Journal of Intellectual Property Law

Volume 18 | Issue 1 Article 6

October 2010

Copyright and Contract Law: Economic Theory of Copyright Contracts

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COPYRIGHT AND CONTRACT LAW: ECONOMIC THEORY OF COPYRIGHT CONTRACTS

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TABLE OF CONTENTS

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I. INTRODUCTION

The economic theory of copyright is now well advanced and has covered many issues related to the grant of copyright and the supply and consumption of copyrighted goods. However, a very important aspect of the value chain has been largely ignored—the fact that between creation and consumption, many contracts are likely to be involved, and copyright will, logically, have effects upon the way those contracts are written and interpreted. It is interesting that economists themselves have not put the issue of contracts into the forefront of the economics of copyright, since certainly the study of contracts and the incentives that they create is of primordial interest to economists generally.

This Article reviews the scant economics literature that does deal with the relationships between the legal institution of copyright and the contracts that are then written along the value chain. It is to be emphasised that this Article only deals with the economic theory literature, and does not consider the legal literature. The principal objective is to clearly identify the research gaps that exist, and to gain some perspective on the question of how these gaps might be prioritised in terms of importance or urgency.

II. CONCEPTUAL FOUNDATIONS

The study of the economics of copyright often approaches the topic using an incentives argument—copyright is granted to authors in order that they can be appropriately remunerated for their work, so they thereby have the appropriate incentive to provide that work. Under this approach, the central problem for determining the correct legal copyright parameters is the balancing at the margin of the incentive provided to authors and the access to works that is available for users.

However, the mere grant of copyright, regardless of the parameters involved, provides no guarantee of remuneration of any type or amount, and so copyright alone cannot provide any sort of incentive for authors. There are two other crucial elements that are also required in order that copyright does not become a "straw-man." These elements are enforcement of copyright, and contracts between rights holders and eventual users. Only contracts can provide remuneration and thus incentives, while copyright together with its effective enforcement are what pave the way for contracts to be written. That is, without copyright and enforcement, contracts would be impossible. Thus, in short, copyright itself is not an incentive mechanism, but (assuming that it is enforced) it does allow an incentive mechanism, namely contracts, to operate.

It is also true that, under an enforced copyright system in the digital environment, it is only via contracts that users actually gain access to copyrighted material. Naturally, some of these access contracts might be very simple—you pay me $20, and I allow you to take a CD-Rom with my content

saved to it in such a way that you can access it, but payment of the price and acceptance of the disk imply that you have contracted not to repackage and resell the content in any way. Of course, there are other, minor, ways in which one can gain some access to copyrighted content outside of a contract. For example, any fair use that is provided for within the copyright law structure does precisely this. However, the principal means of access is via contracts, either explicit or implicit.[1]

If we then accept that the incentives provided to authors, and access provided to users, stem not so much from the grant of copyright itself, but rather from the ability that an enforced copyright law gives for bringing the parties together via contracting, then we are justified in looking closely at the way in which contracts for access to copyright are structured. Further, the analysis of contracts is a very common theme within applied microeconomic theory. For that reason, in the present document, I propose to look at both the general economic theory of contracts, and the specific literature on contracts for copyrighted works, in order to see what sort of overlap actually exists, and thus to attempt to identify logical gaps in the specific literature that might be considered to be subject of future research.

III. COPYRIGHT AND THE CONTRACTABLE SPACE

In general, copyright law can be seen simply to provide for a restricted space upon which contracts can be written. If there were no copyright law, or alternatively, if there were no enforcement of the law, then the effective space for contracting becomes empty. Without copyright law, an author would not be able to contract to provide access to his content to a publisher in exchange for royalties, since the publisher would envisage no revenue stream from which royalties could be paid. Of course, this depends crucially upon the only incentive to the author being financial. If the author does have other incentives—for example, if he is only motivated by gaining access to readership—then a contract might still be possible under which the author pays the publisher for producing and distributing the work. Exactly this type of contract is at the forefront of the so-called "open access" movement in academic publishing, and it has recently been strongly proposed by Steven Shavell as a socially desirable situation that copyright in academic work might

[1] In the analogue world, the first-sale doctrine (also known as "exhaustion of rights") ensured that once a carrier of content was sold, the reach of the contract ended. The legal status of shrink-wrap, click-wrap, and browse-wrap licences is not settled in many jurisdictions. Similarly, whether fair use type exceptions survive contractual restrictions remains a point of contention. These issues are discussed in detail from a comparative legal perspective in Estelle Derclaye & Marcella Favale, *Regulating User Contracts: The State of the Art and a Research Agenda*, 18 J. INTELL. PROP. L. 65 (2010).

be best abolished.[2] In any case, in a scenario of pure financial motivation and no effective copyright law, contracting between authors and users becomes virtually impossible, and the incentive effects for authorship are diluted down to nothing. Any authorship that continues in such an environment cannot be due, in any important manner, to an expectation of financial reward.[3]

On the other hand, a maximal copyright law (enforced), with perhaps absolutely no fair-use provision and no expiry-date, provides an unrestricted space for contracting, and thus a maximal expectation of reward since no access at all would be granted unless the right holder submits to it (which she might only be persuaded to do in exchange for a financial payment). Intermediary options, in which copyright does restrict ownership in some way (certainly over time, and most likely also over specific uses), lead to a restricted, but not empty, contract set.

Contracts that are written in a restricted set might differ from those in an unrestricted set, although this is certainly not a general result. Changes in copyright law and its enforcement will only have effects upon the contracts that are written when those contracts lie on the boundaries of the contractable set that copyright offers. Clearly, this will be the case when the initial set is very small, but it might not be the case when the initial set is very large. Thus, a central topic in the economics of copyright contracts might be to look within the contracts to see where, and how, the current copyright law parameters are reflected. If they are not reflected in the contract, then we might understand that the contract in question does not lie on the boundary of the contractable space, and thus extensions in copyright law (which would simply expand the contractable space) would have no effect on the contract, and thus on the incentive and access effects. Similarly, if the current copyright provisions are present, explicitly or implicitly, in the contracts that are written, then changes in the copyright law will affect the contracts that are written, and thus will have both incentive and access effects.

In order to illustrate, let's take a simple example. Suppose Mr. A, an author, has written a wonderful book that he would like to get published and marketed. So he negotiates with publisher P for that purpose. A and P agree on a publishing contract, which stipulates that A will supply the work to P for the purpose of printing and sale, and that P will pay a specific royalty to A for each book that is sold. Upon signing of the contract, A duly supplies the work to P.

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[2] Steven Shavell, *Should Copyright of Academic Works be Abolished?*, 2 J. LEGAL ANALYSIS 301 (2010).

[3] While this proposition is theoretically plausible, empirical support is poor. Royalty contracts between authors and publishers concluded in a non-copyright environment (*see, e.g.*, Martin Kretschmer, *Regulating Creator Contracts: The State of the Art and a Research Agenda*, 18 J. INTELL. PROP. L. 141 (2010) (describing Friedrich Schiller's Horen contract of 1974)) provide a telling counter example. This gap between orthodox economic theory and empirical evidence has profound policy implications.

However, at the end of the day, two things emerge: (1) even though there have been sales of the book, *P* has not paid any royalties to *A*, and (2) it has been detected that a second publisher, *Q*, has also produced and sold copies of the same book. *Q* has no contractual relationship with either *A* or *P*. What can *A* do?

I would argue that *A* can sue *P* for breach of contract, and *A* can sue *Q* for breach of copyright law. In principle, *A* cannot sue *P* for breach of copyright law, since the contract between them gives *P* the right to produce and market the book. The important aspect of this example might be the remedies that *A* can expect from both *P* and *Q*. Clearly, if *P* is sued for breach of contract, then we must look to the contract itself for the remedy, which is likely to mean that *P* must pay *A* the contracted royalty. On the other hand, the remedy that will be available from *Q* will depend on copyright law. So long as *Q* is indeed found liable for infringement, at the very least *Q* will be ordered to stop producing and selling the book, and perhaps some sort of damages from *Q* to *A* will also be awarded. The point is that the extent of the damages available under copyright law might well have contributed to the choice of the contracted royalty between *A* and *P*. If the damages under copyright infringement were much lower than what would be contracted to as royalty payments, then publishers would have an incentive to infringe rather than to contract. Thus, the copyright law "standards" and parameters might be seen to affect the contractual conditions that are agreed to. Weak copyright standards might lead to unfavourable contracts for authors, while strong copyright standards might lead to favourable contracts for authors.[4]

In that sense, if the contracted royalty is heavily dependent upon the copyright standard, then we might expect that the royalty would change if the copyright standard changes. This is what is meant by a contract being on the boundary of the contractable set defined by the copyright law. In these cases, alterations in the law will have incentive effects via the contracts between authors and publishers. On the other hand, it might well be that the damages from copyright infringement are extremely high, and are impossible to approach in a voluntary access contract. Then the royalty in the contract will not be affected by any further increase in infringement damages. In this case, the contract is not on the boundary of the contractable set, and alterations in the law will have no effect upon the contracts that are written, and thus upon the incentives that are given.

