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**THE EFFICIENCY OF CONTRACTS THAT  
REALLOCATE ENTITLEMENTS IN CREATIVE WORK:  
A SKEPTICAL VIEW**

by

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# The Efficiency of Contracts that Reallocate Entitlements in Creative Work: A Skeptical View

Guy A. Rub\*

## Introduction

Copyright law provides authors<sup>1</sup> and consumers of information good with a bundle of entitlements. When Anna sells a book she wrote to Ben for \$20, copyright law divides the entitlements and potential usages of the book between the two.<sup>2</sup> Ben can read the book, reread it as many times as he likes, read it out loud to his children, keep it on his shelf in perpetuity, sell the book, destroy the book,<sup>3</sup> write a review about the book and in it he may quote a short segment from it, photocopy a page from the book to assist him in teaching his class<sup>4</sup> and more. At the same time, without Anna's authorization, Ben cannot copy the entire book and sell it, read the book out loud in front of a large crowd, translate it for commercial purpose<sup>5</sup> and more. This initial division of entitlements is the starting point determined by copyright law, but the question is whether it should also be the ending point. To what extent should the parties be permitted to use legally enforceable contract to trade these entitlements that were initially assigned to them? Can Ben for example trade his right to cite parts of the book for a permission to read it out loud in public? Can he trade it for a discount in the book price? Put differently, should copyright's initial allocation of entitlement be treated as a default rule that the parties can contract around, or as a mandatory and inalienable allocation?

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<sup>1</sup> I loosely use the terms "authors," "creator," "publisher," "producer" or "copyright holder" to refer to the entity that created the work, had full possession of it before publication and holds the copyrights (if such exist) for it. Needless to say that sometimes one entity creates the work, another publishes it and a third holds the copyright for it, and each of these entities might have different interests and incentives, but this distinction is outside the scope of this work. See generally John D. Shuff & Geoffrey T. Holtz, Copyright Tensions in a Digital Age, 34 Akron L. Rev. 555, 556-557 (2001); *N.Y. Times Co. v. Tasini*, 533 U.S. 483 (2001); William M. Landes & Richard A. Posner, An Economic Analysis of Copyright Law, 18 J. Legal Stud. 325, 327 (1989).

<sup>2</sup> See William W. Fisher III, Symposium on the internet and legal theory: Property and contract on the internet, 73 Chi.-Kent. L. Rev. 1203, 1204-1206 (1998).

<sup>3</sup> 17 U.S.C. §109(a)

<sup>4</sup> 17 U.S.C. §107

<sup>5</sup> 17 U.S.C. §106

In *ProCD v. Zeidenberg*,<sup>6</sup> the Seventh Circuit implicitly held that parties are allowed to trade their initially allocated rights. The decision, written by Judge Easterbrook, used both doctrinal and economic reasoning to reverse the ruling of the district court and to hold that a contractual cause of action is substantially different from a copyright infringement cause of action and therefore not preempted. A few years later, a split panel of the Federal Circuit adopted this reasoning and explicitly ruled that a copyright holder can force a licensee to waive the right of fair use, even through a standard form contract.<sup>7</sup> While most courts that dealt with this issue in the last ten years adopted a similar rule,<sup>8</sup> the *ProCD* decision had come under harsh criticism in the copyright literature.<sup>9</sup> Most of the debate on this rule focuses on doctrinal issues, on questions regarding the proper ways to interpret the preemption provision of the Copyright Act<sup>10</sup> and the interaction between that provision and other constitutional preemption doctrines. In this paper I will stay away from this doctrinal debate and instead explore the *ProCD* rule from an economic efficiency perspective.

As the *ProCD* rule allows the parties to trade the bundle of rights that the Copyright Act created I will call it “an unbundling regime” and compare it to the “forced bundling regime” that some commentators support. Since unbundling of rights allows the producer to price discriminate between its consumers, Judge Easterbrook and others concluded that it is an efficient regime. Professor Picker for example argued that this regime lets the creator “march down the demand curve for a particular work,”<sup>11</sup> which means that it allows the producer to serve consumers that cannot afford the uniform monopoly price that is charged under a bundling regime. This paper will closely examine the effects of unbundling scheme and will suggest that while Easterbrook’s and Picker’s argument might be intuitively appealing it is misguided.

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<sup>6</sup> *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1449 (7th Cir. 1996).

<sup>7</sup> *Bowers v. Baystate Techs.*, 320 F.3d 1317 (Fed. Cir. 2003)

<sup>8</sup> See, e.g., *Davidson & Assocs. v. Jung*, 422 F.3d 630, 639 (8th Cir. 2005); *Altera Corp. v. Clear Logic, Inc.*, 424 F.3d 1079, 1093 (9th Cir. 2005); *Lipscher v. LRP Publs., Inc.*, 266 F.3d 1305, 1318 (11th Cir. 2001). C.f. - *Wrench v. Taco Bell Corp.*, 256 F.3d 446, 454 (6th Cir. 2001) (noting that preemption might apply if the right that is created by the contract is too similar to an exclusive right under the Copyright Act).

<sup>9</sup> See, e.g., Wendy J. Gordon, *Intellectual Property as Price Discrimination: Implications for Contracts*, 73 *Chi.-Kent L. Rev.* 1367 (1998); David Nimmer, Elliot Brown & Gary N. Frischling, *The Metamorphosis of Contract into Expand*, 87 *Calif. L. Rev.* 17 (1999); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 *Cal. L. Rev.* 111 (1999); Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 *N.Y.U. L. REV.* 354 (1999); Julie E. Cohen, *Taking Stock: The Law and Economics of Intellectual Property Rights: Copyright and the Perfect Curve*, 53 *Vand. L. Rev.* 1799 (2000).

<sup>10</sup> 17 U.S.C. § 301.

<sup>11</sup> Randal C. Picker, *From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright*, 70 *U. Chi. L. Rev.* 281, 295 (2003).

Consequently, it will conclude that the efficiency of the unbundling of rights regime might be questionable.

The paper proceeds in four main parts. Part I explains how the diversity in the demand for information good creates a need for unbundling. Part II puts this type of regime in context as a non-perfect non-exclusive second degree price discrimination tool. Part III shows that while the producer surplus increases under unbundling regime it has an ambiguous effect on the deadweight loss that is created by copyright law. Part IV explores whether unbundling might be an efficient way to ex-ante incentivize creation in comparison to other rules currently in existence under copyright law. I conclude by suggesting that it might be difficult to defend an unbundling regime from an economic efficiency perspective and that Congress should consider intervening in this debate.

## Part I - The diversity in the demand for licensing agreements

The group of potential consumers who are willing to pay for a specific information good is typical heterogeneous. Different members of this group have different preferences, needs, wealth and constraints and therefore a different willingness to pay for different usages. I will illustrate this argument using the classic copyright treatise “Nimmer on copyright”. Table 1 identifies some of the groups that might be willing to purchase this treatise if they are allowed to use it according to their minimal needs and constraints:

The Typical user	For how long is the access to the work needed	Lending	Quoting	Criticizing	Limited photocopying
<i>Autodidact</i>	A week	No	No	No	No
<i>Student</i>	3 months (a semester)	No	Probably yes	Probably no	Probably no
<i>Professor</i>	In perpetually	No	Yes	Yes	Probably yes
<i>Lawyer</i>	In perpetually (if updated)	No	Yes	Probably yes	Probably yes
<i>Library</i>	In perpetually (if updated)	Yes	Probably yes	Probably yes	Yes

The *autodidact* is a layperson who, for his own desire for knowledge, wants to be more educated on copyright issues she finds interesting. The *autodidact* is willing to pay for the right to read specific chapters from the treatise once. She has no need for any other usages of the book

and is unwilling to pay for them. The *law student* is studying a copyright related course and is willing to pay to have an access to different chapters of the book while studying. She is however willing to pay very little for the right to keep a copy on her shelf in perpetually, or for other rights.

The *law professor* has an higher willingness to pay but only if she can read it whenever she needs, keep it in perpetually and quote and criticize it in her articles. She is also willing to pay more if given the right to make multiple copies of small segments of the treatise to use in her class. The *copyright lawyer* has similar needs but an even higher willingness to pay. Like the *professor*, she also likes to read it whenever she needs, keep it in perpetually (while the work is as updated as possible), to quote and maybe photocopy a few pages or possibly criticize it in her briefs. The *library* has a high willingness to pay and low elasticity of demand but only if it is given a set of special rights. Specifically, the library must have all the rights that its readers need, plus the right to lend the book and assign these right to its patrons.

There are of course other typical users: The *competitor* who is writing a copyright treatise, the *parodist*, the *book critic*, the *audiobooks publisher*, the *translator* and more.

The typical member of each group has a different willingness to pay to each entitlement she might get in the treatise. Copyright law is not sensitive to these distinctions, since, as mentioned, by selling the book the author gives the buyer a bundle of rights.<sup>12</sup> If the author is forced to offer one license that bundled different rights for one price she will take into account the demands of the different groups of buyers and will try to set a price that will maximize her revenues. If I return to the Nimmer on Copyright example then as most consumers with high reservation price like to keep the book in perpetually, the *autodidact*, who has no need for such a right but who wants to access the treatise, will have to cross-subsidize this usage, and pay a price that reflects the fact that this right is bundled in the product's license. Moreover, as *libraries* and *lawyers* have a high willingness to pay their participation in the market can cause the price to soar,<sup>13</sup> which will price out of the market most of the *autodidacts* and *students* and maybe the

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<sup>12</sup> Not all the possible entitlements in the book are bundled by the copyright law. As mentioned, some entitlement, like the rights to create copies or to translate the treatise, stays with the copyright holder and are therefore no bundled and sold separately. Therefore, what I call "a forced bundling regime" is actually partly bundling regime which prohibited the unbundling of the rights the copyright law gives to the buyer of a copy of the information good, like the right of fair use. See also Wendy J. Gordon, supra note 9 at p. 1370 - 1375.

