



**ESSAYS ON THE LAW AND ECONOMICS  
OF COPYRIGHT PROTECTION**

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# **Copyright Declaration**

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To mum and my beloved wife.

# Abstract

This thesis consists of four essays titled “The Historical Law and Economics of the First Copyright Act”, “Copyright Doctrines, Abstraction and Court Error”, “Copyright Failure and the Protection for Tables and Compilations”, and “Orphan Works, Abandonware and the Missing Market for Copyrighted Goods”.

The analytical methodology is characterised as law and economics, and additionally, two main themes are observable. One is the incorporation of historical record or analysis. This stems from the belief that good legal, as well as law and economic, analysis must not be devoid of its historical context. Therefore, an attempt is made to incorporate a historical perspective in every essay. The second observable theme is the emphasis on curbing the monopoly or market power of copyright owners, both in the descriptive and prescriptive senses. In the first two essays, statutory provisions and copyright doctrines are shown to have the intended effect of controlling the market power of copyright; in the last two essays, liability rule remedies are proposed as a possible solution to further reduce the welfare losses associated with copyright protection.

Two general conclusions can be made. Copyright owners generally, and perhaps with the exception of databases, do not have strong market power for the reason that, since the first statutory copyright law and under various copyright doctrines, differentiated copyrighted works may be independently produced by other authors, thus giving rise to monopolistic competitive markets for copyrighted goods. The second conclusion is a normative one, namely that there are scopes for social welfare gain by protecting copyright, under certain situations, by a liability rule instead of the traditional property rule. Two specific situations are examined in this context: when the copyrighted work is a database, and when the copyrighted work is abandoned or orphaned.

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>The Historical Law and Economics of the First Copyright Act</b>	<b>4</b>
2.1	Introduction . . . . .	5
2.1.1	Copy-right and The Stationers' Company . . . . .	6
2.2	The Existence (or Non-Existence) of a Scottish Copy-right Law . . . . .	11
2.3	The Copyright Act of 1710 . . . . .	13
2.4	Exclusive Right . . . . .	13
2.4.1	Creation . . . . .	14
2.4.2	Registration . . . . .	16
2.4.3	Enforcement . . . . .	19
2.5	Copyright as Market Failure . . . . .	22
2.6	Authorship . . . . .	25
2.7	Limited Term . . . . .	27
2.8	Non-Discriminatory Registration . . . . .	29

2.9	Price Control . . . . .	30
2.10	Legal Deposit . . . . .	31
2.11	Importation of Foreign Works . . . . .	32
2.12	Uncertain Property Rights . . . . .	32
2.13	Conclusion . . . . .	33
<b>3</b>	<b>Copyright Doctrines, Abstraction and Court Error</b>	<b>45</b>
3.1	Introduction . . . . .	46
3.1.1	Boundaries of Copyright Protection . . . . .	47
3.1.2	Copyright Law is about Evidence . . . . .	50
3.1.3	Outline . . . . .	50
3.2	Abstraction . . . . .	52
3.2.1	The Abstraction Process . . . . .	52
3.2.2	Judicial Recognition . . . . .	53
3.2.3	The Risk of Court Error . . . . .	54
3.3	Protection Divide . . . . .	55
3.3.1	Idea-Expression Dichotomy . . . . .	56
3.3.2	Protecting the Literal Dimension . . . . .	59
3.3.3	Creativity . . . . .	61
3.3.4	Protecting the Non-Literal Dimension . . . . .	64

3.4	Inference Divide . . . . .	68
3.5	Non-Strict Liability . . . . .	69
3.5.1	Causal Connection . . . . .	69
3.5.2	Independent Creation Defence . . . . .	70
3.6	A Theoretical Model . . . . .	70
3.6.1	The Model . . . . .	70
3.6.2	Doctrinal Explanation . . . . .	72
3.7	The Filtration Puzzle . . . . .	75
3.8	Conclusion . . . . .	77
<b>4</b>	<b>Copyright Failure and the Protection for Tables and Compilation</b>	<b>81</b>
4.1	Introduction . . . . .	82
4.2	The Abstraction Process . . . . .	83
4.3	Significant Levels of Abstraction . . . . .	84
4.4	Economic Implications . . . . .	88
4.4.1	Imperfect Substitution . . . . .	89
4.4.2	No Substitution . . . . .	89
4.4.3	Perfect Substitution . . . . .	90
4.5	Copyright Failure Defined . . . . .	91
4.6	Copyright Failure in Databases . . . . .	92



4.7	Solution to Copyright Failure . . . . .	96
4.8	Hypothesis . . . . .	104
4.9	Results . . . . .	105
4.10	Discussion . . . . .	106
4.11	Conclusion . . . . .	107
<b>5</b>	<b>Orphan Works, Abandonware and the Missing Market for Copyrighted Goods</b>	<b>123</b>
5.1	Introduction . . . . .	124
5.2	The Problem . . . . .	124
5.3	Definitions . . . . .	125
5.4	Types and Causes of Abandonment and Orphanhood . . . . .	126
5.5	Proximate Causes of Abandonment and Orphanhood . . . . .	129
5.5.1	Unexpired Copyright Term . . . . .	130
5.5.2	Unavailability of Copyrighted Work . . . . .	131
5.6	Specific Problems Related to Abandonment of Computer Software . . . . .	133
5.7	Economic Analysis of Solutions to Abandonment and Orphanhood . . . . .	135
5.7.1	Commercial Abandonment . . . . .	137
5.7.2	Strategic Abandonment . . . . .	139
5.7.3	Temporary Abandonment . . . . .	141
5.7.4	New Use . . . . .	143

5.7.5	Distinguishing the Different Types of Abandonment . . . . .	144
5.7.6	Unknown Ownership . . . . .	145
5.7.7	Unlocatable Ownership . . . . .	146
5.8	Legal Solutions to Abandonment and Orphanhood . . . . .	146
5.8.1	Existing Solutions . . . . .	147
5.8.2	Possible Legal Reforms . . . . .	159
5.8.3	My Proposal . . . . .	165
5.9	Conclusion . . . . .	166

# Chapter 1

## Introduction

This thesis consists of four essays on the law and economics of copyright protection. The objective of the research is to use the law and economics methodology to study copyright law and related phenomena.

Chapter 2 is an essay on the first copyright Act, the Statute of Anne of 1710. The approach here is to marry economic history with law and economics, to give rise to a novel way of analysis, namely historical law and economics. The first part of chapter 2 looks at the emergence of the copyright Act from an institutional perspective. The second part examines the provisions of the 1710 statute using an economic analysis of law method to support the earlier point that the first copyright Act was mainly an instrument to curb the monopoly power of printers and booksellers in the London book trade.

Chapter 3 continues the historical trend to look at one aspect of the next stage of development in copyright law, namely the rise of copyright doctrines. This is a work which, the author asserts, was concurrently conceived as Lichtman's (2003) around year 2001. The basic idea is that copyright doctrines are about evidence, and just like Adam Smith's invisible hand, the *presumably* private aim's of judges to avoid evidential difficulties in copyright infringement cases coincides with the public aim of reducing the monopoly power in copyright owners by strategically not protecting high levels of abstraction in a copyrightable work. Having the advantage of referring to Lichtman

(2003), this essay takes the point further by introducing the concept of levels of abstraction and using a probabilistic model to explain an infringement threshold which I term the ‘inference divide’.

In chapter 4, I look at one common type of copyright cases, i.e. cases involving copyright claims to tables, compilations, and what in modern time we call ‘databases’. This is another essay which takes a historical approach, in the sense that English and Scottish ‘database’ cases, from the earliest of times since the enactment of the Statute of Anne to the coming into force of the Database Directive on 1 January 1998, are categorised into data to test the hypothesis that judges will choose an efficient resolution to the disputes by employing a liability rule remedy, such as a compulsory licence. Part 1 reiterates to some extent the idea from chapter 3 on the nature of copyright protection. Part 2 introduces the concept of ‘copyright failure’ in informational works such as databases, and looks at the use of liability rule solutions in specific cases. Part 3 employs the ‘data’ compiled to descriptively examine whether courts consistently choose the theoretically efficient solution of liability rules. The conclusion found was unfortunately in the negative.

The final chapter, Chapter 5, brings us forward to the present day and examines the recent issue of orphan works and abandonware. These are copyrighted works which are still protected by copyright law but are no longer commercially available. Economic intuition suggests that *ex post* creation, social welfare is maximised if these abandoned or orphaned works are released into the public domain. Part 1 categorises the different types of abandonware and orphan works based on stylised reasons for their orphanhood or abandonment. The essay proposes a distinction between the two phenomena: abandonment occurs when the copyright owner is known and in existence, but chooses not to make the copyrighted work available to the public; orphanhood happens when the copyright owner is not locateable or when no one makes a claim to the copyright of a work. Part 2 makes an economic analysis to the different types of abandonment and orphanhood and proposes a suitable solution thereto. It also looks at possible existing and proposed legal solutions to this problem. Finally, a conclusion in the form of a suggestion for a renewable copyright with a separate right for characters—to solve the “Mickey Mouse problem”—is made.

Two main themes are observable from the essays. One is the incorporation of historical record or analysis. This stems from the belief that good legal, as well as law and economic, analysis must not be devoid of its historical context. Therefore, an attempt is made to incorporate a historical perspective in every essay. The second observable theme is the emphasis on curbing the monopoly or market power of copyright owners, both in the descriptive sense in Chapters 2 and 3, and in the prescriptive sense in Chapters 4 and 5. In Chapters 2 and 3, statutory provisions and copyright doctrines are shown to have the intended effect of controlling the market power of copyright; in Chapters 4 and 5, liability rule remedies are proposed as a possible solution to further reduce the welfare losses associated with copyright protection.

Two general conclusions can be made from the essays. Copyright owners generally, and perhaps with the exception of databases, have strong market power from the copyright, for the reason that since the first statutory copyright law, and under various copyright doctrines, differentiated copyrighted works may be independently produced by other authors, thus giving rise to monopolistic competitive markets for copyrighted goods. The second conclusion is a normative one, namely there are scopes for social welfare gain by protecting copyright, under certain conditions, by a liability rule instead of the traditional property rule. Two specific situations are examined in this context: when the copyrighted work is a database, and when the copyrighted work is abandoned or orphaned.

Three of the four essays here have been accepted for publication in peer-reviewed journals. Chapter 2 is appearing in the *Erasmus Law and Economics Review*, Chapter 3 in the *Review of Law and Economics*, and Chapter 5 in the *International Journal of Law and Information Technology*. Chapter 4 is pending review.

## Reference

Lichtman, Douglas. 2003. Copyright as a rule of evidence. *Duke Law Journal* 52: 683–743.

## **Chapter 2**

# **The Historical Law and Economics of the First Copyright Act**

### **Abstract**

In this paper, an economic analysis of the first copyright Act, the Statute of Anne of 1710, is described. Part I covers the emergence of common law copy-right and the enactment of the Statute of Anne. Part II examines the provisions of the Statute of Anne from a law and economic perspective, and shows that contrary to popular belief that the Statute of Anne strengthened publishers' monopoly power, the provisions had the effect, at least in theory, of reducing the market power of copyright owners. In all, this paper provides a historical law and economic perspective of one aspect of copyright law.

## 2.1 Introduction

This is the story of the first British Copyright Act,<sup>1</sup> passed by the British Parliament in 1710.<sup>2</sup> It is also the world's first Copyright Act—the French had theirs in 1793 and the Germans one year thereafter (Avis 1965, 23).

This paper arose from a desire to study the economics of copyright law from a historical point of view. In a sense, it is an attempt to fill the historical and institutional gap in the economic analysis of copyright law, and to add to the literature in the area of historical research in law and economics.<sup>3</sup> Since the 1980s, copyright law has been subject to the investigation of law and economic scholars (e.g. Gordon 1982, Landes and Posner 1989), although studies on the efficiency of the copyright system dates back half a century earlier to Arnold Plant (1932).

The underlying objective of this paper is to counter the popular belief that modern copyright law was crafted to grant a monopoly right to authors and their assigns. Patterson (1968) writing on the history of copyright law, for example, laments that the 1710 Act was the point copyright law goes astray. He argues that the Act was simply a perpetuation in statutory form of publishers' interest. Hence, it is the intention of this paper to show that that was not the case. On the contrary, we find that the Parliament when passing the Copyright Act in 1710 was mindful of the ill-effects of the copyright they were creating, and thus introduced a range of features to counter the monopolistic effects of a copyright. More in particular, apart from solving the public goods problem of literary works, the Parliament had two purposes in mind. The first is to break the London booksellers' cartel,<sup>4</sup> and the second to end the "perpetual monopolies" in classical and popular titles owned by the London booksellers.

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1. I use the more unconventional term 'British' here instead of the usual 'English' because the Copyright Act of 1710 was equally applicable in England, Wales and Scotland. A copy of the Act is enclosed in the Appendix.

2. The bill was first presented to the Parliament on 12 December 1709, and received the royal assent on 5 April 1710 (Rose 1993, 42–47). Although many authors referred to it as the 1709 Act, John Feather rightly recommended that it be referred to as the 1710 Act (Saunders 1992, 51).

3. For a good discussion on the uses of history in law and economics, see Harris (2003).

4. Note that the early booksellers performed the dual roles of retailers and publishers.

In the first part of this paper, we recount the events leading to the making of the Copyright Act. In the second part, we examine the various features of this Act in the light of contemporary law and economic knowledge to show how they had the combined effect of limiting the monopolistic effect of a copyright.

## **Part I: The Copyright Story**

### **2.1.1 Copy-right and The Stationers' Company**

The history of Anglo-Saxon copyright can be traced to the Stationers' Company of London. In 1403, a guild of writers of text-letters, lymners, bookbinders, booksellers, and possibly parchminers, was formed in London (Blagden 1960, 22–23). After printing technology was brought to England by Caxton in 1477 (Blagden 1960, 23), the composition of the guild tended to consist mainly of printers and booksellers. Naturally, with the advent of the printing press, printed books were cheaper than hand-copied ones. Unfortunately, it also meant that pirating another's book would be comparatively easier. When piracy was easy, a prisoners' dilemma existed among the few printers, for each could free-ride on the other's investment and payment for manuscripts (Gordon 1992a).

How then, did the guild of printers and booksellers solve this prisoners' dilemma absent a copyright law as we understand it today? Presumably, they would have to appoint an arbiter among themselves, having power to enforce punishment against any free-riders. Secondly, the group of printers and booksellers would have to be small enough to monitor and for enforcement to be effective. In other words, the guild of printers and booksellers would have to be organised much like a cartel with the necessary barrier to entries (Blagden 1960, 22–23). Ideally, non-members had to be prevented from exercising the trade.

The minimum requirement for self-regulation in a trade group is a rule and an arbiter. The arbiter came in the form of two wardens appointed by the Mayor of London to oversee the behaviour and work of the craftsmen when the guild was established in 1403. They



were empowered to present bad and disloyal men for punishment, and were answerable to the Mayor who was appointed by the crown. This was the source of the wardens' enforcement power. Evidence of the rule came in the form of an early ordinance, of an unknown date between 1403 and 1557, which made it an offence to print a book before showing it to the wardens for approval, registering it in a register, and paying a fee (Blagden 1960, 32–33). In this way, the wardens would ensure that the book to be printed had not been owned by another printer or bookseller.

There remains, however, another problem. Non-members, especially those operating outside of London, were not subjected to the powers of the wardens. To expand the powers of the wardens, royal sanction was necessary. This too came eighty years after Caxton established a printer in London, with the grant of a royal charter.

With the proliferation of printed matters, the literate population and the reading public group expanded. Some writings were more critical of the crown, while others deemed scandalous against the church. Thus, a series of press regulations was instituted.<sup>5</sup>

The wardens too had to play their parts in controlling the press, by ensuring that they only approved books which were not illegal.<sup>6</sup> However, it could be easily conceived that the interest of the Stationers' Company, as the guild came to be known, was not in self-regulation, but in tackling piracy, minimising free-ridership, and establishing market power. The zeal of the crown in press regulation was the perfect opportunity for the Company to request for more control over printing in the whole of England. In 1542, the Stationers' Company requested a royal charter to give it greater power to control printing under the pretext of assisting the crown in regulating the press. Unfortunately this attempt went unheeded.

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5. For example, in June 1530 a proclamation ordered that new theological books in English were not to be sent to the press before they had been examined by the bishop of the diocese, and by a proclamation of 1538 no English book was to be printed in England without the approval of a royal licenser (Blagden 1960, 30).

6. Blagden (1960, 43) observes that "theoretically, [the Company's] approval was quite independent of any ecclesiastical or civil authorization which a royal injunction or an Act of Parliament might require; except that, in order to protect themselves, the Wardens often insisted that the entry could be allowed only if such outside authority were obtained."

However, as the years went by, it was clear that the crown was unable to keep the tide of seditious material at bay, and in 1557, Queen Mary Tudor acceded to the Stationers' Company request for a royal charter. Under the charter, the freemen of the company were given the usual privileges of being in a chartered company: the right forever to be a corporate body with perpetual succession, the power to take legal action and to make rules for their own governance, the right to meet together and to elect a Master and two Wardens, and the right to own property in the City or suburbs.

More importantly, the Stationers' Charter had terms which were unique to it. The preamble of the charter declares that the King and Queen, wishing to provide a suitable remedy against the seditious and heretical books which were daily printed and published, gave certain privileges to their beloved and faithful lieges, the ninety-seven Stationers, in addition to the normal rights of a company.<sup>7</sup> It was laid down, firstly that no one in the realm should exercise the art of printing, either himself or through an agent, unless he was a freemen of the Stationers' Company of London, or unless he had royal permission to do so; and secondly that the Master and Wardens of the Company were to have the right to search the houses and business premises of all printers, bookbinders and booksellers in the kingdom for any printed matter, to seize (and treat as they thought fit) anything printed contrary to any statute or proclamation, and to imprison anyone who printed without the proper qualification or resisted their search; such offenders were to remain in gaol for three months without trial and be fined five pounds, half of which was to go to the Crown and half to the Company (Blagden 1960, 21). At last, the powers of the wardens to search were expanded, and the Stationers' Company had an almost exclusive right to printing in the whole England.

Under the royal charter, it could be conceived that the wardens were playing two roles

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7. The preamble of the Stationers' Company charter reads: "Know ye that we, considering and manifestly perceiving that certain seditious and heretical books rhymes and treatises are daily published and printed by divers scandalous malicious schismatical and heretical persons, not only moving our subjects and leiges to sedition and disobedience against us, our crown and dignity, but also to renew and move very great and detestable heresies against the faith and sound catholic doctrine of Holy Mother Church, and wishing to provide a suitable remedy in this behalf" (Arber 1950, vol. 1, xxviii).

at the same time: one for the crown and another for members of the Company. For the first, they had to ensure, when approving a book, that it was not seditious, heretical, obscene or blasphemous (Sherman and Bentley 1999, 11), for their necks depended on it.<sup>8</sup> This, they performed rather well by requiring that an approval will only be given after the approval of the royal licenser had been sought. It was never recorded that a warden lost his head because of approving a book.

The second role was more difficult to play. They had to ensure that a book had not been registered earlier in another printer's or bookseller's name. To do this, a register was kept. Approval for printing would not be given if a book had been registered in another printer's or bookseller's name. And to maintain the cartel-like organisation, registration would only be given to a member of the Company. Further, the expanded power to search for illegal books throughout the kingdom meant that the Master and wardens of the Stationers' Company could use their enforcement powers against any printers who printed and booksellers who kept illegal or pirated copies of books (Blagden 1960, 120).

With the combination of approval-registration and the search and seizure power granted to the Master and wardens, we now have a rudimentary form of property right in books for printers and booksellers who were members of the Stationers' Company. The existence of this privately arranged copy-right<sup>9</sup> was criticised by a royal commission in 1583,<sup>10</sup> although by no means that the Stationers' copy-right arose spontaneously. Paterson observes from the Company's old registers, an evolution in the understanding of

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8. Blagden (1960, 43) suggests that under the terms of the Charter and the Injunction of 1559, "the officials of the Stationers might be held responsible for the publication of books which smacked of sedition or heresy."

9. I use 'copy-right' with a hyphen to denote the practice of the Stationers' Company claiming an exclusive right to print the manuscripts or copies they owned; while reserving the word 'copyright' to the legislative right.

10. "We find proued and confessed that the nature of bokes and printing is such, as it is not meete, nor can be without their vndoeinges of all sides, that sondrie men shold print one boke. And, therefore, where her Matie graunteth not priuilege, they [the Stationers] are enforced to haue a kinde of preuileges among them selues by ordinances of the companie whereby euerie first printer of any lawfull booke, presenting it in the hall, hath the same as seuerall to him self as any man hath any boke by her Matie preuilege.": State Papers Domestic Elizabeth, vol. 161, no. 1 (C); probably July 18th, 1583. Quoted from Blagden (1960, 42).

this copy-right. It started as “a licence to print” in the earliest entries; by the seventeenth century, a book or copy came to be understood as “belonging” to a particular member (Rose 1993, 14).

It has to be noted that up until this point, authors played no part in this early copy-right system. The author had no right apart from the ownership of his manuscript (Rose 1993, 17–18). A printer or bookseller would approach an author to buy his manuscript and proceed to register it at the Company. The author was merely bound by contract not to assist or sell the same manuscript to another printer or bookseller.<sup>11</sup>

Fortunately or unfortunately, this was not the end of the story. In the name of press regulation, further powers were granted to the wardens under subsequent royal decrees. For example, under a 1566 decree, any books which offended against the laws of the land or against the grant or injunction issued by Her Majesty, whether they were printed in England or abroad, were to be seized and brought to Stationers’ Hall; half of such books were at the royal disposal and half to be delivered to the seizer or informer. More specific power of search was granted to the Wardens or their deputies than the Charter gave them, particularly the right to enter warehouses at ports and to examine any mounds or bales suspected of containing books (Blagden 1960, 70).

In 1586, a new decree was made with more explicit control and powers to the Stationers’ Company. Recalling the Injunctions of 1559, no books were to be printed without licence by the proper civil or ecclesiastical authority; no books were to be printed contrary to any ordinance of the Company, i.e. the ordinance about the entering of copies and the respecting of the copies of others being the one particularly referred to. A printer’s punishment was the destruction of his press and type, disablement from ever printing again and six months’ imprisonment without bail; that for the booksellers and bookbinders was three months’ imprisonment. Further, wardens or their deputies have the rights to search the premises of any member of the book trade, to seize books which offended against the decree and to carry away offending printing materials; the defacement of letters and destruction of presses were to be done to the order of the Assistants (Blagden 1960, 71–72).

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11. An example of such contract terms was quoted by Rose (1993, 27–28).

In 1662, after the Courts of Star Chamber was abolished in 1641, Parliament enacted a Printing Licensing Act, known as such, for it required every licence to be printed verbatim at the beginning of each book (Blagden 1960, 154). This Licensing Act first lapsed in 1679, but was reinstated by the Parliament after King James II's accession, of which it lasted seven years when it finally lapsed in April 1695 (Blagden 1960, 174–175).

The ending of the Licensing Act in 1695 was an important event in the history of copyright. No longer did the Stationers' Company have the advantage of an enforcement power, meant for searching unlicensed and illegal books, to protect its copy-rights. The Glorious Revolution of 1688 proved that "the Tudor methods of government, under the shadow of which the Company had begun to play a real part of the world, were no longer workable" (Blagden 1960, 177). Thereafter between 1695 and 1707, ten unsuccessful attempts were made by the Stationers' Company at legislation to restore the Licensing Act or for registration of copyright (Saunders 1992, 51).

In December 1709, a group of major London booksellers and printers managed to petition for leave to bring in a bill "for securing to them the Property of Books, bought and obtained by them" (Rose 1993, 42–43). Unfortunately, the Act that the Stationers received for their efforts was not as what they had anticipated. When Edward Wortley's bill returned from the committees of the House of Commons and House of Lords, many key features which were drafted for the advantage of the Stationers had disappeared, replaced by those favoured by the Houses to restrict the monopoly enjoyed by the printers and booksellers. This bill became law on April 5 and came into force on April 10, 1710.

## **2.2 The Existence (or Non-Existence) of a Scottish Copy-right Law**

By 1282, Wales was under the political control of England, but the union between Scotland and England did not take place until the Scottish King James VI became the James I of England. The old Scottish Parliament was abolished in 1707, whereupon laws were made in London, although the administration of justice remained independent from that of

England. Therefore the possible existence of a Scottish copy-right law similar to England's is a valid question.

Prescott (1989, 455) suggests that "the real motive behind the first Copyright Act ... seems to have been an attempt to *export* copyright control to a region of Great Britain where the Stationers' Company's writ did not run [, i.e. Scotland]." However, this does not seem to be the case, at least not at the time the Act was made. First, the Act is the result of repeated attempts since the end of the Licensing Act in 1695 to have a law passed. At that time, Scotland and England were not in a Union yet. At most we can say is that the prospect of extending the London booksellers' control to Scotland was one of the motivations.

Secondly, there does not seem to be a healthy printing industry up north at the time of the Act as compared to the situation down south. This is important because the old system of copy-right came as a result of a printing industry. The first printing press was set up by Walter Chepman and Andrew Myllar in 1507 after James IV of Scotland gave leave to import a printing-press and type to print law books, breviaries and other works associated with the office of a king's printer (Plant 1974, 26). A record of books printed before 1700 shows that between 1505 and 1700, about four thousand titles were printed in Scotland, and there were about 65 printers in Edinburgh between 1557 and 1700, while Glasgow had only a handful in that same period (Aldis 1970).

