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SUBSTITUTION AND SCHUMPETERIAN EFFECTS OVER THE LIFE CYCLE OF COPYRIGHTED WORKS

Ariel Katz*

ABSTRACT: This article develops two key insights. First, copyrighted works are affected by two types of competitive forces: substitutive competition and Schumpeterian competition. Second, the relevant magnitude of each of these competitive forces changes at various points over the life cycle of copyrighted works. The earlier stages of a work's life cycle are dominated by substitution effects, whereby many other works can function as very close substitutes. As the work develops to a full product, to which many other inputs have been added, it becomes less easily substitutable. This process intensifies as network effects of various kinds secure successful works' market position and render them less vulnerable to competition from close imitations. The competitive threat to which such works may be exposed becomes more Schumpeterian in nature: competition from other works that offer something new, and potentially preferable. Generally, copyright law unequivocally discourages merely substitutive competition, but is much less interested in discouraging Schumpeterian competition. This article's time-based analysis provides both a justification for this distinction, as well as grounds for evaluating various existing rules and doctrines. It suggests that broader copyright protection (perhaps broader than the current protection) may be desirable at the early

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stages of works' life cycle, whereas narrower protection (perhaps narrower than the current) may be justified at later stages.

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Copyright and time are intimately connected. The US Constitution mandates that copyright shall be granted for “limited [t]imes,”¹ and the Copyright Act indeed so provides.² As a result, at a certain point in time copyright expires and the work becomes public domain. Obviously, this may enormously impact the commercial value of those works for which demand still exists when the copyright expires, and may dramatically decrease the transaction costs involved in using works, even when they no longer have any significant commercial value. *Eldred v. Ashcroft*,³ which unsuccessfully challenged the constitutionality of the Sonny Bono Copyright Extension Term Act of 1998,⁴ has generated some recent scholarly interest in the connection between copyright and time, mainly in the question of what the optimal copyright term should be.⁵ Nevertheless, time may be relevant to copyright policy not only when protection expires, but at various other points along the life cycle of copyright works. This connection between copyright and time within the term of copyright protection has garnered less attention, and constitutes the focus of this article.⁶

Copyright law seeks to manage several trade-offs. In addition to the well-known tension between incentive to create and access to works that follows from the grant of exclusive rights in creative works, copyright law seeks to reconcile the tension between the encouragement of creative pursuits by granting exclusive rights to authors, and the concern that doing so would limit the ability of follow-on creators “to build freely upon the ideas and information conveyed by a work.”⁷ The fact that copyright expires is the crudest of the mechanisms that the law provides to address these trade-offs, as it instantaneously and irrevocably liberates the work from any legal restrictions that otherwise would limit its use, whether for mere consumption or as a building block

1. U.S. CONST. art. I, § 8, cl. 8.

2. 17 U.S.C. §§ 301–305 (2006). The limited term of copyright protection is universally and enshrined in international treaties such as the Berne Convention, *see* Berne Convention for the Protection of Literary and Artistic Works art. 7, Sept. 9, 1886, last revised July 24, 1971, 828 U.N.T.S. 221.

3. 537 U.S. 186 (2003).

4. Pub. L. No. 105–298, 112 Stat. 2827 (1998).

5. *See e.g.*, Symposium, *Eldred v. Ashcroft*, 36 *LOY. L.A. L. REV.* 1 (2002), available at <http://lr.lls.edu/volumes/v36-issue1>. *See also* William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 *U. CHI. L. REV.* 471 (2003); Dennis S. Karjala, *Congestion Externalities and Extended Copyright Protection*, 94 *GEO. L.J.* 1065 (2006) (replying to Landes & Posner, *supra*).

6. Others who have studied the effect of time within the term of copyright protection are Joseph P. Liu, *Copyright and Time: A Proposal*, 101 *MICH. L. REV.* 409 (2002), and Justin Hughes, *Fair Use Across Time*, 50 *UCLA L. REV.* 775 (2003).

7. *Feist Publ'ns, Inc. v. Rural Tel. Servs., Inc.*, 499 U.S. 340, 350 (1991).

for other works. But even during the term of protection copyright does not confer absolute protection. The law provides several doctrines, rules and exceptions, such as the originality requirement, the idea-expression dichotomy and fair use (to name just a few), aimed at addressing these tensions within the period of the copyright grant.

Viewing the amount and type of copying permissible by the law along a spectrum demonstrates these trade-offs. At one extreme, a prohibition on making *identical* copies of a work maintains the incentive to invest in new works while imposing no cost on future creators, as by definition the identical copyist creates a perfect substitute for the work, which directly competes with the original author, without adding anything creative of her own. But as the law moves along the spectrum, from outlawing not only identical copying to outlawing copying a ‘material amount’ that results in ‘substantial similarity’ of a work,⁸ the cost of suppressing future creativity increases. At the same time, as the new work moves away from being an identical copy, containing its own creative content it becomes more differentiated from the first. Possibly, if such new work thereby shifts demand away from the old one, it is because of its superiority. The nonidentical new work might affect the profits derived from the first, not (only) because it takes market share and reduces the first work’s price, but because it provides something new that consumers value. The new work’s capability to supplant the old work represents a form of Schumpeterian competition, in which superior innovative products displace the older ones because of their superior qualities.⁹

