



Università Carlo Cattaneo Castellanza, LIUC

Paper presented at

**Workshop on the Law and Economics of
Intellectual Property and Information Technology**

July 22-23, 2005

Scientific Board

Eric Brousseau, *Université de Paris X Nanterre*
Bruno Deffains, *Université de Nancy*
Shubha Ghosh, *SUNY at Buffalo*
Sophie Harnay, *Université de Reims Champagne Ardenne*
Rodolfo Helg, *Università Carlo Cattaneo, LIUC*
Dennis Khong, *University of Strathclyde*
Alain Marciano, *Université de Reims Champagne Ardenne*
Antonio Nicita, *Università di Siena*
Donatella Porrini, *Università di Lecce*
Ugo Pagano, *Università di Siena*
Giovanni B. Ramello, *Università Carlo Cattaneo, LIUC* (local organizer)
FM Scherer, *Harvard University and Haverford College*
Francesco Silva, *Università di Milano Bicocca*

Details and Other Papers downloadable at
<http://www.liuc.it/ricerca/istitutoeconomia/laweconomicsjuly2005/program.asp>

Orphan Works, Abandonware and the Missing Market for Copyrighted Goods

Dennis W. K. Khong
University of Strathclyde, United Kingdom

Workshop on the Law and Economics of Intellectual Property and Information
Technology, Università Carlo Cattaneo, LIUC, 22–23 July 2005

1 Introduction

Of late, the issue of orphan works and abandonware is gaining attention in the legal circle. Following the case of *Eldred v. Ashcroft*,¹ a new case is pending appeal in the United States raising the issue of orphan works.² The Library of Congress (2005) recently ended an inquiry on orphan works. In the US Congress, a bill³ has been put forward to remedy the problem of abandoned copyrighted works in light of the Sonny Bono Copyright Term Extension Act of 1998.

All these activities indicate that the problem of orphan works and abandonware is a legitimate subject of inquiry, not less by using the tools of economic analysis. It is this endeavour that this paper will try to undertake.

In this paper, the use of the term ‘copyright owner’ is meant to denote, unless the context requires otherwise, the owner and his assigns and licensees, such as publishers. Examples of the law are United Kingdom’s unless stated otherwise.

-
1. 537 U.S. 186 (2003).
 2. Brewster Kahle et al. v. John Ashcroft, 72 U.S.P.Q.2D (BNA) 1888; US Dist. Lexis 24090 (N.D. Cal. 2004).
 3. Congress, House, *Public Domain Enhancement Act of 2003*, 108th Cong., 1st sess., H.R. 2601.

Part I

2 The Problem

Copyright law confers an exclusive right to the owner of a copyrighted work to control, *inter alia*, the copying and issuing of copies of his work.⁴ Through this exclusive right, copyright owners⁵ may earn profit by granting a license or sale of a copy subject to payment of a fee. However, copyright law does not make it a *sine qua non* that copies of the work are made available to the public. The copyright owner is at liberty to withhold the distribution of his copyrighted work. As a result, valuable copyrighted works may cease to see the light of the day due to discontinuation of sale of copies. This unavailability of a copyrighted work is the crux of the orphan works and abandonware problem.

Orphan works and abandonware are used by both distributors and consumers. Abandonware websites distribute old software of which the copyright is no longer enforced by the owners. In turn, the users of these abandonware include retro-computing enthusiasts and people using emulators to run old software on modern computers. On the print side, historians and researchers may use out-of-print material both for historical research and as sources of authority. Thus, the fact that copyrighted works are unavailable from the copyright owners does not mean that they are not being used. The existence of a demand which is not being fulfilled by the market indicates a problem of missing market, of which this paper will examine and propose a solution.

Although the use of a copyrighted work includes reproductive use and transformative (or derivative) use, the question of abandonware and orphan works is usually discussed in relation to reproductive use. This is because the issue is centred upon solving the problem of availability of copyrighted goods in commercial form. This notwithstanding, when a copyright owner cannot be located, as in the case of orphaned works, the inability to obtain a licence may hinder a potentially useful transformative or derivative use. Nevertheless, the discussion in this paper will focus on solving the problem of reproductive use rather than the other transformative use of a copyrighted work.

4. Copyright, Designs and Patents Act 1988 (hereinafter “CDPA”), s. 16.

5. Copyright law normally grants first ownership of a work to its author: CDPA, s. 11; although the copyright may be subsequently assigned to other parties: CDPA, s. 90. In this paper, the use of the term ‘copyright owner’ may include licensees such as publishers who pay the copyright owner a fee in return for issuing copies of his copyrighted work.

3 Definitions

Orphan works and abandonware can be generally defined as copyrighted works which are still within their terms of protection but are no longer commercially available to the public. If the copyright owner is available and willing to license the work, the work is not considered abandoned even though no commercial copies are for sale. On the other hand, if the copyright owner sets unreasonably onerous licensing terms in order to discourage the supply of his copyright work, the work may rightly be considered as abandoned.

It should be noted that there is a difference in the usage and meaning of ‘orphan works’ and ‘abandonware’. ‘Orphan works’ as defined by Library of Congress (2005, p. 3739) are “copyrighted works whose owners are difficult or even impossible to locate.” The online community defines abandonware variously as “any PC or console game that is at least four years old and not being sold or supported by the company that produced it or by any other company” (Abandonware Ring FAQ, 2002). In the case of abandonware, the identity of the copyright owners may be known or even locatable, but the owners are not willing or interested in supplying the software. The key difference between orphan works and abandonware is that the problem of abandonware is the non-availability of a copyrighted work while the problem of orphan works is the non-locatability of the copyright owner.

Based on the above definitions, the use of the terms ‘abandonment’ and ‘orphanhood’ can be specifically differentiate. ‘Abandonment’ refers to the situation where the copyright owner is known and available, but the copyrighted work is not currently being supplied; while ‘orphanhood’ refers to the situation where the identity of copyright owner is unknown or he is unlocatable, and therefore a license to copy or to issue copies cannot be legally obtained.⁶

4 Types and Causes of Abandonment and Orphanhood

Although orphan works and abandonware may be simply defined as “copyrighted works which are no longer commercially available,” the actual causes of abandonment and orphanhood are varied and a classification scheme may be developed on this basis. Three types of abandonment may be found: commercial abandonment, strategic abandonment, and temporary abandonment; and two for orphanhood: no known owner, and unlocatable owner.

6. Some literature refers to orphanhood as ‘untraceable ownership’.

Commercial abandonment is the simplest case of copyright abandonment. Here, the copyright owner ceases to supply a copyrighted work because it is no longer commercially viable to do so, and there is no new version being offered. This happens especially when a computer or gaming platform is no longer popular or in use. The demand for a particular work dwindles and the cost of supplying becomes prohibitive. In the case of books, after a title is sold out, the publisher does not reprint the title if he expects it not profitable to do so. As a result of commercial abandonment, many books and copyrighted works go out-of-print before the end of their copyright terms.

A strategic abandonment occurs when the copyright owner stops supplying software or a copyrighted work for the reason that he is selling an upgraded or newer version of the same or similar product. This typically happens in the computer industry when an older version has been superseded by a later version. In the print industry, strategic abandonment happens when the abandoned old edition is being replaced by a newer edition. Similarly, older editions of reference works such as dictionaries and encyclopaedias are periodically replaced by a new edition. Generally, old editions are rarely as useful as the newer editions. Thus there is little demand for an old edition once a new edition appears, as is reflected in the lower prices of old editions of books. The exception to this rule is when the old editions attain antiquarian status which make them highly-priced and sought after collector's items. Nevertheless, old editions are not just good as antiques. Historians and researchers may occasionally refer to old editions to examine the development of a field of knowledge. Authors may want to use an old but non-copyrighted work as a building block for new derivative works. An example of such is the eleventh edition of the *Encyclopædia Britannica* published in 1911.

The situation for strategically abandoned computer software is however more problematic, as each piece of software depends on a particular minimal hardware configuration to be functional. When successive versions of computer software introduce new features and advanced capabilities, the general trend is to demand higher processing requirement. This leaves older hardware stranded with older versions of a piece of software. The problem of abandonware occurs when a particular piece of software is needed but which is not commercially available because the technology has moved on. Unless a copy is found in the resale market and the software's licence allows such copy to be transferred, the potential use of an old computer is curtailed because of unavailability of abandoned software.

When a copyright owner temporarily suspends the availability of a work with a view of making available the work again in the future, a temporary abandonment is found in the interim period between two periods of availability. It is suggested that the exact time of

reintroduction may or may not be predetermined. Nevertheless, temporary abandonment is the result of a form of commercial practice where the belief is that continuous availability of a work devalues it, and an intermittent unavailability restores the commercial value of a work. It could also be the result of an attempt to reduce the cost of marketing a work. The economic argument for temporary abandonment is that the copyright owner maximises his profit by releasing a work periodically instead of continuously.

Apart from the three types of copyright abandonment discussed above, copyright orphanhood may occur when the ownership of a copyrighted work is not known, or when no one making a claim to the ownership. This type of orphanhood may happen when the original copyright owner dies intestate and his copyright is not properly transmitted to the rightful inheritor. Similarly, when a company winds up, its copyrights might be unassigned. On the other hand, a party might have been so assigned a copyright but does not understand its value, and as such does not exert a claim over ownership. Part of the problem of no known owner is that not all works carry an authorship or ownership statement. Even when the initial author or owner is known, the copyright might have been assigned to another party, of which the non-existence of a copyright register, for example in the United Kingdom, makes it difficult to know the identity of the present owner.