[4] Actually, of course, in the example considered, it is also entirely possible that when setting damages in the copyright infringement case, the court may look to the contract between *A* and *P* for guidance as to what might constitute a reasonable royalty. Thus, not only might copyright law affect the contract, but also vice-versa.

IV. COPYRIGHT LAW AND THE PARTIES TO CONTRACTS FOR COPYRIGHTED GOODS

It has been clearly argued that the relationship between copyright law and contracts can only be really fully understood in terms of parties that are not actually signatories to the contract.[5] There is no real need for any kind of copyright law for an author to contract with a publisher for the disclosure from the former to the latter of the relevant intellectual property. This can be done entirely within the domain of a private contract. However, what the publisher is willing to pay under that contract is, at least in part, determined by what potential competitors will be able to do in the subsequent market in which the work will be made available to consumers. Since the competitors are not part of the contract, but they do influence the value of the contract, it is here that copyright law has its primary influence on contracts.[6]

Conventional wisdom holds that strong copyright protection increases the value of the contract for the publisher, and thus (assuming that bargaining powers are not extreme), some of that additional value can be captured by the author through the contract with the publisher. In that way, the level of protection offered by copyright law would influence the terms and conditions agreed to in the contract. That conventional wisdom has been challenged on many fronts, and may not hold at all. However, the important point to note is that not only might it be the case that copyright law directly influences what is and what is not contractable, but it also influences the terms contracted to via its indirect effects in governing the activities of agents who contribute to the value of the contract but who are not directly parties to the contract.

No existing literature has been found on this topic, and thus we propose it as an interesting gap in the literature, waiting to be filled. Research would consider the degree to which contracts can substitute for copyright protection at all points along the value chain. In principle, it would appear that where there are very high transactions costs for monitoring activities, which are an important impediment for contracting, a far greater reliance would be placed upon copyright protection than on individual contracting. Similarly, when third

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[5] Martin Kretschmer, *Copyright and Contracts: A Brief Introduction*, 3 REV. OF ECON. RES. ON COPYRIGHT ISSUES 75, 78–81 (2006).

[6] On this point generally, much of the economic theory on copyright makes no distinction between the "author" or "creator" and the "publisher," considering them as one—perhaps the "supply side" of the market for copyright goods. This is done as a simplification, and is justified by there being few differences in objectives between these two parties—that is, the incentives of authors and publishers are said to be largely aligned. This so-called "harmony of interests" assumption is both conceptually and empirically problematic (*see* Kretschmer, *supra* note 3. In this case, of course, copyright has a direct influence on the contracts signed between this side of the market and the other, the demand side. Contracts written exclusively between parties on the supply side are dealt with in this survey below (royalty contract theory).

parties (i.e., parties that are not signatories to a contract) are able to alter the value of that contract, then copyright law would become more important.

V. STANDARD CONTRACT THEORY, AND SPECIAL CHARACTERISTICS OF COPYRIGHT CONTRACTS

In standard economic theory, the theory of contracts is intimately related to the concept of incentives. That is, a contract is a means under which a given party can be persuaded to carry out some task in a way that is beneficial to a second party. In order for the persuasion to work, the contracted party must be given the correct incentives to do what the contractor would like, and this is typically done by linking outcomes with monetary payments. Contract theory in economics is typically spelled out within the context of the so-called "principal-agent" model, in which the principal attempts to contract for an agent to carry out some task. Of course, the task will generate revenue, and the contract is the mechanism that dictates how that revenue is shared between the two parties. The standard theory of contracts only really becomes interesting in situations of uncertainty and asymmetrical information—that is, scenarios in which the contractor (i.e., the principal) cannot fully observe all that she would like to regarding the behaviour or identity of the contracted party (the agent). In such cases, the issue of incentives comes to the fore, although economic theory has proposed very simple and intuitive solutions to the different types of problem that may occur, always based on contracts that link the agent's payments to the observed outcomes of the task to be carried out.[7]

Commentators have examined and discussed the types of contracts that are commonly used along the value chain for copyrighted products such as written works[8] and music.[9] Also, the widely referenced work of Richard Caves will be of use to us, although it is concerned with a much wider set of contracts—those corresponding to the creative industries generally.[10] However, none of those studies looks formally into the theoretical relationship between the level and nature of legal copyright protection and the contracts that are used along the value chain.

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[7] The interested reader can consult any standard intermediate microeconomics text for a chapter on the principal-agent model with asymmetric information. For example, the well-known text by Hal Varian would be a good place to start. HAL VARIAN, INTERMEDIATE MICROECONOMIC (7th ed. 2007).

[8] William J. Baumol & Peggy Heim, *On Contracting With Publishers: Or What Every Author Should Know*, *in* 53 AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS' BULLETIN 30 (1967).

[9] Marie Connolly & Alan B. Krueger, *Rockonomics: The Economics of Popular Music*, *in* HANDBOOK OF THE ECONOMICS OF ART AND CULTURE: VOLUME 1 (V.A. Ginsburgh & D. Throsby eds., 2006).

[10] RICHARD CAVES, CREATIVE INDUSTRIES: CONTRACTS BETWEEN ART AND COMMERCE (2000).

The particular case of contracts for the production and dissemination of copyrighted products is, in principle, no different from any of the more general situations that are commonly discussed in economic theory. Indeed, all that is required is to check that the assumptions made in the standard theory are relevant to the particular case of copyright, and if not, then to establish the correct set of assumptions under which the contract problem should be analysed. In this subsection, we shall consider the most widely cited text on the topic of the kinds of contracts, and the types of problems that are prevalent, in the particular case of the creation-production-consumption chain for the creative industry (a subset of which corresponds to copyright goods).[11]

In his book, Caves concentrates on the special features of cultural markets, and considers how the contracts that are typically seen in these markets conform to the accepted economic theory of incentive contracting. Most of the book is dedicated to looking at specific details of aspects of the arts, for which copyright may or may not be such an important feature, and so, in that sense, copyright is more of a background theme to the book.

Caves' book is so comprehensive of the contractual means under which the value created in cultural industries is distributed among the participants of the creation-distribution-consumption chain that it becomes difficult to list each relevant aspect of the book under a series of corresponding topical areas. Thus, it is perhaps best to mention this important book separately, and trust that the interested reader will consult it for further details.

The claimed principal focus of Caves is to apply the standard principal-agent theory of applied microeconomics to the case of contracts along the value chain for creative goods. Nevertheless, the book does not provide any modelling on contract theory at all (almost certainly in the interests of a more general readership), but rather Caves limits his analysis to specific features of the contracts that are typical in the real-world at specific points along the value chain for a wide range of creative processes, and noting their relevance to the economic theory of contracts.

Indeed, the most interesting part of the Caves book (especially as relevant to the current survey) is the introductory chapter, which is the most general of all of the chapters in the book, and which is most clearly focused on the relationship between traditional contract theory and creative industries generally. In that introductory chapter, Caves sets out the general aspects of cultural industries that should be present in any analysis of contracting for goods and services within those industries. He also looks at the general economic theory of contracts, and poses (perhaps somewhat implicitly) that the latter might need to be amended in order to appropriately cater for the cultural sector. To the extent that transactions within cultural industries rely upon copyright, this discussion by Caves, which sets out the salient aspects of

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[11] *Id.*

contract, can be applied to contracts for the use of copyright (though Caves himself does not so so).

To summarise, the principal features of cultural markets identified by Caves as being of importance for the theory of contracts are the following:

1. Demand uncertainty
2. The fact that creative workers care about their output
3. The fact that some creative products require diverse skills
4. The existence of differentiated products
5. Vertically differentiated skill requirements
6. The importance of timing
7. The fact that cultural products are durable, leading to durable rent flows
8. The existence of essential inputs in the value chain.

It remains an open question for theory to look more closely at each of these aspects in turn, within the standard principal-agent contract theory set-up, to see how, or indeed if, they lead to a markedly different set of outcomes from those of the traditional theory. In fact, the first of the aspects noted by Caves, namely demand uncertainty, is of course already a very common aspect of the standard theory of contracts, and so we can certainly consider that this has already been covered by the general theory. It may also be doubted that points 3, 4, and 5 will require any major adjustments to the general theory, as they simply imply a widened understanding of the inputs and outputs of agents. In short, instead of using a scalar interpretation of inputs and outputs, we might want to use a vectorial notation. While certainly an added complexity, doing this should not be impossible, and indeed one may well doubt that it would add significant new insights as to the incentive effects of contracts. Likewise, Caves' points 7 and 8 are also unlikely to be of any great importance to standard contract theory. Durability of rent flows are often incorporated by simply taking variables in terms of present discounted values, and as far as essential inputs are concerned, the standard theory already has this aspect present in the sense that no principal gains any profit without an agent, and no agent gains any utility without the presence of a principal. Thus, the essentiality of inputs in creative industries is unlikely to pose any problem to contract theory, and it is also unlikely to lead to any significant alteration in the results of that theory.