So generally, while *perfect* copies only affect existing works by reducing the first work’s profitability through mere substitution and without creating any additional value, *imperfect* copies—works that copy parts of older ones but modify them to create something else—can negatively affect the old one in two different ways.¹⁰ Imperfect copies may harm an existing work through mere substitution or through a Schumpeterian substitution. Both effects, which I will call “substitution effects” and “Schumpeterian effects” respectively, negatively impact the first work but for different reasons and in different ways. While in many cases both effects probably coexist, this article suggests that the importance of each effect changes along the life cycle of a creative work. To some degree, the distinction between these two effects may be captured in courts’ distinction between unlawful “imitation” and permissible “improvement,”¹¹ or between “superseding” and “transformative” uses.¹² However, my purpose in this article is not to draw the exact line between these concepts, whatever the terminology that may be used to describe them. Instead, this

8. See generally, 3 WILLIAM F. PATRY, PATRY ON COPYRIGHT §9:59 (2007).

9. The term “Schumpeterian competition” will be explained in Part I.A *infra*.

10. My focus here is only on negative effects. Some new works, which contain parts of old ones, may have positive effects on the old. An obvious example is a positive critique of an existing work.

11. Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 990–93 (1997).

12. *E.g.*, *Campbell v. Acuff-Rose Music, Inc.* 510 U.S. 569, 579 (1994).

article seeks to highlight the importance of time in determining the location of this line. In other words, while this article's time-based analysis does provide some justification for the distinction between what the law permits and what it forbids, defending this distinction is not crucial for the argument it advances. Instead, this article's core normative claim takes this distinction as given, and argues that because copyright law treats such effects differently, and because they change over time, in order to be internally consistent, the law ought to recognize the importance of time when determining the scope of the copyright.

The article relies on the following core observation, which will be set forth in more detail below. Time affects the value of works and the incentives to create them in several ways. First, while the legal concept of what constitutes a work is rather static, the work's interaction with markets and culture is dynamic; that is, most works exhibit a life cycle. A copyrighted work is born when an idea is conceived and initially expressed and fixed; it is then brought to the market and matures. Sooner or later its glory days fade away (perhaps with some chances for a potential comeback), until it is ultimately forgotten in the archives of cultural relics. At each period, the relative importance of substitution and Schumpeterian effects created by copies may vary. At the early stage of a work's life cycle, its value (or at this stage the potential value) may lie predominantly in the ideas expressed therein. At this stage, other works embodying the same ideas but expressing them in a slightly different manner can function as very close substitutes. We can assume, for example, that at the time Mickey Mouse was developed, the idea of an antropomorphic mouse as a cartoon character expressed with Mickey's distinct appearance and voice easily could be replaced by another antropomorphic mouse with a different appearance and voice, or another antropomorphic animated creature. The commercial viability of the work at this stage is highly susceptible to competition from other similar (even if not identical) works. As the work matures, however, its commercial success tends to depend less on the intrinsic value of the ideas and their specific expression and more on complementary inputs provided by other coproducers, as well as on exogenous factors, such as the word of critics and the work's ability to represent shared identities of groups' members or to become a shared cultural focal point for meaningful social interactions. At that stage, the work is much less likely to be susceptible to substitution effects, although its popularity may make it attractive for follow-on creators to build upon, thus increasing its exposure to Schumpeterian effects. At both stages the first work's copyright owner might invoke her copyright to fend off the competitor, or stake a claim in the competitor's profits. But while at the early stage, fending off the competitor by accepting an infringement claim against her may be beneficial because it directly preserves the incentive to invest, using copyright law to protect against Schumpeterian effects may be less socially desirable. The effects of such protection are more ambiguous and involve more complicated trade-offs.

Relatedly, time may affect the incentives to create because our culture values novelty and originality.¹³ Consequently, the rewards for the first to come up with a work that provides a novel idea—whether direct (the price paid for the work), or indirect (the reputation of the author)—are usually greater than those available for the followers. Although examples of innovations that came ahead of their time and were not adequately rewarded, or cases where followers were able to reap greater benefits than original innovators abound,¹⁴ all things being equal, the expected rewards from being the first are typically greater.¹⁵ Therefore, early copying that deprives the first author the opportunity of being the first on the market may be more detrimental for the incentive to create than the same copying if it occurs later.

Third, as several prominent economists recently have emphasized, the present value of any future reward offered by copyright diminishes with time.¹⁶ As a result, as Professors Justin Hughes¹⁷ and Joseph Liu¹⁸ recently have argued, the harms caused by copying to the incentives to create diminish as time progresses, and the extent of permissible copying should increase accordingly.

If the relative importance of each of the effects changes over the life cycle of the work, then it may be worthwhile asking whether and how the law should take account of these differences. While Professors Hughes and Liu explore the impact of time on fair use analysis, this article builds on their insights and expands them, using the distinction between substitution and Schumpeterian effects to explore time's impact in other copyright areas. I will show, for example, how these insights can explain some of the details of the existing mechanical compulsory license for sound recordings, how they can inform the debate on the ability of copyright owners to use contract and technology to change the original allocation of entitlements as set by the Copyright Act and contract around users' liberties and their use of public domain materials, and how these insights can illuminate the idea-expression dichotomy. Moreover, while both Hughes and Liu focus on the far end of copyrighted

13. See RICHARD A. POSNER, *THE LITTLE BOOK OF PLAGIARISM* chs. 4–5 (Pantheon Books 2007). This has not always been the case. Medieval church writers, for example, disapproved originality and creativity (as understood today) and exalted “the work of the scribe and the copyist [of great old books over] that of authors.” JAMES BOYLE, *SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* 53 (Harvard University Press 1996).

14. See David J. Teece, *Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL'Y 285, 286 (1986).

15. According to Teece, access to complementary assets may often determine whether the innovator or the imitator will achieve commercial success, especially when intellectual property protection for the innovator is not ironclad. *Id.* at 288–90. Hence the emphasis here is on *all things being equal*, for example, access to complementary assets.