Finally, decision of the Scottish Court of Session in *Hinton v. Donaldson* (Boswell 1774) lends evidence to the view that there was no recognisable common law copy-right prior to the first Copyright Act. One of the reasons for this position is that Scottish law which is based on Roman law, does not admit intangible property.

In conclusion, it must be said that a common law conception of copy-right must be wholly an English experience, commensurate with the need for some kind of self-organised form of protection against piracy in the growing printing industry in the seventeenth century.

## **Part II: The Copyright Act and Its Anti-Monopoly Features**

### **2.3 The Copyright Act of 1710**

The Act of 1710, introduced during the reign of Queen Anne, is commonly known as the Statute of Anne in the intellectual property circle.<sup>12</sup> The word ‘copyright’ was not used, although the concept embodied therein is clearly copyright. Titled “An Act for the Encourage of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned,” the Act contains eleven sections of which is reproduced in the appendix herein.

The Act first establishes an exclusive right in his work to the author or his assign. Thereafter, a range of interesting features were introduced to counter this exclusive right, perhaps rightly for fear of creating a monopoly. These anti-monopoly features are summarised under seven headings: authorship, limited term, non-discriminatory registration, price control, legal deposit, importation of foreign works, and what I call provisions relating to uncertain property rights in copyright. Rather than doing a section-by-section analysis of the Act, we shall examine these headings in turn. Before that, we shall look at the exclusive right created by the Statute of Anne.

### **2.4 Exclusive Right**

Section one of the Statute of Anne vests upon authors and their assigns the “sole liberty of printing and reprinting their books,” for a limited term. We can discuss this right in three parts: the creation, the registration, and the enforcement.

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12. 8 Anne, c. 19 (1710).

## 2.4.1 Creation

From an economic point of view, it is irrelevant whether a common law copy-right preexisted the Statute of Anne, such that the Act merely codified what was there; or whether copyright is a sole creation of the Statute. However, on a historical footing, two occasions arose when this question was examined. When the bill was first drafted by Wortley in 1709, the title of the bill reads “A Bill for the Encouragement of Learning and for *Securing* the Property of Copies of Books to the Rightful Owners thereof.” After the amendments by the committee of the whole House of Commons at its second reading, the word ‘vesting’ appeared for the first time in the bill. According to Rose (1993, 46), “whereas ‘securing’ implied that an extant right was confirmed, ‘vesting’ implied that a new right was conferred.” Furthermore section 9 of the Statute of Anne, which makes it a non-offence to printing a registered book prior to the coming into force of the Act, seems to indicate that Parliament did not recognise the preexistence of a copy-right prior to the Statute of Anne.

The main occasion where the question of this supposedly common law copyright was discussed was the case of *Donaldson v. Becket* some eighty years later. It was raised in relation to the existence and survival of the common law right which would have given it a perpetual protection. Although the eight common law judges sitting in the House of Lords favoured such a right,<sup>13</sup> the peers at the House, who had the ultimate say over the matter, voted overwhelmingly in favour of the term-limited statutory right. Thus, any perpetual common law right was effectively overridden. It should also be noted that a few years earlier the Scottish judges at the Court of Session decided against the idea of a common law copyright.<sup>14</sup>

It is not difficult to understand the House of Lords’ reluctance. As our above historical discussion of the Stationers’ Company showed, the so-claimed common law copyright was no common law. Indeed the Lord Chancellor, Lord Camden, asserted in the Parliament that the supposedly the common law rights were “founded on Patents, Privileges, Star-chamber

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13. According to the Journal of House of Lords, seven judges voted for and four against a common law copyright after publication.

14. *Hinton v. Donaldson* (1773), reported in Boswell (1774).



Decrees, and the Bye Laws of the Stationers Company; all of them the Effects of the grossest Tyranny and Usurpation; the very last Places in which [he would] have dreamt of finding the least Trace of the Common Law of this Kingdom” (*Cases of the Appellants* 1774, 48).

Since it was likely that common law did not anticipate a copy-right, or at least not in the form as suggested by the Stationers, why then did the Parliament create it? Standard neoclassical microeconomics texts have a ready answer. A writing, or any intellectual property for that matter, is a public good (Arrow 1962). Without state or legal intervention, there will be a market failure in supplying an optimal quantity of public good. The three standard solutions for a market failure in provision of a public good are grants, prizes and propertisation. Grants can be public grants or private grants. A public grant or a subsidy would entail expenditure from the public coffer, which generally means taxation. Provision of private grants in the form of patronage was popular for literary works until the middle of the eighteenth century. Unfortunately, as Viala (1985) observes, the system of literary patronage has the effect of forcing an author to change his style to suit the particular patronal imperative. A prize has more or less the same characteristics of a grant, except that many participants vie for the prize, and that the prize would have to be sufficiently large enough so that the expected benefit of the prize equals to the cost of creation. The winner takes the prize and the rest loses everything, including their investment in creation. All works that has been created belong to the public domain.

Propertisation, on the other hand, is not without its drawback. The main one being its contradiction with the very nature of a public good: non-excludability and non-rivalry in consumption (Samuelson 1954). By its nature, propertisation of a work of information, such as a literary work, entails conferring the author or owner an exclusive right to control over use and dissemination of his work. In other words, he gets a monopoly of a sort in that particular work that he owns. But once we recognise that the marginal cost of using information is zero, there will be a welfare loss, known as deadweight loss, resulting from under-utilisation when the property owner does not price discriminate perfectly and charges a monopoly price, while a potential consumer is willing to pay a price higher than the marginal cost but lower than the monopoly price. In Arrow’s words:

[A]ny information obtained should, ... from the welfare point of view, be available free of charge (apart from the costs of transmitting information). This insures optimal utilization of the information but of course provides no incentive for investment in research. In a free enterprise economy, inventive activity is supported by using the invention to create property rights; precisely to the extent that it is successful, there is an underutilization of the information. (1962, 616–617)

The “sole right and liberty” in this property as created by the Statute of Anne is an alienable property right, although no procedure is specified. It is likely that the Stationers Company’s existing contractual procedure is retained and recognised. From an efficiency point of view, the alienability of this copyright can be understood as follows. It is the authors’ comparative advantage to do what they do best, i.e. write. With an alienable right, the author would be able to concentrate on writing, sell his work for a lump sum, and leave the business of publishing and selling to the printer and bookseller, without needing to bother a bit over how his work is sold and distributed.

However, when the author’s reputation and the quality of his work are unknown, publishers might not want to risk supporting wholly an unknown author. Hence, it might be necessary to enter into a risk-sharing arrangement such as a royalty contract. In such a situation, an absolutely alienable right might not be necessary. But once authorial reputation is established, an assignment of the copyright by the author to a publisher has the advantage of dispensing with the agency and monitoring cost of the author. Interestingly, the *droit moral* or authors’ right developed in continental European countries has an inalienable component, known in the Anglo-American tradition as moral rights. This inalienable right has been subject to economic analysis with opposite conclusions by Cotter (1997) and Netanel (1993).

## 2.4.2 Registration

Section 2 makes registration of ownership at the Stationers’ Hall a prerequisite for a suit under the Statute of Anne, although non-registration does not affect the claim to a

copyright. In other words, registration does not make the right, but merely completes it.<sup>15</sup> Non registration was not fatal. Instances of obtaining an injunction from the Court of Chancery were not infrequent, earlier, on the ground of the so-called common law copyright,<sup>16</sup> but certainly later, for the protection of unpublished writings.<sup>17</sup>

The adoption of the Stationers' Company's register instead of creating a new one was indeed ingenious for two reasons. First, it pacified the Stationers' claim and gave them a piece of the new copyright action. More importantly, it prevented a possible rush to register all manners of existing work, whether the registrants were legitimate owners or not.<sup>18</sup> In this sense, there was no sudden regime change by the introduction of copyright. Rather, the Act allowed for a smooth transition from a Stationers' copy-right to a statutory copyright.

According to the Statute of Anne, the purpose of registration is evidentiary, i.e. so that people may not "through ignorance offend against" the Act. Further, the copyright register kept at the Stationers' Hall may be inspected free or charge, even though anecdotal records show that the clerks at the registry had solicited payment for inspection.<sup>19</sup> That aside, under the Act, anyone may request a certificate indicating registration of a title upon the payment of a fee not exceeding six pence.

From an economic point of view, registration upon payment of a fee has two advantages. First, it reduces tracing cost, which is the cost involved in tracing the current owner of a copyrighted work (Landes and Posner 1989, 361). It is obvious that use of a

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15. However in 1748 the Scottish Court of Session decided in *Midwinter v. Hamilton* that only if a work met the registration requirements of the Act of 1710 was it protected (Saunders 1992, 61).

16. The existence, or at least the survival, of any common law copyright was finally rejected by the a vote of majority of the peers in the House of Lords in *Donaldson v. Becket* (1774).

17. E.g. *Pope v. Curl* (1741) 2 Atk 342; 26 ER 608, for unpublished correspondences.

18. The American homesteading laws (Allen 1991) and the Internet domain names are two examples of a rush to establish property rights by early registration.

19. An anonymous author in a piece titled "Entered at Stationers' Hall" complained that he was asked one shilling per entry when he requested to examine the register in order to avoid using another author's title for his book (Blagden 1960, 273). In December 1870, C. H. Purday who wrote *Copyright: A Sketch of Its Rise and Progress* (1877) complained to the Board of Trade that he had been prevented from freely searching the copyright entries in the registry at Stationers' Hall (Blagden 1960, 267).

register of title reduces this cost as the ownership information can be obtained easily from the register.<sup>20</sup> There is, however, a shortcoming of the registration system introduced in the Statute of Anne. It is possible that the information in the register is not current because the right is not conferred by registration. An heir, for example, may not update his details in the register, by paying the fee of six pence, if he feels that the copyright has no value to him. Thus, a copier may still not be able to exploit freely a copyrighted work if the information he finds in the register could not help him in tracing the rightful owner. This arises because of the risk of a 'submarine' claim, i.e. a hidden copyright owner suddenly appears to claim damages for infringement. Although the shortcoming of the provision is to an extent mitigated by the registration prerequisite before any enforcement of right under the Act, the ideal situation is to make enforcement contingent to a registration of ownership prior to the unconsented exploitation, and the exploiter lodges a written declaration with the copyright registrar that he has failed to trace the copyright owner by this day.

The second use of a registration has its roots in welfare economics. According to the Pigouvian tradition (Pigou 1951), a tax equivalent to the social cost may be imposed against an economic actor to induce him to internalise the negative externality of his action. Taking the point that deadweight loss is a form of social cost, an appropriate registration fee may be collected to offset the social cost of propertising copyright. It is suspected that no country has ever imposed a Pigouvian tax on copyright, especially not the Statute of Anne, judging by its relatively modest fee. Also, the ability to price discriminate (Liebowitz 1986) and negotiate (Coase 1960) licensing is likely to be a more efficient approach to minimising deadweight loss.<sup>21</sup>

We mention that the primary function of registration in the Statute of Anne is evidential. The registry at the Stationers' Hall, however, does not keep a copy of the actual work being copyrighted, for the Act merely requires registration of details as previously practiced at the Stationers' Hall. Therefore, a system of legal deposit is used to solve the

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20. It is unfortunate that due to the requirement of no formalities in the Berne Convention for the Protection of Literary and Artistic Works 1886, registration as a basis of copyright was lost.

21. In the patent system, a hint of this philosophy may be gleaned from the increasing renewal fee to maintain a patent within its allowable term of protection (Cornelli and Schankerman 1999).

evidential problem. Copies of the registered books are deposited at prescribed libraries in England and Scotland. A further discussion on legal deposit follows below.

### 2.4.3 Enforcement

The Statute of Anne is clear that the “sole right and liberty of printing” is confined to books, although the preamble in section 1 mentions “other writings” once. This does not necessarily mean that writings not in the form of a book get no protection. In *Pope v. Curl* (1741), Lord Hardwicke sitting in the Court of Chancery was of the opinion that letters and sermons not originally intended for publication may also be protected under copyright when they are collected later as part of a book.

The second part of section 1 makes it an infringement for a person who is not the proprietor, to “print, reprint, or import, or cause to be printed, reprinted, or imported” any copyrighted book within its term of protection, without the consent of the proprietor. This consent has to be obtained in writing and signed in the presence of two or more credible witnesses. It is not clear from the language of this section, whether printing a derivative work such as a translation is an infringement. In *Burnet v. Chetwood* (1720) 2 Mer. 441; 35 E.R. 1008, the first case to come before an English court after the Statute of Anne, Lord Chancellor Macclesfield thought that “on account that the translator has bestowed his care and pains upon [his translation], and so [is] not within the prohibition of the act.” However, on the facts of the case, an injunction was granted on moral grounds, i.e. for censorship purpose.

*Burnet v. Chetwood* is not a definitive statement of law on derivative works then for two reasons. First, the court which heard this case was the Court of Chancery, which was not a common law court. The Court of Chancery makes its decisions based on moral conscience, equity and fairness, and not principles of law. Secondly, the statement about a translation as not prohibited by the Act was made as an *obiter dictum*, as a decision contrary to the statement was in fact made. Many years later, we would find Parliament to have included control of certain types of derivative works as part of the exclusive rights of the copyright owner.

Some research works on the economic analysis of derivative works in copyright have been published in recent years, notably from the perspective of the American-inspired fair use exceptions. I must honestly admit that the line between making a derivative work and use of a copyright is a fine one, and hence many fair use explanations by Gordon (1982) may apply. An economic analysis of derivatives is inconclusive whether they should be subject to the same protection as a reproduction (Landes and Posner 1989; Gordon 1992b). Ultimately, it depends on various factors. Firstly, if the author could recoup his creation cost without resorting to charging for derivatives, the law should allow derivatives, for it minimises deadweight loss; conversely, if the author has factored in the value of any derivative works at the time of creation, it might be necessary to allow control over derivative works to solve the provision of public goods problem.

Secondly, if the derivatives are sufficient substitutes to the originals, it might cause a market failure if derivatives are not prevented. On the other hand, if the derivatives do not compete with the original, but the copyright owner may strategically prevent its distribution, for it might be used as a negative quality signal of the original, social welfare calls for allowing these derivatives, for quality signals enhance market efficiency and are public goods. This is the logic behind the English fair dealing exceptions for criticism or review. Also, there might be situations where a derivative work may be embarrassing to the author but yields a social benefit, such as when a parody is made. In the United States, the fair use doctrine allows for such derivatives (Merges 1993; Gordon 2000). Finally, recent research on anticommons show that if a derivative work depends on a few copyrights separately owned, the fair use exception may be a way to minimise deadweight losses resulting from different copyright owners trying to extract monopoly prices (Depoorter and Parisi 2002). An example of such a derivative work is a database containing archive of old news articles as in *New York Times v. Tasini* (Parisi and Sevchenko 2002).

Although the economic justification of derivative works is inconclusive, the protection of copyrighted works against 'printing' and 'importation' in the Statute of Anne is historical. The Stationers' copy-right only came about after the advent of the printing press in England. Indeed the need for copyright arose as a consequence of the printing press. Prior to the printing press, books were copied by hand. The bookseller's job

was to take orders, commission scribes to a copy of the book, and thereafter send the sheets for binding. Thus producing a copy of a book was a time-consuming and expensive venture. Books were expensive and few except for the very rich could afford one. To get books written, wealthy patrons provided for the writers in the time of literary patronage. This age of literary patronage came to an end with the printed press. With the press, the marginal cost of a book was substantially lowered. This opened up a market for the printed books, and consequently the number of readers and the literate went up. This in turned inspired more writers. As time went on, the number of writers grew and it was becoming increasingly difficult for potential patrons to identify deserving patronees. When literary patronage ended, it was replaced by the system of copy-right. As we have seen, the concern of copy-right was that of the printers and booksellers. In order to capture the value of their trade, it was only reasonable for them ask for protection against competing printers and imports printed elsewhere. The exclusive right only came to be expanded when other groups of artisan came to petition for similar rights in the goods of their trade.

The Statute of Anne provides two kinds of remedy for a breach of copyright: forfeiture and fines. Upon finding an infringement, the copyright owner may forfeit all infringing books and sheets, and have the liberty to “damask and make waste paper of them.” Further, the copyright owner may also sue to claim half of the fine of one penny for each sheet collected. Apart from these two statutory remedies, a copyright owner could also seek equitable remedies from the Court of Chancery which include injunctions and accounts for profits.

It is optimal, for most of the time, to protected copyright by a property rule, à la Calabresi and Melamed (1972), in the form of injunctions or punitive damages, and possibly criminal punishments. However, there are occasions which call for the use of a liability rule where restitution or compulsory license may be in order. A special case of a liability rule is when payment is zero. This is the case for the fair use or fair dealing exceptions, where a technical infringement is allowed. However, it is unfortunate that as far as property is concerned, English common law has developed mainly along the line of property rules. Except in the area of accident laws, common law judges are almost powerless to grant a liability rule remedy in property cases, and intellectual property is not

an exception.<sup>22</sup>

Arguably, the statutory fine of one penny per sheet as prescribed in the Statute of Anne is a hefty sum in 1710, in comparison to the cost of registering a book at six pence. If the rationale behind the fine is to protect copyright by a property rule, this amount may be reasonable. Gary Becker's (1968) model on crime and punishment is useful here in understanding the effect of the statutory fine on the incentive to pirate. Assuming a copyright pirate is a rational actor, he will weigh his expected cost and expected benefit of pirating and will only pirate a book when the expected cost is lower than the expected benefit. The expected benefit is made up of the marginal benefit per sheet multiply by the probability of a successful sale; and the expected cost of the cost per sheet, plus the statutory fine and loss of the pirated material multiply by the probability of being caught. Therefore, to increase the expected cost of piracy, the relevant authorities such as the Stationers' Company and the copyright owners will have to increase enforcement and detection of piracy.

The design of the enforcement mechanism in the Statute of Anne has some limitations. If enforcement is solely a private affair, there might be less than an optimal level of enforcement, as private individuals might not have the resources and skills in effectively enforcing their property rights. Collective enforcement of copyright has the advantage of scale economies because detection of copyright violation is a quasi-public good.<sup>23</sup> Obviously, the Stationers' Company would be in a good position to play the role of a collective agency representing booksellers and printers who owned copyrights.

## 2.5 Copyright as Market Failure

If by a market failure we mean the allocation achieved by the market is inefficient, it is easy to see how copyright may lead to a market failure. The usual argument that copyright is a

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22. The United States Supreme Court decision in *New York Times Co. v. Tasini*, 533 U.S. 483 (2001) is a fine example of a case which might do well with a liability rule as a solution.

23. Prosecution in enforcement is semi-excludable where violation of non-member's copyright is simply ignored.



source of market failure goes like this. Copyright creates a monopoly, with some limited exceptions, in the copyright owner for that particular work. Thus, in the absence of price discrimination, a copyright owner who is a price setter, will charge a profit maximising price, which is the monopoly price. When the monopoly price is higher than the marginal cost, there will be a deadweight loss. This deadweight loss arises when some of the potential users have a willingness to pay which are higher than the marginal cost, but lower than the monopoly price.

The perception of the deadweight loss, which is not natural but arising as a result of the legal institution, is aggravated when potential users could obtain pirated copies of the copyrighted work, or make a copy themselves, at a cheaper price. Normally, for a non-protected goods such as works in the public domain, users are legally allowed to copy whatever things they want if the total cost of making them is cheaper. Similarly, if a manufacturer could produce a non-protected good at a cheaper cost than the market price, they may enter the market. Therefore, deadweight loss is a reflection of the loss opportunity to improve social welfare because of monopoly pricing.

The usual reason given for granting such an exclusive right to a copyright owner is that absent such a right, the creator will have insufficient incentive to create works of “mental labour” (Sherman and Bentley 1999). This is because works of mental labour have the characteristics of a public good, which is nonexcludability and inexhaustibility (Gordon and Bone 2000, 191). Without an exclusive right, the creator or his assign will have to compete with free-riders who do not share the fixed cost of creation.

The need to recoup fixed cost leads us back to monopoly pricing. Arguably, where the fixed cost is low, it is possible to recoup it from the normal profit even when the market price is at marginal cost. But we have to recognise that monopoly pricing is a natural consequence of having a monopoly power. Where the number of players is small such as in a natural monopoly industry, we usually find government price regulation as a way of countering the effects of a monopoly. The market price will then be fixed by the regulators at, or at slightly higher than, the marginal cost. But price regulation is bound to be unworkable in copyright, because of the large number of copyrighted works and the problem of asymmetric information. It is costly, difficult, and in fact impossible for the

regulators to know accurately the fixed cost of creation. Even if accounting cost can be determined, creators of works of mental labour will have the incentive to be X-inefficient. Thus, copyright law basically takes a hands-off approach and leaves the determination of market prices to the copyright owner.

The welfare losses of a monopoly power in copyright can be reduced through two major ways. One is to allow substitutes, albeit not necessarily perfect ones. Anyone is allowed to independently create a substitute without referring to the copyrighted work, and this rule applies even when the substitute is identical or perfect. On the other hand, borrowing to create an imperfect substitute is not allowed without the consent of the first copyright owner, unless it falls within some form of legal exceptions. Legal doctrines such as fair use and fair dealing allow borrowing to create substitutes where the transaction cost of licensing is high (Gordon 1982). In all other cases, borrowing to create a perfect substitute is almost impossible.

By allowing competing substitutes in the copyright market, the monopoly power from a copyright is tremendously reduced. Instead of having markets of pure monopoly, we generally find monopolistic competition. Although not as efficient as the idealised situation of perfect competition, a market of monopolistic competition substantially reduces the welfare losses from a monopoly. This is especially so when the cross elasticity of demand of a copyrighted work is high.

The second way of reducing monopoly power in copyright is more controversial and less equitable. It is to grant the copyright owner the privilege of price discrimination, i.e. to charge different prices to different users either based on an observable difference in willingness to pay, class of users, or subtle product differentiation. Simply, price discrimination allows a copyright owner to sell at different prices and thus translate the deadweight loss to mainly producer's surplus. This is the argument that price discrimination increases allocative efficiency (Demsetz 1970). More recently, Meurer (2001) observes that many features of copyright law facilitate or impede the practice of price discrimination; and price discrimination has significant negative as well as positive effects on social welfare.

As for the Copyright Act of 1710, we can observe that it focuses more on restricting the copyright owners' monopoly power as a means to cure the market failure of a copyright, than to facilitate price discrimination, although it is not wholly impossible for it to achieve the latter.

## 2.6 Authorship

It is said that the introduction in copyright of authorship was the principal motivation for the British Parliament to accept a petition to enact a copyright legislation after ten unsuccessful lobby attempts by the Stationers' Company. If we recall earlier, an author gets no place in the Stationers' scheme of copy-right. What authors had was just a right to sell to one of the Stationers his copy, who would then proceed to register the copy in the Stationers' Company register. Also, the author who prints his book on his own initiative faces the risk of piracy for the Stationers' Company rarely opens its register to non-members or protects their rights.<sup>24</sup>

Defoe's (1704, 27–28) call for a law to protect authorial rights is probably the earliest recorded instance in English history (Rose 1993, 35). This followed an earlier Parliamentary edict of 1642 requiring the author's name and his consent to be printed on the title page of a book, as an initial response to the flood of anonymous publications at the fall of the Star Chamber in 1641 (Rose 1993, 22). The edict, although short-lived, granted a property right to authors to grant consent or to veto the publication of a book. Presumably, it created an economic right and allowed an author to press for a higher payment for his work.

The Stationers first introduced authorship in a petition to Parliament for a bill in 1707. John Feather (1980, 42, n. 59) speculates that the bill failed because the advocates of

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24. Blagden (1960, 41) notes that on occasions, a non-member tradesman such as a Draper was given access to the copy-right register. C.f., an order of the Court of Assistants of the Stationers' Company in December 1607 preventing its wardens from entering in the register any book except for a member of the Company resident in or near London; and that no member was to act as a cover for a non-member (Blagden 1960, 110).

copyright managed to get licensing clauses tacked on to it. A subsequent petition in 1709 reintroduced the plea of the authorship, and this was successfully carried to the 1710 Act.

Under the 1710 Act, any author, his assign, or any person for that matter may seek copyright registration. The effect is to break the booksellers' cartel in two ways.<sup>25</sup> First, authors may choose to register the copyright to himself and market his work without the help of a bookseller. Secondly, there will be potentially more buyers for an author's work, for anyone may now own a copyright. As a result, we could presume that authors would get a higher remuneration for his work as the number of potential buyers or publishers increase. Consequently, the number and variety of works too will increase. This increase in the number of titles in the market has a positive effect on social welfare. As more books are published, there will be more diversity to satisfy different consumers' preferences. Further, more titles would mean higher substitutability, which would theoretically increase the price elasticity of demand, and therefore drive down the monopoly prices.

The positive effect of this legislative innovation was not realised until more than half a century later. Collins (1927, 15) characterises the eighteenth century as the age of cooperation among the London booksellers, but by the nineteenth century competition. At least three major factors contributed to this shift in trend. First, literacy rate has gone up by the second half of the eighteenth century, thus increasing the demand for printed words. Secondly, the House of Lords' 1774 decision in *Donaldson v. Becket* rejected the booksellers' claim of a perpetual common law copyright surviving the statutory limitation. This sounded the death knell to the booksellers' monopoly on classical and popular titles, with the effect that any printer could sell it at marginal cost. And finally, since the end of the Licensing Act about a century earlier, the number of printers and booksellers from Scotland and the English provinces has multiplied, thus increasing competition in the

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25. By the eighteenth century, printers had long been subsidiary and had ceased to be the dominant factor in publishing; they were now merely agents hired by the booksellers and shut out from any participation in the higher walks of the trade (Collins 1927, 16). My theory is that booksellers have better information about the market and thus be in a better position to extract monopoly rent. Further, competition among printers drove down the price of printing. Also in this picture is an entry barrier to become a bookseller, where the London booksellers prevent others from owning the copy-right to profitable titles.

market place to a certain extent.