However, the other points, namely point 2 (the fact that workers care about their output) and point 6 (the importance of timing) may well be more interesting. It is certainly true that in the standard theory of contracts, workers are only concerned with the financial gains from their efforts, and not with any other aspect related to the output obtained. If trade-offs between monetary payments and other aspects of output (perhaps the level of sales itself) are able to be brought into the contract, it is to be expected that different outcomes will

result. Finally, with respect to timing, when there are many acts within the sequence of actions required for an output to be gained, and when the ordering of these acts is important, there is a clear incentive for strategic and collusive behaviour by the participants along the value chain. Again, these types of considerations are likely to impact upon the outcomes of traditional contract theory, in which generally there is a single act (that of the agent), and thus no scope at all for collusion and hold-up effects.

Thus, clearly we have another gap in the literature, namely the extension of the traditional principal-agent framework to one that includes agents who care about more than just their monetary payments, and (independently of the previous suggestion) a greater complexity when considering possible strategic interactions among the players along the value chain. Both extensions to the basic model appear to be reasonably straight forward, and should not present any major modelling difficulties.

Notwithstanding Caves' invitation, implicit or otherwise, to economic theory for a consideration of some of the specific aspects of creative industries within contract theory, he himself refrains from providing any such analysis, retaining instead the standard, i.e., "simple," theory of contracts. Indeed, in his own words "[m]uch of this book is about why contracts and deals are structured the way they are, and so simple contract theory plays a considerable role."[12] Thus, Caves limits his work to the use of the standard theory as an explicative device for specific aspects of contracts that are observed in the real-world of the creative process value chain.

It is also true that Caves' book has relatively little to do with copyright, and specifically the relationship between copyright and contracts. Copyright is not mentioned until relatively late in the book,[13] and the first mention of copyright law is related to *droit de suite* for works of visual art, rather than copyrights for other forms of access, which are of greater interest to the current survey.[14] However, one of the last chapters of the book, titled "Organizing to Collect Rents: Music Copyrights"[15] is certainly of relevance to the current survey.

This chapter offers a rather U.S.-centric history of collective administration of the various royalty sources from music, but again does not discuss the way in which copyright law might affect the contractual relationships, or vice versa. However, interestingly, a testament to the highly controversial nature of the structure of royalty payments for music is apparent in the constant participation of the regulator in setting royalty fees. For example, as Caves documents (for the case of the U.S. at least), mechanical royalty fees have always been set by legal decree rather than contractual negotiation. It is also interesting to note that some contractual terms appear to be the result of purely historical

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[12] *Id.* at 11.
[13] *Id.* at 281.
[14] *Id.*
[15] *Id.* at 297.

antecedents rather than contractual negotiation. For example, the fact that (again, in the U.S., as documented by Caves) the royalties for performance of music are split equally between authors and publishers appears to be purely the continuation of what was first decided, without any recall to negotiation (that could be explained by contract theory).

VI. INDIVIDUAL CONTRACTING

As argued in the previous section, the divergence between the traditional economic theory focus of contracts and what is required for the particular case of copyright related transactions is not too great. In effect, most (if not all) of the assumptions that would be relevant to copyright are in fact present in the more general theory, and any assumptions that are not could feasibly be introduced (and indeed, they might be relevant for many particular cases, not only copyright), but at the not-insignificant cost of complexity of analysis. In our opinion, the costs of re-working contract theory to accommodate such aspects as workers who care about their output, and timing issues, would outstrip the additional insights that would be gained by their inclusion.

In short, I find that the economic theory literature has paid very scant attention to the question of the relationship between copyright protection and contracts along the value chain for copyrighted goods. The question has only really been studied in passing, indirectly, or at best in an incomplete fashion. That said, it is worthwhile to point out that most of the earnings literature concludes that median authors actually earn rather little from copyright royalty contracts.[16] For example, on average, for the thirty-five top musical acts that toured during 2002, less than 10% of income was generated by recordings (i.e., copyright royalty income), while some 73% was due to concert earnings.[17] While copyright royalty income should clearly depend upon the legal copyright protection standard, it would be interesting to study exactly how other income streams do. For example, to what extent do concert earnings actually depend upon copyright? In one study, empirical evidence from Vietnam was collected that showed that when the perceived level of copyright protection is low, artists rely heavily on concerts for income.[18] Indeed, the authors of that study showed that, at least in the case of Vietnam, the lower the level of protection, the more recordings are heard (although most in illegal formats), and, correspondingly, the greater the concert attendance and thus revenue. Thus, there may exist a negative relationship between copyright strength and concert earnings, and if concert earnings are by far greater than earnings from sales of music (as is the

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[16] *See* Kretschmer, *supra* note 3, at 158–66 (providing a detailed review of earnings data).

[17] Connolly & Krueger, *supra* note 9, tbl. 1.1.

[18] Koji Domon & Kiyoshi Nakamura, *Unauthorized Copying and Copyright Enforcement in Developing Countries: A Vietnam Case Study*, 4 REV. OF ECONOMIC RESEARCH ON COPYRIGHT ISSUES 87 (2007).

case in Vietnam), then there will be a negative relationship between the strength of copyright protection and the total earnings of artists.

Similarly, we have a reasonable number of theoretical papers (see below for a discussion) that analyse the welfare effects of alterations in copyright, and these papers do (in some cases) include a consideration of the effects of copyright upon the price that is charged to consumers for access to the copyrighted good, which can clearly be seen as a rudimentary contract. However, the contractual implications in these models are nothing more than a side-effect, and are not seen as being of principle importance. Indeed, the best of the models cannot actually sign the effect of an increase in the copyright standard upon the market price of an original, due to the incorporation of many other variables, mainly related to piracy. Finally, we have a literature that explains how copyright licensing contracts should be structured, but these models (at least the published ones) are not designed to consider the effect of an alteration in the copyright standard upon the contractual structure for a licensing agreement. Notwithstanding these comments, we shall now go on to review the literature that exists, above all since it serves to highlight the large research gap concerning the relationship between contract structures and copyright protection.

VII. THE STRUCTURE OF ROYALTY CONTRACTS—ROYALTY VS. BUY-OUT

There is certainly one particular aspect of individual contracting for copyright goods that has been the subject of economic analysis—namely, the structure of royalty contracts. Here, the questions that are often posed are the following:

1. How should a royalty contract be structured in terms of the use of royalty payments and fixed payments?
2. Can it be optimal for the contract to stipulate only a fixed payment, that is, a buy-out?
3. Is there any benefit in non-linear royalty contract structures?
4. Should we expect that the same contractual terms would be optimal for all cases?
5. How can we understand and interpret up-front payments, along with royalties?
6. How does a contract for access to an intellectual product relate risk and incentives?

In short, the answers to these six questions are, in order,

1. outside of very special cases, both aspects should be present,

2. it is not generally optimal to exclude a royalty,
3. non-linear royalties would be more optimal than linear ones for all but one very special, and unrealistic, case,
4. we should expect different contractual terms to be optimal for different cases,
5. up-front payments can be interpreted as insurance mechanisms, and
6. risk-sharing is just as important as financial remuneration as an incentive mechanism. In this section I shall discuss the two most important strands of literature—that regarding contracts and risk-sharing, and that regarding contracts and infringement (i.e., piracy).

VIII. COPYRIGHT ROYALTY CONTRACTS AND RISK SHARING

As a starting point, consider the paper by Stan Liebowitz.[19] This is perhaps the first paper that explicitly recognises that the degree to which the risk embodied in intellectual products is retained by the creator depends entirely upon the terms of the contract under which access to the product is transferred. A royalty contract, where the royalty is calculated as a function of market revenue, shares the risk embodied in the revenue stream between the parties to the contract, whereas a fixed fee contract, where the user pays a fixed sum to the copyright holder, independent of revenue, transfers all risk away from the copyright holder. It is also true that to the degree to which outright sale is avoided, for example, under a strict royalty agreement, the more the copyright holder retains post-contractual risk. The essence of the Liebowitz paper is to question the optimality of pure royalty contracts, especially when the first contracted user may affect the post-contract value of the intellectual property in question. The quandry is that, when the intellectual property is licensed and used, its value after that initial contract ends is often dependent upon what has happened during that contract. Under a pure royalty arrangement, the copyright holder alone would own the future income stream after the initial contract, but that income stream might well depend upon how the intellectual property is used during the initial contract. In a sense, under a pure royalty arrangement, access to the intellectual property is rented to the user for a determined length of time, and then, after that period of time has expired, the copyright holder is once again the sole owner of any residual income stream. Most traditional economic theory would argue that, in cases such as this, the initial user should retain at least some of the post-contract income stream, in order that he has an incentive to maximise the value of the intellectual property

[19] Stan Liebowitz, *Some Puzzling Behavior by Owners of Intellectual Products: An Analysis*, 5 CONTEMPORARY POLICY ISSUES 44 (2006).

intertemporarily. As an extreme case, the intellectual property might be sold outright to the first user, who would then retain all of the income stream after the first use. Liebowitz posits the possibility that outright sale, at least in some cases, might well be a better option for copyright holders.