16. Brief for George A. Akerlof et al. as Amici Curiae Supporting Petitioners, *Eldred v. Ashcroft*, 537 U.S. 186 (2003) (No. 01-618), 2002 WL 1041846. *But see* Stan J. Liebowitz & Stephen E. Margolis, *Seventeen Famous Economists Weigh in on Copyright: The Role of Theory, Empirics, and Network Effects*, 18 HARV. J.L. & TECH. 435, 454–56 (2005).

17. Hughes, *supra* note 6, at 781–82.

18. Liu, *supra* note 6, at 425–28.

works' life cycle, this article also looks at the front end of that life cycle. I will suggest that broader copyright protection (perhaps broader than current protection) may be desirable at the early stages of works' life cycle, whereas narrower protection (perhaps narrower than current protection) may be justified at later stages.

The article proceeds as follows: Part I develops the distinction between substitution and Schumpeterian effects; Part II describes the life cycle of creative works and demonstrates how at different stages the relative magnitudes of each effect vary; Part III demonstrates how the insights of this article can explain some of the details of the existing mechanical compulsory license for sound recordings; Part IV shows how they can inform the debate on the ability of copyright owners to use contract and technology to change the original statutory allocation of entitlements by contracting and coding around users' liberties and the public domain; and Part V shows how time may illuminate the rationale for the dichotomies between ideas, facts and their expressions.

I. SUBSTITUTION VS. SCHUMPETERIAN EFFECTS

The incentive theory of copyright easily and intuitively justifies the prohibition on copying. Presumably, without such prohibition, copiers' ability to distribute copies would cause prices to drop quickly to the marginal cost of production and distribution. Then authors, unable to recoup the investment made in creating the work, might refrain from investing in the first place.¹⁹ By giving the author an exclusive right over the making and initial distribution of copies, the author can determine the number of copies made and set their price above marginal cost, thus generating enough profit *ex post* to cover the initial investment and account for the risk of failure to render the investment worthwhile *ex ante*.²⁰ The assumption here is that consumers (or a large enough number of them) view the unauthorized copy as a perfect substitute for the authorized copy, or if not perfect, at least a good enough substitute. Consequently, unauthorized copies harm the copyright owner in two related ways: first, because he no longer determines the number of copies available, the quantity of available copies increases, their price decreases and so do profits.²¹

19. See e.g., William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 328 (1989).

20. *Id.* at 328–29.

21. The law and economics literature on the effects of copying and sharing provides a more nuanced story, demonstrating that in some cases unauthorized copying or sharing may be beneficial to the copyright owner. See, e.g., S. J. Liebowitz, *Copying and Indirect Appropriability: Photocopying of Journals*, 93 J. POL. ECON. 945 (1985); Kathleen Reavis Conner & Richard P. Rumelt, *Software Piracy: An Analysis of Protection Strategies*, 37 MGMT. SCI. 125 (1991); Lisa N. Takeyama, *The Welfare Implications of Unauthorized Reproduction of Intellectual Property in the Presence of Demand Network Externalities*, 42 J. INDUS. ECON. 155 (1994); Lisa N. Takeyama, *The Intertemporal Consequences of Unauthorized Reproduction of Intellectual Property*, 40 J.L. & ECON. 511 (1997); Yannis Bakos et al., *Shared Information Goods*, 42 J.L. & ECON. 117 (1999); Ariel Katz, *A Network Effects Perspective on Software Piracy*, 55 U. TORONTO L.J. 155, 156–57 (2005). See also Stan J. Liebowitz, *Economists' Topsy-Turvy View of Piracy*, 2

Second, whatever profits the work does generate, they accrue not only to the owner but also to those who sell unauthorized copies.

From an investment perspective, however, an author “must also consider the possibility of competitive entry by less direct copiers or imitators,” or even entry of competing works that have not copied anything.²² Copyright law provides partial solutions to this concern by providing that two works may not be literally identical and yet, for purposes of copyright infringement, be found to be substantially similar.²³ But this provides only a partial solace for the author, because competitors may create noninfringing works that are very close substitutes from consumers’ perspective. Competitors may create with impunity identical works if they do so independently (that is, without copying),²⁴ and they may create functionally equivalent works but differentiated enough to fall beyond the first work’s protected scope. If that happens, the price of both works may drop towards marginal cost—as in the case of unauthorized copies. Moreover, a prospective author contemplating investment in a new work must anticipate an even worse scenario. She also must be concerned with a subsequent noninfringing but sufficiently superior work that will not only share the market with her own but will totally displace it.²⁵

Interestingly, however, copyright law affords no protection against such risks,²⁶ even though the effect of both types of competition on the reward available to authors may be similar.²⁷ Consequently, although de jure copyright law applies equally to every original work regardless of its merit or commercial value, effectively the law only rewards—and thereby encourages—works that add enough unique value so that they can displace previous ones, and stay long enough on the market until they are ultimately displaced by others, often long before the copyright legally expires.²⁸ In this sense, by

REV. ECON. RES. COPYRIGHT ISSUES 5 (2005) (providing a critical survey of more recent models in the context of music file sharing).

22. Ariel Katz, *Making Sense of Nonsense: Intellectual Property, Antitrust, and Market Power*, 49 ARIZ. L. REV. 837, 858 (2007).

23. MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 13.03[A] (2008).

24. *Mazer v. Stein*, 347 U.S. 201, 217–18 (1954).