<sup>13</sup> A hard copy of Nimmer on copyright is actually sold for \$1885.  
<http://bookstore.lexis.com/bookstore/product/10441.html>.

*law professors*.<sup>14</sup> Therefore, in this example, forced bundling actually limits the access to the information good.

To further illustrate this point, let's assume there are five potential consumers – an *autodidact*, a *student*, a *professor*, a *lawyer* and a *library* owner, who are willing to pay, if they are entitle to use the product according to their minimal needs (as shown in table I) – 10, 40, 150, 250 and \$300 respectively. If the producer is forced to choose one price for the product she will sell an unlimited license for \$250. Only the *lawyer* and *library* will access the good.

On the other hand, if the author can offer the books under a variety of licenses (under an unbundling regime) more groups will be served. Thus, in the previous example the author can sell three non-lending licenses - license to read for a week for \$10, a license to read for 3 months for \$40, a license to read in perpetually for \$150 - and a lending license for \$300. Under this scheme all 5 consumers will gain access to the product.<sup>15</sup> Table 2 summarizes this result.

Table II – How can unbundling increase access				
The Typical user	Willingness to Pay	Price under bundling	Price under unbundling	Consequences of unbundling
<i>Autodidact</i>	10	250	10	Access is gained
<i>Student</i>	40	250	40	Access is gained
<i>Professor</i>	150	250	150	Access is gained
<i>Lawyer</i>	250	250	150	Receive access for a lower price
<i>Library</i>	300	250	300	Receive access for a higher price

Moreover, there is also a difference in preferences within each group. For example, some *professors* can pay more for the book as they earn more and will gain higher value (monetary and not) from using it. A *student* in a top ranked low school might expect to earn more after graduation and therefore might be willing to spend more on his legal education. Some *autodidacts* are simply wealthier than others. Therefore, when the publisher chooses the price for the treatise, she will have to look into the difference in preferences between groups and within groups. As a result, even if full unbundling of rights is allowed, the author will not be able to use

<sup>14</sup> While these users are priced out of the market, the fact that *libraries* are not may give them some access, possibly a partial one, to the book. See infra note 43.

<sup>15</sup> Unbundling cannot always achieve this result and increases access to the work. See infra part III which is devoted to this question.

this tool to discriminate within a group and therefore, in most cases some members of each group, with relatively lower willingness to pay and high elasticity, will be priced out.<sup>16</sup>

Therefore, the discussion suggests that copyright law bundles together rights that might be evaluated differently by different buyers. Consequently, this bundling scheme can limit the access to information good. If the author is allowed to unbundle the rights she can use the differences in preferences to segment the market and offer different potential consumers a different set of rights to buy, and thus create price discrimination.

## **Part II - Unbundling as a price discrimination tool**

### **2.1 First and second degree price discrimination**

Defining the term “price discrimination” is not a trivial task. As a leading economic treatise puts it, “It is hard to come up with a satisfactory definition of price discrimination. Roughly, it can be said that the producer price discriminates when two units of the same ... good are sold at different price ... This definition is unsatisfactory.”<sup>17</sup> The problem is not just one of definition. Price discrimination is a term that is used to describe several types of pricing strategy, and cases of confusion between them exist in the literature. In this part I will explain the important differences between three types of price discrimination schemes– first, second and third degree price discrimination.<sup>18</sup>

Under first degree price discrimination, also known as perfect price discrimination, the producer sells the product for a price that equals each consumer’s reservation price. Under this scheme the entire consumer surplus and, more importantly, all the deadweight loss, is transformed into producer surplus. The producer thus sells a quantity equals to that which would have been sold in a competitive market equilibrium, and society avoids the reduction in quantity which typically occurs under monopoly pricing. For our purposes, it is important to note that while first degree price discrimination is commonly used in literature, and in particular in the literature on contracts in information good, it can rarely be achieved.

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<sup>16</sup> See *infra* the discussion on this issue in section 3.1.

<sup>17</sup> Jean Tirole, *The Theory of Industrial Organization*, p. 133 (1988)

<sup>18</sup> The separation of price discrimination into three degrees was first suggest by Pigou, A. C. Pigou, *The Economics of Welfare*, 279 (1920), although the modern definition of this distinction and in particular the definition of second degree price discrimination is different than that of Pigou. C.f. - Pigou, *id.*, Tirole, *id.*, at p. 135; Michael E. Wetzstain, *Microeconomic Theory* 419 (2005).

In practice, the consumer's reservation price is a private information that the producer doesn't know. Therefore, producers developed pricing schemes that allow them to indirectly assess their consumers' reservation price. Therefore, under both second and third degree price discrimination the producers use some approximation method to match different prices to different consumers based on the estimation of their willingness to pay. Second and third degree price discrimination differ in the ways they make this estimation.

Simply put, a second degree price discrimination, also called "versioning,"<sup>19</sup> means that the producer offers slightly different versions of its product for different prices to all consumers.<sup>20</sup> The small differences between the products are evaluated differently by different consumers and constitute a tool of self selection, which helps the producer identifying the users with high willingness to pay. Airlines companies, for example, extensively use second degree price discrimination. All travelers in any given flight fly in the same airplane, in the same route and in the same time. However, travelers differ substantially in their reservation price and elasticity of demand and therefore the airline would like to price discriminate and offer cheap tickets to consumers with high elasticity and expensive ticket to consumers with low elasticity. Airlines use a variety of self selection tools to help them identify these atypical travelers. Thus, buyers that purchase tickets in the last minute, or choose not to stay in their destination for a weekend, or even those who are willing to pay for having a larger seat with more leg room, indicate that they are probably business travelers. The higher price that these travelers are asked to pay reflects the facts that they typically have high reservation price and low elasticity and not only the cost of the added benefit they received (if there is such a cost). Here the aforementioned problem of the definition of price discrimination is very salient, since price discrimination is typically defined as selling the same product for different prices, but under versioning, the products that are being sold are not exactly identical. That being said, as the differences in price is attributes primarily to differences in the consumers willingness to pay and not to the cost of production of the add-ons, this type of pricing scheme is called a second degree price discrimination.

With third degree price discrimination the sellers use a different indirect method to estimate their consumers' reservation price. Under this pricing scheme the producer offers the

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<sup>19</sup> Carl Shapiro & Hal R Varian, *Information Rules*, p. 39, 53-82 (1999).

<sup>20</sup> Tirole, *supra* note 17, at p. 135, 142; Wetzstain, *supra* note 18, at p. 419.

same product to different groups of consumers for different prices.<sup>21</sup> The producer use some "exogenous" known information about its consumers (e.g. – their age, occupation, gender, location and so on) to estimate their reservation price. Therefore, under third degree price discrimination, like under second degree price discrimination, the consumers are sorted into groups, but unlike second degree price discrimination the consumers cannot choose their group since it is determined by the "exogenous" public information. For example, the seller of movie tickets might decide that students or senior citizens have, on average, a low willingness to pay and high elasticity of demand and therefore these groups will be offered cheaper tickets.

It should be noted that in many cases the sellers use a variety of second and third degrees price discrimination schemes together. For example, some airlines don't just use second degree price discrimination, as mentioned above, but also offer cheaper student fare. Similarly, movie theaters sometimes use second degree price discrimination by offering cheap tickets on Tuesday evening screenings.

As it will be shown, some commentators use the term "price discrimination" to refer to unbundling of rights in information good, when they probably envision a perfect price discrimination scheme.<sup>22</sup> However, unbundling of rights, like practically all price discrimination schemes that can be identified in real-life situations, is not base upon first degree price discrimination, as it does not match a price directly according to the reservation price of each buyer. In fact, unbundling of rights in information goods is a form of second degree price discrimination. The product being sold is the information good with the license attached to it and the producer offers slightly different attributes in that license, for different prices. The differences in prices cannot usually be attributed to differences in costs,<sup>23</sup> but to the differences in consumers' preferences and to the producer attempt to create a self-selecting mechanism between them. At least in theory,<sup>24</sup> the copyright holder can create a separate license that targets every group of users and attach a price that reflects that group's willingness to pay. Thus, as it

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<sup>21</sup> See Tirole, *supra* note 17 at p. 135, 137; Wetzstain, *supra* note 18, at p. 423.

<sup>22</sup> See *infra* notes 44-45 and note 54 and accompanying text.

<sup>23</sup> That being said, one can argue that there is a real difference in costs in the extreme cases in which an extensive license cuts back on the publisher's market and thus more expensive.

<sup>24</sup> This option is feasible only in theory as creating more and more licenses requires the producer to have more information about her consumers and it increases the costs of separation and the transaction cost, see *infra* the discussion on these cost in section 2.2.

was shown above,<sup>25</sup> the publisher of Nimmer on Copyright can create a variety of versions with different rights and sell them for different prices according to the consumers' reservation price.

## **2.2 The imperfection of unbundling of rights and the costs of separating**

From the perspective of the producer, unbundling, like most schemes of price discrimination, is far from being perfect. It has limited benefits and it involves costs. Using unbundling the publisher tries to estimate the consumers' reservation price based on their usage and such estimation can never be accurate. Indeed, people with exactly the same needs might have different reservation prices. For example, two lawyers might need to use Nimmer on Copyright in a similar way but they can possibly have considerably different reservation prices. Under perfect price discrimination each of these lawyers would have to pay his reservation price but under unbundling of rights regime the two cannot be separated.

Moreover, even if separation is possible (i.e. – the consumers differ in the ways in which they will use the product) preventing arbitrage might be too expensive. In order to foster price discrimination the producer must prevent the buyers who buy for a relatively low price (in this case – a cheap limited license) to sell the good to a buyer with higher reservation price. Since under second degree price discrimination scheme the producer offers the different versions to **every** consumer, arbitrage is generally less of a problem. In the context of unbundling of rights, as long as the contract is enforced, arbitrage does not exist. The publisher sells the cheap license for a certain price and nobody will be willing to pay more in the secondary market for this product. The problem is that the contract will not always be enforced, and thus the publisher must implement some measures to discourage breaches, which are not costless.