As a possible research gap, it would be interesting to study, both theoretically and empirically, the kinds of situation in which outright sale, rather than rental type contracts, appears to hold more promise as an efficient mechanism for contracting access to copyright material. If the empirical analysis does point to a prominence of rental arrangements, whereas the theoretical analysis suggests outright sale (as appears to be the case studied by Liebowitz), then it would be very interesting to attempt to address the reasons for such a divergence.

As soon as it is recognised that the market value of an intellectual product is risky, or subject to uncertainty, then it becomes important that any contract for access to an intellectual product shares this risk among the parties in an efficient manner. That is, not only should a contract provide an incentive for creators via a monetary remuneration from users, but it should also distribute the risks involved in an optimal manner among the copyright holder and the user. Economics sees both of these aspects as being equally important, and indeed economics is explicitly concerned with the way in which incentives and risk bearing are traded off via the contractual terms.

It is, perhaps, important to note clearly that any form of royalty arrangement in a contract for access to a copyright can only be understood as a manner in which risk is shared. That is, in the absence of any risk or uncertainty as to the final market value of the work in question, we should never expect to see any royalty payments in contracts, only pure transfers of quantities of money. To see this clearly, assume that it is agreed by the author and the user of a work that the work is worth either $100,000 or $200,000 in the market. Then the contract that they sign would have to stipulate how they should share the $100,000 if that is what eventuates, or the $200,000 if that turns out to be the case. The easiest way that this can be done is for the revenue to be shared according to some agreed rule—for example, the contract could stipulate that 20% of revenue is paid to the author and the remaining 80% is retained by the user. In this example, there is a royalty rate of 20% on revenue, and so the author would be paid $20,000 if revenue is low, and $40,000 if revenue is high. This kind of contract shares the risk that is embodied in the uncertain revenue stream between the parties. On the other hand, imagine that there were no risk, and that it were known *ex ante* that the revenue would be exactly $150,000. Now there is absolutely no need to stipulate a royalty. Even if the parties still desired that the author were to retain 20% of revenue, this can be contracted to by simply stating that the user should pay the author $30,000 for access to the work in question—that is, an up-front payment now suffices.

In Alonso and Watt, the risk sharing aspect of royalty contracts for intellectual property is explicitly considered.[20] Perhaps the most interesting result that arises in Alonso and Watt is the fact that, in all but one particular case,[21] the contract curve does not correspond to the diagonal of the Edgeworth box, which implies that any optimal contract will normally involve a royalty parameter that is a function of the revenue that is earned. This, of course, contrasts with the commonly seen royalty contract feature that the royalty parameter is independent of the amount of revenue earned—for instance, as in the example of the previous paragraph, it might be 20% of revenue, whatever that revenue might turn out to be, rather than (say) 15% when revenue is high and 25% when revenue is low. Second, so long as both parties to the contract are risk averse to some degree, a contract that transfers all risk to one party alone (e.g., a buy-out) will never be optimal. Thus, normally, we should expect that the contracts will involve a royalty, and that the royalty parameter will vary with the amount of revenue that the product ends up realising in the market. The fact that this does not actually tend to occur can perhaps be put down to such things as transaction costs (it is far less complex to have a single royalty parameter), or perhaps to the existence of asymmetrical information, which is assumed not to be present in Alonso and Watt.

One aspect of copyright contracts that is often observed can indeed be seen to be in harmony with economic theory. That is the existence of up-front payments to creators as remuneration for creating the intellectual property. Such payments are often stipulated as being forwarded royalty payments, in the sense that the up-front payment corresponds to a royalty advance, and the royalty payments only continue once the revenue from the market exploitation of the intellectual product has reached the level that would correspond to the royalty advanced. Alonso and Watt consider this aspect of copyright contracts, and they show that it corresponds exactly to a deductible insurance contract, where the user is insuring the creator. Since economic theory has proven that such a contract form is indeed optimal for risk averse risk-holders, up-front payments to creators are indeed an efficient inclusion in contracts between creators and users of intellectual property.

Aside from risk sharing, there is a second aspect that suggests royalty contracts rather than outright sale might be efficient. The argument is that, since new works by a given author might well affect the market value of existing

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[20] Jorge Alonso & Richard Watt, *Efficient Distribution of Copyright Income*, *in* THE ECONOMICS OF COPYRIGHT: DEVELOPMENTS IN RESEARCH AND ANALYSIS (Wendy Gordon & Richard Watt eds., 2003). *See also* RICHARD WATT, COPYRIGHT AND ECONOMIC THEORY: FRIENDS OR FOES? 90–104 (2000), from which the Alonso and Watt work followed.

[21] The case in question is when both parties to the contract have utility functions that are characterised by constant and common relative risk aversion. While constant relative risk aversion is believable, it is very hard to believe that copyright holders and users will be equally risk averse.

works, it is efficient that authors retain a financial interest in their works, in order that they do have an incentive to continue to produce quality creations. This theory has been expounded by Towse.[22] It is also a common argument for the reason why visual artists should retain a resale royalty.

In spite of the theory of royalty contracts being relatively well covered in the literature, there still exists an important research gap, which is what precisely the relationship is between the terms of efficient royalty contracts and the legal copyright protection standard. Economic theory has yet to attempt to analyse the way in which an optimal royalty contract would be altered should copyright law be somehow altered. If, for example, the risk that is encompassed in a copyright transaction is reduced by a strengthening of the copyright protection standard, then certainly we should expect to see alterations in the royalty structure, since the royalty structure is exactly what is used to share risk. However, such an analysis has yet to be attempted.

IX. CONTRACTS AND INFRINGEMENT (PIRACY)

Other important papers to have considered the different options for structuring a contract between a copyright holder and potential users of the intellectual property are Besen and Kirby,[23] and Varian.[24] However, rather than concentrating on risk-sharing, both of these papers focus more closely on the relationship between the contractual structure used and the degree to which the intellectual property may have to compete in the market, perhaps with pirated versions.[25]

The relationship between a contract for access to a copyrighted good and piracy can be easily stated. In short, if a contract for access to a copyright product involves a per-unit royalty, then the marginal cost to the legal user has been artificially increased over and above the pure marginal reproduction cost. Take, for example, the case of pre-recorded music. There are pure costs involved in fixing a music track onto a physical format, say a CD-Rom, for sale to consumers. But if the copyright holder in the music must also be paid a royalty for each and every time a CD is produced, then the per-unit cost to the legal supplier of the CD is the sum of the production cost and the royalty. On the other hand, a pirate producer would avoid paying the royalty, and would only face the per-unit production cost. Thus, we can easily see that if a contract does involve a royalty payment, then it puts the legal producer at a marginal

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[22] RUTH TOWSE, CREATIVITY INCENTIVE AND REWARD: AN ECONOMIC ANALYSIS OF COPYRIGHT AND CULTURE IN THE INFORMATION AGE (2001).

[23] Stanley Besen & Sheila Kriby, *Private Copying, Appropriability, and Optimal Copying Royalties*, 32 J.L. & ECON. 255 (1989).

[24] Hal R. Varian, *Buying, Sharing and Renting Information Goods*, 48 J. INDUST. ECON. 473 (2000).

[25] *See also* Watt, *supra* note 20 (analyzing this aspect of contracts for access to copyrighted goods).

cost disadvantage with respect to pirate producers. In such a scenario, we might expect that the royalty contract acts as a device that fosters piracy, and hampers the revenue earning capability of the legal operation.

In my paper from 2000, the marginal cost differential between the producer of originals and a pirate producer is at the forefront of the analysis.[26] However, it is shown that, in a traditional Cournot model of competition between the producer of originals and the pirate, it is not necessarily true that the existence of a royalty contract between the creator and the producer of originals will imply a level of piracy that is overly costly to the market earnings of originals. It also turns out that the optimal royalty parameter is very complex to calculate, and depends upon many other variables in the model. Nevertheless, if the copyright holder can vary the royalty parameter over the two periods of Watt's model, then significant gains can be made.[27]

In a small, but certainly interesting literature, we have a series of similar models that analyse the effects of copyright upon welfare. These papers tend to concentrate upon the question of how copyright protection ends up affecting the profits of the firms that produce the protected good, consumer surplus, and social welfare generally. As a side-effect in these models, it is common that the researchers include at least a consideration of the effects of legal protection (defined in a variety of ways) upon the market price of the legitimate product. Inasmuch as the market price is a contract between the producer and consumers, here again, we can find some work that explores the nature of the effect of copyright upon a contractual arrangement. However, it must be stressed that in none of the welfare-type papers is this effect noted as being of primary interest. It is also true that it is customary in this literature to consider the author and the distributor as one, and so there is typically no room in the models for a consideration of the royalty arrangement between these two parties.

Good examples of such papers are Banerjee[28] and Poddar.[29] While both of these papers offer reduced form equations that state the market price of the legitimate product as a function of, among other things, variables that can be understood as representing copyright protection in some way, neither paper can conclude as to a specific sign for the relevant comparative static result. That is, the price at which the good would be marketed depends upon many things in the models, and so an increase in copyright protection will typically have an effect upon the market price of originals, which depends upon the values of

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[26] *Id.*

[27] A.E. Woodfield, *Piracy Accommodation and the Optimal Timing of Royalty Payments*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 43 (2006).