## 2.7 Limited Term

The second innovation introduced by the Parliament in the Statute of Anne was a limitation of term. For books which have been printed or acquired for printing before 10 April 1710, the commencement date of the Act, copyright term was twenty one years. For books which have not been printed or published, and for that matter uncomposed, the term of copyright was fourteen years from the day of first publication. This was an important departure from the Stationers' ancient practice of a perpetual copy-right. It was, in effect, an abrogation of the Stationers' monopolies at the stroke of a pen.

The idea of limiting the copyright term was inspired by two sources: John Locke and the Statute of Monopolies. Observing the monopolistic practices of the London booksellers, John Locke was offended by the "ignorant and lazy" stationers' ability to restrict the printing and importation of new editions of ancient writers. He therefore suggested, in a memorandum, to limit the literary property of a copyright owner to a certain number of years after the death of the author, or, fifty or seventy years from the first printing of the book (Locke 1694). Understandably, Wortley's bill did not have a limitation of term, for the Stationers were adamant on maintaining their perpetual copy-rights. Instead the House of Commons introduced this most important change. To fix the term, the Commons looked at the old Statute of Monopolies which governed patents for mechanical inventions (Rose 1993, 44–45). Accordingly, new inventions could be patented for fourteen years, while existing patents were reduced to a twenty-one-year protection.

The term of protection in copyright and patents is one of the most studied topics by economists in the area of intellect property law (see Nordhaus 1969; Liebowitz 1986). Landes and Posner (2003, 475–485) identify six reasons commonly held by economists for limiting the term of copyright: (1) tracing cost increase with the length of copyright protection; (2) transaction costs may be prohibitive if creators of new intellectual property

must obtain licenses to use all the previous intellectual property they seek to incorporate; (3) because intellectual property is a public good, any positive price for its use will induce both consumers and creators of subsequent intellectual property to substitute inputs that cost society more to produce or are of lower quality, assuming (realistically however) that copyright holders cannot perfectly price discriminate; (4) because of discounting to present value, incentives to create intellectual property are not materially affected by cutting off intellectual property rights after many years, lucrative new markets for the copyright work, unforeseen when the work was created, emerged; (5) in any event, retroactive extensions of copyright should not be granted, because such extensions do not affect the incentive to create works already in existence; but (6) the possibility of such extensions invites rent-seeking. In view of continual updates and exploitation of copyrighted cartoon characters by their owners beyond the statutory term of protection,<sup>26</sup> Landes and Posner suggest an alternative system of copyright term based on an indefinitely renewable registration, much like the one for trade marks.

Speaking in a Parliamentary debate, Lord Macaulay cautioned against extending the copyright term. The famous statesman, sounding like an economist, casts a monopoly as an evil, and that the evil is proportionate to its length of duration. On the other hand, he notes that “an advantage that is to be enjoyed more than half a century after we are dead, by somebody, we know not by whom, perhaps by somebody unborn, by somebody utterly unconnected with us, is really no motive at all to action” (Macaulay 1841, 199). In a more formal way, Liebowitz (1986) describes the same the marginal benefit of a copyright as decreasing, and the marginal cost increasing, over time. This justifies, in theory, a limited copyright term, at the point when the marginal benefit equals to marginal cost. In practice, each piece of copyrighted work would have different marginal rate, and the legislature would be hard pressed to get any accurate information or to set an optimal term.

It is interesting to note that the House of Lords added a section 11 to the bill as amended by the House of Commons. At the expiry of fourteen year term, if the author is still living, the copyright reverts back to him for another term of fourteen years. The idea is that the

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26. See the U.S. Copyright Term Extension Act 1998, and recently, Supreme Court decision *Eldred v. Ashcroft*, 537 U.S. (2003).

author could have a second term of benefit of his work if he was living. The rationale for this is difficult to understand from an economic point of view. Extending copyright term *ex-post* creation has no bearing on the incentive to create. Making it contingent on being living could only be explained as creating an incentive for the author to live longer, although that might sound preposterous since one's death is an uncertain event. However, Tor and Oliar (2002) in a recent article tried to show, using behavioural economics, that copyright term contingent on life could be a more effective incentive than a mere fixed term.

## 2.8 Non-Discriminatory Registration

Having in theory lost their perpetual monopolies through the limited term clause, the London Stationers were given back a role in the administration of the new copyright. The register that they have diligently kept for 150 years now becomes the copyright register under the Act. This was important, for the ownership of the twenty-one year copyright for published books was to be determined from this register. Also, it was foreseeable that the Stationers would be the principal registrants of copyright in the immediate future, and hence it was sensible for them to carry on the practice of using their register.

A major difference in the adoption the Stationers' register under the new copyright regime is that registration is open to anyone, and not merely to members of the Stationers' Company as previously practised. As an added measure to prevent the clerk of the Stationers' Hall from refusing a registration of copyright, section 3 allows a registrant to advertise a notice in the Gazette of such refusal, with the usual witness requirement, and thereafter claim twenty pounds from the clerk. In such cases, the public notice is equivalent to a record of registration. Clearly, this is another measure by the Parliament to break the booksellers' cartel.

## 2.9 Price Control

Another legislative innovation by the Parliament in limiting the negative effect of a market power by the copyright owners is price control. Although we mention previously that price regulation is a function of modern day regulators on natural monopoly, and that information cost would make it infeasible to implement price control on copyrights, the Statute of Anne is unique in the sense that it tries to implement an *ex-post* price control as compared to an *ex-ante* price control found in natural monopoly industries nowadays.

What it means by *ex-post* price control is that a consumer, after observing the market price of a book, may make a complain to a regulator that the price set for a book is too “high and unreasonable”. The interesting thing about this approach is that section 4 provides a list of forums to complain to. This list includes non-judicial personnel such as the Lord Archbishop of Canterbury, the Lord Keeper of the Great Seal of Great Britain, the Lord Bishop of London, the Vice Chancellors of the University of Oxford and University of Cambridge, and the Rector of the College of Edinburgh. Upon enquiring and examining the complaint, the official or the judge acting as a regulator may “limit and settle the price” and seek to advertise the new price in the Gazette. Failure to adhered to the set price may attract a penalty of five pound per offending book sold or offered for sale. Further, the complainant may also claim cost from the bookseller.

It is not clear how effective this scheme of judicial price control was, and how often it was evoked. Without further historical evidence, it is impossible to say whether this section was effective in curtailing the booksellers’ monopoly. Rational apathy would probably deter most people from complaining to the regulators, unless he is a public-spirited one. On the other hand, not having complete and accurate information over the cost of production may prevent a successful complaint. Therefore, it is speculated here that this price control section was not very successful. In any event, this scheme was abandoned in later Acts.



## 2.10 Legal Deposit

Section 5 formalised a tradition which can be traced to an agreement in 1610 between the Stationers' Company and Sir Thomas Bodley for the former to deliver a free copy of every book printed in England to the latter's library in Oxford. However compliance of this was not successful, so in 1637 the Chancellor of Oxford University used his influence in the Star Chamber to obtain a decree with a penalty of imprisonment and a heavy fine for non-compliance (Bell 1977).

In the Statute of Anne version, the number of copies for this legal deposit has been increased to nine. Copies are to be deposited with the warehouse-keeper of the Stationers' Company before publication. Four libraries in England and five in Scotland were to be entitled to one each. Penalty for non-compliance is five pound plus the value of the non-delivered copy. Naturally the London booksellers were not happy with this arrangement. It could be perceived that an effective library collection based on free legal deposits would affect the revenue from sales. Hence, it is not difficult to imagine the booksellers orchestrating a rebellion against this "library tax" (Feather 1988).

This concept of legal deposit was started by King Francis I of France. In 1537 he ordered every printer and publisher in France to forward to the Royal Library at Blois a copy of every newly published book (Bell 1977). Failure to do so entailed a punishment of forfeiture of the whole edition and an arbitrary fine. It proved successful in establishing a sizable library collection with little cost, and became a permanent and tangible record of the country's literary history.

Legal deposit could rightly be considered as a tax. As a tax, it transfers wealth from the booksellers in the form of the cost of a book, to the recipient library, while at the same time yielding an expected improvement in social welfare. From an economic point of view, legal deposit plays an important role in the system of copyright. First, it allows access to a published work, normally, below the market price. And when the work is out of print even though still within its copyright term, it lowers the transaction cost of access, even when the user has a willingness to pay higher than the previous market price. More importantly, it acts as a repository for the public domain when the copyright of a

work expires. This has some equivalence to the filing and disclosure rule in patent law. A deposited work can be used as evidence of the work so copyrighted. Finally, legal deposit facilitates creating of a national bibliography indicating the literary stock of a nation. A complete bibliography prevents duplication of sunk research costs.

## **2.11 Importation of Foreign Works**

The Statute of Anne is only concerned with works registered in the Stationers' Company register, and more importantly books written in the English language. Section 7 allows "the importation, vending, or selling of any books in Greek, Latin, or any other foreign language printed beyond the seas." This obviously has the effect of encouraging local authors to write in English instead of Greek or Latin. Another is to prevent local booksellers from holding effective copyright in foreign books. Thus it might be imagined that in the short run, foreign books will be imported following the rejection of a monopoly on foreign books, but in the long run, local booksellers may be slow in bringing and promoting foreign works in the face of possible competition and free-ridership on promotion cost.

## **2.12 Uncertain Property Rights**

Sections 8 and 10 deals with what I call uncertain property rights. Section 8 allows a defendant claim to cost if the suit against him is unsuccessful. Although quite a usual procedure in courts nowadays, it was important for it creates a disincentive against frivolous threat of infringement. In a way, increasing the expected cost of litigation encourages the copyright owner to ascertain his rights before making a claim. It also lightens other printers and booksellers' fear of being sued based on an uncertain rights. This is because copyright does not have physicality as proof of ownership. Instead, it might be necessary to prove ownership through a paper trail.

Section 10 can be seen as further strengthening the argument of uncertain property

rights in copyright. It requires the copyright owner to bring a suit against an infringer within three months of the infringing action. Failure to do so will cause the suit to be avoided and cease to have an effect. Again, it reduces the uncertainty in the long term of whether a book is actually protected by copyright. In some sense, it lowers the incentive of “suspect” copyright owners to use an protracted threat to sue to gain a first-mover’s advantage. The combined effects of these two provisions can be seen as to reduce the abusive power and threats of the London booksellers against competing printers and booksellers who purported to print non-copyrighted books.

## **2.13 Conclusion**

In this paper, we have looked at the historical events leading to the first British Copyright Act. We show that it was the opportunity to break the London’s booksellers monopolies that prompted the British Parliament to enact the Act. Although the preamble of the Act, as advanced by the Stationers, gave market failure as the justification, the content and structure clearly took an anti-monopoly stance. To further break the London booksellers cartel in the printed words, the British Parliament, in enacting the Copyright Act of 1710, introduced authorship and non-discriminatory registration. Having understood the social costs of perpetual monopoly in books, the concept of limited term was implemented. Other innovations such as price control allowed the occasional regulation of monopoly pricing. Legal deposits and importation of foreign books increased substitution and lowered the market power of booksellers. Finally, provisions against uncertain property rights reduced the practical threat value of booksellers over printing of uncopyrighted works. History has shown that this was not successful immediately after the enactment of the Act, but in the long run, it did change the whole face of the book trade.

One aspect that the Act was blaringly silent was the boundary of protection for a work. The Act is clearly written to tackle the problem of wholesale piracy, but it is vague as to the extent imperfect substitutes are allowed. The solution to this question only came about later in the years through a series of court decisions introducing innovative doctrines to fine tune the boundary of copyright protection.

By and large, the impact and contribution of the Copyright Act of 1710 to modern copyright law should be acknowledged. Although many new developments have thereafter surfaced in copyright law, copyright as we understand today was embryonic in the 1710 Act. This aspect of history should not be ignored in the study of law and economics of copyright.

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## Appendix

### Anno Octavo Annæ Reginæ.

(Statute of Anne, available from <http://www.copyrighthistory.com/anne.html>)

*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.*

[1] Whereas Printers, Booksellers, and other Persons, have of late frequently taken the Liberty of Printing, Reprinting, and Publishing, or causing to be Printed, Reprinted, and Published Books, and other Writings, without the Consent of the Authors or Proprietors of such Books and Writings, to their very great Detriment, and too often to the Ruin of them and their Families: For Preventing therefore such Practices for the future, and for the Encouragement of Learned Men to Compose and Write useful Books; May it please Your Majesty, that it may be Enacted, and be it Enacted by the Queens most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons in this present Parliament Assembled, and by the Authority of the same, That from and after the Tenth Day of *April*, One thousand seven hundred and ten, the Author of any Book or Books already Printed, who hath not Transferred to any other the Copy or Copies of such Book or Books, Share or Shares thereof, or the Bookseller or Booksellers, Printer or Printers, or other Person or Persons, who hath or have Purchased or Acquired the Copy or Copies of any Book or Books, in order to Print or Reprint the same, shall have the sole Right and Liberty of Printing such Book and Books for the Term of One and twenty Years, to Commence from the said Tenth Day of *April*, and no longer; and that the Author of any Book or Books already Composed and not Printed and Published, or that shall hereafter be Composed, and his Assignee, or Assigns, shall have the sole Liberty of Printing and Reprinting such Book and Books for the Term of fourteen Years, to Commence from the Day of the First Publishing the same, and no longer; And that if any other Bookseller, Printer, or other Person whatsoever, from and after the Tenth Day of *April*, One thousand seven hundred and ten, within the times Granted and Limited by

this Act, as aforesaid, shall Print, Reprint, or Import, or cause to be Printed, Reprinted, or Imported any such Book or Books, without the Consent of the Proprietor or Proprietors thereof first had and obtained in Writing, Signed in the Presence of Two or more Credible Witnesses; or knowing the same to be so Printed or Reprinted, without the Consent of the Proprietors, shall Sell, Publish, or Expose to Sale, or cause to be Sold, Published, or Exposed to Sale, any such Book or Books, without such Consent first had and obtained, as aforesaid, Then such Offender or Offenders shall Forfeit such Book or Books, and all and every Sheet or Sheets, being part of such Book or Books, to the Proprietor or Proprietors of the Copy thereof, who shall forthwith Damask and make Waste-Paper of them: And further, That every such Offender or Offenders, shall Forfeit One Penny for every sheet which shall be found in his, her, or their Custody, either Printed or Printing, Published or Exposed to Sale, contrary to the true intent and meaning of this Act, the one Moiety thereof to the Queens most Excellent Majesty, Her Heirs and Successors, and the other Moiety thereof to any Person or Persons that shall Sue for the same, to be Recovered in any of Her Majesties Courts of Record at *Westminster*, by Action of Debt, Bill, Plaint, or Information, in which no Wager of Law, Essoign, Privilege, or Protection, or more than one Imparlance, shall be allowed.

[2] And whereas many Persons may through Ignorance Offend against this Act, unless some Provision be made whereby the Property in every such Book, as is intended by this Act to be Secured to the proprietor or Proprietors thereof, may be ascertained, as likewise the Consent of such Proprietor or Proprietors for the Printing or Reprinting of such Book or Books may from time to time be known; Be it therefore further Enacted by the Authority aforesaid, That nothing in this Act contained shall be construed to extend to subject any Bookseller, Printer, or other Person whatsoever, to the Forfeitures or Penalties therein mentioned, for or by reason of the Printing or Reprinting of any Book or Books without such Consent, as aforesaid, unless the Title to the Copy of such Book or Books hereafter Published shall, before such Publication be Entred, in the Register-Book of the Company of Stationers, in such manner as hath been usual, which Register-Book shall at all times be kept at the Hall of the said Company, and unless such Consent of the Proprietor or Proprietors be in like manner Entred, as aforesaid, for every of which several Entries, Six Pence shall be Paid, and no more; which said Register-Book may, at all Seasonable

[sic; should be: Reasonable] and Convenient times, be Resorted to, and Inspected by any Bookseller, Printer, or other Person, for the Purposes before mentioned, without any Fee or Reward; and the Clerk of the said Company of *Stationers*, shall, when and as often as thereunto required, give a Certificate under his Hand of such Entry or Entries, and for every such Certificate, may take a Fee not exceeding Six Pence.

[3] Provided nevertheless, That if the Clerk of the said Company of *Stationers*, for the time being shall Refuse or Neglect to Register, or make such Entry or Entries, or to give such Certificate, being thereunto Required by the Author or Proprietor of such Copy or Copies, in the Presence of Two or more Credible Witnesses, That then such Person and Persons so refusing, Notice being first duly given of such Refusal, by an Advertisement in the *Gazette*, shall have the like Benefit, as if such Entry or Entries, Certificate or Certificates had been duly made and given; and that the Clerks so refusing, shall, for any such Offence, Forfeit to the Proprietor of such Copy or Copies the Sum of Twenty Pounds, to be Recovered in any of Her Majesties Courts of Record at *Westminster*, by Action of Debt, Bill, Plaint, or Information, in which no Wager of Law, Essoign, Privilege or Protection, or more than one Imparlance shall be allowed.

[4] Provided nevertheless, and it is hereby further Enacted by the Authority aforesaid, That if any Bookseller or Booksellers, Printer or Printers, shall, after the said Five and twentieth Day of *March*, One thousand seven hundred and ten, set a Price upon, or Sell or Expose to Sale, any Book or Books at such a Price or Rate as shall be Conceived by any Person or Persons to be High and Unreasonable; It shall and may be Lawful for any Person or Persons to make Complaint thereof to the Lord Archbishop of *Canterbury* for the time being; the Lord Chancellor, or Lord Keeper of the Great Seal of *Great Britain* for the time being; the Lord Bishop of *London* for the time being; the Lord Chief Justice of the Court of Queens Bench, the Lord Chief Justice of the Court of Common Pleas, the Lord Chief Baron of the Court of Exchequer, for the time being; the Vice-Chancellors of the Two Universities for the time being, in that part of *Great Britain* called *England*; the Lord President of the Sessions for the time being; the Lord Justice General for the time being; the Lord Chief Baron of the Exchequer for the time being; the Rector of the College of *Edinburgh* for the time being, in that part of *Great Britain* called *Scotland*; who,

or any one of them, shall and have hereby full Power and Authority from time to time, to Send for, Summon, or Call before him or them such Bookseller or Booksellers, Printer or Printers, and to Examine and Enquire of the reason of the Dearness and Inhauncement of the Price or Value of such Book or Books by him or them so Sold or Exposed to Sale; and if upon such Enquiry and Examination it shall be found, that the Price of such Book or Books is Inhaunced, or any wise too High or Unreasonable, Then and in such case, the said Archbishop of *Canterbury*, Lord Chancellor or Lord Keeper, Bishop of *London*, two Chief Justices, Chief Baron, Vice-Chancellors of the Universities, in that part of *Great Britain* called *England*, and the said Lord President of the Sessions, Lord Justice General, Lord Chief Baron, and Rector of the College of *Edinburgh*, in that part of *Great Britain* called *Scotland*, or any one or more of them, so Enquiring and Examining, have hereby full Power and Authority to Reform and Redress the same, and to Limit and Settle the Price of every such Printed Book and Books, from time to time, according to the best of their Judgements, and as to them shall seem Just and Reasonable; and in case of Alteration of the Rate or Price from what was Set or Demanded by such Bookseller or Booksellers, Printer or Printers, to Award and Order such Bookseller and Booksellers, Printer and Printers, to Pay all the Costs and Charges that the Person or Persons so Complaining shall be put unto, by reason of such Complaint, and of the causing such Rate or Price to be so Limited and Settled; all which shall be done by the said Archbishop of *Canterbury*, Lord Chancellor, or Lord Keeper, Bishop of *London*, two Chief Justices, Chief Baron, Vice Chancellors of the Two Universities, in that part of *Great Britain* called *England*, and the said Lord President of the Sessions, Lord Justice General, Lord Chief Baron, and Rector of the College of *Edinburgh*, in that part of *Great Britain* called *Scotland*, or any one of them, by Writing under their Hands and Seals, and thereof Publick Notice shall be forthwith given by the said Bookseller or Booksellers, Printer or Printers, by an Advertisement in the *Gazette*; and if any Bookseller or Booksellers, Printer or Printers, shall, after such Settlement made of the said Rate and Price, Sell, or expose to Sale any Book or Books, at a higher or greater Price than what shall have been so Limited and Settled, as aforesaid, then and in every such case such Bookseller and Booksellers, Printer and Printers, shall Forfeit the Sum of Five Pounds for every such Book so by him, her, or them Sold or Exposed to Sale; One Moiety thereof to the Queens most Excellent Majesty, Her Heirs and Successors, and the other Moiety to any Person or Persons that shall Sue for

the same, to be Recovered, with Costs of Suit, in any of Her Majesties Courts of Record at *Westminster*, by Action of Debt, Bill, Plaint or Information, in which no Wager of Law, Essoign, Privilege or Protection, or more than one Imparlance, shall be allowed.

[5] Provided always, and it is hereby Enacted, That Nine Copies of each Book or Books, upon the best Paper, that from and after the said Tenth Day of *April*, One thousand seven hundred and ten, shall be Printed and Published, as aforesaid, or Reprinted and Published with Additions, shall, by the Printer and Printers thereof, be Delivered to the Warehouse-Keeper of the said Company of *Stationers* for the time being, at the Hall of the said Company, before such Publication made, for the Use of the Royal Library, the Libraries of the Universities of *Oxford* and *Cambridge*, the Libraries of the Four Universities in *Scotland*, the Library of *Sion College* in *London*, and the Library commonly called the Library belonging to the Faculty of Advocates at *Edinburgh* respectively; which said Warehouse-Keeper, is hereby required, within Ten Days after Demand by the Keepers of the respective Libraries, or any Person or Persons by them or any of them Authorised to Demand the said Copy, to Deliver the same, for the Use of the aforesaid Libraries; and if any Proprietor, Bookseller or Printer, or the said Warehouse-Keeper of the said Company of *Stationers*, shall not observe the Direction of this Act therein, That then he and they, so making Default in not Delivering the said Printed Copies, as aforesaid, shall Forfeit, besides the value of the said Printed Copies, the sum of Five Pounds for every Copy not so Delivered, as also the value of the said Printed Copy not so Delivered, the same to be Recovered by the Queens Majesty, Her Heirs and Successors, and by the Chancellor, Masters, and Scholars of any of the said Universities, and by the President and Fellows of *Sion College*, and the said Faculty of Advocates at *Edinburgh*, with their full Costs respectively.

[6] Provided always, and be it further Enacted, That if any Person or Persons incur the Penalties contained in this Act, in that part of *Great Britain* called *Scotland*, they shall be recoverable by any Action before the Court of Session there.

[7] Provided, That nothing in this Act contained do extend, or shall be construed to extend, to Prohibit the Importation, Vending, or Selling of any Books in Greek, Latin, or any other Foreign Language Printed beyond the Seas; Any thing in this Act contained to

the contrary notwithstanding.

[8] And be it further Enacted by the Authority aforesaid, That if any Action or Suit shall be Commenced or Brought against any Person or Persons whatsoever, for doing or causing to be done any thing in pursuance of this Act, the Defendants in such Action may Plead the General Issue, and give the Special Matter in Evidence; and if upon such Action a Verdict be given for the Defendant, or the Plaintiff become Nonsuited, or Discontinue his Action, then the Defendant shall have and recover his full Costs, for which he shall have the same Remedy as a Defendant in any case by Law hath.

[9] Provided, That nothing in this Act contained shall extend, or be construed to extend, either to Prejudice or Confirm any Right that the said Universities, or any of them, or any Person or Persons have, or claim to have, to the Printing or Reprinting any Book or Copy already Printed, or hereafter to be Printed.

[10] Provided nevertheless, That all Actions, Suits, Bills, Indictments, or Informations for any Offence that shall be Committed against this Act, shall be Brought, Sued, and Commenced within Three Months next after such Offence Committed, or else the same shall be Void and of none Effect.

[11] Provided always, That after the Expiration of the said Term of Fourteen Years, the sole Right of Printing or Disposing of Copies shall return to the Authors thereof, if they are then Living, for another Term of Fourteen Years.

## Chapter 3

# Copyright Doctrines, Abstraction and Court Error

### Abstract

Copyright protection can be divided into five levels: subject matter, level of abstraction, exceptions, term limit, and protected acts. Although copyright exceptions, in particular the fair use doctrine, and term limit have been subject to significant economic analyses, studies on protection and the limits of protection of subject matter, and level of abstraction in copyright are still fairly scarce. Furthermore, the dominant model for optimal copyright protection is problematic for it requires a standard-based copyright doctrine to achieve what was postulated. Since copyright doctrines in respect of protection based on the level of abstraction are more rule-based in nature, an alternative explanation is in order. In a recent article titled “Copyright as a Rule of Evidence,” Douglas Lichtman (2003) hinted such an approach where evidence plays a role in explaining this set of doctrines.

In this paper, we use an abstraction and a probabilistic model to explain copyright doctrines. Copyright doctrines such as the idea-expression dichotomy, the originality requirement, *de minimis* rule, substantiality requirement, merger doctrine, and the *scènes à faire* doctrine, have the effect of creating a protection divide. Doctrines such as the

causal connection requirement, independent creation defence, and the objective similarity requirement, further create an inference divide. We show that the protection and inference divides are relevant in protecting the literal and non-literal dimensions in a copyrighted work. Furthermore, we find that between the protection divide and the inference divide, there is a region of non-strict liability protection. All these three regions, and the related copyright doctrines, are explained by an evidence theory of minimising the risk of court error in deciding infringement cases.