25. Katz, *Making Sense of Nonsense*, *supra* note 22, at 859.

26. Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 326–27 (1970), (“copyright law is intended only to protect an author from competing sales of his own works; it was not designed to limit competition from the works of others.”).

27. Cf. Frank R. Lichtenberg & Tomas J. Philipson, *The Dual Effects of Intellectual Property Regulations: Within- and Between-Patent Competition in the U.S. Pharmaceuticals Industry*, 45 J.L. & ECON. 643, 665–67 (2002) (showing that the present discounted value of innovating drug companies’ returns from competing drugs covered by other patents appears to be at least as large as the reduction from competition by generic firms, and may be much larger).

28. Unique value of course, is not a prerequisite to copyrightability. The law only requires that a work be “original,” which means that the work is not copied and, depending on the jurisdiction, that it represents a “modicum of creativity”, *Feist Publ’ns, Inc. v. Rural Tel. Servs., Inc.*, 499 U.S. 340, 346 (1991), or the “author’s exercise of skill and judgment”, *CCH Canadian Ltd. v. Law Soc’y of Upper Can.*, [2004] 1 S.C.R. 339 ¶ 45(Can.). In any event, despite differences in nuances, the amount of creativity required in almost all jurisdictions is rather low. See generally Daniel J. Gervais, *Feist Goes Global: A Comparative Analysis of the Notion of Originality in Copyright Law*, 49 J. COPYRIGHT SOC’Y U.S.A. 949 (2002). But although all original works are de jure

prohibiting competition from identical or “substantially similar” copies, but allowing total destruction by other creative works, copyright law encourages the kind of competition described by Joseph Schumpeter as the “perennial gale of creative destruction,”²⁹ in which new products displace old ones, only themselves to be later displaced by the next generation of products. In this process the threat to firms comes not from close substitutes but rather from “the new commodity, the new technology, the new source of supply, the new type of organization . . . competition which commands a decisive cost or quality advantage which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.”³⁰ While Schumpeter believed that “[c]reative [d]estruction” is in general “the essential fact about capitalism,”³¹ in fact his analysis barely mentioned intellectual property.³² Nonetheless, markets for copyrighted works, perhaps paradigmatically, exhibit this tendency of new products to rapidly displace old ones. With a few exceptions, creative destruction typically happens long before copyright expires and substitutive competition from identical copies becomes legal.³³

In addition to copyright law’s refusal to outlaw competing works that were independently created or that are not substantially similar, the law demonstrates tolerance to competition arising from nonidentical copies (and hence imperfect substitutes) in many other ways. For instance, copyright law extends no protection to facts or ideas, thereby allowing others freely to copy the facts collected by one person and the ideas that she had conceived, even for the purpose, or with the effect, of creating a slightly differentiated yet effective substitute for the first work.³⁴ Moreover, although the law does protect the specific expression against copying, under the merger doctrine copying the expression will be allowed when there is only one or very few ways to express an idea.³⁵ Furthermore, not every copying of the specific expression is forbidden. In some cases, in the interest of allowing other works to compete with the first, the law may allow copying of elements that are functional,³⁶ or nonoriginal,³⁷ or under the *scènes à faire* doctrine are held to be mandated by or

equal, the incentive to create works providing unique value comes from the fact that only those which provide unique value will be rewarded by the market.

29. JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 84 (3rd ed. 1950).

30. *Id.*

31. *Id.* at 83.

32. Mark Blaug, *Why Did Schumpeter Neglect Intellectual Property Rights?*, 2 *REV. ECON. RES. COPYRIGHT ISSUES* 69, 70 (2005).

33. Hughes, *supra* note 6, at 799–800; Liu, *supra* note 6, at 464–67; *cf.* Lichtenberg & Philipson, *supra* note 27, at 665–67 (same regarding patents).

34. *Feist Publ’ns, Inc. v. Rural Tel. Servs., Inc.*, 499 U.S. 340, 349–50 (1991) (emphasizing that “this is not ‘some unforeseen byproduct of a statutory scheme.’ It is, rather, ‘the essence of copyright,’” (quoting *Harper & Row, Publishers v. Nation Enters.*, 471 U.S. 539, 589 (1985) (Brennan, J., dissenting) (citations omitted))).

35. *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 535 (6th Cir. 2004).

36. *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1524 (9th Cir. 1992) (citing *Baker v. Selden*, 101 U.S. (11 Otto) 99, 102–04 (1879)).

37. *Feist*, 499 U.S. at 348.

customary to the genre.³⁸ Furthermore, even when a new work incorporates by copying a substantial part of a copyrightable element, fair use jurisprudence distinguishes between “transformative” and “substitutive” uses. The more “transformative” the new work is the more likely will the use be deemed “fair”; similarly, the more “substitutive” the new work is, the less fair will it be deemed to be.³⁹

The law’s relative hostility to substitutive competition and relative tolerance towards Schumpeterian competition is so ingrained that courts often take it as axiomatic that only by allowing innovators freely to build on others’ works will the mandate, “[t]o promote the progress of science and the useful arts”⁴⁰ be fulfilled.⁴¹ Nevertheless, from an economic perspective this is far from obvious. After all, because the demand for any specific work depends not only on the number of infringing copies but also on the number of competing yet noninfringing works,⁴² both types of works decrease the expected reward from creating new works, and both types of competition may negatively affect the incentives to create in the first place. Presumably, an author would be concerned not only about new works appropriating his expression but about any work competing with his own, even if borrowed nothing from him, and would consider both contingencies when deciding whether and how much to invest. Therefore, in theory one could anticipate that the law would equally limit both types of competition; that is, prohibit for a limited time *any* competing work, regardless of the amount of copying, the nature of the copied elements, or even whether copying had taken place at all.⁴³ Of course, while

38. *Lexmark Int’l, Inc.*, 387 F.3d at 535–36.