[28] D.S. Banerjee, *Enforcement Sharing and Commercial Piracy*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 83 (2006).

[29] Sougata Poddar, *Music Product as a Durable Good and Online Piracy*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 53 (2006).

these other parameters. Thus, while certainly of interest to the relationship between market price and the copyright protection standard, these papers do little to resolve the question of the effect of copyright law upon the contractual terms at the point of sale to consumers.

So far, the literature concerning contracts for copyright has indicated a certain conflict between two opposing objectives. The inclusion of a royalty is a necessary ingredient for efficient risk sharing, but the royalty may well imply a lower shareable revenue due to the possibility that it provides a relative advantage to piracy operations. A full analysis of the trade-off between risk sharing and the amount of revenue to be shared as functions of the royalty parameter has yet to be attempted.

Of course, the relationship between royalty contracts and piracy has not, as far as I am aware, ever been studied empirically. Such a study would be of undoubted value, and this is a clear literature gap. An empirical study could be based simply upon looking at the prevalence of per-unit royalty agreements over different types of copyrighted good where the differences would be taken in terms of the degree to which they are pirated. The theory would suggest, at first sight, that with those copyrighted goods for which there are no royalty payments there is less piracy. It would certainly be interesting to see what an empirical study would say.

X. THE EFFECT OF COPYRIGHT LAW ON ROYALTY CONTRACTS

In the above, we have looked at how copyright royalty contracts might be affected by two specific factors: (1) uncertainty of the market value of the work, and (2) the presence of a threat of piracy. Both of these factors are related in that one expects that they are affected by copyright law. Certainly, it is generally accepted that the stronger the legal protection standard offered, the less worrisome is the threat of piracy. Also, part of the demand uncertainty might be due precisely to piracy, and so again a stronger copyright standard might reduce that uncertainty. However, there are many other ways in which copyright law might affect the final configuration of the royalty contract. As far as I know, there is no concise theoretical paper that fully analyses the relationship between the legal standard and the terms of royalty contracts, but the paper by Muthoo makes many indirect inferences to what one might expect the relationship to be.[30]

Muthoo correctly models copyright royalty contracts as the outcome of a voluntary bargaining process between two parties—the author and the publisher. Of course these two names are merely labels that might be altered to suit particular cases, and so we might rather prefer to use labels such as

[30] Abhinay Muthoo, *Bargaining Theory and Royalty Contract Negotiations*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 19 (2006).

"copyright holder" and "copyright user." In any case, Muthoo applies standard bargaining theory to the case of royalty contracts, and points out that the price at which the final bargain is struck will depend almost entirely upon the relative "bargaining powers" of the parties. It is interesting to see how the relative bargaining powers are affected by different aspects of the particular problem, and to understand the effect of copyright law.

Muthoo's analysis is simplified to the extent that the contract is represented by a single number—a price—rather than a complex contractual structure perhaps involving up-front payments and royalty amounts that might depend upon intermediate outcomes. In reality, as has been argued above, this is really nothing more than an assumption of non-existence of risk or uncertainty as to the final market value of the work in question. Nevertheless, using a price as a surrogate for the contract, even if some demand risk is present, is certainly sufficient to gain an intuition as to how the copyright law standard might affect the final outcome.

Concretely, Muthoo identifies the following factors as the determinants of the final outcome:

1. Reservation values
2. Impatience
3. Risk of breakdown in negotiations
4. Existence and value of "outside" and "inside" options
5. Asymmetric information

Of these factors, copyright law can feasibly have an impact upon at least the first four, and thereby can have an influence upon the final contract that is achieved. While Muthoo does not explicitly mention how copyright law might affect the factors that he discusses, we can rather easily consider that ourselves here.

The reservation values are the minimum price at which the copyright holder would be willing to trade, and the maximum price at which the user would be willing to trade. Clearly, in order for any mutually beneficial trade to occur, the maximum willingness to pay of the user must exceed the minimum willingness to accept of the copyright holder. We can expect that, if a contract is indeed signed, it will involve a price that is strictly between the two extremes. That said, the values of the two extremes will be of fundamental importance to the exact contracted price. For example, for many simple bargaining problems, the agreed price is exactly half-way between the two extremes. Thus, if one (or both) of the extreme prices is altered, the contract will also be altered. Finally, since copyright law might well have a strong bearing upon the extreme prices, it influences the contract.

To illustrate, we can use Muthoo's numerical example. There, an author owns the copyright to some music, which he values at $100,000, which

represents the income that he can derive by privately distributing the music via the Internet. This $100,000 is then the author's minimum willingness to accept in a contract with a publisher. The publisher values the music at $200,000, which is the income that it would derive by recording the music on CDs and selling it to consumers. This $200,000 is the publisher's maximum willingness to pay in a contract with the author. Now, say that, given these two extreme prices, the two parties agree to contract at a price of $150,000, where this is calculated as the number that lies exactly half-way between the two reservation prices, and that indeed such a deal would always be struck whatever were the two reservation prices. What happens, then, if copyright law were strengthened? Presumably, both reservation prices would increase—the music will be more costly to pirate, both online and in CD-Rom format, so both the author and the publisher would value the music more highly. So long as the final contract is still struck at half-way between the two reservation values, then the contract price must increase with the increase in the copyright standard. Note that the stronger copyright standard implies a greater contract price even if it is not true that both reservation prices increase. So long as at least one reservation price increases, and the other does not decrease, then the contract price must increase with the copyright standard.[31]

However, if the reservation price of the publisher is actually decreased by the stronger copyright standard, then it no longer becomes clear how the contract would be affected. For example, perhaps it is the case that under the weaker copyright standard, the publisher was able not only to record and sell the music on CD-Rom format, but that it could also charge radio broadcasters for the right to broadcast the music. Then, say, a change in the copyright law conferred the right to charge radio for broadcasts only to the author, and not to the music publisher. This would likely increase the author's reservation price, and decrease that of the publisher. The point that is now half-way between might be greater than or less than (or even still equal to) the original $150,000.

The second determining factor noted by Muthoo for the contract price is the relative impatience of the two parties. Again, copyright law might be a factor here, in as much as patience is (at least partially) determined by such things as levels of income from other sources. Muthoo notes that the final deal that is struck will, all other things equal, be more favourable to the relatively more patient party. If a party is more willing to wait, then it has a greater bargaining power when the deal is negotiated. However, as is clearly implied by Muthoo, the relative degree of patience between the two parties will likely be heavily influenced by their abilities to earn money from sources other than what is being negotiated. For example, say the author only owns the copyright that is

[31] It must be stressed that these are purely theoretical statements, based upon theoretical models of negotiation. Exactly how things would turn out empirically would also be of great interest.

subject to negotiation, and he earns money in some other form of employment, perhaps as a music teacher. Assume that his ability to earn money as a music teacher is totally independent of the copyright law standard. On the other hand, the publisher will (presumably) already be working with other musicians, and the profitability of that ongoing business might well depend greatly on the copyright standard. In that case, a change in the copyright standard will affect the patience of the publisher, but not that of the author. If the copyright standard is increased, and if that increases the patience of the publisher relative to that of the author, then the final contract price can be expected to decrease.

Third, Muthoo establishes that the risk of breakdown in the negotiations is an important factor, along with the degrees of risk aversion of the two parties. Note that the risk of breakdown in negotiation is quite independent of and different from demand uncertainty. A risk of breakdown occurs when, during the process of negotiation of the contract and, of course, before any deal is actually struck, events can occur that affect the value of the contract. Normally, it is thought that these possible events are detrimental to the value of the contract, but in principle there could also be events that actually increase the value of the contract. When these risks are known to exist, they are taken into account in the negotiations, and are duly reflected in the final contract.

Muthoo argues that, for a given risk of breakdown in negotiations, the more risk averse a party is the lesser his bargaining power, and thus the less favourable will be the royalty contract to him. For a given risk of breakdown, the more risk averse party will be more eager to close a deal, and thus will be more willing to accept a less favourable price to him personally in exchange for getting the deal struck before any breakdown event occurs. It is unlikely that copyright law can affect the risk aversion of either party directly,[32] but it will much more plausibly affect the actual probability of breakdown, or perhaps the payments to the two parties should a breakdown occur, and thereby the contract itself.

For example, imagine that competing works arrive according to some random process. Then, while negotiations regarding the contract for the current work are ongoing, there is some probability that a new work will arrive that can compete successfully with the current one. If this happens, it is likely to reduce the market value of the current work, thereby altering the parameters affecting the current contract. Perhaps copyright law is strengthened to the effect that the probability of close substitutes emerging is reduced. Then the risk of breakdown is reduced, and the contract that is signed should reflect that fact. Again, then, copyright law can be seen to directly affect the terms on

[32] If the outside income streams of either (or both) parties are themselves risky, and if that risk is determined at least in part by the copyright standard, then a change in the standard can affect the risk aversion of the parties when the current contract is being negotiated. This is a case of "background risk," which is rather complex to deal with theoretically, and thus will not be considered here.

which the deal is struck. If the alteration in copyright law does reduce the risk of breakdown, then this should benefit more the relatively more risk averse of the two negotiating parties. Thus, the relatively less risk averse of the two should be able to obtain more favourable contractual terms.