In some situations the breach of a license agreement is done in public. For example, most instances of transformative use, whether considered fair use or not, are done in public. Similarly, the catalogs of libraries are typically easily achievable and therefore if a library lends a book or DVD when the license forbids such an action, this breach is relatively easily detectable, especially in the digital era when information is more easily reachable and searchable.

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<sup>25</sup> See supra table II and the accompanying text.

Nevertheless, reducing public breaches and arbitrage requires monitoring systems<sup>26</sup> backed by a reliable threat of litigation.

Another tool that can reduce arbitrage, which is especially useful when the breach is not done in public, is encryption. Encryption in this context is a self-enforcing tool that prevents the consumers from using the product in a way that is inconsistent with the license agreement. Encryption became popular in the digital era and especially since Congress had enacted the Digital Millennium Copyright Act (DMCA) in 1998. This act prohibited the circumvention of encryption tools and criminalizes production and dissemination of technology, devices, or services that are used to circumvent them.<sup>27</sup> Therefore, currently, in many cases, the producer can enforce the contract and prevent arbitrage by attaching an encryption tool (typically called DRM – Digital Rights Management) to the product. That being said, encryption tools are not costless and are not immune to circumvention. Therefore in some cases the producer should back the technical limitation with a reliable threat of litigation against the circumventer.

Lastly, the publisher must deal with the problem of privity.<sup>28</sup> As contracts don't create rights in rem, in order to establish a contractual cause of action the publisher must be able to prove the defendant's consent to the license agreement. This is less of a problem in the primary market where the publisher might verify acceptance of the terms as part of the sale but in many cases copies of information good is transferred from one consumer to another. In these situations the producer must try to create privity with any transferee or else the chain of privity will be broken. Take for example a relatively cheap DVD that was sold to a private consumer under a shrinkwrap that prevents lending, which was later contributed to a public library. The library didn't tear the wrap and didn't consent to the license and therefore is not bound by the contract but just by the copyright law, which allows lending. Therefore, producers of information good typically try to attach the contract to the good in a way that forces consent before accessing the information. For example, many manufactures of software typically add a click-wrap to the shrink-wrap that forces the user to click "I Agree" to the terms of the license before she can use

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<sup>26</sup> Many holders of extensive portfolio of copyrighted work already employ monitoring systems that try to detect copyright infringements. It is possible that for these systems, the additional costs of monitoring contract breaches will not be substantial.

<sup>27</sup> 17 U.S.C. §1201.

<sup>28</sup> See generally Robert P. Merges, The End of Friction? Property Rights and Contract in the "Newtonian" World of On-Line Commerce, 12 Berkeley Tech. L.J. 115, 119-121 (1997).

the product. The problem is that such a scheme is not only legally questionable<sup>29</sup> and costly, but in some cases (like books, or music recording) it is technically extremely difficult (and thus expensive) to prevent a break in the privity chain.<sup>30</sup>

To conclude, all these tools –active monitoring, encryption, attachment and of course creating reliable threat of litigation - have costs. These costs were reduced in recent years, which makes the unbundling more feasible,<sup>31</sup> but they were not eliminated. Moreover, all of these measures put together cannot ensure full compliance with the license and the damages from existing breaches constitutes additional costs to the producer. Lastly, having several licenses might increase the transaction cost of reaching the agreements (i.e. – increase the cost of drafting, the consumers’ search cost and more).<sup>32</sup> Consequently, even when two users have different needs and different willingness to pay, the producer might not be willing to offer them different licenses as the private cost of segmentation is higher than the private benefits. For example, the publisher of Nimmer on Copyright might decide that she could not offer a special cheap license to autodidacts that allows the licensee to read the treatise just for a week as she might be concern that some students will buy this version and use it for a longer period. She might conclude that considering the price of a DRM that will prevent this illegal (under contract law) arbitrage, the estimation that some users will illegally (under the DMCA) circumvent it and the low revenues she expects to gain from the autodidacts users, such cheap license is not beneficial to her and should not be offered.

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<sup>29</sup> From a contract law perspective the problem is that the buyer can usually read the terms of the agreement only after payment. Courts disagree whether such terms are binding. C.f., *Hill v. Gateway 2000*, 105 F.3d 1147 (7th Cir. 1997) (holding that terms that were sent together with a computer that was purchase over the phone are binding); *Klocek v. Gateway, Inc.*, 104 F. Supp. 2d 1332 (D. Kan. 2000) (holding that the terms that were sent together with a computer that was purchase over the phone are not part of the contract and therefore not binding). [add references the debate in the property law literature]

<sup>30</sup> The producer might also try to use tortious interference in contractual relations as a cause of action against the third party that gain access to the copy of the information good without accepting the contract. However, proving the elements of this tortious cause of action, and especially the intentional inducement of the breach by the defendant, could be quite difficult. Such cause of action might be especially difficult to establish when the chain of privity was broken long before the defendant got the copy of the work. Think about the DVD whose original buyer agreed not to let anyone to lend it that is passed from one private owner to another till brought by a library.

<sup>31</sup> See generally, Fisher, *supra* note 2; Robert P. Merges, *supra* note 28.

<sup>32</sup> See generally Shapiro & Varian, *supra* note 19, p. 67-72 (discussing how many versions of an information good should the producer offer); Michael J. Meurer, *Copyright Law and Price Discrimination*, 23 *Cardozo L. Rev.* 55, 76-77 (2001) (discussing sorting costs in a second degree price discrimination scheme).

### **2.3 The non-exclusivity of unbundling as a tool of price discrimination in information goods**

Offering different licenses to the same information good for different prices is just one way, among many, to create different products from the same information good for different consumers. In reality producers of information good use a mix of second and third degree price discrimination schemes to sell their products. For example, the producer can create a second degree price discrimination by creating versions of its product that differ in the speed of updates (lawyers will probably be willing to pay relatively more than others for a treatise that is updated frequently), convenience of usage and prestige (lawyers and libraries might be willing to pay for an expensive hard cover while the students might be fine using the paperback version), comprehensiveness and more.<sup>33</sup> The producer can also use third degree price discrimination scheme and offer special “law professor” or “law students” licenses that will be considerably cheaper than regular licenses which will be purchase by lawyers and libraries.<sup>34</sup>

While the possibilities are numerous, no second of third degree scheme of price discrimination is perfect. As the examples below demonstrate, in some situations, depending on the diversity of the demand as well as the feasibility of separation and its cost, the most efficient way, and maybe the only practical way to segment the market is through unbundling of rights.

This argument is not purely theoretical and nowadays some publishers segment the market by offering their potential consumers various licenses and prices for different usage of the product. ProCD, which was involved in the most famous litigation on this issue, offered its client two licenses, one for private users and one for commercial users.<sup>35</sup> iTunes, which offers some songs in two versions: A limited license version for \$0.99<sup>36</sup> and an unlimited personal use license, for \$1.29,<sup>37</sup> is another example.

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<sup>33</sup> See generally Shapiro & Varian, *supra* note 19, p. 55-61.

<sup>34</sup> Note that autodidact cannot be offered a special license under this scheme as they cannot distinguish themselves. This is yet another example that any method of second or third degree price discrimination is not perfect by definition.

<sup>35</sup> In fact ProCD offered a third license that included on-line subscription through AOL. ProCD, *supra* note 6, at p. 1449. This license segments the market on a different base, and was tailored made for consumers with impermanent needs and/or that place high value on the accuracy of the information.

<sup>36</sup> The limitations, which are enforced through Apple’s DRM, called FairPlay, include restrictions on rights that are part of the creator exclusive rights under 17 U.S.C. §106 (like copying of songs), rights that are not part of section 106 (like the right to play a song which was legally copied to the computer, <http://www.apple.com/support/itunes/store/authorization>), and rights that are clearly within the sphere of “personal use,” that some commentators argue that copyright intentionally doesn’t cover. Jessica Litman, *Lawful Personal Use*, 85 *Tex. L. Rev.* 1871 (2007).

<sup>37</sup> <http://www.apple.com/pr/library/2007/04/02itunes.html>

LexisNexis uses a variety of tools to segment its market. The licenses allow the users to access various parts of the entire database for different prices and extensively use third degree price discrimination (e.g., student license). However, some licenses use second degree price discrimination, when the user can opt for a cheaper license that limit her ability to print or download information from the database.

LexisNexis is a nice example to end this part of this paper with since Nimmer on Copyright is actually offered through this service. Accordingly, the publisher of the treatise can separate the consumers who prefer buying hard-copy (which typically have high willingness to pay) from those who prefer the online version, and then rely of LexisNexis's ability to create fine tuned price discrimination within the later group. Consequently, through a variety of price discrimination instruments, most of the groups (although probably not all) from table I can access a tailored made version of the treatise.

### **Part III – Unbundling and copyright's deadweight loss**

While contracts allow the creators of information good to unbundle the rights that their consumers get and thus to price discriminate between them, the question still remains as to what are the economic effects of such a scheme. A closer examination reveals that unbundling can have significant economic consequences, where some economic actors can gain or lose when it is allowed.

The creator of information good is better off under unbundling regime as the producer surplus always increases. Under unbundling regime the creator is given the choice whether and to what extent to create different versions of the good and therefore it is not possible she will have a smaller surplus in comparison to forced bundled regime, which denies her this choice. While this result is obvious this section will focus on the more complex effect of unbundling on the potential consumers of information good.