### 3.1 Introduction

Very frequently a copyright lawyer will advise his client that, “Copyright law protects the whole of your work, the expression of your work, but not the ideas in your work.” The puzzled-looking client will then ask, “What is an expression? What is an idea? Does that mean others can steal the idea in my book? Does that mean others can make a translation of my books without my permission because that too is just copying ideas?”

The general public, and some lawyers too, are often confused by the concept of idea-expression in copyright law. They think that the written or visible part of a work is the expression, and the non-visible part the idea. But when they examine further the case law, they will find that it is not so. What the courts meant by an ‘idea’ and an ‘expression’ is not what those terms are usually understood. Idea and expression in copyright law are not what they literally mean. In fact, there is very little guidance in the case law that we can find to clearly explain the concepts of idea and expression. It seems almost to be the case that courts decide what is expression or what is idea after deciding what to protect.

Apart from the idea-expression dichotomy, courts in English and American jurisdictions have through the years developed a list of doctrines which define the boundary of copyright protection. These too require clarifications. Interestingly, these copyright doctrines and the idea-expression dichotomy can be examined and explained using a model based on probabilistic theory. The model we propose is based on the idea that courts develop copyright doctrines *as if* trying to minimise the risk of court errors.



The reason why courts do that is explained below, but first it is useful to examine the doctrines.

### **3.1.1 Boundaries of Copyright Protection**

The boundaries of copyright protection are found at five levels: (i) at the categorisation of works protected, (ii) at the level of abstraction, (iii) via exceptions to protection of a work or part of a work in special circumstances, (iv) at the end of the term of protection, and (v) at the types of restricted acts. These boundaries create protection divides which have been the subject of investigations by law and economics scholars for some time.

One of the earliest investigations was the subject of term limit by Nordhaus (1967), albeit in the context of patent law. Copyright term limit can be understood as an attempt to contain the social cost which increases while the corresponding benefit to the author decreases over time (Landes and Posner 1989). One of the reasons for this decline is that authors discount potential income from their work to the present value, to the extent that the further in time is the protection, the lesser is the marginal incentive *ex ante* (Liebowitz 1986). Landes and Posner (2003) however have recently reconsidered this position and found that term limit is not absolutely necessary. They proposed instead an indefinitely renewable copyright protection based on registration and payment of a levy. According to them, the advantage of a renewable system is that it counters the inefficiency of a fixed term for all types of works regardless of their costs and benefits.

Exceptions to copyright, such as the American fair use doctrine, have also been subject to law and economics scrutiny. Under these exceptions, special circumstances of acts which technically are infringements are exempted from legal actions. Scholars have sought to explain these exceptions in terms of the transaction costs of licensing. For example, the broad fair use doctrine has been justified as to prevent underutilisation when transaction cost of licensing is more than the value of a license (Gordon 1982). Fair use has also been explained as a mechanism to prevent a strategic impasse when multiple rights owners hold vetoes to the formation of a derivative work (Depoorter and Parisi 2002). Another use of the fair use doctrine is to provide a justification

for the quotation of copyrighted works for the purpose of criticism or review,<sup>1</sup> by removing the right of the owner to withhold consent (Gordon 2002). On the same note, copyright exceptions which allow copying of copyright material for the purpose of parliamentary or judicial proceedings<sup>2</sup> may be explained as furthering a normative goal, such as justice or parliamentary oversight, higher than pure market economics. Exception such as performance in educational establishments,<sup>3</sup> may also serve as a wealth transfer mechanism to maximise consumer surpluses in the students.

The selection of the types of works to be protected under copyright is less easy to be objectively justified. Historically, copyright protection started in the United Kingdom with printed books (1710),<sup>4</sup> then with engravings (1735),<sup>5</sup> fabric designs (1787),<sup>6</sup> sculptures (1789),<sup>7</sup> dramatic literary property (1833),<sup>8</sup> lectures (1835),<sup>9</sup> designs (1839),<sup>10</sup> ornamental designs (1842),<sup>11</sup> and paintings and photographs (1862).<sup>12</sup> All these disparate statutes were eventually consolidated into the Copyright Acts of 1911 and 1956. Even after that, as new technological advances appeared, new subject matters were added to the existing copyright law. Unfortunately, no substantial economic analysis has been conducted on the boundaries of these subject matters, apart from the casual observation that they are mainly creative and expressive works.

Not all uses of a copyright work are infringements. Only those uses which are restricted by the copyright law are protected. Examples of restricted acts include copying; issuing copies of the work to the public; renting or lending the work to the public; performing, showing or playing the work in public; communicating the work to the public; and making an adaptation of the work.<sup>13</sup> More recently, provisions against

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1. United Kingdom's Copyright, Designs and Patents Act 1988 (chap. 48) (hereinafter "CDPA"), s. 29.
  2. CDPA, s. 45.
  3. CDPA, s. 34.
  4. Statute of Anne, 8 Ann. c. 19.
  5. Engravers' Act, 8 Geo. II c. 13.
  6. Calico Printers' Act, 27 Geo. III c. 38.
  7. Sculpture Copyright Act, 38 Geo. III c. 71.
  8. Dramatic Property Act, 3 & 4 Wm. IV c. 15.
  9. Lectures Copyright Act, 5 & 6 Will. IV c. 65.
  10. Designs Registration Act, 2 Vict. c. 17.
  11. Ornamental Designs Act, 5 & 6 Vict. c. 100.
  12. Fine Art Copyright Act, 25 & 26 Vict. c. 68.
  13. Copyright, Designs and Patents Act 1988, s. 16.

circumventing anti-copying technological measures and alteration of electronic right management information have been included as restricted acts under the control of the copyright owner.<sup>14</sup> Over all, it has been observed that copyright law has been amended periodically to remedy unanticipated problems due to changes in the technologies for producing and distributing information products (David 1993, 56). From a public choice perspective, the ever-expanding list of restricted acts can be explained as the result of legislature succumbing to the pressure of corporate copyright holders.

On the role of copyright doctrines, the dominant explanation is the one proffered by Landes and Posner (1989). In their model, copyright doctrines lead to an optimal level of copyright protection through minimising monopolisation cost. Accordingly, this monopolisation cost includes deadweight losses from the under-utilisation of copyrighted goods both as consumption good by end-consumers when perfect price discrimination is impossible (Davis and Whinston 1967), and as a factor of production in derivative works. This same sentiment was echoed later by Gordon and Bone (2000) and Green (2003).

Landes and Posner's (1989) characterisation of copyright doctrines is, unfortunately, problematic. For the doctrines to work in a way that optimises protection, they have to be standard-based, i.e. the level of protection dependant on each work, its associated cost of production, benefit, and potential deadweight loss. An example of a standard-based doctrine in negligence law is the reasonable man standard, which is explained as an attempt to induce an optimal level of precaution, taking into account the cost of precaution as well as the benefit of precaution (Calabresi 1970; Shavell 1987). A standard-based argument for copyright doctrines, however, is not common, the exception being the fair use doctrine as described by Gordon (1982). Instead, copyright doctrines are more like rules, establishing clearer criteria and are less information intensive to implement (Schäfer 2001).

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14. CDPA, ss. 296–296ZG; UK Copyright and Related Rights Regulations 2003. See also WIPO Copyright Treaty 1996, Art. 11 and 12; United States' Digital Millennium Copyright Act 1999.

### 3.1.2 Copyright Law is about Evidence

If the standard-based copyright doctrines argument does not hold, perhaps there is an alternative economic explanation. It is possible that copyright doctrines are not so concerned with the optimal level of protection, but with other utilitarian factors. One possibility, taking a cue from Calabresi (1970), is the minimisation of secondary and tertiary costs of copyright through rule-based doctrines.<sup>15</sup> In this case, the secondary cost is the cost of risk-aversion, and the tertiary cost the cost of adjudicating copyright disputes. Adjudicating and determining copyright infringements are not the same as hearing disputes over ownership of a physical property. In a copyright claim, the judge has to determine whether the complainant can claim ownership over what was allegedly being infringed, and secondly, whether the respondent has actually infringed the complainant's right through unlawful appropriation.

One way of describing these secondary and tertiary costs is to subsume them under the general heading of evidence. This approach is taken by Lichtman (2003) He explains that the creativity requirement, the merger doctrine, and the *scènes à faire* doctrine in US copyright law are mechanisms to avoid “extraordinary problems of proof”, and that the fixation requirement is also to reduce the cost of evidence.

The evidentiary approach introduced by Lichtman (2003) is extended in this paper. However, instead of inductively looking at selected copyright doctrines to show their relationships with evidence, a deductive model based on an abstraction process is also developed. We further propose that copyright doctrines operates as if to reduce the risk of court error associated with copyright protection.

### 3.1.3 Outline

In the second part of this paper, the concept of abstraction is introduced, and the case law and copyright doctrines supporting an abstraction process are examined. Copyright

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15. Judicial rule-making is thought to be an evolutionary process in which vague standards eventually collate into some harden rules through a series of judicial decisions (Schäfer 2002).

doctrines seeking to establish a protection divide in the literal dimension and the non-literal dimension are then analysed. The non-literal dimension is further discussed in two parts: factual and fictional. The ideas of an inference divide and a non-strict liability protection region are also raised.

In the third part, we develop a simple probabilistic model of the abstraction process to demonstrate how the doctrines are related to the evidence approach. Finally in the fourth part, the filtration test as purported to be applied in some cases is re-evaluated in light of the preceding discussion.

Through the model and related discussion, we show that many copyright doctrines are associated with the reduction of the risk of court error. This applies to both doctrines related to the subsistence of copyright and the infringement of copyright. These subsistence doctrines are the originality doctrine, the *de minimis* rule (in the United Kingdom), the creativity doctrine, the selection and arrangement requirement, the merger doctrine, the idea-expression dichotomy, non-protection of facts, and the *scènes à faire* doctrine (in the United States). The relevant doctrines related to infringement in the United Kingdom are the substantiality requirement, causal connection doctrine, and the independent creation defence.

In this paper, the word 'protect' and its derivatives have the general meaning of preventing a second-comer from using the same element as first used by the claimant, either with or without additional requirements. Unlike conventional legal analysis which first asks whether copyright subsists before finding a similarity between the claimed work and alleged infringing work, this paper takes an unorthodox approach of first examining which levels of abstraction are similar before deciding the question of protection and infringement. More generally, the author takes the view that the protection question is closely linked to the infringement question thus making the idea of protection an ad hoc case-to-case affair. Unless stated otherwise, the law in the United Kingdom (UK) is used as a basis for discussion, although examples from United States (US) and European Union (EU) copyright law will also be introduced where applicable.

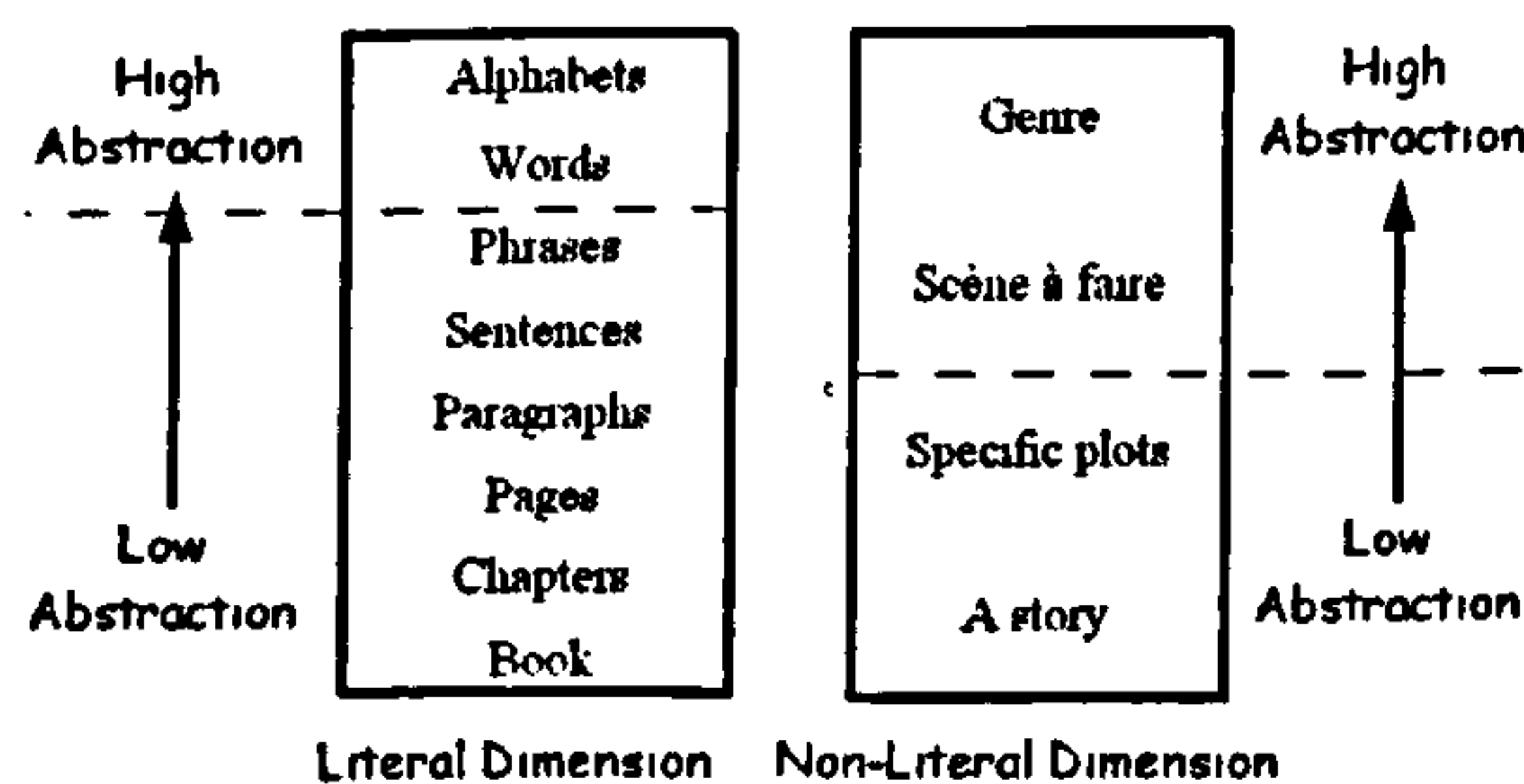
## 3.2 Abstraction

It is this paper's contention that the idea of abstraction is a powerful tool in helping us to understand copyright doctrines. In the abstraction process, the details in a copyright work are filtered and conceptually removed and replaced with generalities. For example, the text of the *Happy Birthday to You* song can be 'abstracted' into *a birthday song*, and then further 'abstracted' into *a song*.

### 3.2.1 The Abstraction Process

Every copyright work can be analysed in two dimensions: the literal dimension and the non-literal dimension. The literal dimension consists of the tangible and sensate parts of a work as embodied in a physical medium. The non-literal dimension, on the other hand, contains the intangible and conceptual parts. In the language of semiotics (Chandler 2002, 49–53), the literal dimension is the signifier and non-literal dimension the signified. A diagrammatic representation follows in Figure 3.1.

Figure 3.1: The Abstraction Process



Within each dimension, there are many levels of abstraction. Within each level of abstraction, there are elements constructed from simpler elements from the level of abstraction above. Hence, as the level of abstraction moves upwards, these elements become more general and common. Likewise, as the level of abstraction moves downwards, there are more details.

Take for example a text in the literal dimension. The lowest level of abstraction

consists of a complete work such as a book. As the level of abstraction moves up, we find chapters, pages of text, paragraphs, sentences, phrases, words, and finally letters of the alphabet and punctuation marks. It can be observed that elements at the higher levels of abstraction are fewer and more common, but elements at lower levels are numerous and varied. This observation is important in explaining the behaviour of copyright doctrines.

Similarly on the non-literal dimension, Rebikoff (2001) gives a good description of the different levels of abstraction that can be obtained from literary and dramatic plots. Using Nimmer and Nimmer's (1985) example of *Romeo and Juliet* versus *West Side Story*, he points out that the two works are similar as far as being tragic romance stories. At a lower level of abstraction, thirteen elements of dramatic structure can be found to be similar in both stories. Beyond that, specific incidents in the stories make them different from each other.

### 3.2.2 Judicial Recognition

Although not explicit, courts hearing copyright cases do recognise the existence of the different levels of abstraction in a work. In the US, this existence was acknowledged by Judge Learned Hand in *Nichols v. Universal Pictures Corporation* when he said:

Upon any work, and especially upon a play, a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may be no more than the most general statement of what the play is about; and at times consists only of its title; but there is a point in this series of abstraction where they are no longer protected, since otherwise the playwright could prevent the use of his ideas, to which, apart from their expression, his property is never extended.<sup>16</sup>

Also, in copyright infringement cases involving computer programs, a three-part test consisting of an abstraction, filtration, and comparison process was introduced in the US in

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16. 45 F.2d 119 (2d Cir. 1930), at 121.

*Computer Associates International, Inc. v. Altai, Inc.*<sup>17</sup> Under this test, a copyrighted work is to be abstracted into different levels of abstraction, the non-protectable elements filtered out, and what remains are to be compared with the alleged infringing work. Although the validity of the filtration and comparison approaches are in doubt, this case serves as a judicial acknowledgement that a work can be abstracted for analysis.

In the UK, the test in *Computer Associates* was adopted by Ferris J. in *John Richardson Computers Ltd. v. Flanders & Anor.*<sup>18</sup> An abstraction process involving non-literal ideas was also mentioned by Lord Hoffmann in his opinion in *Designers Guild Ltd. v. Russell Williams (Textiles) Ltd.*<sup>19</sup>

### 3.2.3 The Risk of Court Error

Determining copyright infringement of elements at any level of abstraction is not an exact science. This is because the decision of a court may inherently, even with sufficient evidence, be factually wrong.<sup>20</sup> What is admitted as evidence is a judge's perception of the truth and ultimately a fallible human judgement. An untrue proposition risks being admitted as true, and a true proposition risks being rejected as untrue. In a trial, a court may err in favour of the defendant (a Type-I error) or in favour of the claimant (a Type-II error) (Png 1986). This risk of court error exists in copyright cases whenever there is a possibility that similarity between two works could be, not as the result of copying, but the result of independent inspiration, or coming from a common source. The legal terms used to refer to situations of independent inspiration are 'independent creation' or 'coincidental similarity'.

This risk of court error decreases, *ceteris paribus*, as the level of abstraction decreases. This results from the observation that the number of possible variations is high at low level of abstraction, and low at high level of abstraction. Hence, the probability of

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17. (1992) 23 IPR 385.

18. (1993) 26 IPR 376.

19. [2001] 3 FSR 113, at 121, para. 25.

20. Assuming for a moment that 'fact' is an objective construct determinable by an omniscience entity called God.



coincidental similarity increases as the level of abstraction increases; and the risk of court error correspondingly increases in tandem with the increase in the probability of coincidental similarity.

It is this paper's contention that many copyright doctrines can be explained *as if* judges are trying to minimise the risk of court error. A rational choice explanation of judges behaviour is that by minimising the risk of court error, they minimise potential embarrassment resulting from an incorrect finding of fact. Whether legal jurists will agree that this explanation reflects reality is altogether another matter. The task of law and economics is to provide an economic formulation of what judges behave *as if* they did (Stephen 1988, 4). It is not the conformity to what judges said they did which is important, but that of the accuracy of the economic formulation.

### 3.3 Protection Divide

Douglas Lichtman's (2003) "extraordinary problems of proof" is another way of describing the court's attempt to eliminate the risk of court error. One approach to reducing these "extraordinary problems" is to protect only elements at the low levels of abstraction, and keep the elements at the higher levels unprotected. A protection divide thus is formed between the protected lower levels and the unprotected higher levels of abstraction. This idea of separating the levels of abstraction into two parts is in line with the observation of Hand J. in *Nichols*.<sup>21</sup>

If such an approach is to exist, the next question is to decide on where the protection divide lie, and more specifically, the normative criterion for allocating this protection divide. Three possible answers exist to this question. The first is at a point where the risk of court error exceeds a certain threshold. The second is at an optimal point, when the marginal benefit of protection equals marginal cost. The third is at a 'balancing' point, when the cost of protection equals the benefit of protection.

If copyright doctrines relating to the levels of abstraction are based on an evidence

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21. *Supra*, n. 16.

theory, the second and third approaches are likely to be ruled out. This is because the costs and benefits of protection are not generalisable into a rule, but vary according to each work and how the works marketed. There are in fact tremendous difficulties in accurately assessing these costs and benefits. Copyright owners may then have strong incentives to over-represent their private costs.

On the other hand, placing a protection divide based on the perception or assessment of risk is an arbitrary exercise. It is not likely that there will be a consensus as to where this divide should be. There might, however, be regions at the two extreme levels of abstraction which are generally agreeable to be protectable or not protectable. That said, one device to alleviate the arbitrariness problem is by allowing non-infringing independent creations of some levels of abstraction bordering the protection divide.

If there is to be a protection divide, copyright law can use one or more doctrines to differentiate those levels of abstraction which are protected from those not protected. Some doctrines place some higher levels of abstraction in the unprotected region. Some doctrines place the lower levels of abstraction in the protected region, and other doctrines allow independent creation for intermediate levels of abstraction. Evidence of this approach can be found in copyright law itself. For the sake of elegance, the discussion of these doctrines are divided into two groups—those operating in the literal dimension and those in the non-literal dimension. The protection divides as gathered from the relevant copyright doctrines are represented as dotted lines in Figure 3.1.

### **3.3.1 Idea-Expression Dichotomy**

It is important, before examining the copyright doctrines, for us to discuss and clarify my understanding of the idea-expression dichotomy vis-à-vis the literal and non-literal dimensions.

The approach of dividing a copyright work into its literal and non-literal dimensions is derived from Walker J's decision in *Computer Associates International, Inc. v. Altai*,

*Inc.*<sup>22</sup> In *Computer Associates*, the judge noted that “[a]s a general matter, and to varying degrees, copyright protection extends beyond a literary work’s strictly textual form to its non-literal components.” Citing *Nichols*,<sup>23</sup> he further found that “[i]t is of course essential to any protection of literary property ... that the right cannot be limited literally to the text, else a plagiarist would escape by immaterial variations.”

However, not all parts of the literal and non-literal dimensions are protected by copyright. Only those levels of abstraction which are deemed ‘expression’ are protected. This proposition of protecting only ‘expression’ is termed the idea-expression dichotomy in American copyright jurisprudence: “It is a fundamental principle of copyright law that a copyright does not protect an idea, but only the expression of the idea.”<sup>24</sup> This principle is also stated in the TRIPS Agreement, of which many countries are parties to.<sup>25</sup> It is reputed to owe its origin to the dissenting English decision of Yates J. in *Millar v. Taylor*:

Ideas are free. But while the author confines them to his study, they are like birds in a cage, which none but he can have the right to fly; for, til he thinks proper emancipate them, they are under his dominion.<sup>26</sup>

It is nevertheless believed that “[d]rawing the line between idea and expression is a tricky business.”<sup>27</sup> Judge Learned Hand observed in *Nichols* that “[n]obody has ever been able to fix that boundary [between idea and expression], and nobody ever can.” The same judge reiterated some decades later in *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.* that “[o]bviously, no principle can be stated as to when an imitator has gone beyond copying the ‘idea’, and has borrowed its ‘expression’. ... Decisions must therefore inevitably be ad hoc.”<sup>28</sup>

The English courts tend to take a different approach to the idea-expression dichotomy. Jacob J. in *Ibcos Computers Ltd. & Anor. v. Barclays Mercantile Highland Finance Ltd.*

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22. [1997] 23 IPR 385.

23. *Supra*, n. 16.

24. *Computer Associates*, per Walker J. citing *Baker v. Selden*, 101 US 99 (1879).

25. Agreement on Trade-Related Aspects of Intellectual Property Rights, Article 9.2.

26. (1769) 4 Burr 2303, 2378; 98 ER 201, 242.

27. *Computer Associates*, *supra*, n. 17, per Walker J.

28. 274 F.2d 487 (2d Cir 1960), at 489.

& *Ors.*, took the view that only general ‘ideas’ are not protected, but sufficiently detailed ‘ideas’ may be protected in copyright.<sup>29</sup> However, in practice it was difficult for judges to decide where the fine line is. In other cases, the more American approach was adopted. Thus Lord Hailsham commented that, “... as the late Professor Joad used to observe, it all depends on what you mean by ideas.”<sup>30</sup>

It is submitted that the problem of the idea-expression dichotomy stems from two confusing and contradictory usages of the terms ‘idea’ and ‘expression’. On the one hand, there is the usage based on a *legal* definition of ‘idea’ and ‘expression’; while on the other hand, there is another usage based on a *literal* definition of the same. The phrase “copyright protects only the expression and not the idea”<sup>31</sup> neatly captures the paradox of the dichotomy. The problem is that this phrase requires us to first identify what comes first, i.e. protection or the labels (‘idea’ and ‘expression’).

If judges first decide what is protected and what is not protected, before attaching any label to the parts of the work, then the terms ‘idea’ and ‘expression’ only take on a legal definition. These terms do not then carry a literary or dictionary meaning. Therefore a priori what is protected *must be* called the expression, and what is not protected *must be* called the idea. From this legal definition point of view, the labels ‘idea’ and ‘expression’ have no function other than as namesake to delineate protection in a copyright work. A legal definition therefore does not tell us, if we do not know before hand what is protected and what is not, which part of a work is an idea and which part is an expression.

