

# The Economics of Copyright

Developments in  
Research and Analysis

Edited by  
WENDY J. GORDON and  
RICHARD WATT

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Developments in Research and Analysis

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**Joëlle Farchy** is Assistant Professor at the University of Paris Sud and a member of the Center of Research Matisse, Paris 1. In 1990, her Ph.D. in economics was about the French film industry. She now teaches both in the University of Paris Sud and Panthéon Sorbonne (Paris 1). She has published several papers on cultural industries. Her last book entitled *The end of the*

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**Wendy J. Gordon** is Professor of Law and the Paul J. Liacos Scholar in Law at Boston University School of Law. A member of the Editorial Board of the *Encyclopaedia of Law and Economics* (Edward Elgar) and a former Chair of the Intellectual Property section of the Association of American Law Schools, she is best known for uniting economic and philosophic inquiries in her studies of copyright and intellectual property theory. Her 1982 piece 'Fair Use as Market Failure' (*Columbia Law Review*) was one of the first legal articles to introduce systematic economic theory into the analysis of copyright doctrine. Her more than two dozen articles include 'An Inquiry into the Merits of Copyright' (*Stanford Law Review*), 'A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property' (*Yale Law Journal*), 'On Owning Information' (*Virginia Law Review*), 'Toward a Jurisprudence of Benefits' (*University of Chicago Law Review*), 'Excuse and Justification in the Law of Fair Use: Commodification and Market Perspectives' (in *The Commodification of Information*, Kluwer), and 'Copyright' (with Robert Bone, in the *Encyclopaedia of Law and Economics*). She has been the Visiting Senior Research Fellow at Oxford's St. John's College, a Visiting Fellow at Oxford's Centre for Socio-Legal Studies: Programme in Comparative Media Law and Policy, a Fulbright Scholar, a resident at the Rockefeller Foundation's Bellagio Center, and the recipient of various other grants and awards. She is currently the General Secretary of SERCI.

**Stan Liebowitz** was trained at Johns Hopkins (B.A.) and UCLA (Ph.D.). He is currently a Professor of Economics in the School of Management at the University of Texas at Dallas after having been on the faculty at the University of Western Ontario, University of Rochester, and a Faculty Fellow at the University of Chicago. In addition to five books, he has published over sixty articles in journals including the *American Economic Review* and the *Journal of Political Economy*, as well as more popular outlets such as the *Wall Street Journal* and *CIO Magazine*. He is on the Editorial Board of the *Journal of Network Industries* and the Advisory Board for the Digital Economy Center of the Heartland Institute. Professor Liebowitz's research interests include the economic impact of new technologies on copyright owners, the economics of networks, pricing issues, and antitrust. He is best known for his work (with Steve Margolis) on network effects and lock-in, culminating in two books, *Winners, Losers & Microsoft* (Independent Institute, 1999) and a collection of academic articles on that subject in *The Economics of Qwerty* (NYU Press/Palgrave, 2001, edited by Peter Lewin). His most recent book titled *Rethinking the Network Economy* was published

by the American Management Association in the fall of 2002. His work has been the focus of articles in *The Economist*, the *Wall Street Journal*, the *New York Times*, the *Financial Times*, and a programme on the BBC. He has consulted and testified in the United States and Canada on issues related to technology and intellectual property.

**Francesco Parisi** is a Professor of Law and Director in the Law and Economics Program at George Mason University School of Law. He received his D.Jur. from the University of Rome 'La Sapienza', an LL.M. and a J.S.D. and an M.A. in economics from the University of California at Berkeley and a Ph.D. in economics from George Mason University. Among his published books are *The Law and Economics of the European Union*, with Paul Stephan and Ben Depoorter (Lexis, 2003); *Economic Foundations of Private Law*, with Judge Richard A. Posner (Edward Elgar, 2002), *Law and Economics* (3 volumes), with Judge Richard A. Posner (Edward Elgar, 1997), *Liability for Negligence and Judicial Discretion* (California, 1990; 2nd ed., 1992), and *Il Contratto Concluso Mediante Computer* (CEDAM, 1987). Additionally, he has authored over one hundred papers in the field of law and economics and comparative legal theory. Professor Parisi is currently serving as Editor of the *Supreme Court Economic Review* (Chicago University Press) and Co-Director of the Program in Economics and the Law at the J.M. Buchanan Center for Political Economy and he is a member of the Board of Editors of the *International Review of Law and Economics*, the *American Journal of Comparative Law*, and the *Social Sciences Research Network*.