#### **3.1 The conflicting effects of unbundling on the deadweight loss**

Most commentators on unbundling of rights in information good suggested, or at least assumed, that this regime can enhance efficiency as it increases the access to the work. There is an appealing logic to this claim. Copyright accords the right holder a monopoly power that

prevents entry to the market. This power allows the copyright holder to charge a price higher than the marginal cost of production which makes the recovering of the fix costs of creation possible. A side effect of this monopoly pricing scheme is the deadweight loss – the pricing out of the market of consumers whose reservation price is higher than the marginal costs of production but lower than the monopoly price. If, instead, the copyright holder is able to serve these low paying consumers by price discrimination—that is, by continuing to charge the high monopoly price to the high paying consumers and offer a cheaper limited package to the low paying users - every one will be better off. Differently put, the intuition is that unbundling of rights, like perfect price discrimination, allows the producer to sell the product to additions segments of the markets, which would otherwise be priced out, which reduces the deadweight loss.

This conjecture is quite prevalent. In his ProCD decision, Judge Easterbrook draws on this logic when he state that “If ProCD had to recover all of its costs and make a profit by charging a single price ... it would have to raise the price substantially ... The ensuing reduction in sales would harm consumers.”<sup>38</sup> Other commentators agree. For example, Professor Picker argued that unbundling allows the prouder to “march down the demand curve for a particular work.”<sup>39</sup> In this metaphor he refers to the producer’s ability to serve consumers with low reservation price, who are priced out of the market under monopoly pricing, that are located on the “lower” end of the demand curve. Even commentators that are critical of the ProCD decision, like Professor Gordon, concede that “a monopolist charging a single price imposes a higher deadweight loss on society than one who does not.”<sup>40</sup>

In this section I argue that this supposition is misguided and that unbundling of rights in creative work has a more ambiguous effect on the deadweight loss which can increase or decrease.

Unbundling of rights creates two effects with opposite impact on the deadweight loss. I will call one “the new markets effect” and the other “the poor among rich effect.” The new

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<sup>38</sup> ProCD, supra note 6, at p. 1449. See also infra note 51 and the accompanying text.

<sup>39</sup> Randal C. Picker, supra note 11, at p. 295. This phrase was cited by Judge Easterbrook, in his answer to the critics of his ProCD ruling. Frank H. Easterbrook, *Contract and Copyright*, 42 *Hous. L. Rev.* 953, 967 (2005).

<sup>40</sup> Gordon, supra note 9, at p. 1390. See also Fisher, supra note 2, at p. 1239 (arguing that “the use of contracts and technological protections” increases access to the information good and decrease the deadweight loss); *C.f.*, Meurer, supra note 32, at p. 79, 92 (noting correctly that “price discrimination may reduce consumer surplus and total surplus” and that “[price discrimination] sometimes reduces access” but also suggesting that “In the hardest case, which is probably common, discrimination ... increases total surplus”).

markets effect, which resembles Easterbrook's and Picker's argument, means that unbundling allows the producer to offer a cheap limited version of its product that will give make it possible to some consumers, who were priced out of the market under bundling regime, to purchase the product. For example, the publisher of Nimmer on Copyright can offer cheap limited autodidacts or students license and in this way allows them to access the treatise. This effect reduces the deadweight loss as it increases the access to the good.

When the publisher uses unbundling she must sort the potential consumers into groups, based on their needs, and set a price which will maximize her revenue within each group. This price will typically price out of the market the member of the group that have relatively low reservation price. This is the "poor among rich" effect. Think, for example, of a public library that under bundling might be able to buy DVDs on the market and lend them to its patrons. Under unbundling regime the publisher might create a special lending license for libraries that will be priced in according the reservation price of the entire groups, which include rich buyers with low elasticity like Blockbuster. The price therefore might be set too high for a public library, which will be priced out of the market.<sup>41</sup>

The poor among the rich effect does not exist under perfect price discrimination (as the poor among the rich are offered a license that exactly fit their reservation cost) which might explain why it is sometimes overlooked in the literature on this issue.<sup>42</sup>

Therefore, unbundling give access to the good to some users and thus reduces the deadweight loss that bundling creates but also deny access from other users and thus increases the deadweight loss in comparison to bundling. In some cases the first effect will dominant and the total deadweight loss will be reduced while in other the second will dominant and the total deadweight loss will increase. The attributes of the demand curves of every group will dictated the uniform price under bundling, while these curves, together with the cost of unbundling will dictates the different prices under unbundling. For some of these groups, typically these with higher elasticity and lower reservation price, the price will be lower and the deadweight loss smaller and for some of them the price will increase and the deadweight loss larger. As will be

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<sup>41</sup> In this particular example the publisher can use a third degree price discrimination scheme and offer a special "public libraries" license. However, as this license can damage the attractively of its product in the eyes of the commercial for-profit libraries it is questionable whether she will choose to do so.

<sup>42</sup> See supra the notes 38-40 and the accompanying text.

demonstrated below, the size of the groups and the difference in price, which are of course facts-dependent, will dictate whether the total deadweight loss will increase or decrease.

Before continuing exploring the total effect of unbundling on the size of the deadweight loss we should notice the progressive distributive effect of unbundling. Generally speaking, unbundling distributes surplus from consumers with relatively high reservation price and lower elasticity to consumers with lower reservation price and higher elasticity. The “new market effect” give access (and create consumer surplus) to these who are priced out of the market under bundling, who have low reservation price. At the same time the “poor among rich” effect denies access from consumers who could have afforded it under the uniform price, and therefore have a relatively higher reservation price. Moreover, even among the consumers who buy the product under both schemes, the groups with a lower reservation price and higher elasticity will receive the product for a cheaper price while the group with higher reservation price and lower elasticity will need to pay more for it. For example, under bundling, when a professor buys Nimmer on copyright she is charged a high price that reflects the high reservation price of libraries and lawyers. Unbundling will allow her to buy a cheaper version while the publisher will take advantage of the low elasticity of demand of the libraries and the lawyers and will sell them a more expensive version. In many cases the consumers with higher willingness to pay and lower elasticity are relatively richer and therefore in most cases, although not in all, unbundling distributes wealth from the richer consumers to poor.<sup>43</sup>

### **3.2 A simplified case demonstrating the effect of unbundling on the deadweight loss**

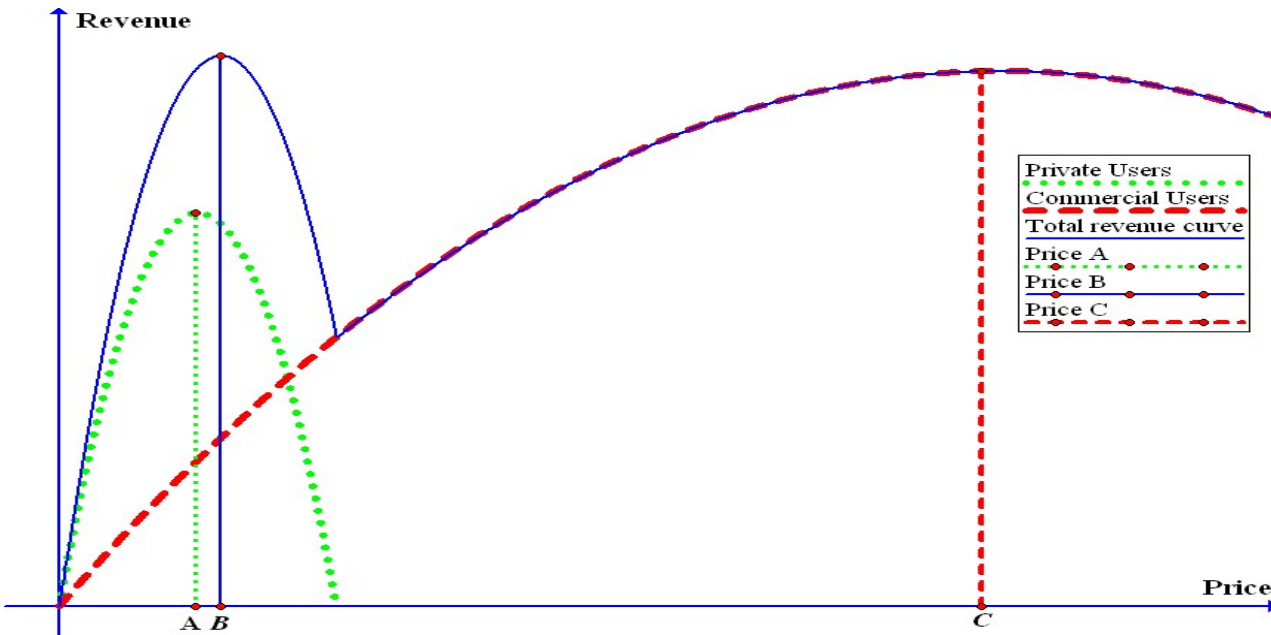
A simplified version of this problem might illustrate the ambiguity effect of unbundling on the deadweight loss. For simplicity, let’s assume that the potential consumers of the information good, much like the consumers of ProCD, can be separated into two distinct groups: One big group with limited needs and lower willingness to pay (which will be called “private users”) and another smaller group with more intensive usage needs and higher willingness to pay (called “commercial users”).

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<sup>43</sup> This argument is of course very simplified. In fact, a rich autodidact consumer might have high elasticity because she doesn’t have a strong enough desire to read Nimmer on Copyright. On the other hands libraries usually have low elasticity but they are serving of a large group of consumers with low willingness to pay. See Julie E. Cohen, *supra* note 9, at p. 1806; Shapiro & Varian, *supra* note 19, at p. 47-49.

Under bundling the publisher will need to choose one price for which to sell the good to all users. She will have to take into account two conflicting considerations. If she chooses a low price the volume of sales will be big as she will be able to sell the good to the two groups. However, the commercial group will receive the good for a price which is much lower than the reservation price of most of them and therefore the producer will capture only a small portion of the size of the potential surplus from this group. On the other hand the producer might decide to sell at a high price which will reflect the commercial group's high reservation price. Such a scheme will price out of the market most or maybe all the private users, which is a much bigger group. Therefore, the producer will need to consider what is more dominant – the bigger size of the private use group or the higher reservation price of the commercial use group.