The second type of orphanhood relates to the non-locatability of the copyright owner. Although the identity of the copyright owner may be known, his whereabouts may be unknown. Since the Berne Convention allows ownership of a copyrighted work by a foreign person,⁷ the owner of that work may be a person residing in another country, and hence locating the owner may be particularly difficult. Like the earlier type of orphanhood, unlocatability prevents the potential licensing of copyrighted works. Arguably, unlocatability as the cause of orphanhood is less of a problem than unknown ownership. The availability of computer searchable telephone directories and public records greatly increases the probability of finding the address of the copyright owner.

It might be the case that theoretically if the copyright owner is found, he might want to supply or license his work. Unfortunately the fact that he cannot be found makes copyright licensing impossible. On the other hand, abandonment and orphanhood may be mutually exclusive. A copyright owner may be known and locatable, but remains unwilling to supply or licence a copyrighted work, or may demand a licensing fee which is higher than what is reasonably expected by a potential licensee. Whether a problem falls within the scope of abandonment or orphanhood depends on the facts of each case. As for each case, there are possible specific solutions, as discussed further below.

7. Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) (hereinafter "Berne Convention"), Art. 5(1).

5 Proximate Causes of Abandonment and Orphanhood

The classification of abandonment and orphanhood gives us the direct causes of the problem at hand. There are, in addition, other proximate causes of non-availability of copyrighted works. The general definition of orphan works and abandonware points to two factors which contribute to the phenomenon of abandonment. The first is an unexpired copyright term. The second is the non-availability of the copyrighted work. These two factors correlate to, first, a legal restriction, and second, the non-supply or non-licensing by the copyright owner.

The problem of an unexpired copyright term is discussed in the law and economics literature under the topics of optimal copyright term, and more recently, indefinitely renewable copyright. The problem of non-availability of copyright work is more frequently discussed as a problem of deadweight losses and barriers such as transaction costs to licensing.

5.1 Unexpired Copyright Term

An unexpired copyright term is a problem to abandonware because of the public goods nature of copyrighted works. As a public good, a copyright work is inexhaustible and can be used by others without depriving the copyright owner of his use. By reserving the copyright during the term of protection, and not supplying copies of the copyrighted work to the market, a social loss is incurred. This social loss is reduced if the copyright term is shortened. When the copyright term is terminated and the work put into the public domain, other users may make use of the work without needing the consent of a copyright owner. Also, there is no need to pay a licence fee, and as such, potentially there is no deadweight loss associated with monopoly pricing.

Part of the causes of unexpired copyright term is the progressive lengthening of copyright term through various amendments to the copyright legislation. The first Copyright Act, the Statute of Anne of 1710,⁸ provided a copyright term of 14 years for new books, with a further reversion of 14 years to the authors if he survives the first term. The Copyright Act of 1814⁹ extended the term of protection to 28 years in the first instance, and with an extension to the life of the author if he survives the first term. A few years later, the Literary Copyright Act of 1842¹⁰ provided authors with a term for life plus seven years, or 42 years

8. 8 Anne, c. 19.

9. 54 Geo. III, c. 156.

10. 5 & 6 Vict., c. 45.

from the date of first publication, whichever was longer. In 1911, the disparate copyright acts covering various subject matters were consolidated into an Imperial Copyright Act,¹¹ and the term of protection for authors was extended to life plus fifty years. Following the harmonisation effort of the EU Copyright Term Directive of 1993,¹² copyright term was further extended to life plus seventy years in 1995.¹³

Contrary to stylised models of optimal copyright term,¹⁴ the optimal term as a matter of fact as against a matter of law varies according to each individual work. If the breadth of copyright protection is assumed exogenous, and the objective of copyright law is taken as to maximise the sum of consumers' and producer's surplus, the socially optimal term for each work would necessarily depend on factors such as the cost of creation, the marginal cost of reproduction, and the demand curve over time. Since each of these factors varies according to the type of work and the specificity of each piece of work, it is not possible to speak of a universal optimal copyright term.

In an ideal world where each copyrighted work is given a different but optimal term, the problem of abandonment would be lessened. The copyright term ends when the marginal social cost of protection equals to the marginal benefit of protection, which would *more likely* approximate the moment the copyright owner stops supplying the work to the public. Hence, much like the deregistration of a trade mark due to non-use,¹⁵ the lapse of copyright would leave the abandoned work in the public domain.

Arguably, there is an assumption in this analysis, that is, the demand for a copyright work declines over time, and there is no phenomenon of resurrection of demand after a break in time, as in the case of temporary abandonment. Otherwise, the analysis based on an unknown and unforeseen future would be made more complicated. As an example from trade marks law, a grace period of five years for non-use is provided before the trade mark being deregistration.¹⁶ On the same basis, the definition of abandonware by the online community provides a certain number of years before considering a piece of copyrighted software as to be 'abandoned'.

11. 1 & 2 Geo. V, c. 36.

12. Council Directive 93/98/EC of 29 October 1993 on the Harmonizing the Term of Protection of Copyright and Certain Related Rights.

13. The Duration of Copyright and Rights in Related Performances Regulations 1995, Statutory Instrument 1995 No. 3297.

14. See e.g. Landes and Posner (1989).

15. Trade Marks Act 1994, ss. 46(1)(a) and (b).

16. Trade Marks Act 1994. s. 46(1)(b).

5.2 Unavailability of Copyrighted Work

The non-availability of a copyrighted work is the other factor contributing to the phenomenon of abandonware and orphan works. This non-availability may be attributed either to abandonment by the copyright owner or to orphanhood. More specifically, unavailability due to orphanhood problem can be generalised as a transaction cost problem in economic terms. This transaction cost hinders welfare enhancing licensing. This hindrance is partly caused by the non-registration and no formality rule of existing copyright law.¹⁷ With a registration system, and ideally with a requirement to update the register when an assignment occurs, a copyright owner could easily be identified and located from the register. Thus, transaction cost is reduced and the problem of orphanhood minimised.

Ironically, the first copyright laws require the registration of a work in order to obtain copyright. This was the legacy of a practice to establish ownership of common law copyright prior to the enactment of the first copyright Act. The first Act, the Statute of Anne, makes it a prerequisite to register a work at the Stationers' Hall before publication in order to claim damages from an infringer.¹⁸ This practice was carried on until Britain became an accession state to the Berne Convention in 1887. The International Copyright Act of 1886 abolishes the requirement to register foreign works, and the requirement for registration was completely abolished under the Copyright Act of 1911, although the practice of registration at the Stationers' Hall continued for evidential purposes until the end of 1923. Thereafter, a new register was set up by the Stationers' Company for books and fine arts until February 2000.

It is submitted that the abolishment of registration under the Berne Convention substantially changed the structure of copyright market. Under a registration system, authors have to opt into copyright protection by registration and payment of a fee. Presumably, the number of copyrighted works therefore is smaller than the number of published works. Some authors and publishers may think that it is not worth their while and expenditure to register their works. Others may publish with an altruistic intention, by hoping that non-protection will encourage greater dissemination.

With the abolishment of registration and the automatic subsistence of copyright based on *inter alia* the nationality of the author, copyright was transformed from an opt-in system to a theoretical opt-out system. It is 'theoretical' because although authors and copyright owners may dedicate his copyright to the public domain, there is no system, until recently,

17. See Berne Convention, Art. 5(2).

18. 8 Anne, c. 19, s. 2.

to declare or register such intention. It was only recently when the appearance of open access and public licenses that a copyrighted work may be offered to the public under a pre-consented licence. Even then, it is doubtful whether there is a mechanism under law or contract which may transfer a copyrighted work absolutely to the public domain.

Arguments supporting a public domain traditionally revolve around the idea that the public domain is inherently good in itself. With a public domain, book publishers would print titles from the public domain and make them available to the public at reduced prices.¹⁹ Similarly, the argument goes that authors may use works and material from the public domain which would enrich the creative process.²⁰ These arguments of the public domain assume that at a lower price and multiple publishers or means of distribution, consumers would reap the benefit of price competition. In addition, there is the benefit of elimination of tracing and transaction costs associated with licensing a copyrighted work. Presumably with lowering of these costs, authors and consumers would make greater use of works in public domain, which in effect is a materialisation of consumers' surplus.

6 Specific Problems Related to Abandonment of Computer Software

Abandonment in software creates problems. As a new and more advanced version of software is being promoted, old computer hardware might likely not be suitable. Some software may need continual support from the vendors or producers, and abandonment of earlier version and the discontinuation of the support force users to upgrade their hardware even though the new version of the software does not offer any additional advantage. It has to be recognised that forced obsolescence and forced upgrade when the circumstances do not justify is a form of social waste.

Abandonment of computer software raises further problems peculiar to the nature of these goods. The adoption of shareware and crippled-ware methods of marketing computer software invariably leads to partially functional software which requires further support or intervention from the authors or copyright owners in order to make these software fully functional. But when the copyright owner is not locatable, these software may remain crippled and less useful for potential users. Similarly, the use of digital rights management systems for electronic files also reduces the functionality of digital objects after support from

19. US Public Domain Enhancement Act, s. 2(3).

20. Ibid.

the publisher is withdrawn. Thus when the tools to un-cripple or unlock these digital files are not released by the copyright owner after their abandonment, potential social welfare is reduced.

While it may be possible for their parties to provide suitable hacking tools to un-cripple or unlock these digital files, it remains unlawful to do so in the face of strict copyright law which provides for criminal offences.²¹

A related problem of abandonment of computer software is the unavailability of source codes to correct or modify a computer program. It is a common practice in the computer industry not to provide the source code of a computer program as it is considered a trade secret. Hence, when a software publisher goes out of business or does not continue to support or release new version of a piece of software, consumers may be left in a lurch when patches are needed. This was apparently the case when companies rushed to ensure their systems were Y2K compliant at the turn of the millennium. Users who were using unsupported non-compliant software had to switch to new systems without the benefit of using a patch. Thus unnecessary costs were incurred had the source codes be made available for the required modifications.