The literal definitions of ‘idea’ and ‘expression’ are as generally conceived or given by the dictionaries. It is not uncommon to think that ‘expression’ refers to the sensate part of a work and ‘idea’ the non-sensate part, such that expression coincides with the literal dimension and idea coincides with the non-literal dimension. On this thinking, we would come to the conclusion that all of the literal dimension would be protected and all of the non-literal dimension would not be protected. However, this conclusion is clearly wrong, as indicated by the quotations from *Computer Associates* and *Nichols*

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29. (1994) 21 FSR 275.

30. *L. B. (Plastics) Ltd. v. Swish Products Ltd.* [1979] RPC 551.

31. *Supra*, n. 24.

above. In English copyright law, the same finding that non-literal dimension is also protected, holds as illustrated by the fact that copyright reserve to its owner the right to make adaptations and translations.<sup>32</sup> Jacob J's comment in *Ibcos Computers* also gives support to this proposition.<sup>33</sup> Hence, we cannot start with using the literal definitions of 'idea' and 'expression' to find the regions of protection in a copyright work. To do so would lead us to an inconsistency with the rest of the copyright doctrines which protect some of the non-literal elements, and do not protect some of the literal elements.

It is submitted that any attempt to determine the protection in a copyright work on the basis of the definitions of 'idea' and 'expression' is wrong. The literal meanings of idea and expression unfortunately cannot be used as criteria for copyrightability in this case. Only the legal definitions of 'idea' and 'expression' as suggested above is consistent with other aspects of copyright law. As will be discussed below, the guidance on which parts are protected and which are not is instead found in other copyright doctrines.

As a result of the two different, though close, definitions of 'idea' and 'expression', usage of these terms in copyright literature is problematic. It is tempting and convenient to rely on the literal meaning of these terms to mean the *literal* and *non-literal* aspects of copyright work. But there is a danger that the reader would jump to the inaccurate conclusion that what is *literally* known as expression is protected and what is *literally* known as idea is not protected. With this in mind, it is with great reluctance that the terms 'idea' and 'expression' are avoided by the author except in the context when they take their legal definitions. Nevertheless, this kind of usage in quotations of court decisions and legal literature is unavoidable. The terms 'literal' and 'non-literal' as defined above are preferred instead.

### 3.3.2 Protecting the Literal Dimension

The literal dimension covers those parts of a work which are tangible and sensate to the user. For instance, the text in a book, the colours and objects in a painting, and the sound

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32. CDPA, s. 21.

33. *Supra*, n. 29.

and noise in a recording, are the literal elements. Many copyright doctrines deal with the protection or non-protection of the literal dimension. These copyright doctrines are the originality requirement, the creativity requirement, the de minimis rule, and the merger doctrine.

## Originality

Copyright protection is only conferred upon works which are original. In the UK, this requirement for an original work is largely equated with independent effort. The famous formulation given by Peterson J. in *University of London Press, Ltd. v. University Tutorial Press, Ltd.* is that copyright law “does not require that the expression must be in an original or novel form, but that the work must not be copied from another work—that it should originate from the author.”<sup>34</sup> A work, therefore, is original as long as it is not a copy of an earlier work. Another way of putting it is that “considerable skill, labour and judgement” have been expended in the making of the work.<sup>35</sup>

The originality requirement in copyright law can mean two things in our abstraction scheme. First is that it is a requirement that the element seeking protection is not the result of copying.<sup>36</sup> In this way it discourages slavish copying in the production of new works. The second meaning of originality is that it is not an element at a high level of abstraction, as that which is common and widely used. In this second interpretation, words and letters of the alphabets are considered unoriginal and thus not protected by copyright. More generally, elements in the higher levels of abstraction, with correspondingly higher likelihood of coincidental similarity, will be precluded from protection.

It has to be noted that this analysis of the originality requirement is incomplete. The originality requirement can also be interpreted as approving independent effort in

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34. [1916] 2 Ch 601, 608. Note again that courts are not very consistent when they use the word ‘expression’. Sometimes, the word ‘expression’ can be considered to mean a protectable element, and an ‘unoriginal expression’ to mean a protectable but not protected element for the reason that it is not original.

35. *Ladbroke (Football) Ltd. v. William Hill (Football) Ltd.* [1964] 1 All ER 465.

36. *Supra*, n. 34.

collecting information, for which the element seeking protection might have a high likelihood of coincidental similarity. This happens when the originality requirement is taken to mean the expending of “sweat of the brow” or the result of “industrious collection”.<sup>37</sup> In this way, the application of the originality requirement is an exception and an anomaly to the evidence theory.

### 3.3.3 Creativity

In order to cure the anomaly of the originality requirement in the collection of information, the law in EU was harmonised, and the law in US interpreted, to bring the requirement closer to the “second meaning” as suggested above. In 1991, the US Supreme Court in *Feist Publications, Inc. v. Rural Telephone Service Co.* held that protection of collection of information requires the element of creativity instead of mere “sweat of the brow”.<sup>38</sup> In 1998, the EU Database Directive came into force to mandate databases<sup>39</sup> to be protected in copyright only “by reason of the selection or arrangement of their contents, constitute the author’s own intellectual creation”.<sup>40</sup> It can be said that these two developments usher in a new requirement of creativity in some types of copyright work.

The creativity requirement requires an author to show that his work has something unique, such as having elements with a low likelihood of coincidental similarity, before the subsistence of copyright. Even that, only the creative parts in the collections of information or databases are protected. In our abstraction scheme, that means that only elements in some low levels of abstraction will satisfy the creativity requirement, and elements in the higher levels of abstraction will be excluded from protection.

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37. See *Macmillan & Co. Ltd. v. Cooper* (1924) 40 TLR 186; and *Ladbroke (Football) Ltd.*, supra, n. 35.

38. 499 US 340 (1991).

39. Defined as “a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means,” Article 1(2), Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the Legal Protection on Databases (“Database Directive”).

40. Article 3(1), Database Directive.

## De Minimis Rule

The *de minimis non curat lex*<sup>41</sup> rule excludes words and short or trivial phrases from copyright protection. In *Exxon Corporation & Ors. v. Exxon Insurance Consultants International Ltd.*,<sup>42</sup> the Court of Appeal denied copyright protection to the invented word 'Exxon'. Phrases such as 'Post Office Directory',<sup>43</sup> 'Splendid Misery',<sup>44</sup> 'The man who broke the bank at Monte Carlo',<sup>45</sup> and 'Opportunity Knocks'<sup>46</sup> have similarly been denied copyright protection. The most extreme example is in one case where a long but possibly commonplace phrase, such as "Good sight is your most valuable asset. Avoid the predicament of being without your glasses. Let us make you a spare pair. Broken lenses promptly and accurately repaired," failed to attract protection.<sup>47</sup>

The de minimis rule has the effect of specifically excluding from protection short phrases at the higher levels of abstraction. One puzzle remains on the exclusion of invented words.<sup>48</sup> This may be rationalised by the rule-based argument<sup>49</sup> that the law works *as if* it is neutral to variation in languages, and thus excludes protection based on the size and complexity of the element or subject matter in question.

## Merger

The merger doctrine is unique to US copyright law. *Baker v. Selden* by the US Supreme Court is considered the classic authority for the merger doctrine.<sup>50</sup> In *Baker* the court held that it was not an infringement for the defendant, Baker, to copy forms for a bookkeeping system invented by the plaintiff, Selden. It was found that, "blank accountbooks are not the subject of copyright; and that the mere copyright of Selden's book did not confer upon

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41. Latin: the law does not care about trivial things.

42. [1982] Ch 119.

43. *Kelly v. Byles* (1879) 13 Ch D 682.

44. *Dick v. Yates* (1881) 18 Ch 76.

45. *Francis, Day and Hunter Ltd. v. Twentieth Century Fox Corporation* [1940] AC 112.

46. *Green v. Broadcasting Corporation of New Zealand* [1989] RPC 469.

47. *Kirk v. J. and R. Fleming Ltd.* [1928-35] MCC 44.

48. E.g. *Exxon Corporation & Ors. v. Exxon Insurance Consultants International Ltd.*, supra, n. 42.

49. See text of n. 15.

50. 101 US 99 (1879).



him the exclusive right to make and use account-books, ruled and arranged as designated by him and described and illustrated in said book.”<sup>51</sup>

*Baker v. Selden* was approved by the Court of Appeals for the First Circuit in *Frank Morrissey v. The Procter & Gamble Company et al.* which gave a rationale for the merger doctrine thus:

When the uncopyrightable subject matter is very narrow, so that “the topic necessarily requires,” ... if not only one form of expression, at best only a limited number, to permit copyrighting would mean that a party or parties, by copyrighting a mere handful of forms, could exhaust all possibilities of future use of the substance. In such circumstances .. it is necessary to say that the subject matter would be appropriated by permitting the copyrighting of its expression. We cannot recognize copyright as a game of chess in which the public can be checkmated.<sup>52</sup>

An example of the application of the merger doctrine is the non-protection of literal manifestation of facts, such as dates, figures, and names. When the practical or efficient ways of expressing a non-literal element (literally an ‘idea’) are few, and the likelihood of coincidental similarity high, the risk of a court error correspondingly increases. Thus it may be efficient not to protect this kind of elements in order to minimise the risk of court error. It should be noted that these elements may fall within a low level of abstraction which, but for their peculiar nature, ought to be protectable.

The UK courts do not, unfortunately, admit a doctrine such as the merger doctrine. In *Ibcos Computers Jacob J.* at the UK High Court rejected the proposition that “if there is only one way of expressing an idea, that way is not the subject of copyright.”<sup>53</sup>

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51. Ibid. at 107.

52. 379 F.2d 675 (1st Cir. 1967), at 678.

53. Supra, n. 29, at 291.

### **3.3.4 Protecting the Non-Literal Dimension**

The non-literal dimension is the non-sensate aspect of a work. Elements which are found in the non-literal dimension include themes, plots, story lines, incidents, knowledge, and information. Just like the literal dimension, the non-literal dimension can be separated into different levels of abstraction. The low levels of abstraction contain complex and specific details, while the high levels of abstraction contain rough and general components.

The non-literal dimension can be further classified into two kinds: fictional and factual. A fictional element is a non-literal element constructed by the imagination and does not reflect reality. A factual element, on the other hand, is a reflection of reality or a natural phenomenon. Moreover, non-literal elements can be hybrid, consisting of partial facts and fiction, which we term 'fictitious facts'. Fictitious facts are those facts which are made up and are not real, but appear mainly in factual works.

In a comparison between the risk of court error for literal and non-literal elements, the risk for non-literal elements is higher because there are usually many ways of literally representing one non-literal element. Thus, the likelihood of coincidental similarity in a non-literal element is higher than in a literal element. The simple idea of love and the varied ways of expressing it, as in Shakespeare's Sonnets, are examples. Thus for evidential reason, the protection for non-literal elements is usually thinner than literal ones.

In the discussion below, we first look at the three types of non-literal elements, and then examine two copyright doctrines which are relevant to non-protection of thereof.

#### **Fiction**

Fictional elements are man-made and do not need to strictly reflect factual phenomena. Detailed fictional elements at low levels of abstraction have many possible variations and low likelihood of coincidental similarity. Thus, if judges make decisions as if to minimise the risk of court error, only detailed and unique fictional elements at the lower levels

of abstraction will be protected. Fictional elements at high levels of abstraction are too general and common that protection will lead to an escalation of court errors.

## **Fact**

Factual elements, on the other hand, have to reflect observable phenomena. As the number of actually occurred factual phenomena is smaller than all possible fictional phenomena, the number of variations for factual elements is correspondingly smaller than fictional elements. Thus factual elements are less abundant, and the likelihood of coincidental similarity in factual elements is higher than fictional elements. The risk of court error in factual elements therefore is correspondingly higher. As a result, if the judges declare copyright doctrines as if to minimise the risk of court error, the protection for factual elements would be thinner than fictional elements.

It can also be argued that this difference in treatment is because factual elements are discovered and not created. Although we talk of technical innovations as being invented, they are more as the results of a process of discovery. In a sense, facts as objects of discovery become increasingly discoverable, and rediscoverable, after their existences become obvious. This is particularly true of scientific and technical discoveries, but is no less true of discoveries in other spheres of human activity. An implication thereof is that the risk of a court error becomes larger as time goes by, with the exception for historical facts.<sup>54</sup>

On the other hand, some facts are single-sourced, or the costs of gathering them are highly asymmetrical among producers. This happens when the emergence of these 'facts' are closely tied to the activities of certain producers. Examples of these abound in the case law: telephone directories,<sup>55</sup> television programme listings,<sup>56</sup> and horse-racing

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54. Historical facts as a category, are less likely to be completely discoverable the further away in time from the occurrence of the 'historical' events.

55. *Feist Publications, Inc. v. Rural Telephone Service Co.*, supra, n. 38; *Desktop Marketing Systems Pty Ltd v. Telstra Corporation Ltd.* [2002] FCAFC 112, [2002] 55 IPR 1 (15 May 2002).

56. *Independent Television Publications Ltd. v. Time Out Ltd. & Elliott* [1984] FSR 64.

schedules.<sup>57</sup> It would seem that since these kinds of facts are sole-sourced, the likelihood of incidental similarity is slim, and the risk of court error small. For this reason, it is possible for the protection divide to shift towards more protection. However, from a welfare perspective, protecting sole-sourced facts under copyright law may lead to a severe monopolisation problem necessitating further remedy.

On a different note, even though facts generally acquire thin protection under copyright law, perhaps as a result of higher risk of court error, it is still possible to provide facts with property right protection. This is done through the patent system with a registration process. Patent law provides a limited property right to the first discoverer of facts in the form of a technical invention or an inventive process. This has the effect of inducing early discoverers of scientific facts to not just stop at having a scientific discovery but to persevere until an invention is found. Since patent law does not protect basic scientific discoveries, these discoveries are still left in the commons and available free for use by others.

The patent system, unfortunately, only covers a specific category of factual ideas, namely inventions and inventive processes. Other non-scientific discoveries which may also be socially useful are not protected under patent law. A recent development in EU has seen the passing of the Database Directive for the protection of factual information not normally covered under patent law. In other cases, the discoverers of factual ideas can only get thin protection in the selection of his facts in the form of a copyrightable book or article. In practice, the cost of discovering non-scientific facts is often borne by academic research grants.

### **Fictitious Fact**

Fictitious facts are fictional elements passed off as facts. They are made and included by authors in factual works. Their purposes are manifold. It could be to make a factual work more convincing when particular factual details are uncertain or unavailable, as is often

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57. *British Horseracing Board Ltd. & Ors. v. William Hill Organisation Ltd.* (2001) 151 NLJ 271 (Ch, 9 February 2001), [2001] EWCA Civ 1268 (CA, 31 July 2001).

the case with biographical and historical works; or, it may be used to seed a factual work with clues to detect copying.

The question regarding fictitious facts in a factual work is whether to treat them as facts or as fictions. Different legal systems deal with this question differently. In the US, the *Feist*<sup>58</sup> decision suggests that fictitious facts in the form of false telephone directory entries are to be treated as real, and hence are incapable of copyright protection. In the UK, a long line of precedents from the earliest times have held that fake or erroneous entries in directories may be used as evidence of copying in copyright cases.<sup>59</sup> Thus, one way of reading these UK cases is that fictitious facts in factual works are protectable in copyright.

The economic argument against protecting fictitious facts is based on social costs. Protecting compilations of facts based on the existence of fictitious facts may create the adverse incentive of encouraging the embedding of erroneous and fictitious facts. They could be costly to society if relied upon as they may lead to mistakes and accidents. Furthermore, users will have to expend resources to weed out these fictitious errors or seek confirmation or verification from alternative sources. If alternative sources are not available, users might even have to undertake the task of compiling the same compilation again. This is wasteful to society as a whole because the same sunk cost is expended many times without any additional new resources being generated. Henceforth, a strategy to discourage fictitious facts in a factual work is to treat them as facts and not grant them special status as indicators of copying.

On the other hand, the evidentiary argument for protecting fictitious facts is that they reduce the likelihood of coincidental similarity and risk of court error in a factual work. When this happens, the comparison for similarity could be shifted towards a higher level of abstraction.

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58. *Supra*, n. 38.

59. *Kelly v. Morris* (1866) 1 Eq 697; *Morris v. Ashbee* (1868) 7 Eq 34; *Cox v. Land & Water Journal Co.* (1869) 9 Eq 324; and *Ladbroke (Football) Ltd. v. William Hill (Football) Ltd.*, *supra*, n. 35.

## Scènes á Faire

One doctrine that might be useful in defining a protection divide in the non-literal dimension is the *scènes á faire* doctrine in US copyright law. Scènes á faire are “incidents, characters or settings which are as a practical matter indispensable, or at least standard, in the treatment of a given topic.”<sup>60</sup> In other words, general themes are not subject to protection and hence those higher levels of abstraction cannot be taken into account in a suit for infringement. Although the doctrine of *scènes á faire* is relatively vague in its definition, and that much room for discretion resides at the judge, it does demonstrate the existence of a protection divide on the non-literal dimension.

### 3.4 Inference Divide

It is suggested that below the protection divide, there exists an inference divide. This inference divide separates a region of abstraction which requires proof of copying from a region which does not require the same level of proof. The existence of an inference divide can again be explained by the idea of minimising the risk of court error.

In a typical copyright case, the claimant first proves that he is the rightful owner of a work, and that there is a substantial similarity between his work and the defendant’s work.<sup>61</sup> Then, he further shows that the similarity is the result of copying and not merely of coincidental similarity.<sup>62</sup>

When there is similarity at a low level of abstraction, and that the cost of further proving the act of copying outweighs the benefit in reducing the associated risk of court error, it makes economic sense to raise an inference of copying, dispense with the need for proof, and perhaps give an opportunity to the defendant to convincingly rebut this inference.

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60. *Alexander v. Haley*, 460 F.Supp 40 (SDNY 1978).

61. *Francis, Day & Hunter, Ltd. & Anor. v. Bron & Anor.* [1963] Ch 587.

62. *Ibid.*

An application of this inference can be seen in copyright piracy cases. In those cases, copying by the infringer is wholesale, and there is rarely a need to prove that the similarities are the result of slavish copying. Also, if the similarity is highly substantial and the probability of coincidental similarity is low, the court may raise an inference of copying which in practice is difficult if not impossible to rebut.<sup>63</sup>

## 3.5 Non-Strict Liability

The protection divide and the inference divide conceptually separate the levels of abstraction into three regions. The highest region is the unprotected region. The lowest region, based on our model, is the inference region. The middle region is a unique region where the elements are protected but proof of copying is still required.

In the language of accident law, the inference region is akin to strict liability, and the middle region ‘negligence’ or non-strict liability. This non-strict liability rule can be explained as a response to the existence of the risk of court error, at the periphery of the protection divide. To minimise the risk of wrongly penalising an alleged copyright infringer, a further stage of proving copying is needed, as reflected in copyright doctrines such as the causal connection doctrine and the associated independent creation defence.

### 3.5.1 Causal Connection

In principle, it is a copyright infringement only if the similarity between the infringed work and the infringing work is the result of copying. A “causal connection” between the copyrighted work and the infringing work, such as proof of copying, needs to be shown by the copyright owner alleging infringement. In *Francis, Day & Hunter, Ltd. & Anor. v. Bron & Anor.*,<sup>64</sup> Upjohn LJ notes that a copyright owner plaintiff “[does] not necessarily have to show knowledge or suspicion of plagiarism against every defendant,

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63. *Francis, Day & Hunter, Ltd. & Anor. v. Bron & Anor.*, supra, n. 61; *Designers Guild Ltd. v. Russell Williams (Textile) Ltd.* [1998] FSR 803 (Ch.D).

64. Ibid.

but the plaintiff always has to prove that the alleged infringement is not the independent work of the alleged infringing author or composer, but is causally connected with the plaintiff's work." However since proof of copying is not possible in every case, and some judges have accepted proof of access as sufficient.<sup>65</sup>

### **3.5.2 Independent Creation Defence**

In a copyright dispute, the alleged infringer can raise an independent creation defence to counter the 'proof' raised by the complainant. Copyright law, in theory, allows independent re-creation, or what Diplock LJ calls "coincidental creation", of a work as long as there is no copying or prior access.<sup>66</sup> Thus, when both parties admit evidence of their positions, the party with the more convincing evidence prevails under the common law.

## **3.6 A Theoretical Model**

The abstraction process and the discussion above can be made easier to understand through a simple theoretical model.

### **3.6.1 The Model**

Consider a class of copyrightable works having only nine levels of abstraction  $L$ , from  $L_1$  to  $L_9$ . These levels of abstraction are in the same dimension, e.g. the literal dimension.  $L_1$  is the lowest level of abstraction and  $L_9$  the highest. If this class of works is literary,  $L_1$  would be a chapter of text or a book,  $L_2$  a page,  $L_3$  a paragraph,  $L_4$  a combination of a few sentences,  $L_5$  a long and complex sentence,  $L_6$  a short and simple sentence,  $L_7$  a phrase,  $L_8$  a word, and  $L_9$  a letter of the alphabet. The number of possible variations of elements

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65. Ibid.

66. Ibid. at 625.



for each level of abstraction is given by  $P$ , such that  $P_1$  is for  $L_1$ ,  $P_2$  is for  $L_2$ , and so on. The relationship between the possible variations are such that  $P_9 < P_8 < \dots < P_1$ .

It is further assumed, simplistically, that each variation or element has the same probability of occurrence,<sup>67</sup> and therefore, the probability of coincidental similarity of an element at the  $L$  level of abstraction is  $\frac{1}{P}$ , where  $\frac{1}{P_1} < \frac{1}{P_2} < \dots < \frac{1}{P_9}$ . Absence other external considerations, the probability of coincidental similarity  $\frac{1}{P_n}$  is also the value of the risk of court error for at element at level  $L_n$ .

We assume that the judge fixes a risk threshold  $\Phi$  for holding infringement, with  $0 < \Phi < 1$ . The position of  $\Phi$  corresponds to the inference divide in our discussion above. From the discussion on the de minimis rule,<sup>68</sup> we deduce that the threshold is between  $L_2$  and  $L_3$ , and hence,  $\frac{1}{P_2} < \Phi < \frac{1}{P_3}$ .

When similarity between two works is proved, a value for the risk of court error  $\tau$  is obtained. This value for the risk of court error depends on the lowest level of abstraction of which their elements are similar. For example, if a few sentences are similar in the two works,  $\tau = \frac{1}{P_4}$ ; if it is a paragraph,  $\tau = \frac{1}{P_3}$ , and so on.

The value of  $\tau$  can be reduced by extraneous evidence, such as proof of copying or access. This extraneous evidence is denoted by a multiplier  $\omega$ , where  $0 < \omega < 1$ . The value of  $\omega$  is smaller if the evidence is stronger (such as proof of copying), and larger when the evidence is weaker (such as proof of access).

A note must be made regarding the derivation of  $\frac{1}{P}$ . This model assumes that the value of  $\frac{1}{P}$  is a constant for each level of abstraction. It assumes that the number of words in every phrase, sentence, paragraph, and page, is always the same. However, this is just a theoretical simplification. In reality, the risk of court error is normally larger than

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67. This assumption is simplistic, and in fact is unrealistic, because its logical conclusion is that mastery of a language entails learning all possible variations of the language. On the other hand, empirical studies have shown that the elements of a language, such as words, have frequencies of appearance in inverse relation to their lengths (Zipf 1932). This simplification is adopted, nevertheless, because it does not distort the explanatory power of this model.

68. See section 3.3.3.

this theoretical value because of contextual requirements and linguistic constraints. The number of ways to express a non-literal element is limited, each language has rules of grammar to conform with, and a limited corpus of synonymous words to use. Words and phrases which are less frequently used might thus have a smaller risk than a more common ones. On the other hand, using constant values for  $\frac{1}{P}$  might be closer to judicial behaviour, if judges adopt a rule-of-thumb approach rather than actually calculating the specific risk in each case.

### 3.6.2 Doctrinal Explanation

In this model, for a claimant in a copyright suit to succeed, he must furnish evidence in such a way that the  $\tau$  falls to a level below  $\Phi$ . What it means is that when  $\tau \leq \Phi$ , the judge can feel safe that the risk of court error is at an acceptably low level to find the defendant liable for copyright infringement.

When the work sought to be protected is de minimis, it means that the similarity between the claimant's work and the defendant's work is only at the level of  $L_6$  or above<sup>69</sup>. We can therefore imagine that the protection divide most likely to be situated between  $L_5$  and  $L_6$ . Of course, this is just an imagination for our model. Occasionally the court may place the divide between  $L_3$  and  $L_4$ , as the case of *Kirk v. J. and R. Fleming Ltd.* shows.<sup>70</sup>

When the similarity is at a lower level, such as at  $L_3$  or  $L_4$ ,  $\tau$  may be reduced by evidence of copying or access. When such evidence is admitted, the risk of court error becomes  $\tau = \omega \frac{1}{P}$ . This explains the applicability of the causal connection doctrine in the non-strict liability region where proof of copying or access is required. Conversely, if the independent creation defence is successfully raised, the multiplier  $\omega$  is not used.

Fictitious facts in a factual work may also be similarly explained, in that the inclusion of fictitious facts lowers the  $\tau$  by multiplying the high  $\frac{1}{P}$  of a chunk of facts with a low  $\frac{1}{P}$  of fiction. As has been noted by the courts, the similarities of "inessential, small, redundant

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69. As in  $L_7$  to  $L_9$ .