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**Fabrice Rochelandet** is Assistant Professor at the University of Paris Sud. He received his doctorate in economics from the University of Paris Pantheon-Sorbonne. His thesis addressed the question of copyright in view of the technological changes in the cultural industries. He has taught courses and seminars on public economics, copyright economics, and heritage and copyright. His current research centres on the economic impact of digital technologies through topics such as electronic commerce of cultural goods, intellectual property and digital divide. He has written and published several articles on the protection of copyrighted content in the digital era, the efficiency of copyright collecting societies and the European copyright harmonisation.

**Lisa N. Takeyama** received her Ph.D. in economics from Stanford University in 1992. She is currently employed as an Assistant Professor in the Department of Economics at Amherst College. Prior to this, she was employed for four years as an Assistant Professor of economics at the University of Oregon. Her primary work on piracy and intellectual property has been published in the *Journal of Law and Economics* and the *Journal of Industrial Economics*. She has also published other work in the *Journal of Industrial Economics*, the *European Economic Review*, *Economics of Innovation and New Technology*, and *Economics Letters*. In 1997, she was named among the top 15 economics scholars at the Assistant Professor rank at liberal arts colleges (*Journal of Economic Education*).

**Ruth Towse** is Reader in Cultural Industries at the Department for the Study of the Arts and Culture at Erasmus University Rotterdam, the Netherlands. She works in cultural economics and the economics of copyright, specialising in performers' rights and the music industry. She was Joint Editor of the *Journal of Cultural Economics* from 1993–2002. She has authored a number of articles on copyright and artists collected in *Creativity, Incentive and Reward* (2001), published by Edward Elgar, and edited several recent books on the economics of intellectual property and cultural economics, all published by Edward Elgar; *Cultural Economics* (1997), *Economics of Intellectual Property* (with Rudi Holzhauer) (2002) and *Copyright in the Cultural Industries* (2002).

**Richard Watt** is Professor of Economic Theory at the Universidad Autónoma de Madrid. After completing a Bachelors and a Masters degree in economics at Canterbury University in New Zealand, he earned his doctorate in economic theory from the Universidad Autónoma de Madrid in 1990. His interest in the economics of copyright is manifested in his book *Copyright and Economic Theory: Friends or Foes?* (Edward Elgar, 2000). He is also actively researching the economics of risk bearing and risk sharing. He has published several papers in international journals on this topic, as well as on the theory of oligopoly. He is currently the President of SERCI.

# Preface

**Richard Watt**

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The Society for Economic Research on Copyright Issues (SERCI)<sup>1</sup> was founded with the general objective of providing a solid academic platform from which the economic dimension of copyright can be studied, debated, and in general analysed, and from which the results of such study can be distributed as widely as possible. In particular, SERCI is concerned with researching how copyright can be efficiently and effectively administered, managed, protected, and rewarded. As an integral part of SERCI's activities, an annual congress is held at which economists, lawyers and other copyright professionals from all over the world present their research, and at which this research is actively debated. When a group of academics from such diverse backgrounds meets to discuss topics such as 'equity' and 'efficiency' in copyright administration, the positive externalities that constantly flow from one group to the other can only help in our overall understanding of such a complex and stimulating area of research.