Part II

7 Economic Analysis of Solutions to Abandonment and Orphanhood

The problem of orphan works and abandonware is the problem of missing markets. Missing market is a form of market failure. In this case, there is a small demand for some orphan works and abandonware, but there is no legal supply to satisfy this demand. The solution to solving the missing market problem is by determining whether the problem may be resolved by reallocating property rights to the public, as in putting the work into the public domain, or by temporarily allowing members of the public to use or distribute the work, with or without payment of a fee. It is possible that by reallocating property rights, other parties may exploit this property rights efficiently, such as by supplying the missing orphan works and abandonware.

21. CDPA, s. 296ZB.

Abandonment and orphanhood invariably lead to deadweight losses. A deadweight loss is the welfare loss resulting from the unwillingness or the inability of a producer to supply consumers with a good even though the consumers are willing to pay a price equal to or higher than the marginal cost of supplying that good. In the case of abandonware and orphan works, the marginal cost of supplying can be as low as the cost of distributing, duplicating or downloading software, or the cost of photocopying an out-of-print book. Presumably, this cost is very low, and charging a price at this level would not bring much profit, if any, to the producer or copyright owner. Furthermore, the copyright owner might also be unwilling or unable to license his copyright because the cost of negotiating or transacting a license is prohibitive.

It should be noted that traditional economic analysis of copyright and intellectual property acknowledges the deadweight loss resulting from monopoly pricing. This defect however is taken as the price society pays for encouraging authors to create new works which presumably improve the welfare of the society as a whole.²² Therefore, the ex-ante incentive to create arising from the copyright system is often pitted against the ex-post deadweight loss arising from monopoly pricing. However, the analysis of the deadweight loss assumes that it is the result of monopoly pricing, and not one from the non-availability of a copyrighted work. When deadweight loss from non-availability is taken into account, the size of the deadweight loss would be larger than that of monopoly pricing.

A starting point of analysing a solution to the problem of abandonment and orphanhood is to reduce the deadweight loss while preserving the ex-ante incentive to create. If this ex-ante incentive is an important component in the economics of copyright, any distortion to this incentive, in the form of demand diversion, has to be taken into account. This distortion can be quantified as the reduction in the expected profit that would have been made by the copyright owner. Nevertheless, it should be noted that ‘expected profit’ is a theoretical value and the actual profit varies for each copyrighted work. Since the expected profit cannot be actually measured, the alternative approach to determining potential reduction is to see whether the copyright owner would have earned additional profit but for the alleged distorting act, such as an unconsented copying or distribution.

If the copyright owner would not have earned additional profit, it can be deemed that an alleged distorting act is not distorting at all. And if that act would have decreased the deadweight loss, it should be allowed by law. If any payment is made to the copyright owner, it would then be purely a wealth transfer and potentially a windfall to the copyright

22. Copyright law could and does reduce the monopoly power of copyright owners by allowing the creation of similar but differentiated works which increase the price elasticity of demand and force the prices down.

owner. If this windfall would have raised the marginal cost of acquiring or producing the copyrighted work, it should be avoided, for such an increase in the marginal cost has the effect of reducing the number of supplied copies and increasing deadweight loss.

The distortion to the ex-ante incentive may also be disregarded if the gap in time between the last availability of the product and the use of the abandonware is large. When this happens, the effect of deferred consumption is negligible. On the other hand, if the proximity between the two time period is close, some users may defer their consumption of the product in order to enjoy the abandonware, if made legal, at a lower price. This may also account for the definition of abandonware which requires software to be over a certain age before being considered an abandonware.²³

Therefore, it is suggested that using the criterion of non-distortion to the ex-ante incentive to create, or at least compensating for this distortion, a series of solutions may be devised for each type of abandonment and orphanhood.

7.1 Commercial Abandonment

Commercial abandonment is the simplest form of copyright abandonment. A copyright owner stops supplying this work because it is no longer commercially profitable to do so. The reason this happens could be that the work is technologically obsolete, as in the case of software, or that the demand for the work has diminished. It does not necessarily mean that the demand has ceased all together, but just that at the price the copyright owner is willing to charge, the cost of supplying outweighs the benefit.

When a copyright owner commercially abandons his copyrighted work, it is assumed that the use or supply by a third party would not have a demand diversion effect on the copyright owner's other products. Therefore, what a copyright owner potentially loses when a third party uses his work, after abandonment, without a payment, is just a windfall loss.

The result of commercial abandonment is the unavailability of a copyrighted work from a publisher, while within its copyright term. Resale or second-hand market may be able to satisfy some, but not necessarily all, of the demand from remaining consumers. A second-hand market may not be as efficient and easy to use as a retail market. Supply of specific titles is not guaranteed, and availability of titles sharply decreases over time. After a certain number of years, specific titles gain antiquarian value and the prices subsequently rise. At

23. The other reason is to accommodate temporary abandonment.

best, a second-hand market is only a second-best solution to the supply of abandoned copyright works.

Another short-term solution is the sale of remainder stock by dealers. This solution of remainder stock is only applicable if supply of the copyrighted work is through sale and not through non-transferable licensing. The reason is that a licensing model of supply is usually more restrictive in terms of transferability and resale. Restrictive licensing terms do apply to certain form of copyright work for the economic reason of allowing the copyright owner to capture of additional profit as well as to prevent arbitrage.²⁴

If the demand by consumers could not be satisfied through the secondary markets, such as resale or remainder stock, there will be a real deadweight loss. To reduce this deadweight loss, third party suppliers should be allowed. Nevertheless, it would be the general position that if the copyright owner could not capture or supply those consumers, perhaps other third party suppliers too could not efficiently and profitably do the same, assuming that both the copyright owner and third party suppliers have the same cost function. A solution to this problem thus is private arbitrage or private copying, where the consumers bear the full cost of copying. This is facilitated by either suspending copyright protection or ending the copyright protection outright. Abandoned software can be supplied through Internet downloads, and abandoned books and media could be obtained through making duplicates from library copies.

In conclusion, with the assumption that for commercial abandonment there is no demand diversion effect when the copyrighted work is used or distributed by third parties, there is no distortion to the ex-ante incentive to create. If free use is allowed, the copyright owner suffers only a potential windfall loss, which has only distributional effect. Free use and distribution push the cost of supplying to the marginal cost, and therefore is efficient. The efficient policy therefore is to allow third party to duplicate and distribute a commercially abandoned copyrighted work.

7.2 Strategic Abandonment

In the case of strategic abandonment, the copyrighted works are not totally abandoned, but are upgraded instead to a newer version. What are abandoned are the older versions of the same or similar works. Often the differences between the new version and the old versions

24. See Judge Easterbrook's decision in *ProCD, Incorporated v. Matthew Zeidenberg & Anor.*, 86 F.3d 1447 (7th Cir. 1996).

are the inclusion of new material in the new version, and the correction of mistakes from the old versions.²⁵

If among its consumers, there is a demand for an older version of a work, the question for strategic abandonment would be “Why publishers do not sell old versions to satisfy consumers’ demand?” As commonly observed, old editions of software, books and magazines are no longer stocked by retailers, and only available in the second-hand market. Hence, the ubiquitous phenomenon of strategic abandonment must be the result of a conscious economic choice by publishers.

Fudenberg and Tirole (1998) attempt to answer this question through an economic model. They show that “old good is never produced and sold [after the introduction of a new good] if the new, higher-quality good has the same production cost. Instead, the monopolist will either be inactive in the market for the old good or will repurchase (and dispose of) units of the old goods to help increase the price it can get for the new one.” Further to this, Ellison and Fudenberg (2000) show that under the assumption of network externalities, excessive upgrades in the software industry are socially inefficient. Software publishers nevertheless produce excessive upgrades as a strategy to signal and deter entry by potential competitors, as well as to extract profit from existing users who are pressured to keep up with the latest versions, especially for file compatibility reasons.

Another reason why publishers do not keep the older version as a price discrimination tool is the addition of marketing costs. Traditional neo-classical economic models normally do not take into account marketing costs. However, marketing costs including advertising and distribution costs are real, and can be substantial. Often, marketing costs are incurred as periodical fixed costs in discrete units. To promote two versions of a product, a publisher would have to allocate more marketing cost than if promoting one version. If the majority of the demand is for the new version, and there exists a competing second-hand market for the older version, a publisher might not be able to make a profit by marketing and selling the older version. Hence, publishers would literally abandon the old version in favour of promoting the new version.

Since there is usually a competing supplier of the old version in the form of a second-hand market, prices of the old version would be driven down by competition. Hence, publishers have strong incentive to promote new titles over old ones and portray that the old versions are inferior substitute to the new version, and thereby influence potential new users to demand the new version as against an older version. In fact, in order to reduce the size of the second-hand market, and consequently earn higher profit through a larger demand for

25. And often times, inadvertently introducing new mistakes.

the new version, publishers periodically destroy stocks of old version of books and organise buyback schemes for certain textbooks (Fudenberg and Tirole 1998, p. 237n).

Once a copyrighted work is strategically abandoned, certain users such as researchers and historians may face difficulty in obtaining old versions for copyrighted works for analysis or as sources of data, and specific computer users for getting old software. Using the principle of no demand diversion above, the economic solution is to supply to this particular demand in such a way that the supply would not distort the incentive to innovate by the original producer and divert the demand from new version of the product.