70. *Supra*, n. 47.

and even mistaken elements” may give rise to the suspicion of copying.<sup>71</sup>

The value of  $\tau$  may also be reduced through the combination of different elements. If three paragraphs  $L_3$  are similar between the claimant’s work and the defendant’s work, irrespective of their orders,  $\tau = \frac{1}{P_3 C_3} = \frac{6}{P_3(P_3-1)(P_3-2)}$ . If the appearance of the similar elements are in the same sequence in both works,  $\tau$  is further reduced to  $\tau = \frac{1}{P_3 P_3} = \frac{1}{P_3(P_3-1)(P_3-2)}$ . Thus, it can be observed that  $\frac{1}{P_3(P_3-1)(P_3-2)} < \frac{6}{P_3(P_3-1)(P_3-2)} < \frac{1}{P_3}$ .

The creativity requirement of the selection or arrangement of contents in a database may be similarly explained using this model. Requiring ‘arrangement’ is like the use of the inverse of a permutation rule to reduce the risk of court error, while requiring ‘selection’ is like the use the inverse of a combination rule.

### Substantiality Doctrine

To prove copyright infringement via copying, the complainant must show that the alleged infringing work is substantially similar to his copyrighted work.<sup>72</sup> This substantiality requirement means that trivial similarities do not amount to infringement. Unfortunately, the courts do not provide firm guidance on what constitute substantiality. It has been held that substantiality is a question of fact,<sup>73</sup> and a matter of impression.<sup>74</sup> The courts have also repeatedly emphasised that substantiality is not just a question of quantity, but also of quality. In *Ladbroke (Football) Ltd. v. William Hill (Football) Ltd.*, Lord Reid said that “the question whether [a infringer] has copied a substantial part depends much more on the quality than on the quantity of what he has taken.”<sup>75</sup>

The substantiality doctrine asks the question whether the infringing work copied is a substantial part of the claimant’s work. The question is why the size of the infringed work is used to determine infringement. If substantiality is confined to a quantitative test, it would lead to a paradox in that a small work gets better protection than a larger work.

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71. *Ibcos Computers Ltd. & Anor. v. Barclays Mercantile Highland Finance Ltd. & Ors.*, supra, n. 29.

72. CDPA, s. 16(3).

73. *Chatterton v. Cave* (1878) 3 AC 483.

74. *Designers Guild Ltd. v. Russell Williams (Textiles) Ltd.*, n. 19.

75. Supra, n. 35, at 469.

If a copyist takes the same number of elements from a small work and the larger work, the judge if using a quantitative test, would find a larger percentage, as in a substantial part, of the smaller work being copied. For the larger work, the judge would find a small percentage, i.e. an insubstantial part, being taken. To avoid this paradox, the courts have to develop an alternative concept of substantiality based on what is known as the 'qualitative' test. In a qualitative test, the impression made on judge overwrites the percentage of similarity. Unfortunately, the qualitative test is subjective and difficult to measure.

An alternative interpretation of the substantiality can be offered here. Substantiality can mean that the risk of court error  $\tau$  has been reduced to a level which is considered safe to find an infringement  $\Phi$ . This interpretation is not at odds with the quantitative and qualitative tests of substantiality. In all, four complementary explanations can be raised. The first is that the similar elements in the claimant's and defendant's works are at a level of abstraction capable of sustaining a finding of infringement. The second is that of a sufficiently large portion of similar and consecutive elements, e.g. a series of paragraphs from a page. The third is that of a sufficient number of similar elements in the same, though not consecutive, ordering. The fourth is that of a sufficient number of similar elements, though in the the same but not consecutive ordering.

The first and second explanations may account for the quantitative test of substantiality. This test can be explained as requiring that the lowest level of abstraction, similar between the infringing and the infringed work, to have crossed the threshold for finding an infringement, i.e. the inference divide.<sup>76</sup>

The third and forth explanations can be the illustrations for the qualitative test. This test can be interpreted to mean that insubstantial elements of high levels of abstraction, taken together in combination, using the combination or permutation rule, would reduce the risk of court error to such a low level as to be safe to find an infringement. As such, the qualitative test of the substantiality doctrine allows finding an infringement even when the similarity between the works does not constitute a large part of the infringed work.

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76. Or one approaching the inference divide, taking into account proof of copying or access as discussed above.

It is possible for the judge to look at substantiality not only from the literal dimension or the non-literal dimension, but to look at both dimensions cumulatively. If that is so, the model needs only one  $\tau$  and one  $\Phi$ , instead of one each for the literal and non-literal dimension. This makes sense as the function of copyright law is to prevent copying of a copyrighted work, both literally and non-literally.

### 3.7 The Filtration Puzzle

One puzzle remains in relation to protection of the different levels of abstraction, i.e. the role, if any, of a filtration process.

Some recognition of a filtration process may be found in the dicta of judges. In *Designers Guild Ltd. v. Russell Williams (Textiles) Ltd.*, Lord Millet in the House of Lords held that “similarities may be disregarded because they are commonplace, unoriginal, or consist of general ideas.”<sup>77</sup> In *Warwick Film Production Ltd. v. Eisinger & Anor.*,<sup>78</sup> Plowman J took almost the same approach where he found that those portions that have been copied were unoriginal parts and hence there was no infringement. Ferris J in *John Richardson Computers Ltd. v. Flanders & Anor.*<sup>79</sup> explicitly adopts this a filtration process from the US case of *Computer Associates International, Inc. v. Altai, Inc.*<sup>80</sup>

It seems that courts from UK and US do agree that unoriginal, commonplace, and public domain expressions are to be filtered out. Peterson J in *University of London Press Ltd. v. University Tutorial Press Ltd.*<sup>81</sup> hinted that authors could draw from a common stock. He notes that,

If an author, for purposes of copyright, must not draw on the stock of knowledge which is common to himself and others who are students of the

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77. Supra, n. 19, para. 39.

78. [1969] 1 Ch 508.

79. (1993) 26 IPR 367.

80. Supra, n. 17.

81. Supra, n. 34.

same branch of learning, only those historians who discovered fresh historical facts could acquire copyright for their works.<sup>82</sup>

A hypothetical situation illustrates the necessity for the filtration process. Imagine a copyrighted work which is an adaptation of an earlier public domain work, where it incorporates a substantial portion of the earlier work. The infringing work copies from the copyrighted work those portions which are similar to the earlier public domain work and no more. Copying is admitted. The question is whether those portions which were from the public domain work are to be filtered out before the similarity and substantiality tests. If filtration is allowed, we are acknowledging that copyright does not protect the whole work but only the original portion. If filtration is not allowed, incorporation of an earlier work may become a back door to extending copyright protection. Therefore, based on the discussion above, it seems that the filtration process is necessary.

Unfortunately, the filtration process does not square well with our abstraction model. In the abstraction model, no elements are filtered out. Instead, examination of similarity is confined to different levels of abstraction, with differing complexity in their elements. One solution to this paradox is to imagine that the filtration process does not really do what it says it does. Rather, a filtration process merely pushes the level of comparison for similarities down to a lower level of abstraction, when the previous higher level is deemed not protected as elements thereon are hypothetically 'filtered' away. Therefore, the solution to the illustration above is not to filter away the public domain elements, but to assign a risk value of '1' to that level of abstraction which contains the public domain work. This is equivalent to pushing the comparison of the level of abstraction to a lower level, and to ask whether there are substantial protectable elements at that lower level of abstraction.

This interpretation of the filtration process thus is closer to Lord Reid's caution:

A wrong result can easily be reached if one begins by dissecting the plaintiffs' work and asking, could section A be the subject of copyright if it stood by

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82. Ibid. at 609.

itself, could section B be protected if it stood by itself, and so on. To my mind, it does not follow that, because the fragments taken separately would not be copyright, therefore the whole cannot be. Indeed, it has often been recognised that if sufficient skill and judgment have been exercised in devising the arrangements of the whole work, that can be an important or even decisive element in deciding whether the work as a whole is protected by copyright.<sup>83</sup>

### 3.8 Conclusion

In this paper, we have used an evidence approach and an abstraction and probabilistic model to explain copyright doctrines. Copyright doctrines such as the originality requirement, de minimis rule, merger doctrine, and the *scènes à faire* doctrine, have the effect of creating a protection divide. Doctrines such as the causal connection requirement, and independent creation defence, further create an inference divide. We show that the protection and inference divides are relevant in protecting the literal and non-literal dimensions in a copyrighted work. Furthermore, we find that between the regions below the protection divide and the region above the inference divide, there is a non-strict liability protected region. All these three regions in the abstraction of a work, and the related copyright doctrines, are explained by an evidence theory of minimising the risk of court error.

We note the UK courts tend not to be explicit about the abstraction process, although the discussion and model above show that an abstraction process is what is adopted in determining copyright infringement. It is suggested that better understanding and analysis can be made if courts are more forthright about this approach.

Through the analysis in this paper, we further observe that copyright doctrines in the US come closer to supporting the evidence theory. The creativity requirement, merger, and *scènes à faire* doctrines in the US correlate well with the non-protection of levels of abstraction with high risk of court error. On the other hand, the “sweat of the brow” or

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83. *Supra*, n. 30.

“industrious effort” interpretation of originality in the UK shows that copyright doctrine does not support the evidence theory all the time.

Finally, we show that perhaps it is the goal of minimising the risk of court error which determines the evolution and development of copyright doctrines such as idea-expression dichotomy, originality, creativity, merger, de minimis rule, the scènes á faire doctrine, the causal connection requirement, independent creation defence, and the substantiality requirement.

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## **Chapter 4**

# **Copyright Failure and the Protection for Tables and Compilation**

### **Abstract**

This paper attempts to show that databases, as a category of informational goods suffer from what I term 'copyright failures'. The efficient remedy to these copyright failures is a liability rule. Property rule is socially inefficient for various reasons, and no protection leads us back to the classical problem of provision of public goods. With this in mind, a hypothesis is formulated based on Richard A. Posner's efficient common law hypothesis. Our hypothesis is that judges will tend to make liability rule decisions as it is socially efficient. This hypothesis is tested against court decisions on tables and compilations disputes from the earliest times to 1997 when a new database regime supersedes thereafter. Initial investigation shows that our hypothesis is rejected, and that in most cases, judges choose property rule over liability rule. The possible reasons for this anomaly are explored.

## 4.1 Introduction

Informational goods such as copyrightable works exhibit public goods characteristics, namely non-excludability and non-rivalrous in consumption (Gordon and Bone 2000), which cause them to be susceptible to freeriding. Furthermore, the theory of public goods postulates that when freeriding occurs, there will be suboptimal incentive for authors and creators to invest in the creation of new works. It goes that the provision of informational goods is a form of market failure requiring state intervention, which may come in various forms.

As an example, the state may subsidise authors and creators through tax revenue, or hold a contest with a cash prize every time a new work is required. Alternatively, the state may have a law to create a special kind of property in informational goods with the power to legally exclude non-paying users. In practice, it is this special kind of propertisation which is presently being adopted to resolve the market failure in the provision of informational goods such as copyrightable works. Copyright law, in other words, is a law which creates a property out of non-excludable and non-exhaustible creations.

It is the contention of this paper that although copyright law may be an optimal mechanism to resolve the problem of informational goods provision in most cases, special circumstances may arise where secondary market failures are prevalent. The genesis of these secondary market failures, termed here as copyright failures, is examined here in Part I. In Part II, copyright failure in databases is explored and liability rule remedies are suggested. In Part III, the Posnerian hypothesis that common law courts will make efficient rules is tested against English and Scottish tables and compilations cases to determine whether the hypothesis holds true whereby courts grant liability rule remedies. Finally a conclusion discusses the findings and suggests further direction for research.

# Part I: Nature of Copyright Protection

## 4.2 The Abstraction Process

It is arguable that copyrighted works are divisible into levels of abstraction, on both the literal and non-literal aspects (dimensions) of the works (Hand J. in *Nichols v. Universal Pictures Corp.*; Khong [2006]). The higher levels of abstraction contain common and general elements, while the lower levels of abstraction contain unique and detailed elements. For example, at the literal dimension of a text, the higher levels of abstraction consist of the letters of the alphabets, words, and short phrases; and the lower levels of abstraction consist of sentences, paragraphs, pages and chapters of text. Similarly at the non-literal dimension, the highest level of abstraction consists of the genre or a very general idea, and the lowest level of abstraction consists of specific sequences of plots, scenes and instances of a story.

It can be shown that copyright doctrines as established by case law create a protection divide where elements at higher levels of abstraction are not protected by copyright law, while elements at the lower levels of abstraction are protected. In American copyright law, elements in the protected levels of abstraction are called 'expression' and elements in the unprotected levels of abstraction 'ideas'.

There is possibly a further inference divide below the protection divide which protects elements in the levels of abstraction below by a first appropriation, strict-liability like rule. This is evident through findings of infringement in copyright piracy cases when similarity between a protected work and an alleged infringing work is wholesale, and no proof of copying or access needs to be shown. Thus, it is as if that a level of abstraction below an inference divide in the protected work is duplicated in an infringing work, regardless of culpability by way of copying.

By extension, the protected levels of abstraction above the inference divide are effective only against appropriation but not against independent re-creation. This means that to prove infringement of a level of abstraction above the inference divide, extraneous

evidence of actual copying or probable access has to be adduced.

It can be seen that the implication of this abstraction analysis is that low levels of abstraction in a work get strong copyright protection while the highest levels of abstraction get no protection. Substantial reuse by other authors of the elements at the higher levels of abstraction is thus made possible. Thus it is observable that the more levels of abstraction are found above the protection divide, the more reusable it is of a copyrighted work by other authors. Nevertheless, the injunction of Judge Learned Hand in *Nichols v. Universal Pictures Corp.* has to be always kept in mind: “Nobody has ever been able to fix that boundary [between protected and unprotected levels of abstraction], and nobody ever can.”

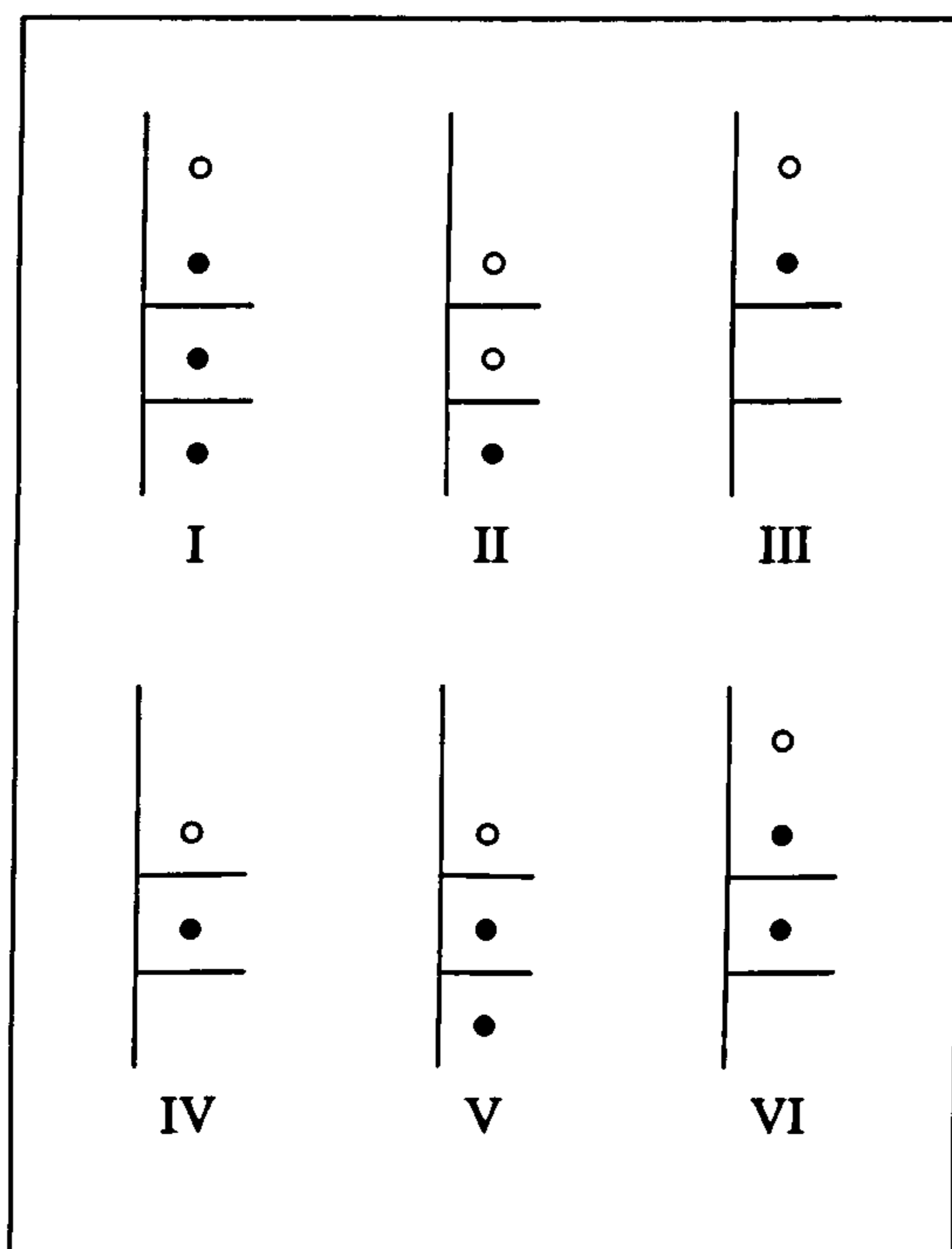
### 4.3 Significant Levels of Abstraction

Since the high levels of abstraction consist of general and common elements, consumers of copyright goods derive utility mainly from using or enjoying the elements at low levels of abstraction. These low levels of abstraction therefore are ‘significant levels of abstraction’ because they bring about an increase in the consumer’s surplus as the result of the creation of the works. It should be noted that the term ‘significant levels of abstraction’ does not include higher levels of abstraction which may only allow a right-holder to extract rent from second-comers by way of limiting entry.

The significant levels of abstraction may be or may not be protected by copyright law depending on the position of protection divide. Figure 4.1 shows a representation of six possible configurations of a hypothetical copyright regime. The black dots denote the significant levels of abstraction and the white dots denote non-significant levels of abstraction. The lower lines represent the inference divides and the upper lines the protection divides. A blank region means that there is no further level of abstraction in that region. It should also be noted that the configurations here are equally applicable to the literal and non-literal dimensions of a copyrighted work.

Configuration I shows the case where the significant levels of abstraction span across

Figure 4.1: Significant Levels of Abstraction



all three regions. The significant levels of abstraction above the protection divide allows for reuse of those levels by competitors, and the significant levels of abstraction below the inference divide cannot be reused by competitors without licence. Configuration I represents one model of partial copyright protection in a market with imperfect substitutes.

Configuration II represents a situation where all the significant levels of abstraction are below the inference divide. In such a case, there are no meaningful substitutes from competitors, and the market can be characterised as a monopoly with complete copyright protection. Configuration III shows the other extreme. All significant levels of abstraction are above the protection divide. There is no copyright protection to the works in this market. Competitors and second-comers may appropriate the significant levels of abstraction without infringement.

The black dots in the middle region in Configurations IV, V and VI represent protection of those significant levels of abstraction only against appropriation or on proof of actual copying. Whether these levels are protected strongly or weakly depend on their likelihood

of coincidental similarity, i.e. how likely can the elements be re-constructed independently without having access a similar prior work. If the likelihood of coincidental similarity is low, these significant levels of abstraction will tend to be strongly protected as in the case of a monopoly. On the other hand, if the likelihood of coincidental similarity is high, such as for factual content, they tend to be weakly protected, as if they are competitively available to all. Such is the case of Configuration IV, and also, the middle regions in Configurations I, V, and VI.

Partial protection as represented in Configuration I may be further illustrated by two examples. In the first, we have the case of an economics textbook. We find that copyright law protects how the author expresses his content in each paragraph, and the sequence of appearance of each of the specific paragraphs. What is not protected is the knowledge of economics in the non-literal dimension. Hence, the textbook is only partially protected by copyright, so far as to the wordings of each paragraph, but not to the knowledge in its content. In the second case, we have a play. Similar to the textbook case, the wordings in a large chunk, and specific sequences and details of each scene may be protected by copyright law. But the general idea of the play is not protected. Even the idea of a specific scene may be not protected. Likewise, a play is only partially protected by copyright law.

Partial protection by copyright law may give rise to substitutes that are dissimilar in appearance, but partially similar in content. This is due to more protection on the literal dimension and less protection on the non-literal dimension. Competitors may reuse to some extent those parts of a work which are not protected or falling under the protection divide. They may also independently create those protected parts above the inference divide. As a result of this dissimilarity in appearance, the works are likely to be imperfect substitutes.

If all the significant levels of abstraction lie below the inference divide as in the case of Configuration II, a case of complete protection results and there will be no substitutes by competitors. A related example of this can be seen in technical specifications, especially in computer-related technology. In *Data Access Corporation v. Powerflex Services Pty. Ltd. & Ors.*, the High Court of Australia affirmed the decision of the Full Court of the Federal Court of Australia, that a specially created table of codes known as a



Huffman Compression Table, used in an application development system, is protected by copyright, even though its reproduction in a competing system is necessary to achieve interoperability. The court acknowledged thus that “[the finding] may ... have wider ramifications for anyone who seeks to produce a computer program that is compatible with a program produced by others,” but it resisted from interfering with the law as it thinks that “these are ... matters that can be resolved only by the legislature reconsidering and, if it thinks it necessary or desirable, rewriting the whole of the provisions that deal with copyright in computer programs.” Since the compression table is an essential component of the appellant system, providing complete protection thereto will render competing software non-substitutes if lock-in effect is taken into account. Even if lock-in effect is disregarded, competing products may only be considered as partial but imperfect substitute.

Complete protection may also appear in the case of compilations of information, when such compilations are sourced from a single organisation. In *British Broadcasting Company v. Wireless League Gazette Publishing Company*, Astbury J. held that the defendant publisher was infringing the plaintiff’s copyright in television programme listings by incorporating them in its weekly entertainment magazine. Since the court found that the whole of the listing is protected, the defendant could not create a substitute product without infringing on the plaintiff’s copyright. Hence, copyright protection in such cases is complete.

The flipside of complete protection is no protection. This happens when the significant levels of abstraction are above the protection divide, as represented by Configuration III. In *Feist Publications, Inc. v. Rural Telephone Service Co., Inc.*, the United States Supreme Court denied copyright protection to a telephone directory on the ground that the subscribers’ details are facts and not capable of copyright protection, that there is no creativity in the selection of entries since selection is wholesale, and that there is no creativity in the arrangement either since the listings are in plain vanilla alphabetical order. The peculiar situation caused by this decision is that some significant and socially useful works such as directories may be denied copyright protection.

In conclusion, three possible situations may be envisaged by the operation of copyright

law: partial protection, complete protection, and no protection, although different countries' copyright law may give rise to slightly different effects, such as in the United Kingdom where there are fewer occurrences of 'no protection' situations because of lower threshold for copyright protection. The economic implications of the three positions of copyright protection will be subject to further examination below. Furthermore, it is suggested here that a secondary market failure, which I term 'copyright failure', results when there is complete or no copyright protection.

## **4.4 Economic Implications**

The three possible situations of copyright protection may lead to three types of market for copyright goods. Partial copyright protection give rise to a market of imperfect substitutes, complete copyright protection to a market with no substitute, and no copyright protection to a market of free competition with perfect substitutes. These three market conditions will be analysed in respect of copyright works.

For the purpose of this paper, a stylised characterisation of an informational work is one with a fixed cost of creation, and zero or non-increasing marginal cost of reproduction (see Arrow 1962). Consequentially, the average total cost is ever decreasing, and the supply curve exhibits the characteristics of a natural monopoly. The existence of this natural monopoly phenomenon is a reason to prevent the duplicative effort to re-create the same work if re-creation is costly.

A second consideration to the analysis is that risk of court error arises when the court could not conclusively determine whether two informational works are the same because of copying by one from the other, or were independent creations. Therefore, it seems that copyright doctrines developed in such a way as if to minimise the occurrences of court error (Khong [2006]). This does not mean that judges consciously develop doctrines to avoid court error. More likely, courts do so in such a way as if to avoid the embarrassment of making erroneous findings of fact. Thus, it can be said that copyright law promotes evidentially dissimilar works, and discourages the duplicative creation of evidentially

similar works.

#### **4.4.1 Imperfect Substitution**

Normally, partial protection leads to a copyright market of imperfect substitutes. When copyright law protects significant low levels of abstractions and gives no protection to the high levels of abstraction, a market of imperfect substitutes appear. This happens because competing works may provide substitution in the non-protected ideas, and imperfect substitution or some differentiation in the protected expression. In the language of economics, the market exhibits the characteristics of monopolistic competition (Meurer 2001).

The welfare analysis of such a market, absence concrete empirical data on a specific category of works, is at best indeterminate (Tirole 1988, 288). It is possible that the unregulated market will produce too many variations of the same theme (Abramowicz [2003]), or that competition albeit imperfectly may drive down prices and drives up quality, and inducing dynamic efficiency (Yoo 2004). Potentially, competition has the effect of increasing consumer surplus by reducing the size of deadweight loss.

A copyright market of imperfect substitutes with evidentially dissimilar works has the additional advantage of reducing the risk of court error. Furthermore, duplicative sunk costs of creation are likely to be avoided as each work seeks to be different from the others. It would seem that partial copyright protection leading to a market of imperfect substitutes is a good solution to the public goods problem in informational goods.

#### **4.4.2 No Substitution**

When copyright law provides complete protection to all the significant levels of abstraction in a work, it creates a monopoly market with no substitute. The protected author or copyright owner will then be able to charge a monopoly price and earn super-normal profit with no threat from competition. From a welfare point of view, this is a form of market

failure. Potential consumers who are not willing to pay the monopoly price are unable to consumer the good even though their willingness to pay is lower than the marginal cost of provision. This loss of potential consumption is the proverbial deadweight loss associated with monopoly pricing.