The present book contains a refereed selection of papers from the SERCI annual congress that was held in Madrid on June 3<sup>rd</sup> and 4<sup>th</sup> of 2002. The papers that have been selected cover several of the main fields that are currently at the forefront of the copyright research agenda. They not only show how fruitful the study of copyright from an economic theory perspective has been, but the papers also clearly indicate the directions (and analytical tools) that will be of principal interest over the next few years, as research in this area flourishes.

Our most sincere gratitude goes to the people and institutions that have, collectively, made the book possible. First and foremost, we are most appreciative to the Spanish Author's Society (SGAE) for their belief in, and support of, the SERCI project. SERCI, and therefore the annual congress and this book, would not exist without their generous support. In particular, we would like to thank Eduardo Bautista, Rubén Gutierrez and Rufino Sánchez for their surprisingly adept ability to attend, understand, appreciate, and in all



respects offer support for, the seemingly unconventional environment of pure academic work. Above all, we hope that the final output is useful as a bridge between academia and the day-to-day practice of copyright administration, at least offering useful suggestions, stimulating ideas, and directions of thought.

A debt of gratitude is owed to all of the team at Edward Elgar Publishers, above all for their patience and understanding as far as deadlines on a collectively authored project are concerned.

All of the papers that are contained in this volume were revised by their respective authors, based on both the lively discussions at the congress and on the comments that derived from the referee process. Given this, I would like to express my gratitude to all of the participants at the 2002 SERCI congress. The combined efforts of these academics have undoubtedly led to a far better final product. Special appreciation, however, is due to my co-editor, whose tireless work into the small hours of the morning on many occasions, and whose insightful comments on almost all of the papers in this volume, have improved the final quality of this book by an incalculable degree.

## A GENERAL OUTLINE OF THE BOOK

The papers are ordered in such a way that the reader interested in a general knowledge of how economic theory can be of use in dealing with the most pressing issues for copyright administration can start at the beginning and read each chapter in order, and yet readers interested in particular issues can read separate chapters in any order. Nevertheless, I strongly recommend all readers to begin with Wendy Gordon's introduction, which does a marvellous job of introducing us to the economics of copyright by going right back to the origins of economic theory itself.

The first three chapters of the book proper (Liebowitz, Belleflamme, and Takeyama) can be grouped under the general heading of 'the economics of copying' and the next three chapters (Towse, Alonso and Watt, and Regner) consider the types of contractual relationships that occur between creators and distributors. Following that, the next two chapters (Ramello, and Farchy and Rochelandet) turn to economic analyses of the legal environment of copyright, and the final two chapters (Parisi and Depoorter, and Rochelandet) analyse the particularly important issue of collective administration of copyright.

The first chapter, written by Stan Liebowitz, offers a particularly good foundation upon which the rest of the book can build, since it not only does an excellent job in surveying the principal routes along which the economics of copyright has travelled, but it also sets the stage for many of the following chapters by pointing out the issues that constitute the central stage of the copyright dilemma currently. In particular, Liebowitz analyses the effects of

digital distribution of music over the internet, both historically in comparison with other similar issues in the past (for example photocopying of written works in the 1970s, and video-taping of movies in the 1980s), and in the aftermath of the Napster revolution (peer-to-peer file sharing). Liebowitz, who is very well known for his pioneering work adapting the theory of price discrimination (under the title of 'indirect appropriability') to study alternatives to copyright, sets out to see if the new copy and diffusion technologies afforded by the internet have indeed been harmful to copyright holders. He finds sufficient evidence to conclude that copyright holders' fears of the internet, in contrast to previous technical developments that are frequently cited as having been harmful when in fact they were not,<sup>2</sup> may be well founded. This chapter is followed by two papers that consider different issues relating to the economics of copying. In chapter 2, Paul Belleflamme walks us through a wonderful mathematical model of copying that, without being overly complicated, clearly points out several very important results on how pricing strategies by copyright holders can be considered as an alternative to legal protection. In chapter 3, Lisa Takeyama follows up on some earlier work of her own concerning the true economic effects of the existence of copying on the welfare of copyright holders by showing how important it is to take asymmetric information into account. Underlining previous results, we find that, contrary to what is constantly claimed by copyright lobby groups, a certain degree of copying may have beneficial effects for copyright holders.