If a third party supplier could separate out the above specific users from other users so that demand diversion effect from his supply could be avoided, then licence-free use and distribution of the copyrighted work by the third party supplier should be allowed for it is welfare enhancing. One way of separating the different types of users is a delay. This technique of delaying is employed in the definition of ‘abandonware’, where delay of a few years in technological terms is used as a separating criterion to differentiate specific users from other users practising demand diversion. The same approach holds for demand from researchers for orphan works for historical purposes. To this end, the practice of some software houses such as Borland Software Corporation allowing free downloading of selected ‘antique software’ is a good case in point.²⁶

Free copying and distribution of a strategically abandoned copyrighted work should be allowed as long as the ex-ante incentive to innovate is not distorted. This is ensured through a mechanism that differentiates users who want new software from those that do not want new software. Delay of a certain period of time after abandonment is one such mechanism. Where copyright owner does not unilaterally offers free downloads or free copying of strategically abandoned works, legal reform in the form of an exception to copyright infringement should be considered.

7.3 Temporary Abandonment

If by strategic abandonment, a copyright owner retires a work after a period of sale, in temporary abandonment, the retired work is being resurrected after a period of unavailability. Temporary abandonment is the result of withholding the supply of a copyrighted work by the copyright owner for a period of time. The purpose of temporary abandonment can be understood as to increase profit of the copyright owner by saving

26. See Borland Developer Network’s Museum, at <http://bdn.borland.com/museum/>.

marketing cost during the period of unavailability without substantially losing sales. This strategy is particularly appropriate for non-essential or non-time-sensitive works such as fictions where other titles in the same genre are good substitutes during the period of unavailability.

Unlike commercial abandonment and strategic abandonment, the case for unlicensed access to temporarily abandoned works is less clear. Assuming that temporary abandonment is a profit-maximising strategy for the copyright owner, any supply by the copyright owner during the stated period of unavailability will reduce profit. This is because of the assumption that to bring the copyrighted work to market, the copyright owner would have to incur marketing cost such as advertising, promotion and delivery.

As a consequence of temporary abandonment, there is deadweight loss from consumers who could not obtain a work from the secondary market or from substitutes during the interim period of abandonment. These consumers may be divided into two types: time-sensitive consumers and time-insensitive consumers. A consumer who is time-sensitive is one who has high discount rate over the utility of a particular copyrighted work; while one who is time-insensitive is assumed to be indifferent over getting a copyrighted work now or later.

For time-sensitive consumers, their utility discounts as time goes on until the copyright owner resupply the copyrighted work. For time-insensitive consumers, the periodic supply of copyrighted goods would have satisfied their demand. The problem of temporary abandonment therefore only affects time-sensitive consumers. If the copyright owner is reluctant to supply a copyrighted work during the interim period of unavailability, and assuming that secondary market such as resale and remainder stock could not satisfy the demand of these time-sensitive consumers, the question is whether the third parties could supply the same work while preventing demand diversion by time-insensitive consumers.

With the above constraint in mind, the solution to interim supply is to make it indifferent or even more costly for time-insensitive consumers to obtain the copyrighted work during the interim period of unavailability. This means that a price has to be charged for copies obtained in the interim period. In order to ensure the copyright owner is compensated for any demand diversion from interim supply, a sum of payment has to be made to the copyright owner. This sum is optimal when set to the level of the efficient component pricing rule (ECPR). This rule requires that the price charged for an upstream component, such as a copyright licence, is set to the cost of providing access, which is zero for information goods such as a copyright, plus the forgone profit were the copyright owner provided the work. In other words, third party licensee supplying the copyrighted work would have to

charge a price equal or higher than the marginal forgone profit of the copyright owner.

This solution however is not wholly satisfactory. Unless the third party supplier faces a substantially lower cost function than the copyright owner, the copyright owner might be better off supplying in the interim period themselves. Indeed this is a plausible scenario where specially negotiated licences are available to a time-sensitive consumer during the interim period of unavailability.

On the other hand, if the copyright owner refuses to supply during the interim period, or charges a price which is excessively higher than the normal profit plus the additional cost of licensing such that even high-valuation consumers could not possibly pay for it, third party suppliers should be allowed to supply provided that they remit to the copyright owner a sum equal to the forgone profit of the copyright owner. Obviously to mandate the third party suppliers pay a sum to the copyright owner would require a system of compulsory licensing with an official who could determine the correct amount of forgone profit. All these are informationally costly and not common in the present system of copyright law.

7.4 New Use

A new use arises when a commercially, and perhaps less often strategically, abandoned copyrighted work receives an unanticipated demand which makes it commercially viable for the copyright owner to re-establish supply of the work. An example of a new use in abandoned computer software is the case of computer games designed for the obsolete Sinclair ZX Spectrum which have now be ported to work on the new Amstrad e-mailer phone system.

The relevant question in relation to new use is whether a third party supplier not under licence has to cease supply when the copyright owner starts to exploit the new use. The answer to that question would necessarily depend on whether the continual supply by a third party would have a demand diversion effect on the copyright owner's exploitation of the new use. If there is no demand diversion effect, it is efficient for the third party suppliers to continue supplying to the missing market. Conversely, if there is a demand diversion effect, it might be necessary for the third party supplier to cease supply as the goods supplied for the new use is now a substitute to the previously unavailable copyrighted work.

It might be asked whether payment of a licensing fee as in the case of temporary abandonment would be sufficient compensation in lieu of cessation of supply by the third

party. Indeed it might be so on economic ground. But whether a copyright owner loses his exclusive right forever upon a commercial or strategic abandonment, notwithstanding the appearance of a new use, is a philosophical question which economics have little to say. Nevertheless, in the absence of a compulsory licensing scheme as suggested above, cessation of supply by the third party might be the only viable position to hold.

7.5 Distinguishing the Different Types of Abandonment

The solutions proposed above suggest that free copying and distribution should be allowed when a copyrighted work is commercially or strategically abandoned, but a payment has to be made if the copyrighted work is merely temporarily abandoned. Therefore, it is necessary to be able to distinguish temporary abandonment from other forms of non-availability of copyrighted work.

Strategic abandonment is easier to observe. What needs to be shown is that the copyright owner or publisher has released a new or updated version of a work. On the other hand, it might be more difficult to differentiate commercial abandonment from temporary abandonment. Arguably, if the copyright owner has previously revived an abandoned title, it could be deduced that it was in fact a temporary abandonment. On the other hand, if a work is known to be technologically or factually obsolete, as in old text books, it is likely that commercial abandonment is at work. Conversely works which are timeless such as classical music tend not easily become obsolete. Finally, if the copyright owner is a large media company which periodically reintroduces older works, it is reasonable to assume that all copyrighted works are only temporarily abandoned.

Arguably, the above method of distinguishing different types of abandonment is not conclusive and relies on a certain amount of guesswork. Nevertheless, if copyright abandonment is to be given legal recognition, the legislature or the judiciary would have to consider the implications of different types of copyright abandonment, and their criteria for distinction.

7.6 Unknown Ownership

The problem of unknown owner of a copyrighted work is directly related to the absence of a reliable register system to determine ownership. Without a reliable register, the identity of the owner for many of the copyrighted works could not be easily identified. Even if

the author of a work is known, there is no guarantee that the copyright owner is known, especially when the author's copyright has supposedly been transmitted to a next-of-kin. The fact that most copyright now extends to life of the author plus seventy years means that there would be a period where the copyright is being transmitted to another party upon the death of the author, unless the said copyright has been earlier assigned to a publisher. Even if a publisher takes over the copyright at the time of publication, it is still possible that the identity of the current copyright owner is lost when the publisher ceases its business.

The solution to the problem of unknown ownership is simple. If it can be established that the said copyrighted work is no longer commercially available, and efforts to establish the ownership of the copyright have proved futile, it is welfare enhancing to allow copying and even distribution of the work without further consent. If the approval of an authority is indeed needed, an authorised body such as a Copyright Tribunal might be in the position to grant permission. The use of an authorising body can be a means to reduce the risk of infringement where prior written approval would have been obtained before the use of a copyrighted but orphaned work. Although some transaction cost of obtaining approval might be incurred, it might be more cost effective than bearing the risk of being found to have committed an infringement.

Similarly, under the threat of an approving authority for orphan works, it might be in the copyright owners' interest to establish a register of ownership as a means of pre-empting the possibility of licence-free permissions. Finally as for whether a licensing fee should be imposed, this question should be answered by reference to the type of abandonment that is involved.

7.7 Unlocatable Ownership

The situation of unlocatable ownership is to a large extent similar to that of unknown ownership. In this case, the identity of the copyright owner is known but cannot be located. Thus a licence cannot be obtained from the copyright owner. The effect of unlocatable ownership is no different from that of unknown ownership, and hence, the proposed solution should be the same. Copying and distribution of the copyrighted work should be allowed if the work is no longer commercially available, and efforts to locate the copyright owner have proved futile. Similarly, the comment on prior permission from a Copyright Tribunal and licensing fee applies.

8 Legal Solutions to Abandonment and Orphanhood

I have attempted to provide an economic analysis of the different types of abandonment and orphanhood and their solutions in the above section. In this section, I look at how the above solutions can be translated into legal doctrines and related legislative reforms. However, before looking at the legal reforms, I will examine existing, albeit imperfect, solutions to the problem of copyright abandonment and orphanhood.

The solutions to abandonment and orphanhood can be generally placed within the Calabresi and Melamed's (1972) scheme of property rules and liability rules. In term of property rules, the solution is in the form of no-property, i.e. by placing the work in the public domain. Liability rules solutions on the other hand can be divided into zero-rated liability rule and positive-rated liability rule. In a zero-rated liability rule solution, the exercise of certain rights by the copyright owner is suspended, and users of those rights need not pay the copyright owner a royalty. This is different from the no-property rule where copyright is effectively terminated and withdrawn from the owner. In a positive-rated liability rule solution, a licensing fee is payable.

