned and understood the content of the *Principia*. Notice, which is relevant, that the *Principia* were published before the Statute of Anne introduced some (weak by current standard) degree of IP legislation in the U.K.

Notice that the final products of the two technologies are, functionally speaking, equivalent: a copy of the *Principia* is a copy of the *Principia*, and a human that understands the principles and laws of gravitation is, at least from this narrow point of view, equivalent to any other human who understands the same principles and laws. This point will become relevant later on, when discussing the *public domain* for ideas. Notice also that both technologies use a variety of inputs to obtain their final product, that some of these inputs are previous innovations (e.g. Kepler's Laws) and that such inputs can be acquired on competitive markets under No Intellectual Property (NIP), but would have to be obtained from monopolists by acquiring many licenses under IP. There are two exceptions, to what we just said. First, the innovation technology uses a particularly scarce input, Newton's geniality in this case, which greatly limits the number of initial prototypes that can be obtained. Had we been concerned with a less dramatic invention, simultaneous creation by a number of different and independent innovators would have been likely, as it is often the case in practice. Still, the total amount of "creative ability" available at any point in time to make prototypes of a new idea is quite limited. In the jargon of economics, there is always *limited creative capacity* of prototypes at any given point in time. In the particular case of scientific inventions or of artistic creation, this limitation of creative capacity may persist for a long time: new scientific discoveries are very difficult to understand, that is why we have Ph.D. programs and post-docs, and live performances of, say, new music hard to imitate, which is why live concerts are often sold out and very expensive. The imitation technology also uses a special kind of input, and that is a pre-existing copy of the *Principia* (in case we are considering a publisher making copies of the book) or, generally, someone who has already understood its content (in case we are considering a student learning gravitational laws). Either way, also this particular input(s) is in limited supply; strictly speaking, this is true at any point in time and even

now, but it is especially true in periods close to the time in which the first prototype of the *Principia* appeared. In summary, the imitation technology also faces a *limited productive capacity*, the size of which is basically determined by the number of copies of the idea “Newton’s Gravitational Laws” embodied in humans/books at any point in time.

A little reflection shows that this set of properties is not specific to the particular case of the *Principia*, but applies quite widely (we would say: universally) to other innovations. The differences are quantitative, never qualitative: new valuable ideas are always embodied in either people or things; innovative capacity is always limited; imitation/reproduction always requires copies of the idea and hence stems from the original prototype even if in some rare cases imitation may not require large investments; reproductive capacity is also quite limited for a substantial number of periods after the innovation takes place; new ideas almost always require old ideas to be created, and creation is more and more a complex and cumulative incremental process; finally, consumers are always impatient and would rather have the stuff today than tomorrow. Our theoretical analysis builds upon such properties, and an additional one: it took quite a while to Newton to come up with the gravitational laws (falling apples notwithstanding) and, for what we know, even longer to fully articulate them in the manuscript of the *Principia*. Further, the *Principia* were not a minor, infinitesimal departure from or improvement upon previous knowledge, but a substantial one indeed. This property is also general, at least qualitatively! Producing the prototype, via the invention technology, requires quite often a large investment, which we want to think of as an *indivisibility*. While it is not true that a sizeable indivisibility is involved with the production of prototypes of every idea, it is true that this is often the case, and that this feature of creative activity should be taken in proper account when discussing the allocation of economic surplus from creative activity,

Finally, a few words to further clarify our approach to the problem. We ask what is socially optimal, and how incentives should be provided (i.e. which market structure can provide the appropriate incentives) for the *socially optimal amount of creative activity to take place*. The problem of providing incentives for innovation should not be confused with the protection of rents of intermediaries, or rents of established artists, or creators more generally. The issue here is not what makes creators richer or as rich as possible, but how to allocate to them enough of the surplus from creative activity so that they have the incentive to carry it out efficiently, from a social view point. This requires focusing on the concept of *opportunity cost*, i.e. to ask: when a potential innovator considers the choice between engaging in creative activity or doing something else, his opportunity cost is determined by how much income he would receive from doing something else. Efficiency requires that, should the innovator opt for creation, he receive from the latter at least as much as he would receive from the alternative activity, that is: his opportunity cost. When the market structures allows the innovator to receive more than his opportunity cost, this additional rent serves no socially useful purpose. Per se, this additional rent may just be a pure transfer, which does not affect economic efficiency; nevertheless, more often than not, and in particular when monopoly power is involved, this additional rent accrues to the innovator because he has the incentive to provide less innovations, or less copies of his innovations, than socially efficient. In this case the additional rent is not just a neutral transfer from consumers to innovators (which may be unfair, but irrelevant for efficiency) but a socially costly and inefficient tax on consumers, less copies of ideas are available to the people than it is desirable and technologically feasible. Our critique of current IP laws focuses mainly on this second aspect.