Following up on the economics of copying, the next three chapters consider the contractual relationships between creators and distributors of copyright products. Once again, in order to set the stage, we begin with Ruth Towse's particularly clear analysis of the relationships between copyright law and administration, and of the ensuing labour supply by creative individuals. In particular, Towse discusses in detail copyright policy's relationship to artists' efforts in the creation of cultural assets, paying special attention to the effects on both earnings and employment. She points out where current analysis has been lacking, and where research could be fruitfully directed. This is followed by a paper by Jorge Alonso and Richard Watt that analyses the efficiency of commonly used royalty contracts. In this paper, it is shown that the commonly used royalty contract format is highly likely to be inefficient (in the sense of diverging from the contract curve of the relationship between the participating parties), and even for the cases in which it is not inefficient, the commonly used royalty percentages are difficult to defend as the solution to a bargaining game. The suggestion is that current contractual relationships may benefit from the advice that economic theory is able to offer. Finally, in this group of papers, Toby Regner discusses the optimal distribution of ownership of copyright between creators and

distributors, especially as distribution channels change with the introduction of new technologies. The prediction is that as technology develops, we should see creators retaining a greater share of ownership, and searching for new methods of distribution.

In chapters 7 and 8, the legal environment in which copyright is set is analysed using the type of tools that economic theory offers. Giovanni Ramello begins by analysing the relationship between copyright and competition law, paying special attention to the elements of conflict that have repeatedly emerged from recent antitrust cases in both the United States and Europe. In particular, the thesis argued is that the framework of intellectual property rights is crucial to antitrust evaluations because of the deterministic relation which exists between property rights on the one hand, and market structure and modes of competition on the other. In chapter 8, Joëlle Farchy and Fabrice Rochelandet study some of the more traditional alternatives that have been forwarded as substitutes for copyright in the digital age as possible barriers to trade. At the top of this list of such alternatives are the technological protection systems designed to allow content producers the ability to appropriate value in an environment of digital copying quite independently of copyright law. However, as the authors point out, such protection systems may be contrary to the interests of artists and users.

The final two chapters of the book consider the important issue of the collective administration of copyright. In chapter 9 Francesco Parisi and Ben Depoorter discuss the complementary nature of the way many intellectual property products are marketed, and they show how a market based on an oligopoly for such products can be in fact less efficient socially than a monopoly. The case of copyright collectives, an obvious example of a monopoly selling a blanket licence for complementary products, is discussed in detail. Finally, in chapter 10, Fabrice Rochelandet analyses some of the principal collectives in Europe, and subjects them to a comparative analysis according to certain common efficiency criteria. In particular, the collectives are analysed under both common accounting criteria, and using the now popular Data Envelopment Analysis technique (DEA).

## NOTES

1. See the society's web page on <http://www.serci.org>.
2. Examples include photocopying, cassette recording, and VHS.

# Introduction

Wendy J. Gordon<sup>1</sup>

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The economic problems faced by creative persons – and by those who want access to their output – can be conceptualised in many ways. Consider, for example, this excerpt from Adam Smith's *The Wealth of Nations*:

The labour of some of the most respectable orders in the society . . . like that of menial servants . . . does not fix or realize itself in any permanent subject, or vendible commodity, which endures after that labour is past, and for which an equal quantity of labour could afterwards be procured . . . . In the same class must be ranked, some both of the gravest and most important, and some of the most frivolous professions: churchmen, lawyers, physicians, men of letters of all kinds; players, buffoons, musicians, opera-singers . . . . Like the declamation of the actor, the harangue of the orator, or the tune of the musician, the work of all of them perishes in the very instant of its production.<sup>2</sup>

Smith called all such labour 'unproductive' because it was consumed at the moment of exertion, leaving nothing tangible that could later be sold.