Generally, it is efficient to have zero-rated liability rule for information goods such as copyrighted works because of the public goods and zero marginal cost nature of such goods. However, zero-rated liability rule cannot always apply because it would distort the ex-ante incentive to create. Therefore, zero-rated liability rule should as a principle be applied if and only if it can be established that the ex-ante incentive to create would not be distorted.

8.1 Existing Solutions

Existing solutions to abandonment and orphanhood may be divided into three classes: no-property rule, zero-rated liability rule, and positive-rated liability rule. We examine zero-rated liability rule under provisions for permitted acts; and positive-rated liability rule under a special provision of the Berne Convention, the Copyright, Designs and Patents Act 1988, and licensing scheme and levy. A no-property rule is uncommon, but a proposal is currently being discussed in relation to a renewable copyright system. In addition, we investigate extra-legal solutions in the forms of micro-payment, grey markets, and open access licensing.

8.1.1 Berne Convention

The Berne Convention contains in its appendix, special provisions for developing countries which are relevant to abandonment and orphanhood. Accordingly, developing countries can choose to exercise these provisions which weaken the right of reproduction and right of translation, provided that they lodge a notification of their intention with the Director General of the World Intellectual Property Organization.²⁷ Article III allows a developing country to substitute the exclusive reproductive right in copyright with “a system of non-exclusive and non-transferable licences, granted by the competent authority” under certain conditions and subject to Article IV. It allows a developing country adopting the special provision to grant a non-exclusive license to a national, subject to other conditions, to reproduce a published edition after a certain period of time between three to seven years depending on the subject matter of the work, where “copies of such edition have not been distributed in that country to the general public or in connection with systematic instructional activities, by the owner of the right of reproduction or with his authorization, at a price reasonably related to that normally charged in the country for comparable works,”²⁸ or “where the identity or the address of the owner of the right of reproduction is unknown.”²⁹

Article IV imposes the preconditions that the said copyrighted work to be licensed has to be either not licensable or orphaned. The applicant has to establish “either that he has requested, and has been denied, authorization by the owner of the right ... to reproduce and publish the edition, ... or that, after due diligence on his part, he was unable to find the owner of the right.”³⁰ The first precondition is in line with the point made above that it is not an abandonment if the copyright owner is willing to licence the reproduction of the copyrighted work on reasonable terms. Furthermore, Article IV(6) requires that countries make provisions for the payment of “just compensation” by the licensee in return for the licence.

According to Ricketson (1987), the special provisions were a set of concessions to developing countries to encourage them to join the Berne Union. The idea is that the non-exclusive licence would ensure a supply of published works in developing countries even when the owner of the reproduction right does not sell or published the edition in those countries. Quite unexpectedly, the solution provided in the Berne Convention is exactly the right prescription for the problem of abandonment and orphanhood for all countries.

27. Berne Convention, Art. I.

28. Berne Convention, Art. III(2)(a).

29. Berne Convention, Art. III(4)(a)(ii).

30. Berne Convention, Art. IV(1).

Therefore, it is regrettable that these provisions only apply to developing countries and not others, while after all, the problems of abandonment and orphanhood apply equally to developed countries.

8.1.2 Statutory Licence from a Copyright Tribunal

In some countries, the “competent authority” to grant a statutory licence, such as one granted under the special provisions for developing countries in the Berne Convention, is a Copyright Tribunal.

In the United Kingdom, a Copyright Tribunal is established under Chapter VIII of the CDPA. The Copyright Tribunal has jurisdiction, *inter alia*, to give consent “to a person wishing to make a copy of a recording of a performance ... where the identity or whereabouts of the person entitled to the reproduction right cannot be ascertained by reasonable inquiry,” subject to other evidentiary requirements.³¹ Unfortunately, this power has limited application because it only applies to a recording of performance and not other; the right to make a recording of a performance or “performers’ rights” being a neighbouring right to copyright subject matters proper.

Canada, on the other hand, has a system to solve the orphanhood problem. Section 77 of the Canadian Copyright Act allows a person to apply to its Copyright Board “to obtain a licence to use a published work, a fixation of a performer’s performance, a published sound recording, or a fixation of a communication signal ... [if] the applicant has made reasonable efforts to locate the owner of the copyright and that the owner cannot be located.”³² In return for the licence, the Act allows the copyright owner to collect royalties as a civil right.³³

In other words, short of the special provisions allowed to developing countries, there is no existing widespread implementation of Copyright Tribunal to grant consent for licensing of abandoned or orphaned copyrighted works. As noted above, the advantage of licensing from a Copyright Tribunal is that it is certain and there is no risk of being sued for infringement by the copyright owner later. The disadvantage is that an application to a Copyright Tribunal may be a costly process involving a certain amount of delay.

31. CDPA, s. 190.

32. Canadian Copyright Act, s. 77(1).

33. Canadian Copyright Act, s. 77(3).

8.1.3 Permitted Acts

The alternative to a Copyright Tribunal is to create legal exceptions to copyright protection under specific conditions such as when an abandonment or orphanhood happens. Copyright exceptions acts as defences against claims of copyright infringements and are commonly found in all mature copyright law system.

In the United Kingdom, copyright exceptions are known as permitted acts. At last count, the CDPA contains 65 sections providing for different types of permitted acts to be applied in various occasions. For the present discussion, only those permitted acts relevant to the alleviating the problem of abandonment and orphanhood will be highlighted.

Section 29 provides for fair dealing with a literary, dramatic, musical or artistic work for the purposes of research for a non-commercial purpose or private study, subject to sufficient acknowledgement. The same applies for fair dealing with the typographical arrangement of a published edition for the purposes of research or private study. This fair dealing provision allows a student or researcher to make a small amount of copying of a published edition, provided that the dealing falls within the legal conception of ‘fair’. Although many factors have to be taken into account to determine whether a dealing is fair, the most important of which is “whether the alleged fair dealing is in fact commercially competing with the proprietor’s exploitation of the copyright work, a substitute for the probable purchase of authorised copies, and the like” (Laddie et al., 2000, para. 20.16).

If the question of existence or non-existence of competition effect is an important factor in determining whether a dealing is fair, it is submitted that if a copyrighted work is really being abandoned or orphaned, there is very little likelihood of a dealing being in competition with the copyrighted work. Hence, abandonment might be a factor in persuading a tribunal of fact that the dealing is fair. Nevertheless, the non-existence of competition effect should not be taken as a permission to copy the whole of an abandoned copyrighted work. Often, other criteria such as the amount being copied play a not insignificant role in determining whether a dealing is fair.

Copying in the course of instruction or of preparation for instruction, subject to sufficient acknowledgement, is another permitted act.³⁴ However, the copying must “not [be] done by means of a reprographic process,” such as photocopying or scanning. Since this copying does not depend on a fairness criterion, the instructor or student may copy as much as he likes and as often as he likes, provided that it is done by hand (Laddie et al., 2000,

34. CDPA, s. 32.

para. 20.24). According to Laddie et al. (2000, para. 20.24), the section possibly extends to self-instruction, and hence can be an effective but not necessarily efficient solution to abandonment and orphanhood in published material.

Short copyrighted passages from a published literary or dramatic work may be included “in a collection of which is intended for use in educational establishments and is so described in its title, and in any advertisements issued by or on behalf of the publisher, and consists mainly of material in which no copyright subsists.”³⁵ This is subject to the proviso that not “more than two excerpts from copyright works by the same author in collections published in the same publisher over any period of five years” are included.³⁶

A visually impaired person may lawfully make an accessible copy of a literary, dramatic, musical or artistic work, or a published edition for personal use, if an accessible copy is not commercially available.³⁷

The librarian of a prescribed library may make and supply to another prescribed library a copy of an article in a periodical without infringing the copyright in the text of the article or, as the case may be, in the work, in any illustrations accompanying it or in the typographical arrangement.³⁸ The same exception applies to “the whole or part of a published edition of a literary, dramatic or musical work,” provided—and reminiscent of a solution to orphan works—that the librarian “does not ... at the time the copy is made ... knows, or could by reasonable inquiry ascertain, the name and address of a person entitled to authorise the making of the copy.”³⁹ A prescribed library is, *inter alia*, “a library ... of a description prescribed for the purposes of that provision by regulations made by the Secretary of State.”⁴⁰ For the purposes of section 41, the prescribed libraries for the purpose of making a copy are “all libraries in the United Kingdom,”⁴¹ but copied may be made and supplied only to libraries in the United Kingdom listed in the Part A of the Regulations’ Schedule 1 and “any library outside the United Kingdom which is conducted wholly or mainly for the purpose of facilitating or encouraging the study of bibliography, education, fine arts, history, languages, law, literature, medicine, music, philosophy, religion, science (including natural and social science) or technology” which is not conducted for profit.⁴²

35. CDPA, s. 33(1).

36. CDPA, s. 33(2).

37. CDPA, s. 31A.

38. CDPA, s. 41.

39. CDPA, s. 41(2).

40. CDPA, s. 37(1)(a).

41. Copyright (Librarians and Archivists) (Copying of Copyright Material) Regulations 1989, SI 1989/1212, reg. 3(2).

42. SI 1989/1212, reg. 3(3).

In respect of unpublished works in prescribed libraries and archives, section 43 allows the librarian or archivist of a prescribed library or archive to “make and supply a copy of the whole or part of a literary, dramatic or musical work from a document in the library or archive without infringing any copyright in the work or any illustrations accompanying it,”⁴³ “for the purposes of research for a non-commercial purpose, or private study.”⁴⁴

Also partly in respect of orphan works, section 57 creates an exception to copyright infringement in a literary, dramatic, musical or artistic work when the identity of the author could not be reasonably ascertained. The purpose of this section is not for solving the abandonment or orphanhood problem, but for determining the lapse of copyright term when authorship cannot be ascertained. According to that section, the defence of permitted act comes into force when “it is reasonable to assume (i) that copyright has expired, or (ii) that the author died 70 years or more before the beginning of the calendar year in which the act is done or the arrangements are made.”⁴⁵ A similar provision exists in respect of films in section 66A.