Graph I shows the producer revenues as a function of the price she decides to charge:<sup>44</sup>



The dotted line on the left represents the revenue the producer can gain just from the private consumers. The dotted line on the right represents the revenue the producer can gain just from the commercial consumers. The third line is the accumulation of these two curves and it represents the total revenues that can be gained from selling this product.

This graph illustrates how delicate is the balance that the publisher must make. As it can be seen, the total revenue curve has two local maximum points, each representing one of the already mentioned choices the producer can make. It can be seen that even a small change in the demand

<sup>44</sup> I assume here, as well as in the rest of this work that the marginal cost of producing additional copies of the creative work is negligible.

curves (which causes a small change in the revenue curves) can change the choice that the producer makes and have a substantial impact on the price and consequently on the deadweight loss.

We can find real-life situations in which publishers of information good need to make a similar decision. Some publishers decide to sell their product for a low price to private and commercial user and some choose a high price which prices out of the market the private users. For example, most DVD publishers choose a price that allows many private users to buy them although that means that libraries, the commercial users, can purchase them for a price which is significantly lower than their willingness to pay.<sup>45</sup> On the other hand some types of information good it clearly targeted to a small professional group. Adobe sells its cheaper version of Photoshop for \$650 and states that it is “ideal for professional photographers, serious amateur photographers, graphic designers and web designers”.<sup>46</sup> Similarly, Nimmer on Copyright is sold for \$1885, which price out all private users.<sup>47</sup>

The pricing choice under bundling will have a substantial effect on the comparable deadweight loss under unbundling. If under bundling the producer decides to serve just the commercial user (price C) the deadweight loss will be quite substantial. Therefore, under unbundling the new market effect will dominant, as the private users will be served (price A). At the same time the poor among rich effect will not exist as the commercial users with relatively low reservation price (who are the poor among the rich) are not served under both bundling and unbundling. In this case unbundling doesn't harm anyone and it is therefore Pareto superior to bundling.<sup>48</sup> On the other hand if the producer decides to serve both markets under bundling (price B), unbundling might increases the deadweight loss. The new market effect will be

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<sup>45</sup> It should be noted that this pricing scheme is an example of the effect of the legal bundling rule. Indeed, in the United States the right to lend a copy of the work is bundled into the rights of a purchaser of such a copy. 17 U.S.C. § 109 (the first sale doctrine). In many other countries this right is not bundled in the same way and the producer of DVDs sells a different license for private use and for lending.

<sup>46</sup> <http://www.adobe.com/products/photoshop/index.html>

<sup>47</sup> These are of course simplified examples. In practice most producers use a variety of second and third degree price discrimination schemes to allow them to exploit other markets too. Therefore, while DVDs are sold for a price that is affordable to private users, their producers use timing as a form of second degree price discrimination too and release them to the general public only after she exploit other distribution options (like theatre showing). Those producer who seems to target only commercial users will sometimes try to use other methods of price discrimination to at least partly exploit the private user group too and so they will offer a cheaper student version (which Adobe does) or a tailored limited online access (which Nimmer on Copyright publisher, as mentioned, offers through LexisNexis).

<sup>48</sup> In this discussion I assume that the cost of unbundling, see supra section 2.2, are relatively low. See also section 4.3.1 infra.

minimal (it is represented by the small reduction in price for the private users from B to A<sup>49</sup> which will allow a few new consumer to buy the good). On the other hand, the poor among rich effect will be substantial since the commercial users with low reservation price will be price out of the market (the price for this group is increased from B to C which will price out of the market about half of the commercial users).

### **3.3 A numeric example**

I will illustrate the previous case using a numeric example. Let's envision two possible situations. In the first scenario let's assume that the demand curve of the private users group is  $P=50-Q/2$ , while the demand curve of the commercial users group is  $P=800-80Q$ . Under bundling the publisher needs to decide if she wants to serve both groups or just the high paying one. She compares the disparity between the groups' willingness to pay, which favors pricing out the private users, and the disparity between their size, which encourages her to serve both groups. In this scenario, given the two demand curves, the huge disparity in the groups' willingness to pay will outweigh the disparity in size and the private users will not be served. The price will be set at \$400, which will result in a producer surplus of \$2000, a consumer surplus of \$1000 and a deadweight loss of \$3500 (\$1000 of it is caused by the commercial users with a relatively low reservation price that are not being served and \$2500 by the entire private users group). If the producer is allowed to unbundle the rights she will offer an expensive commercial license for \$400 and a cheap limited private-usage license for \$25. The producer surplus will increase to \$3250, the consumer surplus will increase to \$1625 and the deadweight loss will shrink to \$1625.

The only difference between scenario I and II is the magnitude of the disparity between the groups' willingness to pay. In scenario II the commercial users are still willing to pay more than the private users, but the difference is smaller, which yields a dramatic difference in the pricing decisions of the producer. Let's assume in this case that the commercial users' demand curve is  $P=400-40Q$ . Under bundling the difference in the size of the groups will outweigh the difference in their willingness to pay and the producer will offer its product for \$27, which will allow her to serve both groups. Under this price the producer surplus will be \$1485. The

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<sup>49</sup> This small price change for private users under this scenario seems to be inconsistent with the Seventh Circuit argument that bundling forces a substantial price increase for this group. ProCD, supra note 6, at p. 1449.

consumer surplus will be \$2268 (most of it – \$1739 – comes from the commercial users who gain access to the producer for a price significantly lower than their reservation price) and the deadweight loss will be \$747 (more than 97% of this loss comes from the private users, as almost all commercial user have access to the work at this price). Under unbundling the price for the private users will be slightly cheaper (\$25) but the price for commercial users will be dramatically raised to \$200, which will price out half of this group. The total producer surplus will increase to \$2250, the consumer surplus will drop dramatically to \$1125 and the deadweight loss will increase to \$1125 (now, more than 44% of this loss comes form the commercial users).

Table III summarizes the effects of unbundling of rights in both scenarios:

Table III – the effect of unbundling in a ProCD type of scenarios				
	Scenario I		Scenario II	
	bundling	unbundling	bundling	unbundling
Producer surplus	2000	3250	1485	2250
Consumer surplus	1000	1625	2268	1125
Deadweight loss	3500	1625	747	1125

As the previous discussion have suggested, this example further illustrates the problem in any general claim about the efficiency of a second degree price discrimination as a tool that increases the total surplus and decreases deadweight loss. As mentioned, most of the legal literature on this issue ignored the fact that unbundling might raise the deadweight loss,<sup>50</sup> as demonstrated by scenario II above. Moreover, it seems that the ProCD court was also unaware of this possibility as it mentioned that a situation similar to scenario I was indeed possible, but didn't mention the possibility that a situation similar to scenario II, were unbundling increases the deadweight loss, was feasible too.<sup>51</sup> The facts of ProCD, as we know them,<sup>52</sup> do not allow us to decide which hypothetical scenario - I or II – describes the reality that ProCD faced more accurately. Therefore, each possible legal solution – the bundling scheme that the district court

<sup>50</sup> See supra notes 38-40 and the accompanying text.

<sup>51</sup> ProCD, supra note 6, at p. 1449. See also a similar argument at Easterbrook, supra note 39, at p. 965.

<sup>52</sup> The opinions of the Seventh Circuit and the district court do not mention all the relevant economic facts. All we know is that it cost ProCD more than 10 millions dollars to assemble its database, and that it sold two private use versions – the one that Zeidenberg purchased for \$150 and an hourly service for 3\$ an hour, as well as commercial version. ProCD, supra note 6, at p.1449. Other economic data is not mentioned.

prescribed<sup>53</sup> or the unbundling scheme that the Seventh Circuit allowed - can, depending on facts unknown, be the one which reduces the deadweight loss.

## **Part IV - Unbundling of rights as an incentive to creation**

### **4.1 The relative efficiency of unbundling of right**

The previous analysis led to inconclusive results as to the desirability of unbundling. If unbundling can increase or decrease the total surplus then it might be difficult to deduce a normative conclusion as to its advantages. Moreover, as the previous case proves, it is extremely difficult to find even broad categories of cases or some general rule of thumb that will help in identifying the situations in which unbundling reduces the deadweight loss. Case by case analysis is also impractical as it is extremely expensive, and maybe impossible, to discover the attributes of the demand curves during litigation, and thus such an attempt will be wasteful and will introduce much uncertainty that in itself will encourage more wasteful litigation.

In this section I explore whether unbundling of rights, is an efficient legal rule to ex-ante incentivize creation of information good, in comparison to other rules. Indeed, when we examine the desirability of a legal intellectual property regime,<sup>54</sup> we should not focus solely on its affect on the deadweight loss (or total surplus). The deadweight loss is a side effect of the monopoly that allows the creator to cover the fix costs of creation, and thus it is the price that society pays to incentivize the creation of information good and to solve the public good problem.<sup>55</sup>

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<sup>53</sup> It should be noted that, unlike the Seventh Circuit, the district court didn't rely on economic efficiency arguments in its reasoning. *ProCD, Inc. v. Zeidenberg*, 908 F. Supp. 640 (W.D. Wis., 1996).

<sup>54</sup> It should be noted that following the Supreme Court ruling in *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991), *ProCD* probably didn't have copyright in its database. See the discussion on this issue in the district court decision *ProCD*, supra note 53, at p. 647. The Seventh Circuit was willing to assume the same. *ProCD*, supra note 6, at p. 1448. That being said, it is wrong to deduce from *Feist* that no legal rule should incentivize the creation of databases. In fact, a variety of legal rules, Federal and state, allow some creators of databases to cover the fix costs of creation. Miriam Bitton, *A New Outlook on the Economic Dimension of the Database Protection Debate*, 47 *IDEA* 93, 147-166 (discussion how rules of criminal law, trade secret, trademark, unfair competition, tort, contracts and more partly protect the creators of database against free riding and unlimited copying of their work). Therefore, if we assume that the legal system, as a whole, needs to somehow incentivize the creation of databases, then in assent, we remain with the same problem – what set of legal rules can efficiently incentive creation while causing the minimum harm. Thus, although the analysis of unbundling of rights in information good that is not copyrightable is not identical to that of copyrighted information, there are many points of similarity between the two. *C.f.*, Gordon, supra note 9 and David Nimmer et al., supra note 9 (both criticizing *ProCD* at it gave a database creator some market power, which, so they argue, is not required and not allowed under *Feist*).