The fourth important element that is mentioned by Muthoo is the existence of "inside" and "outside" options. Such options are reflections of what the negotiating parties can earn during the negotiation process (inside options) and as an alternative to striking a deal (outside options). The different options available play similar roles to impatience and reservation values. The greater a party's inside option, the less urgent it is for that party to arrive at a final contractual deal. In essence then, that party becomes more patient, and the effects upon the contractual terms would be the same as those already mentioned when impatience was discussed above.

Outside options are similar to, but not the same as, reservation values. An outside option only has an impact upon the contract if it is credible. To illustrate, go back to the original example suggested by Muthoo—the copyright holder values the work at $100,000 and the publisher values it at $200,000. Say that they would then contract to yield a payment of $150,000 to the author. But then, assume that the author has an outside option—an alternative exclusive licensing arrangement with some other publisher—that would pay the author $$x$. If $x<150,000$, then this outside option is not credible as a threat, since by exercising it the author would be worse off. Thus, under this assumption, the outside option is worthless and inconsequential to the contract. But what if $x>150,000$? Now the outside option is credible—by exercising it the author would gain more than by closing the contract deal with the current publisher. In this case, the current publisher has no option other than to offer a deal that is equal to the outside option, and so we would expect that the final contract would stipulate a payment to the author of $$x$ (assuming, of course, that $x<200,000$).

Again, copyright law might play a part in determining the values of outside options. As an example, take the case of music that is licensed to radio broadcasters. Imagine also that music is supplied to radio under a blanket license offered by a copyright collective. In many countries, copyright law stipulates that the same tariff rate should be charged to all radio stations, and that no station can be excluded so long as it pays the set tariff. But what would happen if this law were to change, and the music license could be charged to different stations at different prices, or could be offered to stations on an exclusive basis? Radio stations would be made to bid for music in a kind of auction game, and the licensing body's outside option for any exclusive contract with any one station is the value that the next station is willing to pay. This alteration in copyright law would certainly have important consequences for the contractual terms that are finally arrived at, and would even have major effects upon who the contracting parties are.

The final important aspect noted by Muthoo for contract negotiations is asymmetric information. However, it is hard to see how copyright law might influence the degree to which asymmetric information prevails. Perhaps the only way is when the law stipulates compulsory licensing, since, as is noted by Muthoo, it may turn out that asymmetric information is so severe that voluntary contracts become impossible. If that is the case, then a law that stipulates compulsory licensing would certainly affect the contracts that are made, but it is very hard to work out exactly what would be the final terms of such contracts.

As we have seen in this section, economic theory (the theory of risk sharing, the theory of incentive contracts, and the general theory of bargaining) can provide enlightening insights on how contracts for the access to copyright works should be structured. This has largely been done in reasonably simple theoretical environments, and has not really concentrated upon the effects of copyright law per se on the final terms and structures that would be involved in such contracts. Nevertheless, several interesting and intuitive conclusions can be reached by simply considering how copyright law affects some of the parameters to the negotiation process itself. I have here provided a summary synopsis of my own views on this enticing topic, but a full and detailed analysis has yet to be performed. I see this as being a clear gap in the literature, and one that in principle should be able to be filled using standard economic theory techniques.

Some of the effects that have been alluded to with reference to the Muthoo paper were in fact discussed by Michel in a paper that is perhaps the best effort available for attempting to determine the effects of the copyright standard upon contracts for access to copyright works.[33] Nevertheless, again we have to read between the lines to get to the results. Michel provides a model in which a profit maximising music industry acts as an intermediary between an author and the final consumers of a copyrighted product (specifically, Michel assumes the product is music). The consumers can copy the product, or purchase it, and here is where we can stretch Michel's model a bit to include a treatment of copyright law. The assumptions used are that consumers face transaction costs for copying, and that copies are of inferior quality to originals. Both of these factors can be taken to represent, in some way, the copyright standard—the stronger the protection level offered, the greater the transaction costs for copying, and the greater the quality differences between copies and originals.[34]

Michel follows the lead of other models of copyright piracy by assuming that the contract that the music distributor has with consumers (only those who

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[33] Norbert J. Michel, *Digital File Sharing and Royalty Contracts in the Music Industry: A Theoretical Analysis*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 29 (2006).

[34] The main difference is that Michel assumes that these variables can be different for each consumer, whereas it is more relevant to assume that the same copyright standard applies to each consumer in the same way. However, the insights from the Michel model are still very important for the case at hand.

purchase rather than copy, of course) is captured by a price, p. On the other hand, the contract between the distributor and the author is captured entirely by a royalty parameter that stipulates how the market revenue is shared between them. These are simplified contracts, but still relevant enough to be of great interest to our current investigation.

The Michel model is solved using backward induction. First, the optimal behaviour of the consumers is discovered, and this sets the demand curve that is faced by the music distributor as a function of the sales price. Then the optimal sales price can be determined, as a function of the royalty parameter. Finally, the negotiation between the distributor and the author is modelled (using a Nash bargaining model), in order to determine the appropriate royalty contract parameter.

Of interest here are the comparative statics of the equilibrium with respect to what we are interpreting as the copyright standard. It turns out that the results are quite clear-cut; an increase in the copyright standard leads to a higher market price of the work in question, and a higher royalty parameter. It is also possible to consider the effect over the two contracts while holding the copyright standard fixed. If the royalty rate increases, then the market price of the work also increases.

While the Michel model takes us quite a distance into the relevant framework for analysing the effects of copyright upon contracts, this is not the real objective of the paper, and we need to re-interpret some of the variables in order that the model provides insights as to the effects that we are interested in here. The model is also somewhat simplified, and could be extended and improved, although it is not clear to what extent such extensions would yield different, or better, conclusions.

Finally, it is also interesting to note that in the Michel model, the effects of the copyright standard can only be understood in the relationship between the distributor and the consumers, and so copyright is not a direct input to the contract between the author and the distributor. This is exactly as we have already pointed out above—it might appear that what is important for the author-publisher relationship is contract law, with copyright law having an indirect effect. On the other hand, copyright law is fundamental to the contractual relationship between the publisher (distributor) and consumers. This is, of course, due entirely to the incomplete nature of the contracts that can be had between distributors and consumers, since there is a very high monitoring cost that makes a more complex contract unenforceable.

While the Michel model is, perhaps, the only attempt thus far at considering the relationship between copyright law and contractual terms, it still falls well short of being a complete analysis. Above all, the model concentrates entirely on the effects of copyright law on the contract between the distributor and consumers, and any effects on the royalty contract between the distributor and the author are purely indirect. That is, as we have hypothesised above,

copyright law will certainly have important, and interesting, effects on the bargain that is struck between the author and the distributor, but the Michel model ignores all such effects.

XI. ASPECTS RELATED TO THE "FAIRNESS" OF COPYRIGHT CONTRACTS

It has been argued that there exists a disparity of bargaining power between the parties to a copyright contract that leads to unfair terms and conditions being present in the contracts. The most frequent point of view is that the contracts between artists and the intermediary companies that make the works available publicly (e.g., producers, distributors, publishers, etc.) are "unfair" to the artists and authors who actually create the works. This is an important aspect of contracting that the economics literature has yet to touch upon. Above all, if it is true that there is an element of unfairness in the contracts, one is left wondering how copyright law might be amended in order that the resulting contracts are fairer.

Again, in a certain sense, it is strange that economists have neglected to study the fairness of copyright contracts. Although it is true that economics has traditionally been occupied with aspects of efficiency, there does exist a well-developed theory of fairness in economic theory.[35]

The economic theory of fairness has, in the past, been more concerned with the fairness of an allocation of goods over individuals rather than the contracts that determine those allocations. However, so long as what is really at issue in copyright contracts is not the fairness of the contracts, but rather the fairness of the resulting allocation of revenues (or perhaps of rights themselves), then the existing economic theory is surely of relevance. The questions that would appear to be of maximum interest are the following:

1. How should "fairness" be defined for the context of copyright contracts?
2. Are existing contracts really "unfair"?
3. Do alternative contracts within the current copyright law exist that would be perceived as being "fairer"? If they do exist, do those contracts sacrifice efficiency?
4. To what extent does any perceived "unfairness" depend upon copyright law?
5. Can copyright law be altered in order that the balance of bargaining positions is changed and the resulting contracts are "fair"?

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[35] *See* WILLIAM J. BAUMOL, SUPERFAIRNESS: APPLICATIONS AND THEORY (1987) (providing a survey of the field).

The study of fairness in the context of copyright contracts is bound to be fraught with difficulties, and it is likely to arrive at conclusions that might be seen as being provocative. The entire research agenda will rest squarely upon the definition of fairness that is adopted, and all conclusions reached will of course be subject to that definition. Of course, of fundamental importance then is to arrive at a definition of fairness that is itself considered to be fair by all parties. Not an easy task, but certainly one that is worth working on.