Several other permitted acts exist which allow free reproduction of copyrighted works which may be useful in relation to abandonware and orphan works. However, these permitted acts are only applicable subject to the non-existence of a relevant licensing scheme. Examples of such permitted acts follow. An approved body may make accessible copies of commercially published literary, dramatic, musical or artistic work or published edition, for the personal use of visually impaired persons, provided that accessible copies are not commercially available.⁴⁶ A recording of a broadcast, or a copy of such a recording, may be made by or on behalf of an educational establishment for the educational purposes of that establishment.⁴⁷ An abstract accompanying a published article on a scientific or technical subject may be copied or issued copies to the public.⁴⁸ A designated body may, for the purpose of providing people who are deaf or hard of hearing, or physically or mentally handicapped in other ways, with copies which are sub-titled or otherwise modified for their special needs, make copies of broadcasts and issue or lend copies to the public.⁴⁹

It would seem that there is very little exception in the CDPA to cater for abandonment and orphanhood *per se*. Certainly, none of the fair dealing provision neatly apply to abandoned software, as software often has to be copied *in toto* and through an automated

43. CDPA, s. 43(1).

44. CDPA, s. 43(3)(a).

45. CDPA, s. 57(1)(b).

46. CDPA, s. 31B.

47. CDPA, s. 35.

48. CDPA, s. 60.

49. CDPA, s. 74.

or digital process, which means that section 32 is not likely to be of any use. Section 57 may turn out to be of some use, although it is not very useful for copying new works which are abandoned or orphaned.

8.1.4 Collective Licensing Schemes

The structure of the exceptions of copyright protection in the form of permitted acts in the Copyright, Designs and Patents Act 1988 is such that the occasions for evocation of the exceptions are kept to the minimal, as it affects the financial incentive to create. Therefore, the alternative of having copyright licensing schemes is encouraged. A licensing scheme is a form of liability rule solution but with a price greater than zero (Merges, 1996). Seen in this way, an exception in the form of a permitted act is a liability rule protection with a zero price.

A collective licensing scheme is a licensing scheme where the licensing agency collectively represents a large number of copyright owners and publishers. With a collective licensing scheme, potential consumers do not need to search out and negotiate a licence with the copyright owner, but instead can obtain a licence from a licensing body at a pre-determined price. Another common feature of a collective licensing scheme is that payment is normally not made piecemeal upon each reproduction of a copyrighted work, but is paid lump sum based on several factors such as the nature and function of the organisation, the size of the organisation, the type of material reproduced, and the frequency reproduction is made. The benefit of such a scheme is that tracing cost and transaction cost are reduced.

Many permitted acts in the CDPA do not apply when there is a licensing scheme in respect of those material.⁵⁰ The idea is to encourage copyright owners to organise collective licensing schemes so as to take advantage of the exceptions to permitted acts. In economic terms, it is to allow the change of property rights from a zero-rated liability rule to a positive-rated liability rule. This change presumably will strengthen the economic interest of authors and copyright owners, and therefore encourage optimal investments in the creation of copyrighted works.

A further provision exists to induce copyright owners to organise licensing scheme. Section 140 allows the Secretary of State to appoint a person to inquire into the question whether new provisions are required to authorise the making by or on behalf of educational establishments for the purpose of instruction of reprographic copies of published literature,

50. E.g. CDPA, ss. 31D, 35, 60, and 74.

dramatic, musical or artistic works or the typographical arrangement of published editions. Thereafter, the Secretary of State may upon the recommendation under section 130 by order provide that for the purposes of instruction, reprographic copies of the works to which the recommendation relates be treated as licensed by the owner of the copyright in the works.⁵¹ The order shall furthermore provide for the licence to be free of royalty.⁵² The statutory licence however is not automatically revoked when a licensing scheme covering the recommended matters comes into effect, but the Secretary of State may make order to vary or discharge it.⁵³

The Secretary of State may also “by order provide that ... the lending to the public of copies of literary, dramatic, musical or artistic works, sound recordings or films shall be treated as licensed by the copyright owner subject only to the payment of such reasonable royalty or other payment as may be agreed or determined in default of agreement by the Copyright Tribunal,” provided that there is no licensing scheme certified for such purposes.⁵⁴

The CDPA provides implied indemnity by the operator of a licensing scheme or a licensing body to licensees against “any liability incurred by [a licensee] by reason of his having infringed copyright by making or authorising the making of reprographic copies of a work in circumstances within the apparent scope of his licence.”⁵⁵ The implied indemnity applies if “(a) it is not apparent from inspection of the licence and the work that it does not fall within the description of works to which the licence applies; and (b) the licence does not expressly provide that it does not extend to copyright of the description infringed.”⁵⁶ The operator of a licensing scheme or the licensing body may absolve itself from the implied indemnity by clearly stating in its licence, the types of works covered and not covered by the licence. In practice, a collective licensing scheme may give the illusion that a licensee is covered against all infringement claims, while in fact he is not. A licensee is still subject to obtain separate licences for copyrighted works which do not fall within the domain of a collective licence.

8.1.5 Copyright Levy

A copyright levy is the imposition of a payment on every blank recording material or recording equipment in order to compensate copyright owners for the loss of sale resulting

51. CDPA, s. 141(1).

52. CDPA, s. 141(4).

53. CDPA, s. 141(7).

54. CDPA, s. 66.

55. CDPA, s. 136(2).

56. CDPA, s. 136(3).

from the private copying of copyrighted works. Depending on individual legislation, a copyright levy may or may not absolve a copier from an infringement claim. There is currently no copyright levy system in the United Kingdom.

Section 82 of the Canadian Copyright Act allows a collecting body, the Canadian Private Copying Collective, to collect a levy from manufacturers and importers of blank audio recording media, including recordable CD's and DVD's. In return, reproducing all or any substantial part of a musical work embodied in a sound recording, a performer's performance of a musical work embodied in a sound recording, or a sound recording in which a musical work or a performer's performance of a musical work, for the private use of the person who makes the copy does not constitute an infringement of the copyright in the musical work, the performer's performance or the sound recording.⁵⁷

A copyright levy system has been in place on audio recording material since the 1950s in Germany. Recently, upon the lobby of VG Wort, a levy of twelve euros has been placed upon every personal computer system sold (IDG News Service, 2004). This is in addition to other levies imposed on electronic devices capable of copying copyrighted works, such as CD recorder drives. In return, it is permissible to make single copies of a work for private use.⁵⁸

Copyright levy has the advantage of dispensing permission for all applicable copyrighted works. This partly solves the abandonware and orphan works problem. However like taxes, copyright levy has strong redistributive effect. Commercial copiers do not enjoy a copyright exception even though they have to pay the levy; they have to obtain a separate license for making copies for non-private uses. Similarly, private users who do not copy are also subject to the same payment. In addition, the levy system does not make a distinction between heavy copiers and light copiers. In effect, the activities of heavy copiers are being subsidised by the other users, without regard to each party's willingness to pay.

8.1.6 Micro-Payment

Micro-payment is the use of technology to account for a payment for every single use or copy. It is particularly suitable for data and software delivered through an online system such as the Internet. Abandoned software may be reposted on a website which charges a small payment for every download. Thus copies can be made legal and copyright owners facing potential commercial abandonment can make additional profit through the lowering

57. Canadian Copyright Act, s. 80(1).

58. German Copyright Act, Art. 53(1).

of transaction cost with the use of a micro-payment system. In this way, unavailability because of commercial abandonment may be avoided.

8.1.7 Grey Market Solution

A grey market solution is one where its legality is doubtful. The idea is that an abandoned work is distributed as long as the copyright owner does not make objection to its distribution. In the case of abandonware, a website is constructed where those abandoned software are available for download. It is not labelled as ‘black market’ because its distribution is not specifically unauthorised by its copyright owner. Instead, it relies on the inaction of the copyright owner to solve the unavailability problem.

A recently highlighted example of a grey market solution is the famous photograph of Che Guevara by Cuban photographer Alberto Diaz Gutierrez, who took the picture in 1960 and owned the copyright therein. A copy of the photograph unwittingly came into the possession of an Italian publisher who subsequently published and circulated copies of it when Che Guevara was killed in 1967. This photograph subsequently attained pop icon status and has been reproduced countless times on various media such as T-shirts and posters without its copyright ever being asserted. Free use was implicitly being consented by Gutierrez since he was happy that the image was used to propagate the memory of his hero. This went on until it was used on an advertisement for Smirnoff vodka in 2000, which Gutierrez took offence of. He subsequently instituted an action against advertising agency and the stock photo supplier. Although the case was settled before trial, the High Court took recognition that Guteirrez was the rightful owner of the copyright (Wells, 2000).

A grey market solution is not a perfect solution. It risks being accused as blatant copyright infringement. Following the passing of the Intellectual Property Enforcement Directive, member states may now provide for other sanctions such as a criminal offence against the infringement of intellectual property rights, apart from the usual civil and administrative measures.⁵⁹ This means that even if the copyright owner chooses not to take action against a distributor of an abandoned work, the distribution may still run afoul of the law.