Technological innovation continuously change the opportunity cost and reservation values of the various agents involved in creation. So, for example, the invention of the printing press made the craftsmanship accumulated over century of artisans and monks unnecessary for copying or for production of new books. This was a blessing, for writers of books and their readers, but also a curse for those artisans who suddenly lost their long established title to a substantial share of the social value of every book, new or old that it be. Given current technologies, and the continuous improvement in the innovation and reproduction technologies, it would be crucial to measure what the opportunity costs of creators and innovators actually is. Unfortunately, this is an endeavor to which applied economists, especially in the area of industrial organization, have dedicated minimal attention and we are not aware of any study estimating the minimum future expected income needed to attract potential innovators into creative activity.

5. Conclusion

While the functioning of competition in the market for goods has been the subject of study for a long time, and our knowledge of the subject appears to have progressed substantially since the times of Adam Smith, it is often felt that the same is not true of the market for ideas. Indeed, there is a widespread view that ideas are dramatically and intrinsically different from goods and that the "economics of knowledge" needs to be grounded on different premises and adopt different modeling strategies than the rest of economics. In our work we reconsidered this issue and concluded that, while the economic theory of ideas does require modifications in some of the more common assumptions with which markets for regular commodities are handled, such

differences are much less dramatic than one would have expected *prima facie*, and that a great deal of common economic wisdom applies equally well to the economics of knowledge. This allows us to critically reconsider a number of theoretical issues sitting at the intersection between the theory of innovation and technological change and growth and trade theory, to conclude that much common wisdom, including the legal wisdom bestowed upon us by the Supreme Court of the United States, is either empirically groundless or logically faulty, and that some old, and possibly uncommon, wisdom, should be brought back to bear on the study of technological change, growth, and trade.

Central to understanding the market for ideas and the incentives for the adoption of new ideas is discovering how ideas might be different from other goods. The starting point of the economic analysis of innovation is to recognize that the economically relevant unit is a copy of an idea. That is, typically, many copies of an idea exist in physical form, such as a book, a computer file or a piece of equipment, or in the form of knowledge embodied in people who know and understand the idea. When embodied in humans, copies of ideas are labeled with a variety of different names, which often obscure their common nature: skills, knowledge, human capital, norms, and so on. Careful inspection shows, though, that each and everyone of these apparently different entities is, at the end, nothing but the embodied copy of an idea, and that the latter was either discovered first by the person in whom it is currently embodied, or costly acquired (possibly via observation and imitation) from other humans, in whom it had been previously and similarly embodied. Economically valuable copies of ideas do not fall from the heavens, like manna, but are the product of intentional and costly human efforts. Only these copies matter, first, in the sense that if they were all to be erased, the idea would no longer have any economic value, and, second, in the sense that the copies are relatively good substitutes for each other: whether a copy of an idea is the original copy or the hundredth copy, it is equally

economically useful. From the perspective of the functioning of markets, then, property rights in copies of ideas is assured by the ordinary laws against theft - what is ordinarily referred to as “intellectual property” protects not the ownership of copies of ideas, but rather a monopoly over how other people make use of their copies of an idea.

Notes

¹ See, among others, <http://cyber.law.harvard.edu/openlaw/eldredvashcroft/supct/amici/economists.pdf>

² For example, Miller [1995], reproduced also as Congressional Testimony and available at <http://www.public.asu.edu/~dkarjala/legmats/hatch95.html>, which also contains a careful critique of Miller’s arguments by Dennis S. Karjala.

³ From the U.S. Constitution.

⁴ In case you find our tone somewhat disrespectful of the Supreme Court, we very much regret it. Nevertheless, the part we cite is literally the only argument said Court provide to give substance to the idea that it is good national policy for the Congress of the United States to legislate according to the wishes of the EU Commission in Bruxelles. Certainly, we could have taken another approach and argued, on post 9/11 Patriotic Act grounds, that U.S. legislation should express the will of the U.S. citizens and not that of some, probably anti-American, technocrat in Bruxelles. This is, in fact, what we do next.