Today's technology would seem to remedy the lack that Smith perceived. A host of modern media – film, tapes, CDs, web pages – preserve the comedian's act, the orator's speech and the opera singer's vibrato. Devices for recording and transmission, listening and replaying, allow performers and their backers to obtain money at places and times far distant from the initial expenditure of labour.

Absent a technology for recording, amplifying or broadcasting sound, the creative productions mentioned by Smith were little marked by the traits that economists associate with 'public goods'. That is, they were characterised by neither significant inexhaustibility nor a significant inability to exclude free riders. A concert hall or theatre has some range before it fills to capacity, but the congestion point comes fairly quickly. Unamplified sound reaches a certain distance, then fades, and cannot be infinitely recreated from the unaugmented memories of auditors. As for excluding non-payers, in the ordinary eighteenth-century instance that problem was easily solvable:

persons who had not paid for admission (or whom the host had not invited) were stopped at the front gate. Perhaps some of the value might sneak out the door if the audience contained an inordinately skilful mimic, but the actor, singer or orator was providing value to persons in his immediate vicinity.

With microphones and broadcasting towers, tapes and CDs, the limitations of the concert hall lost their constraining power. With technology came the ability to give value to persons far distant from the performance. And with the technologies came inexhaustibility and the possibility of free riding. Artistic performance had become a 'public good'.

For generations prior to Smith, this transformation had already begun for traditional copyrightable subject matters: the collocation of words and symbols that could be written or printed. Yet it is intriguing to focus on the transformation of performance into 'vendible commodity'<sup>3</sup> for it is recorded performance<sup>4</sup> that drives the most interesting of recent copyright problems – the Napster phenomenon – as our keynote address by Liebowitz explores. Making the return to history allows us to stress that becoming a public good was not a 'problem'. It was an opportunity. The promise of inexhaustibility meant that authors could turn to audiences rather than to patronage for support, and that a wide public could share in what only a few had enjoyed before.

The question became how best to handle the technology that makes it possible for orchestral sound to come into ordinary homes, and movies to play on demand in children's bedrooms. Word can spread not just in its message but also in its form. Copyright deals with all these modes of spreading value.

However, lack of recording technology could not have been Smith's only concern. In the passage quoted, Smith groups 'men of letters' with performers, as if writers were as unable as performers to fix their labour in 'vendible commodities'. Yet by 1776, the year *Wealth of Nations* was first published, authors had long surmounted the technological barriers that still faced acrobats and musicians. Not only had ancient bards and story-tellers come to learn the technique of writing by hand, thus preventing their work from 'perish[ing] in the very instant of its production', but by 1776 the printing press had been in use for centuries. By the late eighteenth century, then, an author's particular ordering of words (whether sermon or essay, dictionary or philosophic treatise) could be fixed and reproduced in copies, and each copy could be sold as a book or pamphlet – a 'vendible commodity' if there ever was one.

So why would Smith group 'men of letters' with persons whose art was then incapable of tangible fixation? Apparently, Smith thought that a literary author like a performer could not expect much future income to flow from his present efforts. This interpretation is supported by a phrase that Smith

elsewhere uses to describe men of letters: he describes them as, 'That unprosperous race of men.'<sup>5</sup>

Why would Smith have been so pessimistic about the chances for literary remuneration? One might have speculated that part of the reason was lack of copyright. In the absence of legal protection, a writer might be afraid of showing his manuscript to a publisher lest it be copied without payment, and even if that were surmounted, a publisher might be wary of paying the author much for a manuscript that, should it prove successful, others could copy at will. Without copyright, the situation could resemble a prisoner's dilemma: although two publishers could each do moderately well paying royalties to their own authors, a publisher who paid royalties could be ruinously undersold if other publishers felt free to copy without paying. So a lack of copyright might lead to a lack of payment and incentives for authors, and thus to underproduction.