39. *See Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) (noting that the central purpose of the first factor, purpose and character of the use, in fair use analysis “is to see . . . whether the new work merely ‘supersede[s] the objects’ of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message; it asks, in other words, whether and to what extent the new work is ‘transformative’” (citation omitted), adding that “the goal of copyright, to promote science and the arts, is generally furthered by the creation of transformative works.”).

40. U.S. CONST. art. I, § 8, cl. 8.

41. *See e.g., Feist*, 499 U.S. at 349–50 (“It may seem unfair that much of the fruit of the compiler’s labor may be used by others without compensation. . . . [H]owever, this is not ‘some unforeseen byproduct of a statutory scheme.’ It is, rather, ‘the essence of copyright,’ and a constitutional requirement. The primary objective of copyright is not to reward the labor of authors, but ‘[t]o promote the Progress of Science and useful Arts.’ To this end, copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by a work. This principle, known as the idea/expression or fact/expression dichotomy, applies to all works of authorship. . . . This result is neither unfair nor unfortunate. It is the means by which copyright advances the progress of science and art.” (citations omitted)). *See also Campbell*, 510 U.S. at 579.

42. Landes & Posner, *supra* note 19, at 328.

43. Noneconomically oriented copyright theorists may solve the puzzle by focusing on the centrality of the concept of authorship in copyright law, claiming that an author cannot legitimately claim that which she did not author. *See e.g., Abraham Drassinower, Authorship as Public Address: On the Specificity of Copyright Vis-à-vis Patent and Trade-Mark*, 2008 MICH. ST. L. REV. 199, 215 (2008); Abraham Drassinower, *Sweat of the Brow, Creativity, and Authorship: On Originality in Canadian Copyright Law*, 1 U. OTTAWA L. & TECH. J. 105, 121 (2004). *See also BOYLE, supra* note 13, at 60.

broad protection against any competing work would enhance the incentive to invest in works of the first generation, too broad protection could increase the deadweight loss created by copyright. It also could very rapidly choke up creativity in the next generation, as well as deprive society of the benefits of Schumpeter's creative destruction. At the same time, too rapid creative destruction may be self-destructive for old and new works alike, as the authors of neither will be able to stay on the market long enough to recoup their investment. Therefore, the law's challenge is to find the socially optimal mix of protection against substitution and Schumpeterian competition.

Essentially, this question brings to the fore the issue of length versus breadth within IP rights. What type of exclusive rights better promotes innovation while decreasing the social cost of intellectual property: broad in scope but short-lived or narrow in scope and long-lived? Although it is not my ambition to review it in any detail here, it is worth noting that the economic literature has reached indeterminate conclusions in this regard.⁴⁴ For my purposes, it is enough to observe that, generally, copyright law has opted for a model of narrow and long-lived exclusive rights, a model that—within the term of protection—treats each type of competition differently. Therefore, I will not claim broadly whether the law's present choice of breadth and length is indeed optimal. Instead, my contribution lies in a more modest claim, namely, that the effects of these different types of competition vary at different points over the life cycle of copyrighted works. The main normative implication following this observation is that in order to be internally consistent and truthful to its incentive purposes, the law should take time into consideration when determining the optimal mix of protection against, and encouragement of, the different types of competition. Therefore, my proposed time-based analysis provides both a rationale for some existing rules, as well a measure for critiquing others.

A. Schumpeterian Competition in the Copyright Context

Schumpeterian competition (or creative destruction) is often thought about in the context of radical innovations that transform entire industries. For example, sweeping changes in technologies for content delivery—such as talkies replacing silent movies, color film replacing black and white film, mp3s replacing CDs, CDs replacing vinyl records—represent forms of Schumpeterian competition. In such cases the industry-wide technological change affects many products and many product markets. I use the term in a broader sense to denote generally the dynamic process in which tomorrow's new products render today's bestsellers obsolete. In this sense, Schumpeterian competition does not necessarily have to encompass only radical industry-wide changes. It can occur on more modest and product-specific levels, whenever firms compete dynamically rather than statically; that is, whenever firms

44. For a concise review of the relevant economic literature, see Stanley M. Besen, *Intellectual Property*, in 2 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW, E-O, 348 (Peter Newman ed., Stockton Press 1998).

compete by developing new products over time rather than by selling similar products and competing over price within any period of time.⁴⁵ This kind of dynamism—the constant supply of new works and the decline of old ones—is one of the key characteristics of markets for creative works.⁴⁶

The term Schumpeterian competition emphasizes this dynamic nature of markets for creative works and distinguishes it from the concept of monopolistic competition in which firms compete by offering differentiated products. This is not to deny that within any single period of time markets for copyrighted works may be characterized by monopolistic competition,⁴⁷ but the focus is on the process in which works constantly replace each other and the social value of letting this process flourish. As noted elsewhere,⁴⁸ and as will be further elaborated in Part II below, sequential transformation, rather than contemporaneous differentiation, is characteristic of many markets for creative works, and arguably a source of tremendous social value.

A few examples will clarify this point. Software markets, in which competition is often sequential, provide a salient example of Schumpeterian competition.⁴⁹ But the “winner-take-all” or “winner-take-most” feature of many software markets characterizes many cultural product markets as well.⁵⁰ While at any given period, many differentiated but otherwise similar works vie to become “the next big thing,” usually only one of them, or a handful, succeed. The rest are easily forgotten. But even the very few who make it are frequently swept aside by the “next next big thing” and so on. This phenomenon charac-

45. Richard Schmalensee, *Antitrust Issues in Schumpeterian Industries*, 90 AM. ECON. REV. 192, 192–94 (2000). In real life, the distinction is not always clear cut. For example, firms can compete within any period of time not only on price but through differentiation by fine tuning the features of their products to better cater to specific consumers’ preferences and tastes.