In such a case, the alternative is to get specific permission from the copyright owner prior of making available the abandoned work. Another alternative is to have a legislative

59. Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the Enforcement of Intellectual Property Rights, OJ L 195/16 (2 June 2004), Art. 16.

reform to create a permitted act allowing the distribution of an abandoned work when a copyright owner does not respond to request for a reasonable licensing scheme. If the copyright owner does respond but imposes an unreasonable term for licensing, the matter may then be brought to a copyright tribunal for determination.

8.1.8 Open Access Licensing

The term ‘open access licence’ is almost used interchangeably with ‘open source licence’, ‘public licence’ and ‘creative commons licence’. This is a genre of unilateral copyright licences where the copyright owner declares his intention to allow free use of his copyrighted work subject to some prescribed conditions. These conditions vary according to how a copyright owner frames his licence or to which specific “boiler-plate” open access licence he adopts. A common characteristic of an open access licence is the allowance for royalty-free reproduction for non-commercial purposes. Further typical variations on these licences include whether commercial use is allowed, whether derivative use is allowed, and whether the licence is ‘viral’. A licence is viral if the precondition for derivative use is that the derived work must be release back to the public under the same or a non-inferior licence. The open source licence is typically a viral-type licence for computer programs which mandates that the source code of any derivative works should be licensed back under the same licence and the source code be made freely available to anyone who requested it, i.e. ‘open’.

Open access licensing may be considered as an altruistic method of releasing a copyrighted work to the public in a limited sense. For example, a non-commercial licence allows the free reproduction of a work for non-commercial purposes while reserving the possibility of deriving commercial income to the copyright owner. A no-derivative licence allows the copyright owner to remain in control of the integrity of his work without burdening him with granting licences for reproduction. Thus, using an open access licensing model, the need to explicitly seek permission from a copyright owner is dispensed with in most cases, and hence orphanhood and abandonment problems may be avoided.

8.2 Possible Legal Reforms

The discussion on the existing solutions shows that there is yet to be an optimal solution in the law to the problem of abandonment and orphanhood. Various scholars and pressure groups have proposed others solutions. Some of these are discussed below.

8.2.1 Expansion of the Fair Use Doctrine

Patry and Posner (2004, pp. 1650–1651) proposed an application of the fair use doctrine in the US to partially overcome the problem of orphan works and abandonware. They suggested that the fair use doctrine be allowed for supplying an abandoned work after some kind of tracing has been conducted and the copyright owner not locatable. To make their proposal more politically palatable, they suggested that this fair use doctrine be applied only to those works which have been extended by the US Copyright Term Extension Act 1998, and only for the purpose of providing public access to otherwise inaccessible or out-of-print works. They argue that this further limitation would only affect those works which gained an unrealised windfall against those new works which would have affected the incentive to create.

Fair use is an amorphous concept developed by the courts in the United States, even though it owes its origin to old copyright cases in the United Kingdom. Nowadays, the courts in the United Kingdom do not admit such a concept because the Copyright, Designs and Patents Act 1988 provides for specific exceptions to copyright infringement. The fair use doctrine gained particular prominence in the *Sony Corp. v. Universal City Studio, Inc.* case regarding the use of video recorders for time-shifting purposes.⁶⁰ In the United Kingdom, section 70 provides a similar defence for the recording of a broadcast in domestic premises for private and domestic use.

8.2.2 Renewable Copyright

Landes and Posner (2003) suggested a system of indefinitely renewable copyright. They argue that such a system would produce two positive effects. One is that abandoned works would be allowed to lapse earlier into the public domain through the inaction and non-renewal by the copyright owners. The second is that some works which are still valuable to its owners would continue to enjoy copyright protection through the payment of a renewal fee. They support their proposal with data from a prior copyright registration system in the United States, and the lessons from trade mark renewals.

The proposal of an indefinitely renewable copyright is currently under examination by various scholars.⁶¹ However, their interests are in comparing the present limited term system versus an indefinite system. For the purpose of this paper, the problem is not about the

60. 464 U.S. 417 (1984).

61. See e.g. Adilov (2005) and Yuan (2005).

optimal length of copyright term, but on how copyright term can be shortened when a work is abandoned. This in turn means examining the ‘renewal’ part of the proposal.

The way a renewal system is carried out is that a period is set before the first renewal is due. When this is due, a copyright owner needs to register his copyright at the Copyright Office and pay a maintenance fee. Like the trade mark system, another maintenance fee is due after a certain period of time, such as a ten year gap. This renewal is repeated until the end of copyright term, in the case of a limited-term system, or indefinitely, as Landes and Posner (2003) propose.

The advantage of a renewal system is that the first renewal period can be set in such a way that a majority of copyrighted works would lapse into public domain due to abandonment by the copyright owner. This is in line with the idea of ending the property right in the works.

8.2.3 Public Domain Enhancement Act

In 1998, the US Congress passed the Sonny Bono Copyright Term Extension Act which amended the copyright law by increasing the duration of protection for existing and future works by a further 20 years, under the pretext of harmonisation with the EU Copyright Term Directive. Eric Eldred and some others publishers deal in republishing books in the public domain, but as a result of the Copyright Term Extension Act, some titles which would have gone into the public domain were withheld for another 20 years. Being aggrieved parties, they petitioned to the court to seek a determination that the Act violated Article I, 8, clause 8 of the US Constitution (the “Intellectual Property Clause”). Their case subsequently went on appeal to the US Supreme Court, where it was rejected by a 7-2 majority.⁶²

In the Supreme Court, Justice Ginsburg writing for the majority cited Congress’ numerous past practices of extending the term of protection for existing works. It held that although the Act purported to extend the term of protection for existing works, it was not ‘unlimited’, and hence did not contravene the “limited Times” part of the relevant Article in the Constitution. The court also held that the same was not in violation of the free speech guarantee of First Amendment.

Interestingly, it seems that the petitioners has earlier acknowledged that the preamble of the Intellectual Property Clause, “to promote the Progress of Science and useful Arts,”

62. Eric Eldred et al. v. John D. Ashcroft, 537 U.S. 186 (2003).

places no substantive limit on Congress' legislative power.⁶³ The court in fact rejected the argument that retrospective extension of copyright term does nothing "to promote the Progress of Science." Instead, it took the view that the "progress clause" merely enables the Congress to enact a copyright system.⁶⁴ In addition, the court also rejected the corollary *quid pro quo* argument that "extending an existing copyright without demanding additional consideration ... bestows an unpaid-for benefit on copyright holders and their heirs."⁶⁵ They countered instead that "promote ... Progress" may be made through "an express guarantee that authors would receive the benefit of any later legislative extension of the copyright term."⁶⁶ Arguably, this is a difficult proposition to accept in economic terms, for it would require authors to be able to factor in possible future extension of copyright term in their incentive to create. Furthermore, studies have shown that at the present length of protection the impact on the discounted incentive to create is minimal at best (Akerlof et al., 2002).

The two dissenting opinions were from Justice Stevens and Justice Breyer. Justice Stevens took the stance that the Intellectual Property Clause has a *quid pro quo* function, and that the Act is subject to judicial scrutiny. On the other hand, Justice Breyer, who in his early days as a professor of law wrote a critical economic-oriented paper on the justification for copyright (Breyer 1970), investigated, *inter alia*, the social cost of copyright extension and its impact on obtaining licenses for orphaned works.

Not deterred by this initial set-back, another attempt was made challenged the Copyright Term Extension Act. This attempt failed when the plaintiffs' action was dismissed at the District Court for the Northern District of California.⁶⁷ An appeal is currently pending. In this instance, the plaintiffs assert, *inter alia*, that "that the Copyright Renewal Act, the 1976 Act, and the Berne Convention Implementation Act, enacted in 1988, all violated the Copyright Clause by failing to 'promote ... Progress.' In particular, plaintiffs challenge the elimination by those statutes of the traditional requirement that copyright owners register their works, deposit a copy of their works with the government, and provide notice of their claim to copyright protection, as well as the requirement that, to avoid expiration, the copyright be renewed by the copyright holder."⁶⁸ Largely relying on the authority of *Eldred v. Ashcroft*, the District Court rejected this assertion that "copyright law unconstitutionally favors the interests of authors over those of the general public," by finding that "Eldred has foreclosed this type of argument."⁶⁹ Furthermore, in deference to

63. *Eldred v. Ashcroft*, at 197.

64. *Eldred v. Ashcroft*, at 212.

65. *Eldred v. Ashcroft*, at 214.

66. *Eldred v. Ashcroft*, at 215.

67. *Brewster Kahle et al. v. John Ashcroft*, US Dist. Lexis 24090 (2004).

68. *Kahle v. Ashcroft*, at 3.

69. *Kahle v. Ashcroft*, at 28-29.

Eldred the Court held that “it is generally for Congress, not the courts, to decide how best to pursue the Copyright Clause’s objectives.”⁷⁰

Parallel to the above actions, as well as inspired by Landes and Posner (2003), a bill titled the Public Domain Enhancement Act was presented to the United States House of Representatives “to allow abandoned copyrighted works to enter the public domain after 50 years.”⁷¹ Unfortunately, not much headway has been made by this bill.

This bill proposes to charge a maintenance fee of \$1 in any published United States work, 50 years after the date of first publication, and every 10 years thereafter until the end of the copyright term. Furthermore, unless payment of the maintenance fee is received in the Copyright Office on or before the date the fee is due or within a grace period of 6 months thereafter, the copyright shall expire as of the end of that grace period. Thus, copyright owners who abandon their works and do not bother to pay the maintenance fee could allow their work to lapse into the public domain without any additional effort. The small fee of \$1 is used as a criterion to separate owners who value his copyright more than \$1 and those who do not. It is to screen out works which have no value to the copyright owner and those which do. Also, the low fee is to ensure that the fee does not unreasonably burden the copyright owner from extending his copyright protection.