However, a lack of copyright could not explain Smith's pessimism, for copyright had come to England in 1710. Admittedly, copyright was then fairly short – a fourteen year term renewable for another fourteen should the author survive – but its comparative brevity does not fully explain why so many authors found their writing produced insufficient means of support. Smith himself shared revenues with his publisher in an unusual arrangement that probably served Smith better than the way in which many of his contemporaries were served by their publishers.<sup>6</sup> Yet Smith had, and seemed to require,<sup>7</sup> a number of sources for remuneration other than writing: university teaching, serving as tutor to a duke followed by receipt of a ducal pension for life, and a position as commissioner of customs.

In this need for supplemental income he was typical. The late eighteenth century was a time of transition for authorship as a profession. Literacy was fairly low, and the cost of books was high (as was the cost of the cloth that made the rags that made the paper that made the books).<sup>8</sup> Apparently sharing among the populace via cafés and libraries made it possible to sell at least some copies at high prices,<sup>9</sup> but publishers rather than authors seemed to reap the largest share of what income books were capable of generating.<sup>10</sup> Thus, the primary responsibility for authors' woes seems to have rested mainly upon the state of the world, affected only in part by the state of the law.

As publishing industrialised, and as new media were developed, a now familiar set of problems and opportunities arose together. Authors were freed of the necessity to please patrons, but pleasing the public had its own constraints. As the value of the 'vendible commodities' increased, so did the complexity of policy issues that copyright law had to face.

If it was clear that the public needed more authorship, then copyright could encourage authorship by allowing creators and their authorised publishers to capture a return above the marginal cost of physical replication.

If only one source can print a given work, that publisher typically will charge a price above marginal cost. Ordinarily, this is the profit-maximising strategy, and the revenue it generates allows a publisher to pay something to the author for the initial work of creation. However, pricing above marginal cost results in fewer copies being purchased than if the book were sold at the lower competitive price: some persons who value copies above marginal cost will instead purchase things they value less. As a consequence of this reduced access to the work, copyright produces deadweight loss.

However, no other institutional arrangement has the clear advantage: not perfect competition, not non-copyright modes of attaining market power, and not price discrimination. Consider first the supposed ideal, perfect competition. Eliminating copyright could in the abstract eliminate deadweight loss if the lack of legal protection led to perfect competition, but under perfect competition, the resulting low prices would eliminate the possibility of payment for initial creation and thus would threaten authorial incentives. If eliminating copyright led instead (as is more likely in a real world) to imperfect competition, where factors such as lead time advantage, retributive editions, and encryption could raise some prices above marginal cost, then some deadweight loss would remain. In addition, revenues would be likely distributed in a manner that would be only loosely correlated with authorial quality, and self-help measures could waste much of whatever profits were earned.

Perfect price discrimination holds out abstract promise – since if a publisher had perfect knowledge and could costlessly bar all arbitrage, he could sell each copy to each customer at the maximum price the customer would bear, simultaneously expanding quantity, eliminating deadweight loss, and serving incentives.<sup>11</sup> But even if the result were normatively acceptable (involving as it does the elimination of consumer surplus), sellers have neither perfect knowledge, nor the ability to costlessly transact with each customer individually, nor the ability to costlessly prevent low-value buyers from reselling to high-value ones. Moreover, price discrimination sometimes makes matters worse.<sup>12</sup> Further, copyright already embodies a large degree of price discrimination,<sup>13</sup> yet no one believes that deadweight loss has vanished.

The usual way of addressing the trade-off is stated by Landes and Posner:<sup>14</sup> ‘For copyright law to promote economic efficiency, its principal legal doctrines must, at least approximately, maximize the benefits from creating additional works minus both the losses from limiting access and the costs of administering copyright protection...’ However, more research is needed to determine how much new authorship the public does indeed desire.