XII. COLLECTIVE ADMINISTRATION OF COPYRIGHT CONTRACTS[36]

In most jurisdictions, the copyright law allows for copyright holders to join together into collectives for the purposes of exploitation of their rights. The origins of collective administration may appear as a straightforward response to a problem of transaction costs. An evocative story recounts the visit of Ernest Bourget, a French composer of popular *chansons* and *chansonettes comiques*, to the Paris café Ambassadeurs in 1847 where, among other pieces, his music was being played without permission. He then refused to settle the bill for his drink of sugared water, at the time a fashionable beverage. In the resulting brawl, Bourget argued "you consume my music, I consume your wares"—an argument he won before the *Tribunal de Commerce de la Seine* which upheld the revolutionary law of 1793, recognising a right to public performance for the first time.

Ernest Bourget understood that, as an individual composer, he should not devote his life to chasing unauthorised performances of his music. On the other hand, each venue performing popular music would incur considerable costs in tracking and negotiating with various holders of the relevant performing rights. The solution to the failures of individual contracting was collective administration, combining a comprehensive monitoring service of music usage with a facility to issue licenses, i.e., permissions to play against remuneration. Ernest Bourget, his colleagues Victor Parizot and Paul Henrion as well as the publisher Jules Colombier founded an *Agence Centrale*, the direct predecessor of the first modern collecting society *Société des Auteurs et Compositeurs et Editeurs de Musique* (SACEM). SACEM, established in 1851, became the European model, collecting at times even in Switzerland, Belgium and the UK.

Transaction cost economics recognises that there are costs of using markets, such as information costs, contract costs, and governance costs.[37] In the case

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[36] The section draws on Martin Kretschmer, *The Failure of Property Rules in Collective Administration: Rethinking Copyright Societies as Regulatory Instruments*, 24 EUR. INTELL. PROP. REV. 126 (2002), and Martin Kretschmer, *Artists' Earnings and Copyright: A Review of British and German Music Industry Data in the Context of Digital Technologies*, 10 FIRST MONDAY (2005), http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1200/1120.

of copyright, transaction costs may include (a) identifying and locating the owner, (b) negotiating a price (this includes information and time costs), and (c) monitoring and enforcement costs. The sparse economic literature on collecting societies tends to accept a transaction cost rationale for their existence.[38]

Under collective administration, there is typically only one supplier of licences to the user of copyright works in one particular domain of rights (such as public performances). Reciprocal agreements with sister societies in other countries ensure that access to "the world repertoire" can be granted through one licence. From the perspective of individual owners of copyright works, there may be no alternative provider of a rights administration infrastructure. In consequence, market prices cannot form for licences to users or for services to right holders.[39]

This monopolistic structure leaves copyright collecting societies in control of the terms of access and royalty distribution in their particular rights domain. In many areas of collective licensing, administrative costs are high. The cost of collection may amount to a quarter of revenues, while for other complex services (such as health insurance) administrative deductions of 5% are seen as high.[40]

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[37] Thus, under certain conditions, non-market structures (such as integrating economic activities into the hierarchy of a firm) can be more efficient than individual contracting. *See* O.E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975); O.E. WILLIAMSON, THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTS (1985).

[38] *See, e.g.*, WILLIAM LANDES & RICHARD POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW (2003); Alonso & Watt, *supra* note 20; J. Thorpe, *Regulating the Collective Exploitation of Copyright, in Special Issue: Trade and Intellectual Property (P. Drahos, ed.)*, 16 PROMETHEUS 317 (1998); R. Towse, *Copyright as an Economic Incentive, in Innovation, Incentive, and Reward: Intellectual Property Law and Policy*, 5 DAVID HUME PAPERS ON PUB. POLICY 31 (1997); John Kay, *The Economics of Intellectual Property Rights*, 13 INT'L REV. L. & ECON. 337 (1993); Stanley Besen, Sheila Kirby & Steven Salop, *An Economic Analysis of Copyright Collectives*, 78 VA. L. REV. 383 (1992); Besen & Kirby, *supra* note 23; Abraham Hollander, *Market Structure and Performance in Intellectual Property: The Case of Copyright Collectives*, 2 INT'L J. INDUS. ORG. 199 (1984). An excellent survey of this field is C. Handke & R. Towse, *Economics of Copyright Collectives*, 38 INT'L REV. INTELL. PROP. & COMPETITION L. 937 (2007).

[39] One strand of commentators has located the inefficiencies in collective administration in the nature of liability rules. *See, e.g.*, Robert P. Merges, *Contracting Into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293 (1996). The argument derives from Ronald Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960). For a critique of natural monopoly analysis, see Ariel Katz, *The Potential Demise of Another Natural Monopoly: New Technologies and the Administration of Performing Rights*, 2 J. Competition L. & Econ. 245 (2006); *The Potential Demise of Another Natural Monopoly: Rethinking the Collective Administration of Performing Rights*, 1 J. COMPETITION L. & ECON. 541 (2005).

[40] To give some examples: PRS performing right income is roughly equally split between income from broadcasting and from general performance (i.e., music at pubs, clubs, shops, aircrafts, concerts). Unsurprisingly, the costs of collecting are much higher for the latter.

The tendency of collective administration to evolve into bureaucracies sheltered from competition has led to increasing state involvement in the supervision of collecting societies. As a general rule, collecting societies in all EU Member States cannot refuse to license their repertoire; they have to admit members subject to certain threshold rules; and they have to give some kind of public accounting of their finances. In the case of music performing right and mechanical reproduction societies, an intriguing feature of collective administration is the representation of both authors (composers and lyricists) and publishers—enforced by a governance structure under which changes to membership and distribution rules can only be implemented by mutual consent of both groups. Despite market pressures to the contrary, author members of German society GEMA receive 70% (compared to 30% of the publisher) of any performing right royalty distribution, and 60% of the mechanical rights. The British Performing Right Society (PRS) distributes 50:50 between publishers and creators, while the Mechanical Copyright Protection Society (MCPS) leaves the distribution shares to individual contracts between the parties.[41] In addition, large right holders whose works are easier to monitor and account for in effect subsidise small members. These distribution decisions are treated as internal matters, and will not be publicised.

Many European collecting societies also weigh their distribution per copyright work according to a value judgment, including the amount of skill involved, and the cultural contribution of a genre or composer.[42] Finally, under the guidelines of CISAC (*Confédération Internationale des Sociétés d'Auteurs et Compositeurs*), the international umbrella organisation of the author rights societies, up to 10% of collected licence fees may be channelled into socio-cultural funds.[43]

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[41] Naturally, it is hard to know what would be a market rate in the absence of a market (*cf.* Liebowitz, *supra* note 19). Two observations indicate that the royalty fees available to music writers are above what would be negotiated in a competitive market between willing individual sellers and buyers: (i) they are very high compared to other markets, such as performers, or video game developers; (ii) authors are under pressure from publishers to accept (and have accepted) a lower percentage of the royalty distribution in countries without a tradition of collective author organisation (such as the new EU members which acceded in 2004 and 2007; *see* Kretschmer 2005, *supra* note 36).

[42] At GEMA, so-called "evaluation committees" weigh the distribution of royalties to authors by considerations of length of membership, past income, artistic personality, and overall contribution of an œuvre. In the UK, the classical music subsidy in the royalty distribution formula was phased out following the Performing Rights report of the Monopolies and Mergers Commission (1996), *available at* http://www.publications.parliament.uk/pa/cm199899/cmselect/cmcumeds/468/46804.htm. In 1999, a PRS foundation was established for the support of new music, regardless of genre.

[43] The German law regulating copyright societies (Urheberwahrnehmungsgesetz) explicitly demands that they should foster "culturally important works and contributions" (§ 7) and set up pension and social funds (§ 8). Anglo-American right holders often feel that their exported property subsidizes foreign social and cultural policy (A. Harcourt, *The Unlawful Deduction Levied Upon UK Composers*, 64 COPYRIGHT WORLD 15 (1996)).

The analysis suggests that collective administration can also be viewed as a form of unionisation. Authors no longer enter the market as individuals,[44] which enables them to extract better terms than contracting individually with music publishers and music users (such as labels and broadcasters), and provide socio-cultural support to creators.

There are several ways in which copyright law might affect the contractual business of copyright collectives, starting with the very fact that they are permitted to exist. As discussed, the justification for the existence of collectives is traditionally based upon the transaction costs savings that they are understood to provide. However, in exchange for being allowed to exist, and therefore for operating as monopolies, the activities of copyright collectives—including the prices that they use for offering access to blanket licenses of their repertories—are normally subject to regulation. Inasmuch as this regulation is understood to be part of copyright law, clearly we have an instance of copyright law affecting the contracts along the copyright value chain. If the regulations were not in force, then we should expect that copyright collectives would operate differently, and so, in that sense, we can understand that the contracts used by copyright collectives lie on the boundary of the contractable space, and would be affected by alterations in the laws regulating the collectives.

The types of contracts used by collectives and that are interesting from an economic theory perspective are those that govern the supply of repertory by authors and the way in which authors are remunerated by the collective, and the contracts under which the collective makes its repertory available to end-users.