46. Justin Hughes has highlighted to me in correspondence that there may be a difference between the notion of Schumpeterian competition in the narrower sense and the one that I have just used. In the first case, the old technology or business model continues ad infinitum until the new disruptive model or technology comes along. In the case of creative works, however, works have limited consumption cycles by themselves. If production of new works (for example, new films) would stop, people probably would not continue consuming old ones forever. While there certainly is some truth in this observation, at least some works might be consumed ad infinitum until new, improved ones, come along. This is likely the case with copyrighted works whose consumption serves utilitarian function. For example, we will probably keep using the same operating system, or the same textbook, forever until better ones come along. It is more difficult to determine what would happen with works that have primarily cultural or entertainment value. While we observe that most people do not read the same novel, watch the same movie, or listen to the same music over and over again, this may be just a result of the fact that new works are constantly created. If production of new novels, films or music stopped, it is plausible that people would consume the same old works over and over again (albeit less frequently). One can think of the Bible, or any other scripture, as such a work (still awaiting the arrival of the next big thing). In any event, in both cases people prefer the new one and choose it over the old one, whether in between they keep consuming the old or do without it.

47. See Christopher S. Yoo, *Copyright and Product Differentiation*, 79 N.Y.U. L. REV. 212, 236–41 (2004).

48. Katz, *Making Sense of Nonsense*, *supra* note 22, at 874–80.

49. Schmalensee, *supra* note 45. See also Katz, *A Network Effects Perspective*, *supra* note 21, at 165.

50. Katz, *Making Sense of Nonsense*, *supra* note 22, at 877.

Katz

terizes not only software, of course, but most markets for literary, artistic, dramatic, musical and cinematographic works.⁵¹

B. Distinguishing between Substitutive and Schumpeterian Competition

Copyright owners understandably complain whenever a new work starts competing with their own. They would complain regardless of whether the new work is a mere substitute or whether it is a Schumpeterian one. But the distinction is important for copyright policy. To illustrate the importance, let us define “new work” as a work that borrows something from an old one. Imagine the amount of borrowing as a spectrum. On one end, the “new” work is an identical copy of the old: it borrows 100% of the old work and adds nothing of its own. This is the archetypical “pirated” copy. On the other extreme the new work has borrowed nothing from the old but competes with it nonetheless. For example, two textbooks on the same subject, written contemporaneously by leading experts in the field, are likely to be substitutes for each other.

The extreme cases are easy as a matter of law. Competing by merely reproducing a work without adding anything is clearly unlawful. The reasons are well known: an identical copy creates a perfect substitute and may seriously diminish the incentive to create in the first place. The other extreme is also easy. The law does not provide any remedy against competing works if there is no copying, even if the new one harms the market for the old. The difficult cases, of course, are between the extremes: where the new work does borrow from the old. As we have seen, the law tends to prohibit copying that creates mere substitutes, but is more reluctant to prohibit copying that results in something new, and potentially better.

Note that in both substitutive and Schumpeterian competition the incumbent firm (for our purposes the owner of copyright over the existing work) may experience declining sales and profits and may be forced to respond by lowering prices. Therefore, the effect on the market for the incumbent’s work does not indicate which type of competition it is facing. However, in the case of substitutive competition, prices charged by both the incumbent and the entrant must be lower relative to their pre-entry level resulting from an increase in supply of the same product and assuming the same demand as before,⁵² whereas in the case of Schumpeterian competition, because she provides a different, perhaps superior product, the entrant may charge the pre-

51. *Id.*

52. This does not mean that the incumbent necessarily lowers his prices. Instead, he may decide to keep prices at their preentry level and sell only to the subset of consumers who have stronger preference for his product (that is, consumers who are brand loyal). This happens often in pharmaceutical markets, when upon expiry of a patent and entry of generic firms, brand name drug companies do not match the prices of generics but instead give up market share and focus on brand loyal consumers. See WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW*, 313–14 (The Belknap Press of Harvard University Press 2003).

entry (or even higher) price while still forcing the incumbent to respond by lowering his prices. Thus the prices charged by the entrant, rather than the harm to the incumbent, can better indicate which type of competition the new work creates.⁵³

Although the distinction between substitutive and Schumpeterian competition may be conceptually clear, in practice both effects can happen simultaneously, as consumers may have varying tastes and preferences. Some consumers may be relatively indifferent about which work they actually purchase, provided perhaps that it is within some genre, whereas others may have strong preferences for either the existing or the new work. Consumers of the first type would regard both works as mere substitutes, consumers of the second type may not regard them as substitutes at all, and consumers of the third type would regard the new work as a substitute for the old, but not vice versa. When all types of consumers coexist it may be difficult to ascertain how the new work affects the old. Nonetheless, as a general proposition, substitutive competition forces the prices of both works to decrease equally, whereas Schumpeterian competition has a greater decreasing effect on the incumbent's prices than on the entrant's.