<sup>55</sup> See generally Niva Elkin-Koren & Eli M. Salzberger, *Law, Economics and Cyberspace* 49-52 (2004); William M. Landes & Richard A. Posner, *The Economic Structure of Intellectual Property Law* (2003) 19-24.

Intellectual property policy should therefore aim at increasing the incentive to creation while decreasing the deadweight loss. Copyright law consists of a set of rules that can influence both the incentive to creation and the harm from the monopoly power of creators, and in particular the deadweight loss. While usually a rule that increases the incentive to creation also increases the deadweight loss and vice versa, rules are different in the ratio between their benefit and harm.<sup>56</sup> Therefore, a legal rule that insignificantly reduces the deadweight loss while dramatically decreases the producer surplus might be undesirable as it over-discourages the creation of information good. Consequently, we should compare the effects of unbundling on the producer surplus and on the deadweight loss, to the effects of other legal tools that incentivize creation.

Under this test, unbundling of rights might seem desirable since, as it was shown above, it typically causes only a minor change in the deadweight loss but it increases the producer surplus substantially. Indeed, the ratio between the deadweight loss and the producer surplus is smaller under unbundling than under bundling.<sup>57</sup> As society “pays” the creator by granting her a set of rights, it should prefer to give the rights that relatively cause less harm. Unbundling of rights is a relatively harmless and thus is a “cheap” price to pay for incentivizing creation.

#### **4.2 Comparing unbundling of rights and copyright protection length**

There are many components in copyright law that increase or decrease the incentives to creation and the damage from the copyright monopoly.<sup>58</sup> In this section I compare two of them – unbundling of rights and the length of copyright protection.

Clearly, the longer the copyright protection period is, the bigger the incentives to creation as well as the damage from the publisher’s monopoly power.<sup>59</sup> Therefore, the creator of

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<sup>56</sup> See Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 Harv. L. Rev. 1813, 1821 (1984) (“It is simply not true that all activities generating equal profits impose equal damages upon society”).

<sup>57</sup> For a more formal proof of this claim see the appendix.

<sup>58</sup> See generally Ayres and Klemperer, 97 Mich. L. Rev. 985 (discussing the balance between uncertainty and delay in granting remedies for patent infringement and the length of protection). Many other components can be mentioned and compared, such as the scope of the exclusive rights (should they include derivative work? should they include moral rights and more), the scope of the limitations and defenses against infringement (e.g. – fair use or first sale doctrine), the remedies in case of infringement and much more. While in this section I explore the balance between unbundling of rights and the protection period, other balances are also possible. For example one can argue that a copyright system that introduces uncertainty and delay, together with unbundling of rights might be extremely efficient, since, as Ayres and Klemperer showed, uncertainty and delay substantially reduces the deadweight loss, while unbundling prevents the associated decrease in the total incentive to creation. Clearly, this suggestion requires a closer analysis especially since, as the discussion below (see *infra* notes 60-61 and the accompanying text) suggests, delay might be impractical in the context of copyright infringement due to the need to discount to present value over an extremely long protection period.

information good should be indifference between a legal regime that offers her a long and weak protection (for example – by forcing bundling) and a shorter and stronger protection (by allowing unbundling). From the society’s welfare perspective we might prefer the later result because allowing the creator to unbundled the rights in the work is not expected, on average, to create a significant damage (as the deadweight loss does not change dramatically) while lengthening the protection period just creates more and more deadweight loss over the years.

A closer analysis of the damage that is created from a longer copyright period further strengthens this conclusion. For two reasons, the average annual incentive that the creator gains from his monopoly position diminishes over time. First, copyrights depreciate rapidly as the demand for the information good diminishes significantly over time.<sup>60</sup> Second, the creator invests the fix cost of creation up front and therefore she discounts her future stream of revenues to present values at the time of creation.<sup>61</sup> The two elements are distinct. For example, when Walt Disney decided to invest the fix costs involved in the creation of Mickey Mouse’s Steamboat Willie, he should have counted for these two factors separately. First, that the demand for the movie will diminish dramatically over time. Second, that when deciding whether to create the movie this stream of future revenues should be brought to 1928 values. These two factors effect the deadweight loss differently. The diminish in the demand for the work also diminishes the deadweight loss (e.g. – the loss of utility attributes to buyers that are denied access to the Steamboat Willie nowadays is very small), while the discounting to present value does not change the ongoing deadweight loss from the monopoly power (e.g. – those who are denied access because of the monopoly price generate a deadweight loss that is equal to their reservation price).

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<sup>59</sup> The length of protection is one of the more discussed about and heavily criticized aspect of the Copyright Act. In a series of amendments, mostly in the last 35 years, Congress has extended the term of protection from fourteen years, which could be renewed by the author by another fourteen-year term, to the current protection period which is the life of the author plus seventy years. *See, e.g.*, 3-9 Nimmer on Copyright § 9.01. Lawrence Lessig, Copyright's First Amendment, 48 UCLA L. Rev. 1057, 1064-1065 (2001); William M. Landes & Richard A. Posner, Indefinitely Renewable Copyright, 70 U. Chi. L. Rev. 471, 471-472 (2003).

<sup>60</sup> See Stephen Breyer, The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Program, 84 Harv. L. Rev. 281, 324-325 (1970) (noting that "... the copyright office figures show that only one book in a hundred is in print after fifty-six year... many of these sell only a few copies." As well as that publishers "...base their publication decision upon expectation that a book will earn a return within ... at most ten or twenty years"); Landes & Posner, supra note 59, at p. 473-474, 496-507 (showing that "fewer than 11 percent of the copyrights registered between 1883 and 1964 were renewed at the end of their twenty eight-year term, even though the cost of renewal was small." And that only 1.7% of the books published in the United States in 1930 were still in print in 2001). This conclusion is actually quite intuitive as it seems practically trivial that almost every successful form of copyrighted work – books, music CDs, software or movies – sells in much smaller quantity and for a cheaper price just a few years after its first publication.

<sup>61</sup> See Breyer, supra note 60, at p. 324; Ayres & Klemperer, supra note 58, at p. 1005.

As a result of these effects there is a disproportion between the length of protection and the incentives generated from it and every extension of the protection period by a certain percentage increases the incentive to creation by a considerably smaller rate.

Finally, deadweight loss is not the only damage from the monopoly of intellectual property. Transaction cost, and in particular tracing cost, which is borne in the licensing stage, also represents an economic waste. These costs increase with the length of copyright protection,<sup>62</sup> and therefore, the shorter-unbundling regime relatively reduces the waste associated with transaction cost.

I will use the previous numeric example - the two possible scenarios that are based on ProCD's facts - to illustrate this claim. Let's assume that the demand curves that were given and the surpluses that were calculated represent the situation in the first year after publication. Let's further assume that the fixed costs of creation are \$20,000, that the demand for the work is diminished by 2% a year, that the discount rate is 3% a year and that each year the consumers bear a tracing cost equal to  $50+2t$ , where  $t$  is the time passed since the publication of the work. Table IV summarizes the "waste" from bundling and unbundling regimes under those assumptions:

Table IV – the long term waste from bundling and unbundling regimes				
	Scenario I		Scenario II	
	bundling	unbundling	bundling	unbundling
Producer surplus on the first year	2,000	3,250	1,485	2,250
Deadweight loss on the first year	3,500	1,625	747	1,125
Years needed to recover fixed costs of creation	14	8	22	12
Total deadweight loss	43,113	12,126	13,402	12,109
Transaction costs	960	522	1,656	806
Total "waste"	44,073	12,648	15,058	12,915

In scenario I: Under bundling the length of protection must be at least 14 years. In these years the total deadweight loss will be \$43,113 and the waste from transaction cost \$960.

<sup>62</sup> See Breyer supra note 60, 326 ; *c.f.* - Landes & Posner, supra note 55, p. 213-217.

Therefore the total loss will be \$44,073. Under unbundling 8 years of monopoly pricing will allow the producer to cover the fix cost of creation. The total deadweight loss will be \$12,126, the transaction cost will be \$522 and the total “waste” - \$12,648. Not surprisingly, as unbundling was Pareto superior in this scenario, the waste that it creates over time is much smaller.

In scenario II: Under bundling we will need a 22 years of monopoly to recover the fix cost of creation. During that time the deadweight loss will be \$13,402, the transaction cost 1,656 and the total waste is \$15,058. Under unbundling we will need only 12 years of monopoly.<sup>63</sup> In these years the deadweight loss will be \$12,109, the transaction cost \$806 and the total waste \$12,915. Therefore, even in scenario II, in which the deadweight loss increases under unbundling,<sup>64</sup> this regime might still be efficient in the long run, if the extra incentive given to the creator is balanced by eliminating a more wasteful incentive measure, like the long length of protection.

### **4.3 Limitations and other considerations**

While the previous analysis suggests that typically unbundling should be included in the set of incentives that society gives to the creators of information good, in this section I will mention few possible factors that this model doesn't fully account for.