⁵ Our usage of “at least” and “not poorer” is intentional. Indeed, to the extent that demand for creative work is downward sloping and creative works are partial substitutes for each other, the US creators are actually richer. This is because monopolist prices are higher than competitive ones, hence, if the prices of EU creations increase once the copyright term increases there, US creators can keep their products as competitive as they were before in the EU markets, and still slightly raise their prices.

⁶ From Karjala [1998] and cited in Landes and Posner [2003].

⁷ Landes and Posner’s discussion of overgrazing and maintenance can be found on pp. 222-234 of [2003].

⁸ Britt [1990] pp. 22 and 26.

⁹ Quoted in Lemley [2004].

¹⁰ We should point out that Lemley's argument that if monopoly rights are provided there is no reason to provide them to the creator is wrong. Regardless of who starts with the monopoly rights, as long as they can be sold without prohibitive transactions costs, they will wind up in the hands of whoever can manage them the most efficiently. In practice most copyrights are in fact transferred to corporations and publishers. If monopoly rights are to be provided, the advantage of providing them to the creator (other than the obvious difficulty of figuring who else to give them to) is that it does create an additional incentive for creation, however miniscule it might be.

¹¹ See also Karjala [2004] and our own analysis in Boldrin and Levine [2005b, chapter 4].

¹² Note that the classical fixed cost argument for intellectual property is absent here – certainly Disney could spend a few million more or less “refurbishing the Mickey Mouse character.”

¹³ That is why promotional campaigns for milk, cereals, and fish are usually carried out by some industry-wide association, and not by individual firms.

¹⁴ Of course the monopolist, unlike the competitive providers, will have no incentive to provide accurate information. We rarely see Disney advertising that, however true it might be, their new Mickey Mouse movie is a real dog, and we should go see the old Mickey Mouse movie instead.

¹⁵ Landes and Posner [2003] p. 50.

References

- Arrow, Kenneth [1962]: “Economic Welfare and the Allocation of Resources for Invention,” in *The Rate and Direction of Inventive Activity: Economic and Social Factors*, A Report of the National Bureau of Economic Research, 609-25. Princeton University Press,
- Boldrin, M. and D. K. Levine [1999], "Perfectly Competitive Innovation," available at www.dlevine.com and www.econ.umn.edu/~mboldrin
- Boldrin, M. and D. K. Levine [2002]: "The Case Against Intellectual Property," *American Economic Review Papers and Proceedings*, 92, 209-212.
- Boldrin, M. and D. K. Levine [2004a]: "IER Lawrence Klein Lecture: The Case Against Intellectual Monopoly," *International Economic Review*, 45, 327-350.
- Boldrin, M. and D. K. Levine [2004b]: “IP and Market Size,” available at www.dlevine.com and www.econ.umn.edu/~mboldrin

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- Boldrin, M. and D.K. Levine, [2005a]: “The Economics of Ideas and Intellectual Property,” *Proceedings of the National Academy of Sciences*, 102, 1252-1256.
- Boldrin, M. and D. K. Levine [2005b]: *Against Intellectual Monopoly*, www.dklevine.com/general/intellectual/against.htm
- Breyer, S. [1970]: “The Uneasy Case for Copyright. A Study of Copyright in Books, Photocopies, and Computer Programs”, *Harvard Law Review* **84**, 281-351.
- Britt, B. [1990]: “International Marketing: Disney’s Global Goals,” *Marketing*.
- Karjala, D. S. [1998]: “Statement of Copyright and Intellectual Law Professors in Opposition to H.R. 604, H.R. 2589 and S. 505, The Copyright Term Extension Act, Submitted to the Joint Committees of the Judiciary.”
- Karjala, D. S. [2004]: “Opposing Copyright Extension,” www.public.asu.edu/~dkarjala/legmats/hatch95.html
- Landes, W. M. and R. A. Posner [1989]: “An Economic Analysis of Copyright Law”, *The Journal of Legal Studies* **18**, 325-363.
- Landes, W. M. and R. A. Posner [2003]: *The Economic Structure of Intellectual Property Law*, Harvard University Press.
- Lemley, M. A. [2004]: “Ex Ante versus Ex Post Justifications for Intellectual Property,” mimeo, UC Berkeley
- Lindsey, B. [2001]: *Against the Dead Hand: The Uncertain Struggle for Global Capitalism*, Wiley
- Posner, R.A. [2004] “Eldred and Fair Use”, *The Economists’ Voice*, September, <http://www.bepress.com/ev/vol1/iss1/art3>.
- Seabright, P. [2004]: *The Company of Strangers: A Natural History of Economic Life*, Princeton University Press