The existence of market power, together with the ability to separate high value and low value consumers and the ability to prevent arbitrage between them, allows the copyright owner to increase his profit through price discrimination. In first-degree price discrimination, where all consumers' surpluses are captured by the seller, profit is maximised and the market is efficient. There is no deadweight loss, and as such first-degree price discrimination is also known as perfect price discrimination, although it is less desirable by the consumers. On the other hand, when the copyright owner could not perfectly price discriminate, the market is not likely to be efficient. The main cause is asymmetry of information between the seller and the consumers over the latter's willingness to pay. Hence, the monopoly seller could not perfectly price discriminate, and deadweight loss remains. In conclusion, only in the rare case of perfect price discrimination, will the existence of no substitute in a copyright market be efficient.

#### **4.4.3 Perfect Substitution**

When copyright law affords no protection over significant levels of abstraction, freeriders may enter an incumbent's market by reproducing what was created without incurring the same fixed cost of creation. By not having the pressure to recoup a fixed cost of creation, these freeriders may charge a price as low as their marginal costs. This pricing at marginal cost in the market of a natural monopoly such as a copyright work is a first best solution, for it is efficient. However, marginal cost pricing is not feasible to the original creator, for he needs to charge at least a price equal his average total cost to recover his investment. Hence, he will not be able to compete with the freeriders and will have less incentive *ex-ante* to invest in the creation of works unless there are supplemental ways to overcome freeriding. The lack of incentive as a result of freeriding is a form of market failure as it leads to the suboptimal provision of public goods.

## **Part II: Copyright Failure**

### **4.5 Copyright Failure Defined**

The simple analysis above shows that imperfect competition is an ideal market structure for informational goods such as copyright works. It avoids the two extremes of monopoly and free-for-all copying. Nevertheless, secondary market failures may arise from the operation of copyright law under certain conditions described below. The term 'copyright failure' is used here to refer to these kinds of market failures associated with the operation of copyright law. A copyright failure can be defined as a deviation of an information market from the model of imperfect competition.

Three types of copyright failure may be described. Type 1 copyright failure is associated with the existence of monopoly power when the law completely protects all significant levels of abstraction in a work and prevents competitors from introducing non-infringing substitutes. A Type 2 copyright failure appears when copyright law does not protect the significant levels of abstraction in a work, and allows freeriding perfect substitutes to appear, in which case the market failure of suboptimal provision of public goods manifests.

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A further Type 3 copyright failure may be described, when copyright law allows independent re-creation of the significant levels of abstraction in a copyrighted work. This failure has two aspects: natural monopoly and risk of court error. The natural monopoly aspect of a Type 3 copyright failure is related to the problem of duplicative sunk costs. If the law protects some significant levels of abstraction but allows independent re-creation of the same, there may be some welfare losses when those levels of abstraction are duplicated by a second-comer. This inefficiency is the result of deviation from the first best solution of requiring all second-comers to license from the first mover instead of independently re-creating those levels of abstraction. Of course, this conclusion only holds if the creation of those levels of abstraction is a costly process; when the cost is low or negligible, or that the transaction cost of licensing is higher than the cost of re-creation,

it is not efficient to compel licensing.

Maurer and Scotchmer (2002) in a paper discussing the lack of an independent invention defence in patent law suggest that this lack is inefficient from the point of patent policy. They postulate that with an independent invention defence, second-comers may use the defence to threaten a patent holder to lower his licensing fee in order to induce competitors to license instead of reinventing the patented technology. The end result of this threat is that the licensing fee will be lowered and the product market incorporating the patent will be competitive owing to a multitude of suppliers. Our model here, on the other hand, suggests another scenario. We submit that in the case of copyright law, the independent creation defence is only applicable to similarity of elements in the intermediate levels of abstraction, and that the defence is generally inapplicable to low levels of abstraction below the inference divide. The defence does not apply if the second-comer intends to duplicate the copyright owner's work. Hence if the second-comer intends to come out with a differentiated but competing work, effort would have to be expended to create a different low level of abstraction, and licensing would not in any case be an useful option. For this reason, there are more uses of independent re-creation in the copyright industry than as what Maurer and Scotchmer's analysis predict.

The second aspect of the Type 3 copyright failure is about the risk of court error. This risk is a conceptualisation of the court's inability to correctly distinguish a second-comer independently re-creating a work similar to the first-moving copyright owner's and that which results from copying by the second-comer. It is similar to what Lichtman (2003) calls 'the evidential conundrum'. The risk can also be considered as a form of social cost, for it may reduce the incentive to create of authors, although rightly this could be off set by a positive risk of being paid damages because of a similar court error.

## **4.6 Copyright Failure in Databases**

Databases or compilations of information pose peculiar problems in copyright law. Unlike other written works such as novels or textbooks which exhibit the characteristics of a

product market of imperfect substitutes, copyright protection of databases generally leads to a few types of copyright failures. These failures are caused by the inherent factual nature of databases, and to further understand the causes of copyright failure in databases, all databases need to be categorised into three types.

The first type of database is the sole-sourced or private-sourced databases. In this type of database, the creator makes his list of content, either randomly, based on some personal preferences, or after research based on his own requirements. The contents of his database are unique to himself, and highly unlikely to be independently re-created by others. The contents of the database may or may not relate to an event or phenomenon post-construction. Nevertheless, in this type of database, the database is most significant before happening of an associated event, such as a broadcast or a race, and this value diminishes rapidly after the event. Therefore, even if other producers may observe the event independent of the original database, re-creation of such a database has little value to other producers. Examples of this type of database are the television programming and horse racing schedules. Television programming and horse racing schedules, as databases, have the most value before the broadcast or the race. Although other producers may re-create such databases, if legally allowed, after observing the event of the broadcast or the race, it will be valueless by then. Thus, the creator is the sole or private source of this type of databases.

The second type of database is what is called quasi-public sourced database. Unlike, sole-sourced databases where their values diminish after happening of an event relating to the contents, the value of a database remains at all times. Therefore, if not legally prevented, other producers may have incentive to re-create the database either by copying or by independently observing the related events. Examples of this type of database are bank and social security numbers, telephone directories, street directories by the city planning agencies, and lists of professionals or accreditation by the regulatory bodies. The normal situation is that the database is a by-product creation of another activity, and creator enjoys economies of scope. Thus, it is common that a creator of a quasi-public sourced database has substantial cost advantage in the construction or compilation of the database compared to other producers.

The third type of database is the public-sourced database. In this type of databases, the contents are found in publicly observable events or phenomena. Therefore, different producers may independently or concurrently compile the same database. No producer has any cost advantage over the other, although some producers may have some technological or financial advantage or endowment which makes them more likely to be successful in compiling the database. Examples of this type of database are maps, astronomical, geographical and meteorological data.

These three types of databases may be analysed against the different configurations of copyright protection in Figure 4.1. Configuration I must be ruled out because it is not a probable configuration due to the factual nature of databases. This is because the content of a database can normally be described as a single level of abstraction. Furthermore, for simplicity sake, Configurations V and VI are not considered here as their implications are potentially indeterminate, depending on the implications of protecting the middle region. Therefore, that leaves us with Configuration II, IV and V to consider.

Table 4.1 tabulates the different types of databases against the three configurations of copyright protection and derives the possible economic implications. It can be observed that a no protection strategy—Configuration III—always lead to a suboptimal provision problem—Type 2 copyright failure—as long as the fixed cost of creation is lower than the cost of reproduction.

When copyright protection is complete, as in Configuration II in a sole-sourced database, a monopoly is created, leading to a Type 1 copyright failure. Allowing non-infringing independent re-creation is useless in this type of database because the content is highly unique to the copyright owner, and cannot be independently re-created. Thus Configuration IV, where independent re-creation is allowed, also leads to a Type 1 copyright failure.

When copyright protection is complete in a quasi-public sourced database, and competitors may not re-create a database indirectly from public sources, the situation is the same as in a sole-sourced database. The advantage of this strategy is that a Type 3 copyright failure is avoided. The disadvantage is that potentially a Type 1 copyright failure



Table 4.1: Copyright Failure in Databases

<i>Configuration Type</i>	<i>Sole Sourced Databases</i>	<i>Quasi Public Sourced Databases</i>	<i>Public Sourced Databases</i>
II	Type 1	Type 1	Type 3
IV	Type 1	Types 1, 3	Type 3
III	Type 2	Type 2	Type 2

occurs. On the other hand, when protection is of Configuration IV, where competitors may re-create a database indirectly, a Type 1 copyright failure may still appear because of the absolute cost advantage of the first creator, but when competitors do independently re-create the database, a Type 3 copyright failure appears.

In public-sourced databases, the predominant feature is a Type 3 copyright failure. The natural monopoly argument applies because it is socially optimal to have one party incur the fixed cost of creation while the others save on this cost by relying on what the first compiler has incurred. Also the risk of court error may also appear because more than one party has access to the same source of information.

In conclusion, legal protection of databases seems to be shrouded with economic market failures, for whatever the type of database and for whatever protection strategies. This is the result of protection under what Calabresi and Melamed (1972) would call 'property rule', where the object of protection is sacrosanct and any infringement has to be stopped and the infringer punished. Perhaps, protection of database through a property rule is not an optimal strategy, and a liability rule remedy may cure some of these failures.

## 4.7 Solution to Copyright Failure

The existence of copyright failures should not paint a gloomy picture on the copyright system. Indeed there exist remedies to overcome situations of copyright failure. One possible solution is a liability rule remedy.

The seminal article on property rules and liability rules is Calabresi and Melamed's (1972). Extending from what Coase (1960) and Stigler (1966, 110–114) showed that under the assumption of zero transaction cost, property rule protection of property rights will lead to efficient final allocation of those rights after bargaining, Calabresi and Melamed demonstrated using the examples of accidents and negative externalities, that property rights is better protected by liability rules, i.e. compensation through payment of damages, *ex-post facto* when bargaining is costly or that transaction cost is prohibitive. When *ex-ante* bargaining is impossible, such as in the case of accidents, or that transaction cost is prohibitive, such as when anti-commons appear (Depoorter and Parisi 2002), liability rules protection might be efficient. Furthermore, as Professor Wendy Gordon (1982, 1613) alluded in her paper on transaction cost and the fair use doctrine, liability rule remedies can be used to avoid strong monopoly power, such as in the case of the market for piano rolls at the turn of the twentieth century.

A liability rule remedy<sup>§</sup> is one where a person is permitted to infringe a property right provided that compensation is paid; while under a property rule, infringement without prior consent is not permitted and the infringer can be punished with criminal sanctions or imposed aggravated damages. The idea for this distinction is to encourage contractual exchanges of rights where feasible and only allow non-contractual intrusions in those special circumstance where bargaining is not possible or is socially justified, of one case is when there is strong monopoly power. It has to be noted that a property may be protected by both a property rule and a liability rule at the same time depending on specific circumstances. For example, a real property may be protected with property rules against trespass and adverse possession, but at the same time may be subject to compulsory acquisition with compensation by the State.

A special case of liability rule is one with zero compensation. A zero-rated liability

rule is the same as a no property rule, i.e. there is no infringement or that protection is not afforded to the property for a particular type of infringement. A common example of a zero-rated liability rule in copyright law is the fair use doctrine. In *Sony Corporation of America, et al. v. Universal City Studios, Inc., et al.*, (*Betamax* case), the US Supreme Court held that recording of broadcast television programmes using a video cassette recorder for time-shifting purposes may constitute fair use and is excused from copyright infringement. Similarly in the UK, section 70 of the Copyright, Designs and Patents Act 1988 provides for the an exception by allowing without infringement “the making in domestic premises for private and domestic use of a recording of a broadcast solely for the purpose of enabling it to be viewed or listened to at a more convenient time.”

Gordon (1982), in analysing the economic rationale for zero-rated liability rule in copyright, in the context of the fair use doctrine, proposes a three-part test consisting of (i) proof of market failure, (ii) cost and benefit analysis, and (iii) no substantial injury to the rights owner. By market failure, it has to be established that use of the copyrighted work would not have happened under contract; by cost and benefit analysis, it should be shown that there is a net social gain after the adoption of the fair use doctrine; and finally, by substantial injury, it must be shown *hypothetically* that the doctrine would not substantially affect the author’s original incentive to create, or in other words, the use is Pareto optimal. Using this three-part test, Gordon argues that the US Supreme Court decision in *Williams & Wilkins Co. v. United States* of finding the fair use doctrine to be applicable to mass photocopying of medical journal articles was economically sound, and that the same test can equally be applied to the *Betamax* case.

The drawback of a zero-rated liability rule is that it might in certain cases lead to sub-optimal level of incentive to create, i.e. a Type 2 copyright failure. On the other hand, a zero-rated liability rule has the advantage of dispensing with the cost of determining the quantum of compensation.

The alternative to a zero-rated liability rule is a normal liability rule where only compensation is payable. The problem of enforcing a normal liability rule is that it is informationally intensive and requires the court to make a determination as to the level of compensation. As liability rule is not punitive, the compensation should not be excessive

so as to unnecessarily deter the defendant from carrying out his activity.

One form of a normal liability rule is a compulsory licensing scheme, where the price or compensation is predetermined. Unfortunately compulsory licensing as a judicial remedy is not common. Unless specifically provided by statute, courts normally do not grant compensation in lieu of an injunction and delivery up. The main reason may be attributed to the difficulty of determining a 'fair' price. This difficulty applies as well to tribunals managing compulsory licensing schemes. Nevertheless, there are some evidences of courts beginning to temper traditional copyright remedy with competition law liability rule remedies.

In *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v. Commission of the European Communities* (the *Magill* case), the European Court of Justice had the occasion to consider the circumstances when a copyright may be subject to compulsory licensing under competition law. In that case, three broadcasting organizations, RTE, ITV and BBC, refused to grant a licence to Magill TV Guide Ltd for including their television programming listings in a weekly publication of all schedules. An investigation by the European Commission found that their refusal to license amounts to an abuse of a dominant position, and ordered them to supply to "third parties on request and on a non-discriminatory basis with their individual advance weekly programme listings and by permitting reproduction of those listings by such parties," and "if they chose to grant reproduction licences, any royalties requested must be reasonable." An ensuing application to the Court of First Instance to annul the Commission's order was rejected, and further appeal to the Court of Justice was also unsuccessful.

The defendant undertakings argued, in the main, that refusal to license is part and parcel of the rights in copyright granted by national legislation, and is further exempted from community competition rules by Article 36 (now 30) of the EEC Treaty. The ECJ however rejected this argument. It held that although refusal to grant a licence on itself cannot constitute an abuse of dominant position, "the exercise of an exclusive right by the proprietor may, *in exceptional circumstances*, involve abusive conduct [emphasis mine]" (*Magill* case, para. 50). Finding the undertakings to be "the only source[s] of ... information" and having "a de facto monopoly over the information" which puts

them “in a position to prevent effective competition on the market in weekly television magazines,” the ECJ held them to be in a dominant position (para. 47). To show exceptional circumstances sufficient to find an abusive conduct, the ECJ considered the following four factors: (i) there is “no actual or possible substitute” to what Magill plans to offer (para. 52), (ii) the undertakings sought to “prevent the appearance of a new product” (para. 54), (iii) there is “no justification for ... refusal” to grant a licence (para. 55), and (iv) the undertakings sought to “reserve to themselves the secondary market of weekly television guides by excluding all competition on that market” (para. 56).

The principle in *Magill* has recently been followed in two competition cases involving intellectual property rights. In *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG*, the ECJ heard a reference for preliminary ruling from a German court on the question, *inter alia*, whether a refusal to licence a database, being an industrial standard structure for the presentation of pharmaceutical regional sales data, by an undertaking in a dominant position which has an intellectual property right therein, to a competitor who would otherwise would not be able to offer an alternative service, constitute an abuse of dominant position within the meaning of Article 82 EC. Similarly in *Microsoft Corporation*, the European Commission found that Microsoft had contravened Article 82 by refusing to disclose and license, to Sun Microsystems Inc., key interoperability information necessary to connect Sun’s workgroup servers to Microsoft’s client operating system. In both cases, the decision in *Magill* was followed, and all four factors were found to be present.

Arguably, the conditions prescribed in *Magill* restrict the wider application of liability rules and compulsory licensing to copyright and intellectual property cases. By requiring the condition of “preventing the appearance of a *new* product,” *Magill* seems to confine the application of compulsory licensing to cases where a new market is created through the introduction of a new product as against sharing of an existing market by way of price competition. If that were the case, compulsory licensing would be a Pareto improvement, for no one is worse off and the new producer and new consumers are better off. Unfortunately, the factual circumstances of *Magill* does not square with the Pareto improvement idea. Although *Magill*, read narrowly, requires the introduction of a new

product and that the new product is to satisfy an unfulfilled demand, the probable outcome is that the new weekly guide will be an effective substitute to the undertakings' guides, and demand will be diverted from the undertakings to the new producer.

This kind of competition can be characterised as a Cournot competition by a duopoly. A Cournot competition is more likely to occur than Bertrand competition because producers of the weekly guides are less likely to adjust the quantity produced once the guides are being printed. The theory of Cournot competition predicts that firms will set an equilibrium price lower than the monopoly price but higher than the perfectly competitive price of which each party's profit is maximised given that each party could predict the other's quantity produced. Consumers' surplus will increase and the joint producers' surplus will decrease. A Kaldor-Hicks improvement, in theory, will result.

An alternative to pricing compulsory licensing is the Efficient Component Pricing Rule (ECPR) (Baumol 1983; Baumol and Sidak 1994; Baumol, Ordover, and Willig 1997). According to this pricing rule, production efficiency in the entrant will be ensured by fixing the compulsory licensing fee, also known as the access fee, at the average incremental cost of supplying the essential facility plus all antecedent opportunity cost of the incumbent-licensor. This opportunity cost is equated to the reduction in the incumbent's profit as the result of supplying one unit of the licence to the entrant-licensee. Proponents of ECPR argue, notwithstanding the fact that the incumbent's holds a monopoly position vis-à-vis the essential facility, the proper criterion for determining the opportunity cost is that under the condition of perfectly contestable market. In practice, the opportunity cost component may include the monopoly rent from the copyright, and henceforth, the incumbent copyright owner will, in theory, be indifferent between being paid for a licence and selling the copyrighted good himself. In fact, if the licensee can sell a competitive substitute product at a lower price than the incumbent, the incumbent's profit from licensing fees will go up because of the effect of the Law of Demand.

Opponents such as Economides and White (1995) and Tye and Lapuerta (1996) on the other hand contend that the Efficient Component Pricing Rule preserves the incumbent's monopoly profit and shields it from the effect of competition. Thus recognising the ill social effects of monopoly pricing and transferring of monopoly rent from the

entrant to the incumbent, Baumol and his supporters have at various forums insisted on supplementing ECPR with a regulated opportunity cost. In a latter article (Baumol, Ordovery and Willig 1997), they clarified that the Efficient Component Pricing Rule is a necessary but insufficient condition for efficiency, and regulation of the opportunity cost component of the access fee has to be in place to limit monopoly rent. Nevertheless, it is not particularly clear why regulation of the opportunity cost component is of any difference from setting a lower licensing fee than one under ECPR as long as it covers the average fixed cost. Indeed, opponents of this rule show that a lower licensing fee than the ECPR could still be welfare enhancing notwithstanding that the entrant is productively less efficient than the incumbent (Economides and White 1995).

Where the marginal cost of a copyright licence is assumed to be zero, as what Arrow (1962) characterises in relation to the marginal cost of information, the quantification of the average incremental cost component becomes problematic. The fact is that zero marginal cost means zero average incremental cost. Although Baumol (2004) tries to advocate the application of the Efficient Component Pricing Rule as the right approach to the “socially desirable size of copyright fee,” he failed to respond to his own challenge of determining the copyright fee when marginal cost is assumed to be zero. One way around this challenge is to think of ‘incremental cost’ as the cost of moving from no copyrighted work or component to having one, i.e. the fixed cost of making the copyrighted work or the relevant component. Thus average incremental cost in this respect would be the average fixed cost of making the copyrighted work or component.

An occasion arose in the New Zealand courts a few years ago to test the acceptability of the Efficiency Component Pricing Rule. In *Telecom Corporation of New Zealand Ltd. v. Clear Communications Ltd.*, the Judicial Committee of the Privy Council heard an appeal from New Zealand over a dispute on the interconnection access and traffic charges to a telecommunications network, based on competition law. Having taken advice from Baumol and Willig, the incumbent network provider, Telecom Corporation sought to apply the Efficient Component Pricing Rule to charges on the new entrant, Clear Communications, of which the latter objected. In the High Court, the ECPR found favour with the judges, as being more likely than other alternatives to improve efficiency

and promote competition in the telecommunications sector. More importantly, the Court acknowledged that although the ECPR would permit the incumbent to retain its monopoly profit, there is no clear evidence Telecom Corporation was doing so. Thus, it was held that by applying the ECPR to pricing of its access and traffic charges, Telecom Corporation was not in breach of section 36 of the New Zealand Commerce Act 1986, which to an extent is similar to Article 82(1) of the EC Treaty.

Clear Communications appealed to the Court of Appeal against the High Court decision. In relation to the ECPR, Cook P. found that “stated in that bald form, the rule would seem obviously anti-competitive and in breach of s. 36 of the Commerce Act. It would amount to allowing a new entry into a market on condition only that the competitor indemnify the monopoly against any loss of custom.” (Court of Appeal decision, at 340.) Gault J. provided a scathing attack on ECPR:

“That the employment of the perfectly contestable standard can lead to a price incorporating monopoly profits suggests to me a contradiction. In a perfectly contestable market I would not expect any monopoly profits to be chargeable. I therefore do not see how monopoly profits legitimately can be included in any opportunity cost. That they can in Professor Baumol’s model invites a conclusion that the model is imperfect.” (Court of Appeal decision, at 356.)

Having lost its ability to charge an opportunity cost component in the appellate round, Telecom Corporation appealed further to the Privy Council in London. Delivering a unanimous opinion, Lord Browne-Wilkinson found that section 36 did not have the function of regulating prices. Rather, there exists a Part IV in the Commerce Act which allowed regulators to impose price restriction by regulation. Furthermore, relying on the High Court’s earlier finding, the Privy Council reversed the Court of Appeal decision on the ground that there is no evidence that Telecom Corporation had sought to retain monopoly profits in the opportunity cost component of its calculation. In the final analysis, the applicability of the ECPR was resurrected and affirmed by the Privy Council, although emphasis was paid to the need to regulate the pricing of the opportunity cost component.



To a certain extent, the difference of opinion between the Privy Council and the Court of Appeal was more in form than in substance. Both acknowledged the need to regulate the inclusion of monopoly rent in the opportunity cost component of the Efficient Component Pricing Rule. The Court of Appeal thought that this could be done within the framework of section 36, while the Privy Council held that section 36 could not be given such a wide interpretation as a specific Part IV in the same Act had provided for such a function. It has to be reminded that even Baumol and Willig agree that monopoly rent in the opportunity cost component has to be regulated, notwithstanding the theoretical validity of ECPR. Finally, it might be useful for other cases to take note that the Efficient Component Pricing Rule has been accepted by a court of highest ranking in the common law world, for the learned opinions of the Privy Council is of highly persuasive value on related questions of law, even though they do not have a binding effect.

An application of non-zero rated liability rule to the same factual situation in *Feist* occurred in the European Union. Article 5 of the Universal Service Directive (2002) read together with recital 35 of that Directive mandate that publicly available telephone service providers in the European Union have a legal duty to furnish their telephone subscribers' information, in a fair, cost-oriented and non-discriminatory manner, for the provision of telephone directories (Garzaniti 2003, para. 1–228). Henceforth, telephone service providers cease to have a right to refuse provision or licensing of their subscribers database. Furthermore, competition authorities have powers to investigate if the price is excessive, although not strictly in a price regulation sense (c.f. European Commission, DG for Competition 1997).

There are, on the other hand, detractors such as Professor Robert Merges (1994; 2004) who does not believe that there are legitimate uses of liability rules for the protection of intellectual property rights. He categorically states his objection to the imposition of liability rule remedies in the form of compulsory licensing in intellectual property cases in favour of voluntary collective licensing schemes. He argues that if there were high transaction cost to licensing, profit-seeking copyright owners would devise mechanism such as voluntary collective licensing organisations to reduce these transaction costs. Thus there is little scope for state intervention by way of compulsory licensing. Furthermore, he

claims that the history of compulsory licensing in the USA in respect of player piano rolls and mechanical reproduction rights thereafter, demonstrates that compulsory licensing creates a market distorting effect by allowing pressure groups to impose a low compulsory licensing rate of two cents per song from 1909 to 1978. Unfortunately, without explicitly stating so, his main gripe about compulsory licensing is not about liability rule *per se*, but the low, and probably below 'market', royalty rate set by the political and interest group process.

In conclusion, it is suggested and shown here that a liability rule remedy in the form of a compulsory licence may be an efficient solution to copyright failure in the protection of tables, compilations and databases.

## **Part III: Analysis of Table and Compilation Cases**

### **4.8 Hypothesis**

Some years ago, Richard A. Posner (1977) put forward an efficient common law hypothesis. Paraphrased by Michelman (1979, 309), this hypothesis suggests that court decisions, "taken as a whole, tend to look as though they were chosen, with a view to maximizing social wealth (economic output as measured by price) by judges subscribing to a certain set of ('microeconomic') theoretical principles." Judges, as the hypothesis predicts, will tend to unconsciously choose legal positions and make decisions which maximise social wealth.