For example, a work distributed in expensive form to five people is less socially valuable than the same work distributed not only to those five, but also to a thousand more in an inexpensive edition. However, as technological

change enables the cheap distribution of copies, is it always most productive to see the authorial work as having become more valuable? Or might it be the technology or the copies to which the increased value should be attributed?<sup>15</sup>

Admittedly, recycling Homer's 'Odyssey' would not render James Joyce's 'Ulysses' superfluous, nor would fans of Akira Kurosawa's film 'Ran' be satisfied with re-reading Shakespeare's 'King Lear' in the original. Nevertheless, it may be that few new authors, and many inexpensive copies of existing work, would best satisfy the public – in which case, a brief and narrow copyright providing few rewards might be in order. A brief and narrow copyright might also be desirable if the incentives that drive the most valued authors are non-pecuniary. Such questions are among the most important, but most difficult to research empirically.

Western nations came to recognise that technology enabled us to do something we had not done before: We could reward creativity not just through patrons and not just through church, government and university appointments. Society could reward creativity through harnessing the desires and purchasing power of audiences. This, in turn, meant that the kind of creativity would be more responsive to popular tastes and, hopefully, popular needs. It was to harness the extra value enabled by technology that copyright was invented.

However, once we recognise the possibility and desirability of having audiences pay the creative labourer long after the labour is complete, a new generation of questions arises: What is the best way of having audiences pay? How much recompense is enough to ensure an efficient level of creativity – and how much payment might be too much, inducing rent dissipation or unduly restraining the development both of new technology and future authorship? How much and what kind of copyright protection would be required to achieve sufficient recompense, and are related laws (perhaps affecting authorial bargaining power) likely to be productive or counter-productive? Are some particular rights or subject matters particularly apt targets for copyright, and, conversely, are there some rights or subject matters that should be kept exempt from copyright protection? Do there exist alternative institutions or mechanisms under which creativity can be sufficiently rewarded, and if so, how does the efficiency of the alternatives compare with that of copyright protection? Are there forms of technological protection, or licensing, that the law should prohibit or subject to mandatory limitation, and if so, why? These (and others) are typical of the types of question that are addressed in the present volume.



## COPYRIGHT AND ECONOMICS

The familiar tropes of copyright economics arrive draped in technical language. For example, we are told that, ‘Giving an author exclusive rights over reproduction solves a “public goods” problem.’ But the lawyers and economists who go beneath the labels make the most progress.

Copyright is a regime under which creation is stimulated, but copyright has costs: it raises the cost of products, and it also raises the cost of creation for the next generation of authors.<sup>16</sup> Other means of collecting revenues may not impose these costs – but may impose others. One task is common to the economist, lawyer and entrepreneur: exploring and comparing alternatives.

Economists study trade-offs. As far as the production and distribution of cultural intellectual property is concerned, any protection mechanism implies both efficiency gains and losses.

Economists are in general agreement that in the absence of intellectual property rights, intellectual product markets are inherently inefficient, both in private and social terms. Economists also agree that copyright law is only capable, at best, of going part of the way towards achieving a proper balance between the sometimes contradictory interests of copyright holders and the public of users.<sup>17</sup> Unauthorised copying can sometimes increase social benefit.<sup>18</sup>

New technological developments, both in communications media and in copy technologies, are constantly upsetting the balances between incentive and access, the costs of copyright administration and costs of self-help. As we move further into the twenty-first century, copyright will evolve as well. We must search for relevant methods of administration and reward, appropriate boundaries between protection and the public domain, under which copyright can be of most benefit to the public.

The research agenda that has been followed by economists concerning copyright has revealed that it can be effectively studied using many tools of economic theory. For example, in studying copyright fundamentals, one typically invokes economic principles and models such as:

1. welfare maximising behaviour in general (both in production and in consumption),
2. social choice and the efficiency trade-off between social and private costs and benefits, in particular the theory of externalities and public goods (and so the Coase theorem and the concept of free-riding are of direct relevance),
3. the theory of monopoly,
4. optimal regulation of monopoly activities,
5. price discrimination,