A good deal of the regulatory environment facing copyright collectives in the U.S. is discussed by Einhorn.[45] In general, it can be seen that exactly what the law stipulates is what is provided—when blanket licenses should be offered only on a non-exclusive basis, they are;[46] when a "genuine choice" must be offered on a program basis, it is; and when there can be no discrimination between licensees, there is not. Thus, it would appear that the regulatory environment is truly restrictive in the sense that if these regulations were not in force, collectives would most likely attempt to contract with licensees in ways that would be different from what they do under the regulation. Of interest to the present survey is the question of exactly how the contracts used by copyright collectives would look under a different regulatory environment, and who would be the winners and users under a regulatory change. Unfortunately, there are no economic theory papers that have considered this issue. However, again it would seem that economic theory is in a good position to analyse such questions.

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[44] ALAN PEACOCK & RONALD WEIR, THE COMPOSER IN THE MARKET PLACE 41 (1975).

[45] Michael Einhorn, *Transaction Costs and Administrated Markets: License Contracts for Musical Performance Rights*, 3 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 61 (2006).

[46] That is, individual licensing must also be allowed. However, individual licensing is almost never advantageous to the individuals themselves, and so is uncommon.

XIII. OTHER ALTERNATIVES

One of the areas of the economics of copyright that has attracted the most interest by economists is the study of the degree to which copyright is actually required. Almost exclusively, this literature assumes that the underlying objective of copyright is to provide incentives to authors to create new works (presumably by allowing contracts to be written), and that the provision of this incentive via a legal regulation like copyright law has certain negative effects socially. The literature does not typically consider that no incentive is required, but rather looks for alternative means under which the same, or similar, incentives can arise, but under which there are fewer harmful side-effects. Examples of the types of alternative mechanisms that have been suggested are indirect appropriability,[47] network effect,[48] DRM systems, bundling and versioning, taxes on blank supports and copy technologies, and public funding including prizes.[49] As a general conclusion from the literature, with the exception of the work by Michele Boldrin and David Levine, who advocate for no need for any copyright protection at all,[50] the literature suggests that some protection is in order, but that it should not be excessive.

Another good source of information on the alternative incentive mechanisms for copyright holders is Gallini and Scotchmer.[51] Although Gallini and Scotchmer are interested in intellectual property generally (i.e., both patent and copyright), their analysis is generally relevant to copyright. In their conclusions, Gallini and Scotchmer find that legal protection is "probably the best mechanism" when there is asymmetric information regarding the costs and benefits of the works in question. It would seem that this is likely true for the case of copyright. However, and perhaps more relevant to the present survey, Gallini and Scotchmer are cautious when it comes to the optimal design of any

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[47] Stan Liebowitz, *Copying and Indirect Appropriability: Photocopying of Journals*, 93 J. POLITICAL ECON. 945 (1985).

[48] Lisa Takeyama, *The Welfare Implications of Unauthorized Reproduction of Intellectual Property in the Presence of Demand Network Externalities*, 42 J. INDUS. ECON. 155 (1994).

[49] A survey of this literature, up to 2006, can be found in Stan Liebowitz & Richard Watt, *How Best to Ensure Remuneration for Creators in the Market for Music? Copyright and Its Alternatives*, 20 J. ECON. SURVEYS 513 (2006).

[50] Michele Boldrin & David Levine, *Intellectual Property and the Efficient Allocation of Social Surplus from Creation*, 2 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 45 (2005); Michele Boldrin & David Levine, *IEUR Lawrence Klein Lecture: The Case Against Intellectual Monopoly*, 45 INT'L ECON. REV. 327 (2004); Michele Boldrin & David Levin, *The Case Against Intellectual Property*, 92 AM. ECON. REV. 209 (2002). Boldrin and Levine assert that the market will work perfectly well without copyright protection, and that the ability for creators to earn money is guaranteed by their first-mover advantage. Most economists who have commented on the suggestion of Boldrin and Levine find that it is based on an economic reality that, while possibly still appropriate for patent goods, no longer exists for copyright goods.

[51] Nancy Gallini & Susan Scotchmer, *Intellectual Property: When is it the Best Incentive System?*, *in* 2 INNOVATION POLICY AND THE ECONOMY (J. Lerner & S. Stern eds., 2002).

intellectual property law, especially in as far as the ability of the parties to contract is concerned. Specifically, they note in closing the following: "To understand whether the property system is strong, too weak, or not necessary at all requires us to understand the incentives for contracting, and its potential anticompetitive consequences." Nevertheless, Gallini and Scotchmer do not offer any analysis of the copyright-contract relationship.

Given these two sources of survey information, here we concentrate upon the possible interconnections between alternative remuneration mechanisms and copyright law itself.

First and foremost, it should be clearly pointed out that most alternative remuneration mechanisms require some form of protection to be in place. At the very least, a formal and legal recognition of a property right might be needed for the original author to be able to justify any type of mechanism that implies payment to him. Take for example the case of open-source software. It is widely recognised that this new intellectual property paradigm cannot exist without legal copyright.[52] Nevertheless, open source licensing is seen as an alternative to traditional proprietary mechanisms that rely more directly upon legal protection for insuring royalty streams. Koski considers a set of Finnish software firms, to see how the characteristics of the firm affect the type of licensing contracts that it might use—open source or proprietary.[53] She finds that a firm's ownership structure has a major influence, with family owned firms opting largely for traditional licensing contracts, and diffusely held companies rely more heavily upon open source mechanisms.

With the possible exception of the general idea that the worse the copyright protection standard the greater the reliance upon alternative mechanisms, I am not aware of any study that considers the marginal effect upon the structure of alternative mechanisms due to alterations in the copyright standard.

XIV. CONCLUSIONS

It is fair to say that, in general, the economic theory profession has not considered in any detail the relationship between the legal institution of copyright and the types of contracts that are written along the value chain for copyrighted goods. The topic of contracts has been looked at mainly in terms of royalty contracts, and then only really between creators and intermediaries (e.g., publishers, distributors, etc.), but then copyright itself is not explicitly brought into the picture. Perhaps the most important research gap, then, is to consider exactly how alterations in copyright protection (either some measure of enforcement, or perhaps some measure of scope, or of course the duration

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[52] *See, e.g.*, François Leveque & Yann Meniere, *Copyright Versus Patents: The Open Source Software Legal Battle*, 4 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 27 (2007).

[53] Heli Koski, *OSS Production and Licensing Strategies of Software Firms*, 2 REV. ECON. RESEARCH ON COPYRIGHT ISSUES 111 (2005).

of copyright) would affect the terms that would be agreed to via royalty contracts. Above all, of interest is the question of exactly how certain changes in copyright would end up affecting the welfare of the signatories to royalty contracts, thereby altering the balance of revenue flows and incentives.

A second important research gap would involve the explicit consideration of the perceived "fairness" of copyright contracts to the parties involved, and how (or indeed if) copyright law can be altered so as to ameliorate any perceived unfairness. Not so long ago, such a study would not have been considered overly relevant for economics scholars, who are renown for concentrating much more on issues of efficiency than issues of equity or fairness. However, there does exist an established general literature on the economics of fairness, which is based on solid economic theory ideals, and that could (in principle) be applied to the case of copyright contracts.

It is also interesting to consider whether copyright and contracts are always to be understood as complements, or whether they can also maintain a substitute relationship. That is, we are generally comfortable with the idea that a contract for a work of authorship might not be able to be written unless there is a copyright law that establishes the title of ownership, and what that owner may legally contract to. It is also the case, however, that contracts, being freely negotiated agreements, can establish what can and cannot be done by the parties involved, including the remedies available for breach. Thus, in a well defined sense, contracts can work as devices that substitute for copyright law, at least as far as the signatories to the contract are concerned. An important research gap then is to consider the nature of the substitute-complement relationship between copyright and contracts, and above all, to determine what the nature of the relationship depends upon (with transactions costs being the most logical element). Once a clear idea has been achieved of the type of relationship that exists, at least for specific points along the value chain, then one can determine with much more authority the type of policy conclusion that is suggestive of how copyright law might be amended to provide the incentives for individuals to use contract terms as protection measures instead.

Finally, a fourth interesting aspect that provides a research gap is the relationship between what I have called the "contractable space" and copyright law itself. If we understand that copyright law sets the boundaries of the contract space, then clearly the former affects the latter. But it is also likely that the types of contracts that are written may well affect copyright law, or at least the interpretation of copyright law. I therefore suggest as a fourth research proposal the issue of the study of the interrelationship between the contract space and the contracts that are written within it, and copyright law's parameters and interpretations.

Overall, I think that a more careful, methodological, and above all a more formal application of the well known principal-agent framework to the specific case of copyright constitutes the most logical first step forward for economists.

Of course the principal-agent model is very well known to economic theory, and it relates directly to the issue of contracting. As parameters around the model, one can easily bring in copyright law with a variety of free variables defining the legal protection parameters. This would then allow the researcher to study how alterations in the legal copyright standard affect the final equilibrium outcome.