4.3.1 *The costs of separation.* In the previous analysis I didn't take into account the costs of separation. If these costs are insignificant in comparison to the size on the producer surplus and the deadweight loss, then the previous conclusion still stands. However, if the costs of separation are significant they will substantially reduce the producer surplus. Consequently, the ratio between the deadweight loss and the producer surplus might be higher (and therefore less efficient) under unbundling. If, for example, the publisher in scenario II needs to invest \$500 in a monitoring system that will ensure that the commercial users do not buy the cheap private version and use it commercially, then unbundling will increase the producer surplus from \$1,485 to just \$1,750 (instead of \$2,250 if separation was costless). This means that the publisher would

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<sup>63</sup> While various works requires different incentives to allow their creation, the law generally prescribes a uniform length of protection that doesn't reflect the dissimilarity in costs and demand. The legal length of protection should therefore reflect some type of an average period that efficiency incentive the creation of an efficient number of works. This issue is just a subset of the larger problem of uniformity in our intellectual property regime, which is outside the scope of this work. See generally Easterbrook, *supra* note 39, at p. 961 (“Does anyone really believe that one single allocation of rights to produce and use works best for movies, records, books, architectural plans, photographs, software, and so on?”); Kenneth D. Crews, *Looking Ahead and Shaping the Future: Provoking Change in Copyright Law*, 49 J. Copyright Soc'y USA 549, 564 (2001) (“One-size-fits-all' ultimately fits few.”).

<sup>64</sup> See *supra* section 3.3.

choose to unbundle the rights but the increase in the deadweight loss will be higher than the increase in the producer surplus. Therefore, as unbundling cause a small increase in the producer surplus and a big increase in the deadweight loss, then under the test developed above, it should not be allowed. In fact, under these assumptions society is better off with a long bundled copyright regime than a shorter unbundled regime. Since the increase in the producer surplus is small then in order to keep the total incentive intact the reduction in the protection period must also be small (it could be shortened to 17 years instead of 22 under bundling and 12 under costless unbundling), which will not minimize the deadweight loss in comparison to bundling (in 17 years of unbundling the deadweight loss will amount to \$16,351 in comparison to \$13,402 during 22 years of bundling). Therefore, if the costs of separation are relatively high, unbundling might be an inefficient tool to incentivize creation.

4.3.2 *The dynamic inefficiency problem of information good.* The discussion so far was mostly concern with buyers who consume information good but don't create any new information products. However, information good is not just the product of the creative process but it is also an input in it. The vast majority of creative work is built upon other works previously created.<sup>65</sup> Unbundling might increase the costs of the creative process since some transformative use which is now bundled together with the right to access the work (i.e. – fair use) might be unbundled and charged separately under unbundling. In particular we should be concern with transformative use by non-commercial users. Think for example on a writer who wants to create a parody which is based on copyrighted work and upload it to youtube. Under bundling if the parodist can legally access the work she is entitled, under the fair use doctrine, to create and distribute the parody.<sup>66</sup> Under unbundling of rights regime the creator might require a special “parody license.” Thus the cost of creation will increase but as the revenues from creation, which could have increased under unbundling if the writer was to publish the work for profit, will not. A full analysis of this dynamic inefficiency problem is outside the scope of this work but it is suffice to say indicate how complex it is. Thus, if the cost of separation and the transaction cost are low enough it might be in the copyright holder best interest to grant free license to not-for-profit transformative use, as it will increase the value of its product and will increase sales (this is a voluntary bundling). On the other hand, one might argue that the

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<sup>65</sup> Jessica Litman, *The Public Domain*, 39 Emory L.J. 965 (1990) (arguing that originality is a legal fiction).

<sup>66</sup> *Campbell v. Acuff-Rose Music*, 510 U.S. 569 (1994).

transformative work, even if distributes for profit, also creates a positive externality on society and therefore the parodist might be unable to pay a price that reflects the social benefits from her work and a market failure might exist. As mentioned, a complete analysis of this problem, including the examination of the positive externality argument and the possible ways to deal with this market failure it outside the scope of this work.

#### **4.4 Back to ProCD: The normative conclusions**

I think that the discussion in the previous parts of this work shows that it is difficult to defend the ProCD decision from an economic efficiency perspective. The analysis might suggest that when society needs to chose the set of legal tools by which it would incentivize creation of information good, allowing unbundling of rights might be considered desirable, especially if the costs of separating are relatively low. Indeed, unbundling might be efficient as it creates an immediate substantial incentive to the production of information good which involves relatively small waste. Assuming, however, that Congress is in charge of deciding what is the set of incentives that potential creators should receive, a court decision that allows unbundling does not necessarily enhance efficiency.

If we assume that when Congress enacted or amended the Copyright Act it envisioned a scheme in which the rights will be bundled (due to legal or technical limitations on unbundling), then we should also assume that the other mechanisms in the Act gives authors a proper incentive to creation without unbundling.<sup>67</sup> If this is the case, then when a court allows

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<sup>67</sup> Judge Easterbrook, who wrote the opinion of the Seventh Circuit in ProCD, clearly doesn't accept this notion. Easterbrook, *supra* note 39, at p. 961-963 ("A copyright lasts the life of the author plus an additional period that Congress keeps increasing in response to producers' lobbying. What is the right length of a copyright? No one knows"). *C.f.*, Nimmer et al., *supra* note 9 (discussing in length "copyright law's 'delicate balance' between the rights of copyright owners and copyright users" and the ways in which ProCD disturbed it). It is important to note that Easterbrook didn't just suggest that Congress might "get it wrong" but he went a step further and argued that this possible error means that as we can't assume that Congress made an optimal choice, it doesn't deserves a special protection from altering (*id.* 962-963). Clearly, a full analysis of the division of power between Congress and the judiciary branch in the context of copyright policy is outside the scope of this work. That being said, and as Nimmer, Brown & Frischling suggested, it seems that Easterbrook is questioning a long legal tradition as to the role of Congress in finding this "delicate balance" and the role of courts in preserving it. See, e.g. *Stewart v. Abend*, 495 U.S. 207, 230 (1990) ("it is not our role to alter the delicate balance Congress has labored to achieve"); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) ("[I]t is Congress that has been assigned the task of defining the scope of the limited monopoly that should be granted to authors or to inventors in order to give the public appropriate access to their work product. Because this task involves a difficult balance between the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and

unbundling, and as it is institutionally unable to balance the increase in the producer surplus with a elimination or alteration of other legal tools that incentivize creation (e.g. – shortening the period of protection), it distort the “delicate balance” that Congress had created. Since unbundling increases the product surplus, doing so when the legal system already properly incentivizes creation will cause over-incentive,<sup>68</sup> and possibly an increase in the deadweight loss. For example, in Scenario II described above, even if the costs of separation are zero, if unbundling is allowed without shortening the length of copyright protection that a bundling regime offers (22 years), then the “waste” will be much higher under 22 years of unbundling than under 22 years of bundling (\$21,840 instead of \$15,058).

The issue of Congress’s intent, and how should we implement its choices, must be considered in the context of the segmentation technology available at the time its decisions were made. It is possible that when Congress had envisioned the ways that copyright would be licensed it expected some unbundling of rights that will be significantly balanced by the high costs of separation. If this is the case, then the substantial reduction in the cost of separation in recent years, especially due to the progress made in encryption technology<sup>69</sup> might requires Congress to intervene,<sup>70</sup> as it did in similar situations in the past,<sup>71</sup> and reinstall the balance to the copyright incentive system.

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society's competing interest in the free flow of ideas, information, and commerce on the other hand, our patent and copyright statutes have been amended repeatedly”);

<sup>68</sup> This, for example, can make the problem of rent-seeking much worse. See generally Landes & Posner, *supra* note 55, at p. 16-18.

<sup>69</sup> See *supra* section 2.2. It should be noted that while the doctrinal discussion of Congress intent is outside the scope of this work, it will be difficult to argue that in 1998 when Congress amended the copyright act and enacted the DMCA, 2 years after the Seventh Circuit decision in ProCD, it wasn’t fully aware of the current technology or that it envisioned a licensing world that didn’t include mass unbundling of rights

<sup>70</sup> The political feasibility of the suggestions made in this work is outside of the scope of this work. It can be argued that the experience in recent decades shows that one may question Congress’s willingness to intervene by limiting the rights of creators of information good, and especially by shortening the copyright protection period. See *supra* note 59; Easterbrook, *supra* note 39, at p. 962; Jessica Litman, *War Stories*, 20 *Cardozo Arts & Ent. L.J.* 337, 350-354 (2002) (“our copyright laws have been written not by Congress, not by Congressional staffers, not by the copyright office or by any public servant in the executive branch, but by copyright lobbyists”). Moreover, a shortening of the protection period by more than twenty years, might breaches the country international commitments under the Berne Convention and The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). 3-9 Nimmer on Copyright § 9.01.

<sup>71</sup> Copyright law was always affected by the technology that allowed creation, copying and distribution of information good, and the intellectual property rules were created and modified throughout the years, and especially in the digital era, in respond the changes in such technology. See, e.g., House Report 105-551 - Digital Millennium Copyright Act of 1998, available at <http://thomas.loc.gov/cgi-bin/cpquery/T?&report=hr551&dbname=105> (noting that the DMCA is aimed at implementing US international obligation and “as part of the effort to begin updating national laws for the digital era”); Senate Report 102-294 on Audio Home Recording Act of 1991 (suggesting that

## Conclusions

Copyright law bundle together a variety of rights in information good while creators of information good sometimes try to unbundle these rights by using detailed licenses. The enforceability of such contracts is a highly debated issue in the copyright literature.

This paper explores some of the advantages and disadvantages of these contracts from an economic efficiency perspective. It concluded that unbundling of rights cannot be defended as per-se efficient as it has an ambiguous effect on the deadweight loss which is created due to the copyright holder monopoly. Unbundling of rights might be desirable as an ex-ante tool to incentivize creation but only if the increase in the incentive to creation is balanced by the elimination of others, more damaging legal rules that incentivize creation, and only in the costs of separation are relatively low.

The reduction in separation cost as well as the wide adoption of the ProCD rule might create a proliferation of contracts that substantially change the ways in which creative work had been distributed in the past. These contracts might disturb the balance that the Copyright Act tries to achieve in a way that is not necessarily efficient and it might require Congress to intervene.