It is also important to note that not every new work that borrows from an old one necessarily competes with it, nor does it necessarily harm its market. For example, borrowing from a work for the purpose of criticism would not generally create a substitute of either type. In some cases such criticism may increase the demand for the old one; in some others it may shift the demand away from it; yet in other cases it will make no difference. In this situation the justification for legitimizing borrowing for criticism may not seem to arise from the interest in allowing Schumpeterian competition—at least not in a narrow sense.⁵⁴ Nonetheless, I find the term Schumpeterian competition useful to describe the full range of cases in which a new work, which is not an identical (or substantially similar) copy, has borrowed from an old one. Using the term Schumpeterian competition in such broader sense is apt because existing works often provide the raw materials for new works, and because Schumpeterian effects can be quite unpredictable and may come from entirely unexpected directions. Even the successful newcomer may not realize in advance that she would creatively destroy someone else's work or what that other displaced work would be. For example, firm *A* may borrow from firm *B*'s work not nec-

53. I am only suggesting here that the entrant's prices can be *an* indicator of the kind of competition that is taking place (and preferable to the decrease in the incumbent's sales), not that these prices are *the ultimate* indicator. Moreover, I only provide a general prediction on the pricing behaviour of competitors, not a forecast applicable in every specific case. For example, a new product may be sold initially for less than the existing one because its producer seeks to quickly achieve a critical mass of consumers. In some other cases, the incumbent may be losing market share but may decide not to lower prices. *Supra* note 52.

54. Cf. Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessors*, 82 COLUM. L. REV. 1600, 1633 (1982) ("It might be argued that allowing fair use to criticisms, satires, and other materials that are potentially hostile to the copyrighted work will undermine incentives to produce original work. But . . . [if] a criticism reveals a work's flaws, it is appropriate that demand for the work should decrease.")

essarily to compete with *B*, but rather to compete with *C*, only to discover that it actually displaced firm *D*'s product. Therefore, by allowing a fertile ground for others to build on existing works, the law supports the Schumpeterian process in the market place in a larger sense, even when competition does not occur in the market of the borrowed work.

In any event, as already noted this article does not focus on defending the distinction between the two forms of competition or on providing the most practical tools to distinguish between the two. Rather, the article advances the proposition that the even if both effects can coexist at any given time, their relative importance varies across time. As demonstrated below, at earlier stages of creative works' life cycle substitution effects dominate, whereas Schumpeterian effects dominate competition arising from imperfect copies of mature works. Because I assume that copyright law seeks to discourage merely substitutive competition but is more reluctant to discourage Schumpeterian competition, recognizing that these effects vary in magnitude over time matters. It will now be useful to discuss the life cycle of creative works and how they are affected by the different types of competition across time.

II. CREATIVE WORKS' LIFE CYCLE

Because this article investigates how different types of competition affect creative works across time, it may be useful to distinguish first between the legal concept of a copyrighted *work*, and the economic concept of a (copyrighted) *product*, as an object of market exchange. The two do not fully overlap: market forces and market competition affect products, which often do not fully map onto what the law protects as a work. A copyrighted work is born when an idea is conceived and initially expressed and fixed in one of the forms recognized by the Copyright Act (literary, artistic, musical, etc.).⁵⁵ At this stage we have a "work" protected by the Copyright Act, but we do not necessarily yet have a "product." Perhaps more precisely, whatever product we might have at this stage will evolve, and the market in which it plays will change: a sketch may become a picture presented in a gallery, a draft may become a published book, a play may become a show, a script a movie, and a musical composition a performed, recorded and released sound recording.

Obviously, this distinction between a work and a product involves two simplifications: a legal and an economic one. As a legal matter, in each of the described stages a new copyrighted work may be created. For example, an artist may draw a sketch (or a series of sketches) before painting the picture. If the sketch and the painting are drawn on different substrates then each of them constitutes a separate copyrighted work. The same is true for the draft and the finished manuscript. Moreover, many objects that can be called "products" do not only incorporate other works but are, as a matter of law, new derivative works that may be copyrighted in their own right. Thus, the movie may be a derivative work of the script, or the sound recording a derivative work of the

55. 17 U.S.C. § 102 (2006).

musical composition.⁵⁶ From an economic perspective, what is termed here a “work,” even at its very preliminary stages, can be a “product,” an artifact of market exchange. Thus studio executives may transact with a writer over a script, or recording artists who do not write their own materials may transact with a musician over a musical composition, and even the most preliminary sketches can become commodities of trade, especially if the artist is or has become well known. Nevertheless, this distinction between a work and a product is made to highlight the evolutionary process that characterizes the production of many creative works, and to differentiate between distinct stages along the life cycles of such works.

What typically transforms the initial copyrighted “work” into a marketable “product” is a process of coproduction in which many additional inputs complement, improve and develop the work, and turn it into a richer product ultimately sold to final consumers. Some inputs may be added by the same author, and others by cocreators; some are profoundly creative while others are less so. These may include additional copyrighted elements (for example, music added to lyrics, to which an orchestral arrangement and sound recording are added), as well as not-copyrightable inputs such as: the opinion of reviewers, editors or peers; instructions given by a director; the charisma of a performer; some business decisions of a producer; as well as a variety of other humdrum inputs.⁵⁷ Importantly, many of these additional inputs come in the form of noncodified, or tacit, knowledge (that is, not capable of being written down), which is relatively costly to transfer and difficult for outsiders to observe.⁵⁸ This process of coproduction ends with finally placing a “product” on the market. This product is the sum of all its inputs—the copyrighted and the noncopyrighted, the creative and the humdrum, the codified and the tacit—and also incorporates the various synergies between the inputs and their contributors.