Arguably, the \$1 might be too small and does not necessarily ensure a net social gain. Assuming that V is the present value of all consumers’ surplus in dollars, p a percentage of the value captured by the copyright owner, F the maintenance fee, L the labour cost incurred by the copyright owner in the process of paying the maintenance fee, A the administration cost incurred by the Copyright Office, and W the net social welfare. The copyright owner will pay the maintenance fee when

$$pV > F + L, \tag{1}$$

and social welfare is

$$W = V - A - L. \tag{2}$$

The copyright owner will not pay the maintenance fee when $pV < F + L$, and social welfare will then be $W = V$; W is ambiguous when $pV = F + L$.

The problem therefore is to solve for the minimum F subject to $W > 0$. If the copyright owner chooses not to pay the maintenance fee, $W = V \geq 0$, so the condition $W > 0$ is of

70. *Kahle v. Ashcroft*, at 44.

71. Congress, House, *Public Domain Enhancement Act*, 108th Cong., 1st sess., H.R. 2601.

no implication. For the other case, from (2),

$$\begin{aligned}
 W &= V - A - L > 0 \\
 V &> A + L \\
 pV &> pA + pL \\
 pV &> [pA - (1 - p)L] + L.
 \end{aligned} \tag{3}$$

Compare (3) to (1), the condition $W > 0$ is fulfilled when

$$F = pA - (1 - p)L. \tag{4}$$

The maintenance fee $F^* = pA - (1 - p)L$ from (4) is optimal to ensure no social loss from the registration and renewal exercise, i.e. $W \geq 0$ if $F = F^*$. It may be a positive value or a negative one, which in the latter case would mean that Copyright Office pays the copyright owner a subsidy to register. A marginally higher F ensures $W > 0$ for all given p, V, A , and L values. And since $W > 0$ is still true for all larger F 's, a practical approximation for F can be found. This is when $F = A$, which is the largest positive value for F which satisfies (4) when $p = 1$ is assumed. Thus the copyright owner can be induced to renew only when a net social gain is ensured ($W > 0$) by setting $F = A$, i.e. the maintenance fee charged at the average rate of Copyright Office's administration cost.

Another problem of the Public Domain Enhancement Act is the long period of time before the first renewal is due. The first Copyright Act in 1710 gave a copyright term of 14 years renewable for another 14 years in the hands of the author.⁷² Many computer software have very short actual commercial life, as demonstrated by the definition of 'abandonware'. Hence, it might be better to set a shorter period such as five or ten years before the first renewal is due.

8.3 My Proposal

Both abandonment and orphanhood problems have to be solved together. Solving just the orphanhood problem by having a registration system would not be sufficient when licensing cannot be reasonably obtained even when the copyright owner is located.

The easiest solution to the orphanhood problem is a copyright register. The biggest barrier presently to a copyright registration system is the Berne Convention, which requires

72. "An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned," 8 Anne, c. 19 (1710), s. 11.

no formality for the subsistence of copyright protection.⁷³ Assuming that the Berne Convention does not get into the way, a registration system may operate either at the stage of subsistence of copyright or later at a renewal stage. Obviously, making registration early solves the problem of tracing the copyright owner earlier.

The alternative to a compulsory registration system is to have a statutory licensing system in case of orphanhood. When a potential licensee satisfy a Copyright Tribunal that efforts to locate a copyright owner prove futile, the Copyright Tribunal may grant a license to reproduce a copyrighted work at a prescribed rate. The threat of an unfavourable prescribed rate of licensing will then induce copyright owners to collectively establish a voluntary register to pre-empt claims of orphanhood.

Nevertheless, the final choice of registration system would have to depend on the solution to abandonment. As indicated above, commercial abandonment may be solved by inducing the copyright owner to abandon his copyright. This can be done through a copyright renewal system, where failure to renew after a prescribed period will result in the termination of the copyright. It is suggested that since most works do not last up to 50 years before being abandoned, the first renewal period should be short. A possible ballpark figure is 10 years, as also in the case for trade marks. This copyright may be renewed every 10 years until the end of the prescribed term of protection. As suggested above, a renewal fee equivalent to the average cost of administering the renewal system should be charged. Furthermore it is suggested that renewal of copyright should only be applicable to published works. Unpublished works should not be subjected to renewal, but the term of copyright should be short, as in life of the author plus five years, unless the work is published during this time whence the term for published works applies.

Arguably, a registration or renewal system is an imperfect solution for most of the abandonment cases described above. For example, ten years might be too long a time to wait before a non-renewed work lapse into the public domain. Even so, this does not guarantee that the copyright owner of an abandoned work will not renew his copyright. He might just do so and the copyrighted work might still be subject to unavailability. It is therefore suggested that perhaps some kind of permitted act in respect of abandonment should be enacted to allow a commercially abandoned work be used. Using the same tactic of pressuring for a collective licensing scheme, the permitted act may allow for free reproduction of an abandoned work unless a reasonable licensing scheme is in operation in respect of that abandoned work. Presumably, it would also be reasonable to charge a rate based on the efficient component pricing rule for temporarily abandoned works.

73. Berne Convention, Art. 5(2).

Notwithstanding the above, there is still some pressure to create a kind of perpetual property right in creations which may outlive the normal term for copyright protection. One particular kind of creations is fictitious characters such as cartoons. The fact that the principal object of the Sonny Bono Copyright Term Extension Act was to extend the life of Disney's Mickey Mouse (Depoorter, 2004, para. 1n) indicates that an indefinitely renewable character right might just be the right prescription for protecting Mickey Mouse and the likes. With this indefinitely renewable character right, a work using the character may be allowed to lapse into the public domain at the end its term of protection, without affecting the investment in "husbandrying" those characters.

9 Conclusion

In this paper, the definitions and causes of abandonment and orphanhood are explored; economic analyses of different types of abandonment and orphanhood are conducted, and legal and non-legal solutions to the problem investigated. The proposal of a renewable copyright system to cure the problem of abandonment and orphanhood are examined, and an economic analysis is conducted. Our examination shows that there are still significant shortcomings in the proposed renewable copyright system, which does not neatly tackle the abandonment and orphanhood problem. A hybrid approach of copyright renewal plus the more extensive use of licensing scheme in the shadow of legislated permitted acts is suggested as a better solution. Finally, the idea of a separate indefinitely renewable character right should be considered to protect the continual investment in the use and development of fictitious characters.

Acknowledgement

The author wishes to acknowledge the useful and kind comments from Ben Depoorter, Sushil Mohan, Frank Stephen, Kim Swales, Darryl Holden and participants of the workshops in law and economics in Ghent and in Manchester. All errors and omissions remain the author's.

References

- Adilov, Nodir. [2005.] Optimal copyright protection and ex-post investment: A Mickey Mouse approach. Working paper.
- Abandonware Ring FAQ. 2002. Available at <http://www.abandonwarering.com/?Page=FAQ>.
- Akerlof, George A., Kenneth J. Arrow, Timothy F. Bresnahan, James M. Buchanan, Ronald Coase, Linda R. Cohen, Milton Friedman, Jerry R. Green, Robert W. Hahn, Thomas W. Hazlett, C. Scott Hemphill, Robert E. Litan, Roger G. Noll, Richard Schmalensee, Steven Shavell, Hal R. Varian, and Richard J. Zeckhauser. [2002.] Amici curiae brief in support of petitioners in the Supreme Court of the United States, Eldred versus Ashcroft.
- Breyer, Stephen. 1970. The uneasy case for copyright: A study of copyright in books, photocopies and computer programs. *Harvard Law Review* 84: 281–351.
- Depoorter, Ben. 2004. The several lives of Mickey Mouse: The expending boundaries of intellectual property law. *Virginia Journal of Law & Technology* 9, no. 2 (Spring): no. 4.
- Fudenberg, Drew, and Jean Tirole. 1998. Upgrades, tradeins, and buybacks. *RAND Journal of Economics* 29, no. 2 (Summer): 235–258.
- IDG News Service. 2004. German court sets copyright levy on new PCs. 24 December. Available at <http://www.itworld.com/Man/2681/041224germanlevy/>.
- Laddie, Sir Hugh, Peter Prescott, Mary Vitoria, Andrian Speck, and Lindsay Lane. 2000. *The Modern Law of Copyright and Designs*. London: Butterworths.
- Landes, William M., and Richard A. Posner. 1989. An economic analysis of copyright law. *Journal of Legal Studies* 18: 325–363.
- Landes, William M., and Richard A. Posner. 2003. Indefinitely renewable copyright. *University of Chicago Law Review* 70 (Spring): 471–518.
- Library of Congress, Copyright Office. 2005. Notice of inquiry: Orphan works. *Federal Register* 70, no. 16 (26 January): 3739–3743.

- Merges, Robert P. 1996. Contracting into liability rules: Intellectual property rights and collective rights organizations. *California Law Review* 84, no. 5 (October): 1293–1386.
- Patry, William F., and Richard A. Posner. 2004. Fair use and statutory reform in the wake of Eldred. *California Law Review* 92 (December): 1639–1661.
- Ricketson, Sam. 1987. *The Berne Convention for the Protection of Literary and Artistic Works: 1886-1986*. London: Centre for Commercial Law Studies, Queen Mary College.
- Wells, Matt. 2000. Big payout over Guevara photo. *The Guardian*, 15 September: 7.
- Yuan, Michael Y. [2005.] A better copyright system? Comparing welfare of indefinitely renewable copyright and the current copyright system. Working paper.