Henceforth, if the efficient common law hypothesis holds in our copyright failure problem, we shall observe the same effect whereby judges often grant liability rule remedies in tables and compilations cases, because liability rule is the efficient remedy. This hypothesis may be tested by British court decision from the earliest times to 1997 when a new database regime (Database Directive) takes over thereafter. For the purpose of this testing, 50 cases identified, with best effort, from law digests, textbooks and

subsequent cases and labelled accordingly in the Appendix, are divided into the three types of databases described below. Within the public sourced database, a special category is identified where the selection of content is not wholesale but involves individual creativity in its selection or composition. Also, indicated in the public source databases category is whether the database owner can be characterised as the 'cheapest cost compiler' because of his unique position.

## 4.9 Results

Of the 50 cases examined, only one of the decisions partially resembles a liability rule remedy (P24). Six sole-sourced databases were examined: one granted an injunction (S4), three interlocutory injunctions (S1, S6, S7), one was held to have no copyright (S3), one with copyright recognised and had the case remitted back to the trial court (S2), and another with copyright declared but no injunctive remedy for the potential future injunction was unknown (S5). This last case is to be contrasted with another case with similar circumstances (C6), namely unknown future football lists, where an injunction was granted. In the case where an interlocutory injunction was granted (S6), it was noted that a licensing scheme for the database was available.

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Seven quasi-public source database cases were examined. All but one had an injunction granted. In the one where the Appeal Court found no infringement (Q7), it was because the defendant claimed to have obtained the information from the physical components sold by the plaintiff instead of copying straight from the plaintiff's database. This is a case where "reverse-engineering" of information is allowed. In all but one cases, there were substantial network effect in the use of the information, *e.g.* telegraphic codes, shorthand codes, and compatible after-market components for cutter-crush machines.

In the category of public source databases, excluding those with creative or unique selection or composition of data, thirty cases were investigated. The remedies ordered were more varied. Fourteen injunctions were ordered or maintained. Two preliminary or interlocutory injunctions ordered. Nine cases were dismissed or found to be not

infringing, partly on the ground that the database is not protected by copyright. Two cases were referred to a jury or an arbitrator with no result reported. In one single case, nominal damages were ordered on the ground that the defendant contributed substantial improvement to the work copied (P6); and another had only damages as there is no more potential future infringement of the said matter (P24). Nevertheless, case (P24) *H. Blacklock & Co. v. C. Arthur Pearson* (1915) cannot be strictly termed as a liability rule remedy in a copyright sense, because it does not cover future use of the copyright material.

As for public-source database exhibiting creative or unique selection or composition of information, four cases had injunctions granted, while two was held not to be entitled copyright protection (C4) or of no infringement (C5).

The cases examined suggest that property rule remedies in the form of injunctions are the predominant results in sole-sourced, quasi-public sourced databases, and public-sourced databases with creative selection. General public-source databases show a mixed result with injunctions granted slightly more often than when infringement of copyright was rejected. A careful examination of public-sourced database cases further shows a general trend of granting of injunction against infringement after (P12) *Kelly v. Morris* (1866).

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In conclusion, the hypothesis that courts will grant efficient solution in the form of a liability rule remedy is rejected. This finding however must be qualified, as it does not wholly reject the Posner's efficient common law hypothesis, but only in regards tables and compilations cases.

## 4.10 Discussion

There are a few possible explanations for the results obtained. First, almost all the cases on tables and compilations are heard in the Court of Chancery or the equity court. Traditionally, this court is an alternative to the King's Bench or Queen's Bench which provides the common law remedy of damages. The Chancery on the other hand provides

injunctions as remedies, and accounts of profits following an injunction. Thus so, an counter-argument can be made by reference to the practice of Scottish Court of Session. In the handful of Scottish cases examined, the court had no problem or reservation against granting an interdict. Therefore, this phenomenon can be rationalised as that granting of injunctions and interdicts is supply driven—offered by the court—rather than demand driven—requested by the claimants.

The second reason is that of path-dependence. Courts are bound by the doctrine of *stare decisis*, which means that courts are obliged to follow the same reasonings in earlier decisions. Since the earliest copyright infringement cases, injunctions have been granted in the Chancery. Hence, courts in subsequent cases follow what had been decided. Likewise in the law and economics literature, Backhaus (1998) and Blume and Rubinfeld (1982) have argued that precedent can hamper the efficient evolution of law.

The third possible explanation is that it is difficult to compute damages in the case of copyright infringement, especially for potential prospective use. Courts are anathema to prescribing prices for compulsory licensing or damages for unique goods (Pengilley 1995). In most cases, each copyrighted work is a unique work with no perfect substitute in the market. Hence there is no equivalent price to determine compensation. Also, the copyright owner might not be willing to divulge its own accounts for the court to assess compensation.

## 4.11 Conclusion

In this paper, we first define the term significant levels of abstraction. Taking that copyright protection creates two divides—the protection divide and the inference divide—around the significant levels of abstraction, we show that there can be a possible six configurations of copyright protection. Within these six configurations, there can be a partial copyright protection, a complete copyright protection, or no copyright protection. Partial copyright protection leads to a market of imperfect substitutes, which some literature shows is dynamically efficient given the public good nature of copyright goods. Complete

copyright protection on the other hand leads to monopoly, which we term Type 1 copyright failure. Insufficient or no copyright protection of the significant levels of abstraction leads to a market of perfect substitutes, and resurface the problem of provision of public goods, which we term Type 2 copyright failure. Further more, the wasteful nature of duplicative sunk costs to independently re-create an evidentially similar work, and its related evidential conundrum are causes for another form of copyright failure. These three forms of copyright failure can generally be identified as market failures stemming from the operation of copyright law.

In the main, we show that databases as a category of informational goods suffer from the problems of copyright failure of all three types, depending on the type of database and the form of protection. For this purpose, we identify three types of databases: sole-sourced databases, quasi-public sourced databases, and public-sourced databases. These three types of databases are analysed against three different configurations of copyright protection. These copyright failures in databases can be efficiently remedied by a liability rule, for which a detailed discussion of judicial experience in applying liability rule remedies follows.

At the end, we test a hypothesis that common law courts will make efficient decisions by granting liability rule remedies, by examining 49 decided British cases on tables and compilations of information. The results reject the hypothesis as most cases ended with an injunction, *i.e.* a property rule remedy. Three possible reasons for these findings are offered.

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*Radio Telefis Eireann and Anor. v. European Commission (Intellectual Property Owners Inc. and another intervening)* (Magill case) ECR [1995] I-0743, [1995] All ER 416, [1995] FSR 530 (ECJ, 6 April 1995).

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## **Legislation**

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Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), [2002] OJ L 108/51–77.

New Zealand Commerce Act 1986.

Treaty Establishing the European Community (previously, Treaty Establishing the European Economic Community 1957), [2002] OJ C 325.

## Appendix

### Sole Source Databases

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[S1] <i>Joseph G. Walford and Ors. v. William Johnston and Son</i> (1846) 20 Dunl (Ct of Sess) 1160.	Custom house books compiled through the authority from the Lords of Treasury.	Copyright and interim interdict affirmed.
[S2] <i>William Maclean and Ors. v. Andrew Moody</i> (1858) 20 Dunl (Ct of Sess) 1154.	Shipping list of which complainers have exclusive access.	Copyright recognised. Case remitted back to Outer Court for jury trial on the issue of piracy.
[S3] <i>Greyhound Racing Association, Ltd. v. Shallis</i> [1922-28] MCC 370.	List of starting position of racing greyhounds, created from random balloting.	No copyright.
[S4] <i>British Broadcasting Company v. Wireless League Gazette Publishing Company</i> [1926] 1 Ch 433 (Ch 1926).	Television programming.	Injunction granted.
[S5] <i>Football League Ltd. v. Littlewood Pools Ltd.</i> [1959] 1 Ch 637 (Ch 1959).	Chronological list of football matches.	Copyright declared, though no injunction for past infringement, and no new lists yet for further matches.
[S6] <i>Independent Television Publications Ltd. v. Time Out Ltd. and Elliott</i> [1984] FSR 64 (CA 1983).	Television programming. Licensing scheme available.	Interlocutory injunction granted.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[S7] <i>Express Newspapers Plc. v. Liverpool Daily Post &amp; Echo Plc. and Ors.</i> [1985] 3 All ER 680, [1985] FSR 306.	Newspaper contest results.	Interlocutory injunction granted.

### Quasi-Public Source Databases

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[Q1] <i>Pitman v. Hine</i> (1884) 1 TLR 39 (QB 1994).	Shorthand codes.	Injunction granted.
[Q2] <i>Ager v. Peninsular and Oriental Steam Navigation Co.</i> (1884) LR 26 Ch D 637.	Telegraphic code. Defendant, using the plaintiff's code, compiled a book for their agents' internal use.	Injunction granted.
[Q3] <i>Ager v. Collingridge</i> (1886) 2 TLR 291.	Telegraphic code. Defendant, using the plaintiff's code, compiled a book for their agents' internal use.	Injunction granted.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[Q4] <i>Exchange Telegraph Company Ltd. v. Gregory &amp; Co.</i> [1896] 1 QB 147 (CA 1895).	Stock exchange information supplied to plaintiff. Defendant obtained information from plaintiff and publish it before plaintiff's publication.	Injunction granted.
[Q5] <i>D. P. Anderson &amp; Co. Ltd. v. Lieber Code Co.</i> [1917] 2 KB 469.	Telegraphic code.	Injunction granted.
[Q6] <i>Masson Seeley v. Embosotype</i> (1924) 41 RPC 160.	Catalogue of cuttercrush machines, types, etc. Defendant competitor publish a catalogue with same information and description.	Injunction granted.
[Q7] <i>Purefoy Engineering Co. v. Sykes &amp; Boxall &amp; Co.</i> (1955) 72 RPC 89-106 (CA 1955).	Code numbers for standard parts. Defendant contended that information was taken from the parts themselves.	No infringement.

## Public Source Databases

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P1] <i>Taylor v. Bayne</i> (1776) 10 Mor. Dict. (Morison's Dictionary of Decisions (Scot.)) 8308 (Scotland). (1776) 10 Mor. Dict. App. 7.	Road book. Piracy proved.	Interdict granted.
[P2] <i>Sayre and Ors. v. Moore</i> (1785) 1 East. 361n; 102 ER 139-140.	Sea charts. Defendant copied and made alterations and improvements. Plaintiff's map inferior to defendant's.	No infringement.
[P3] <i>Carman v. Bowles</i> (1786) 2 Bro.C.C. 80; 29 ER 45-48. (1786) 1 Cox 283; 29 ER 1168-1169.	Plaintiff's road book in letter-press. Defendant published great roads in copper-plate and cross-roads in letter-press. Both editions made by the same author.	Injunction subsequently dissolved, thinking that the second work though contained copied matter, is original in itself.
[P4] <i>Trusler v. Murray</i> (1789) 1 East. 363n; 102 ER 140-141.	Book of chronology.	Case referred to arbitrator for comparison. Copying not allowed.
[P5] <i>Cary v. Faden</i> (1799) 5 Ves. Jun. 24; 31 ER 453-454.	Road book. Errors copied, though with improvements. Plaintiff's book copied from defendant's earlier edition, and defendant copied from plaintiff's.	No order made.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P6] <i>Cary v. Longman &amp; Rees</i> (1801) 1 East 358; 102 ER 138–140. 3 Esp. 273; 170 ER 613–614.	Road book. Plaintiff's book copied from earlier work with improvements.	Nominal damages.
[P7] <i>Cary v. Kearsley</i> (1802) 4 Esp. 168; 170 ER 679–680.	Road book.	Case reverted to jury, on whether copying was to make a new book with new arrangement of matter, or colourably to steal the plaintiff's copyright.
[P8] <i>Matthewson v. Stockdale</i> (1806) 12 Ves. Jun. 270; 33 ER 103–106.	East India Calendar, containing names and appointments on the Indian Establishment. Plaintiffs, being the clerks in the India House, are the cheapest cost compilers.	Injunction maintained.
[P9] <i>Longman v. Winchester</i> (1809) 16 Ves. Jun. 269; 33 ER 987–988.	Court calendar. Copying admitted.	Injunction granted.
[P10] <i>Baily v. Taylor</i> (1829) 1 Russ. & M. 73; 39 ER 28.	Leases and annuities tables, which can be calculated in a few hours' time.	Injunction refused. Plaintiff at liberty to claim suit in court of law.
[P11] <i>Nichols v. Loder</i> (1831) 2 Coop. T. Cott. 217; 47 ER 1135.	Map of canals and railroads. No piracy proved.	Injunction refused.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P12] <i>Kelly v. Morris</i> (1866) LR 1 Eq 697.	London directory. Defendant copied some information from plaintiff's directory.	Injunction granted against those parts copied.
[P13] <i>Scott v. Stanford</i> (1867) LR 3 Eq 718.	Coal import statistics. Plaintiff cheapest cost compiler.	Injunction granted.
[P14] <i>Morris v. Ashbee</i> (1868) LR 7 Eq 34.	Business directory.	Injunction granted against the list of names.
[P15] <i>Cox v. Land and Water Journal Company</i> (1869) LR 9 Eq 324.	List of hounds.	Preliminary injunction refused.
[P16] <i>Morris v. Wright</i> (1870) LR 5 Ch App 279.	Business directory. Defendant used plaintiff's information for verification.	Preliminary injunction maintained.
[P17] <i>Cobbett v. Woodward</i> (1872) LR 14 Eq 407.	Catalogue with description of furniture. Partial copying proven.	Plaintiff entitled to injunction against synopsis, but not description of common articles.
[P18] <i>Grace v. Newman</i> (1872) LR 19 Eq 623.	Catalogue of cemetery headstones. Defendant copied from plaintiff's.	Injunction granted.
[P19] <i>Maple &amp; Co. v. Junior Army and Navy Stores</i> (1882) LR 21 Ch 369 (CA).	Catalogue of furniture, with original engravings. Defendant copied from plaintiff's.	Injunction maintained.



<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P20] <i>Trade Auxiliary Company v. Middlesborough and District Tradesmen's Protection Association</i> (1888) 40 Ch 425 (CA 1889).	Lists of registered bills of sales and deed of arrangement. Defendant copied plaintiff's fictitious entries.	Injunction maintained.
[P21] <i>Cate v. Devon and Exeter Constitutional Newspaper Company</i> (1889) 40 Ch 500.	Lists of bankruptcies, bills of sale, etc.	Injunction granted.
[P22] <i>Leslie v. J. Young &amp; Sons</i> [1894] AC 335 (HL 1894).	Republication of railway time table from plaintiff's book. Copying admitted.	No liability.
[P23] <i>Weatherby &amp; Sons v. International Horse Agency and Exchange, Ltd.</i> [1910] 2 Ch 297.	Stud book with list of brood mares. §	Plaintiff entitled to succeed in the action. An action to restrain infringement of copyright would lie though no damage was shewn.
[P24] <i>H. Blacklock &amp; Co. v. C. Arthur Pearson</i> [1915] 2 Ch 376 (Ch 1915).	List of railway stations, for use in defendant's competition.	No injunction but only damages, as competition was over.
[P25] <i>Odham's Press, Ltd. v. London and Provincial Sporting News Agency</i> [1935] Ch 672.	Starting prices of bets in horse racings.	No copyright.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P26] <i>G. A. Cramp &amp; Sons, Ltd. v. Frank Smythson, Ltd.</i> [1944] AC 329, [1944] 2 All ER 92 (HL 1944).	Tables in pocket diary.	No copyright.
[P27] <i>Elanco Products Limited and Anor. v. Mandops (Agrochemical Specialists) Ltd. &amp; Anor.</i> [1979] FSR 46, [1980] 8 RPC 213 (CA 1978).	Instruction on use of herbicide. Patent on herbicide expired. Defendant's label contains same data but in a different format and language. Most data could be traced to a public source.	Interlocutory injunction granted.
[P28] <i>Waterlow Publishers Ltd. v. Rose</i> (1990) 17 IPR 493, [1995] FSR 207 (CA 1989).	Directory of practising solicitors. Plaintiff has access to cheapest cost compiler, the Law Society.	Infringement upheld, although the data had been checked, verified or updated before insertion in the defendant's directory.
[P29] <i>Waterlow Directories Ltd. v. Reed Information Services Ltd.</i> (1990) 20 IPR 69, [1992] FSR 409 (Ch 1990).	Directory of barristers and solicitors. Defendant entered names from plaintiff's directory into a word processor and sent letters to said persons to invite them to be included in defendant's directory. Plaintiff has access to cheapest cost compiler, the Law Society.	Injunction granted.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[P30] <i>VNU Business Publications BV v. Ziff Davis (UK) Limited</i> [1992] RPC 269.	Directory of corporate computer users and suppliers, for use as mailing list, with seed entries. Plaintiff refused to disclose identity of seed entries.	Interlocutory order for the defendant.

## Public Source Databases With Creative/Unique Selection/Composition

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[C1] <i>Spiers v. Brown</i> (1858) 6 WR 352.	Material from French-English dictionary.	No infringement as result produced was a different work.
[C2] <i>Hotten v. Arthur</i> (1863) 1 H & M 603; 71 ER 264.	Catalogue of books with original anecdotes and descriptions.	Injunction granted.
[C3] <i>Mack v. Petter</i> (1872) LR 14 Eq 431.	Birthday scripture text book. Daily bible quotes in birthday diary.	Injunction granted.
[C4] <i>Chilton v. Progress Printing and Publishing Company</i> [1895] 2 Ch 29 (CA 1895).	Selected predictions of winning horses.	No copyright.

<i>Case Name</i>	<i>Summary</i>	<i>Remedy</i>
[C5] <i>Collis v. Cater, Stoffell, and Fortt Ltd.</i> (1898) 78 LT (NS) 613.	Chemist's trade catalogue.	Injunction granted. •
[C6] <i>Ladbroke (Football), Ltd. v. William Hill (Football), Ltd.</i> [1964] 1 All ER 465, [1964] 1 WLR 273 (HC 1964).	Football betting coupons. Substantial copying proven.	Injunction maintained.

## **Chapter 5**

# **Orphan Works, Abandonware and the Missing Market for Copyrighted Goods**

### **Abstract**

The subject of ‘orphan works’ and ‘abandonware’ is gaining legal attention lately. It concerns the status of copyrighted works which are still within the term of protection but are no longer commercially available to the public.

This paper examines the question of orphan works and abandonware from a law and economics perspective. Orphan works and abandonware are classified into five types depending on their causes, characteristics and assumptions: commercial abandonment, strategic abandonment, temporary abandonment, unknown ownership, and unlocatable ownership. Economic analysis of these five types of orphanhood and abandonment suggests that the efficient solution to the problem of unavailability and unlocatability is different for each type of abandonment and orphanhood.

Finally, existing legal solutions together with a proposal for reforming copyright to a renewable system are examined, and further analysis on this proposal concludes that this coupled with a threat of compulsory licensing might be an effective way of solving the orphan works and abandonware problem.

## 5.1 Introduction

Of late, the issue of orphan works and abandonware is gaining attention in the legal circle. Following the case of *Eldred v. Ashcroft*,<sup>1</sup> a new case is pending appeal in the United States raising the issue of orphan works.<sup>2</sup> The Library of Congress (2005) recently ended an inquiry on orphan works. In the US Congress, a bill<sup>3</sup> 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.

## Part I

### 5.2 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.<sup>4</sup> Through this exclusive right, copyright owners<sup>5</sup> may earn profit by granting a license or sale of a copy subject to

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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.

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.

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.

### **5.3 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, 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.<sup>6</sup>

## **5.4 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.

Commercial abandonment is the simplest case of copyright abandonment. Here, the

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



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,<sup>7</sup> 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.

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

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.

## **5.5 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.

### 5.5.1 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,<sup>8</sup> 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 1814<sup>9</sup> 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 1842<sup>10</sup> provided authors with a term for life plus seven years, or 42 years 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,<sup>11</sup> 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,<sup>12</sup> copyright term was further extended to life plus seventy years in 1995.<sup>13</sup>

Contrary to stylised models of optimal copyright term,<sup>14</sup> the optimal term as a matter

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8. 8 Anne, c. 19.

9. 54 Geo. III, c. 156.

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

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).

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,<sup>15</sup> 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.<sup>16</sup> 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'.

### **5.5.2 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

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

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

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.<sup>17</sup> 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.<sup>18</sup> 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,

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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.<sup>19</sup> Similarly, the argument goes that authors may use works and material from the public domain which would enrich the creative process.<sup>20</sup> 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.

## **5.6 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

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

20. Ibid.

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 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.<sup>21</sup>

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.

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21. CDPA, s. 296ZB.



## Part II

### 5.7 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.

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.<sup>22</sup> 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 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

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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.

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.<sup>23</sup>

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.

### **5.7.1 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 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 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 rises. At best, a second-hand market is only a second-best solution to the supply of abandoned copyright works.

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23. The other reason is to accommodate temporary abandonment.

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.<sup>24</sup>

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.

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

## 5.7.2 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 are the inclusion of new material in the new version, and the correction of mistakes from the old versions.<sup>25</sup>

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

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25. And often times, inadvertently introducing new mistakes.

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 the new version, publishers periodically destroy stocks of old version of books and organise buyback schemes for certain textbooks (Fudenberg and Tirole 1998, 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.<sup>26</sup>

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

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.

### **5.7.3 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 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.

#### **5.7.4 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.

### **5.7.5 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.

### **5.7.6 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.

### **5.7.7 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.

## **5.8 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 terms 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.

### **5.8.1 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.

#### **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.<sup>27</sup> 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

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27. Berne Convention, Art. I.

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,”<sup>28</sup> or “where the identity or the address of the owner of the right of reproduction is unknown.”<sup>29</sup>

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.”<sup>30</sup> 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. 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.

### **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

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

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

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

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.<sup>31</sup> 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.”<sup>32</sup> In return for the licence, the Act allows the copyright owner to collect royalties as a civil right.<sup>33</sup>

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.

## 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

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31. CDPA, s. 190.

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

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

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.<sup>34</sup> 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

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34. CDPA, s. 32.



as much as he likes and as often as he likes, provided that it is done by hand (Laddie et al., 2000, para. 20.24). Accordingly, 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.”<sup>35</sup> 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.<sup>36</sup>

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.<sup>37</sup>

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.<sup>38</sup> 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.”<sup>39</sup> 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.”<sup>40</sup> For the purposes of section 41, the prescribed libraries for the purpose of making a copy are “all libraries in the United Kingdom,”<sup>41</sup> but copied

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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).

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.<sup>42</sup>

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,"<sup>43</sup> "for the purposes of research for a non-commercial purpose, or private study."<sup>44</sup>

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."<sup>45</sup> 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

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

43. CDPA, s. 43(1).

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

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

accessible copies are not commercially available.<sup>46</sup> 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.<sup>47</sup> An abstract accompanying a published article on a scientific or technical subject may be copied or issued copies to the public.<sup>48</sup> 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.<sup>49</sup>

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 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.

### **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

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46. CDPA, s. 31B.

47. CDPA, s. 35.

48. CDPA, s. 60.

49. CDPA, s. 74.

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.<sup>50</sup> 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, 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.<sup>51</sup> The order shall furthermore provide for the licence to be free of royalty.<sup>52</sup> 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.<sup>53</sup>

The Secretary of State may also “by order provide that ... the lending to the public of

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

51. CDPA, s. 141(1).

52. CDPA, s. 141(4).

53. CDPA, s. 141(7).

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.<sup>54</sup>

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.”<sup>55</sup> 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.”<sup>56</sup> 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.

### **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 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

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54. CDPA, s. 66.

55. CDPA, s. 136(2).

56. CDPA, s. 136(3).

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.<sup>57</sup>

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.<sup>58</sup>

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.

### **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

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

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

facing potential commercial abandonment can make additional profit through the lowering of transaction cost with the use of a micro-payment system. In this way, unavailability because of commercial abandonment may be avoided.

### **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.<sup>59</sup> 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 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.

### **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

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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.



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.

## **5.8.2 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.

### **Expansion of the Fair Use Doctrine**

Patry and Posner (2004, 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.<sup>60</sup> In the United Kingdom, section 70 provides a similar defence for the recording of a broadcast in domestic premises for private and domestic use.

### **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.<sup>61</sup> 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 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

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

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

abandonment by the copyright owner. This is in line with the idea of ending the property right in the works.

### **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.<sup>62</sup>

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,” places no substantive limit on Congress’ legislative power.<sup>63</sup> 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.<sup>64</sup> In addition, the court also rejected the corollary *quid pro quo* argument that “extending an existing copyright without demanding

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

63. Eldred v. Ashcroft, at 197.

64. Eldred v. Ashcroft, at 212.

additional consideration ... bestows an unpaid-for benefit on copyright holders and their heirs.”<sup>65</sup> 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.”<sup>66</sup> 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.<sup>67</sup> 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.”<sup>68</sup> 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.”<sup>69</sup> Furthermore, in deference to

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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.”<sup>70</sup>

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.”<sup>71</sup> 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

$$pV > F + L, \tag{5.1}$$

and social welfare is

$$W = V - A - L. \tag{5.2}$$

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

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

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 no implication. For the other case, from (5.2),

$$\begin{aligned} W &= V - A - L > 0 \\ V &> A + L \\ pV &> pA + pL \\ pV &> [pA - (1 - p)L] + L. \end{aligned} \tag{5.3}$$

Compare (5.3) to (5.1), the condition  $W > 0$  is fulfilled when

$$F = pA - (1 - p)L. \tag{5.4}$$

The maintenance fee  $F^* = pA - (1 - p)L$  from (5.4) 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 (5.4) 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.<sup>72</sup> 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.

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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.

### 5.8.3 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 no formality for the subsistence of copyright protection.<sup>73</sup> 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

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

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.

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 "husbandry" those characters.

## **5.9 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.

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