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“the fears that recently developed digital audio recording technology would lead to unprecedented home audio copying of sound recordings” is the background to the act); *Sonny*, supra note 67, at p. 429

## Appendix

In this appendix I will supply a more general and formal proof to the claim that was presented in parts 4.1-4.2 of this work. In these parts I suggested that under certain assumptions unbundling is more ex-ante efficient than bundling.

Let PS denote the annual producer surplus and DWL the annual deadweight loss. Let's assume that the potential consumers of a product can be divided into several groups, each with a linear demand curve ( $P=A-BQ$ ,  $A,B>0$ ). Lastly, let's also assume that the marginal cost of producing an additional copy of the work is zero (and therefore the producer surplus is equal to the revenues).

**Claim A: Under unbundling**  $\frac{DWL}{PS} = \frac{1}{2}$

Under unbundling the producer maximizes the revenues in each group.

$$R = PQ = AQ - BQ^2 \Rightarrow \frac{dR}{dQ} = A - 2BQ. \text{ To find the maximum: }^{72}$$

$$\frac{dR}{dQ} = 0 \Rightarrow A - 2BQ = 0 \Rightarrow Q = \frac{A}{2B}$$

In graph I bellow,  $M(Q^*, P^*)$  is the point where R reaches its maximum. It can be seen that the revenue is equal to the area of  $OQ^*MP^*$  and the deadweight loss is equal to the area of  $MQ^*K$ . Point K is on the demand curve and in it  $P=0$  and therefore for that

point  $A - BQ = 0 \Rightarrow Q = \frac{A}{B}$ . Therefore since we already found that  $OQ^* = \frac{A}{2B}$  the conclusion is that

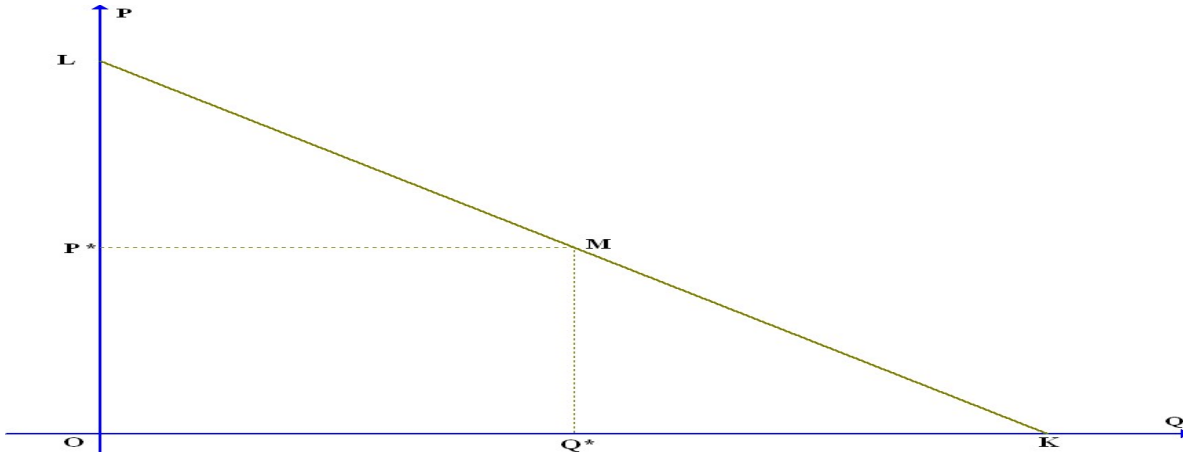
$$OQ^* = Q^*K.$$

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<sup>72</sup> For simplicity I've omitted the examination of the second order conditions.

The area  $OQ^*MP^*$  equals  $OQ^* \cdot MP^*$  while the area of  $MQ^*K$  equals to  $\frac{Q^*K \cdot MQ^*}{2}$  and

$$\text{therefore } \frac{DWL}{PS} = \frac{Q^*KM}{OQ^*MP^*} = \frac{\frac{Q^*K \cdot MQ^*}{2}}{OQ^* \cdot MP^*} = \frac{1}{2}.$$



As this is the case for any group of consumers, the total annual producer surplus will also be exactly twice as big as the total annual deadweight loss.

**Claim B: Under bundling**  $\frac{DWL}{PS} \geq \frac{1}{2}$

Under bundling the producer must choose one price for all the groups. The demand curve she is facing is therefore the accumulation of all the demand curves of the different groups.

When the demand curves of few groups are added together the accumulation is done horizontally, along the x axis. This means that for every price we need to add up the quantity that could be sold in each group. Consequently, the total demand curve might be linear (if the demand curve of all groups is identical) but it is more likely to be convex.  $P = f(Q)$ .

$$\frac{dP}{dQ} < 0, \frac{d^2P}{dQ^2} \geq 0$$

The producer maximize  $R = PQ$ .  $\frac{dR}{dQ} = \frac{dP}{dQ}Q + P$ . To find the maximum point we need to

solve  $\frac{dR}{dQ} = 0 \Rightarrow \left| \frac{dP}{dQ} \right| = \frac{P^*}{Q^*}$  when  $(Q^*, P^*)$  is the point where  $R$  reaches its maximum.

In graph II below let  $M(Q^*, P^*)$  be this maximum revenue point.  $LK$  is the tangent to the demand curve at point  $M$ . The slope of a tangent equals to the value of the first derivative at this point. Therefore the slope of  $LK$ , which is of course  $\tan(\angle MKQ^*)$ , equals the derivative of the demand curve  $\left(\frac{dP}{dQ}\right)$  at point  $M$ . But we already found that this derivative (in absolute values)

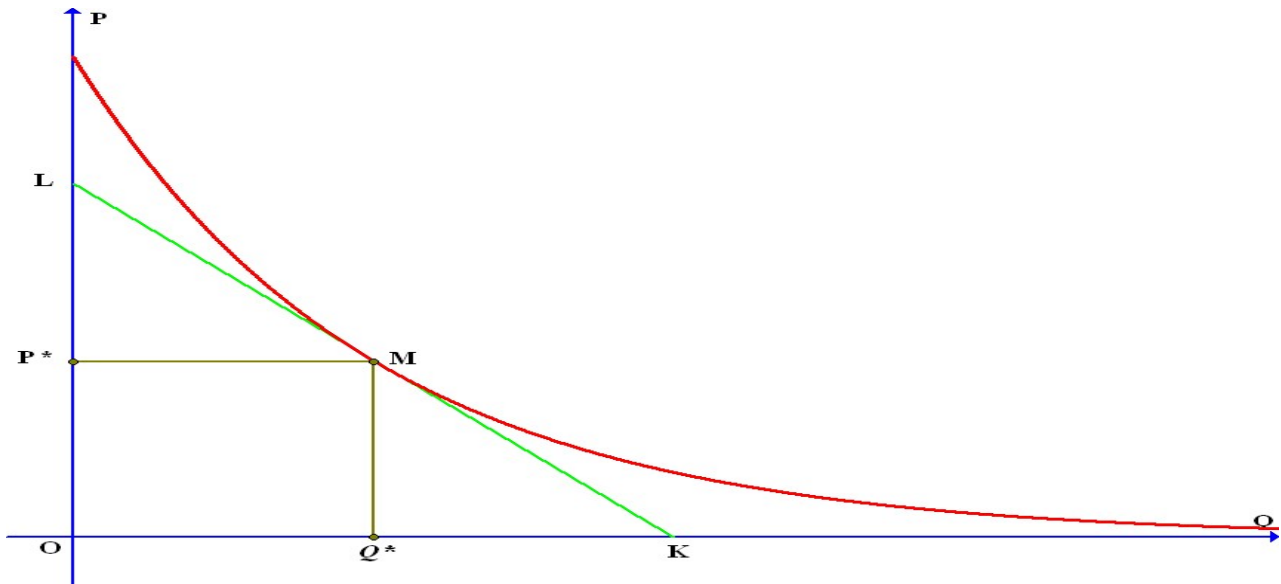
equals  $\frac{P^*}{Q^*}$ . Therefore  $\tan(\angle MKQ^*) = \left| \frac{P^*}{Q^*} \right| \Rightarrow \frac{Q^*M}{Q^*K} = \frac{P^*}{Q^*}$  and as  $Q^*M = OP^* = P^* \Rightarrow \underline{OQ^* = Q^*K}$

$Q^*K$ . Therefore, the area of  $OQ^*MP^*$ , which represents the revenues, equals to twice the area of triangle  $Q^*KM$ .

The deadweight loss in this case is the area under the demand curve  $\int_{Q^*}^{\infty} PdQ$ . Since the

demand curve is a downward sloping convex function every tangent to it is entirely below the function (if the function is linear, the tangent and the function unite). Therefore,

$$DWL = \int_{Q^*}^{\infty} PdQ \geq Q^*KM = \frac{OQ^*MP^*}{2} = \frac{PS}{2} \Rightarrow DWL \geq \frac{PS}{2} \Rightarrow \frac{DWL}{PS} \geq \frac{1}{2}.$$



**Claim C: Unbundling is a more efficient tool to incentivize creation than bundling**

Let  $C$  denote the fix cost of creation. Let's assume that as soon as the copyright protection period ends the producer will be exposed to entry to the market that will reduce the price to the marginal cost of production and no producer surplus will be gained. Therefore, the producer will create the work only if the law grants him a monopoly of at least  $\frac{C}{PS}$  years. During that time the total deadweight loss will be  $\frac{C}{PS} DWL$ . As society tries to minimize the waste and as  $C$  is constant the goal of the copyright policy is to minimize  $\frac{DWL}{PS}$ . As the combination of claims A and B proves, under unbundling regime this ratio is equal or (more likely) smaller than under bundling and therefore unbundling, under this model, is more efficient than bundling.

In section 4.2 I argued that the producer surplus and the deadweight loss are reduced over time. This argument doesn't change the result just proven. The reduction over time changes the

ratio between the deadweight loss and the production surplus in the same proportion under bundling and unbundling and therefore it will remain lower under unbundling.