But the evolutionary process that ultimately determines the commercial success of the copyrighted product does not end at this point. After the product is put on the market its value may continue to grow through its interaction with various other inputs and relationships created by others. Again, some are more creative than others; some may be copyrighted works themselves, while others are not. Many markets for creative works exhibit “network effects” in which the value of the work depends not only on its intrinsic qualities, but also on the number of other people consuming it. Well documented in the case of information technology and software products,⁵⁹ similar effects exist in the case of

56. See 17 U.S.C. § 101 (2006).

57. RICHARD E. CAVES, *CREATIVE INDUSTRIES: CONTRACTS BETWEEN ART AND COMMERCE* 4 (Harvard University Press 2000).

58. See Ashish Arora, *Licensing Tacit Knowledge: Intellectual Property Rights and the Market for Know-How*, 4 *ECON. INNOVATION & NEW TECH.* 41 (1995) (discussing the role of patents in facilitating the transfer of complementing tacit knowledge). On the concept of tacit knowledge, see MICHAEL POLANYI, *THE TACIT DIMENSION* (1st ed. 1966).

59. See e.g., Katz, *A Network Effects Perspective*, *supra* note 21, at 164–65; Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 *CAL. L. REV.* 479 (1998).

cultural goods whose value too increases with their consumption by other people.⁶⁰ This happens because an important part of what people derive from cultural goods is “relevant social interactions.”⁶¹ “We do not want to read books nobody else reads, we do not want to see movies nobody else sees. We want to discuss, rave, slaughter and define ourselves by the things we like.”⁶² As in the case of information technology, cultural goods may have direct network effects, whereby the value of the work increases with the number of other people consuming it because of the opportunities to interact and exchange views with other people, just as having the same software or hardware platform allows consumers to exchange files with each other. Cultural goods also may have indirect effects, whereby the increased number of users induces the development of complementary products and services such as compatible software and hardware, support services and literature in the case of information technology, comparable to commentary, critique, parody, academic courses, and fan clubs in the case of cultural products. Consumers’ decisions about which of two otherwise similar products to purchase or use may depend on how many other people have already chosen them, or on their expectations regarding how many people will choose them. So, being the first to come up with a product and having an installed base of consumers as early as possible may be determinative of the product’s success.⁶³

Creative works are also characterized by highly uncertain and unpredictable demand. Their quality is often hard to discern before consumption, and sometimes even after. Richard Caves calls that the “*nobody knows*” property of creative works.⁶⁴ Therefore, consumers’ choices will depend in part on what

60. I am not arguing here that network effects in cultural goods exist to the same degree as network effects in some software products or communication networks. The effects in cultural goods are probably much weaker. Katz, *Making Sense of Nonsense*, *supra* note 22, at 878.

61. Cass R. Sunstein & Edna Ullmann-Margalit, *Solidarity Goods*, 9 J. POL. PHIL. 129, 138 (2001).

62. Martin Kretschmer et al., *Increasing Returns and Social Contagion in Cultural Industries*, 10 BRIT. J. MGMT. S61, S63 (1999).

63. CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 180–81 (1999). Network effects do not always unambiguously increase the value of the product. Some products may experience congestion as the number of users increases beyond a certain point. See Christopher S. Yoo, *Copyright and Public Good Economics: A Misunderstood Relation* 155 U. PA. L. REV. 635, 678 (2007). This phenomenon may be applicable to some copyrighted works. See Landes & Posner, *supra* note 5, at 484–88; Liebowitz & Margolis *supra* note 16, at 450–52. But see Karjala, *supra* note 5, at 1080–81; Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 141–48 (2004); Paul J. Heald, *Property Rights and the Efficient Exploitation of Copyrighted Works: An Empirical Analysis of Public Domain and Copyrighted Fiction Bestsellers*, 92 MINN. L. REV. 1031, 1041, 1043 (2008); Paul J. Heald, *Testing the Over- and Under-Exploitation Hypothesis: Bestselling Musical Compositions (1913–32) and Their Use in Cinema (1968–2007)*, 15–17, 25 (2008), available at <http://ssrn.com/abstract=1115979> (challenging the significance of congestion with regard to copyrighted works).

64. CAVES, *supra* note 57, at 3 n.3 (borrowing the term from “William Goldman’s much-quoted observation about the [film industry in which] ‘[n]obody [k]nows [a]nything.’” (citing WILLIAM GOLDMAN, *ADVENTURES IN THE SCREEN TRADE: A PERSONAL VIEW OF HOLLYWOOD AND SCREENWRITING* 39 (Warner Books 1983))).

other people think and how many of them think so,⁶⁵ as well as on the reputation of the author and the publisher for having provided works of certain quality in the past. “The main reason that we read the *Wall Street Journal* today is that we’ve found it useful in the past,” explain Carl Shapiro and Hal Varian.⁶⁶ Thus, the *nobody knows* property (and the tendency it creates to rely on other peoples’ choices) and network effects tend to reinforce each other. Both may determine which of otherwise similar works would be propelled forward in a virtuous cycle and which would decline in a vicious one.

Nevertheless, sooner or later the glory days of even the most successful works elapse and, with the exception of few works that become true “classics,” most works ultimately will be forgotten in the archives of cultural relics.⁶⁷ This may happen through the process of “creative destruction” described above and often occurs long before the work formally falls into the public domain. For example, as Hughes observes about films, “the vast bulk of the money made by a film will be made early (in the first ten years, in the first year, or, increasingly, in the first weekend).”⁶⁸

This description of a life cycle suggests that, at different points across it, creative works and creative products would be vulnerable to different types of competitive threats. The competitive dynamics evolve as the work transforms into a product and as its value changes over time. To distinguish between these different threats, I identify a few key time points. Let T_0 be the moment when an idea is initially conceived in a very loose form; T_1 the moment when the idea becomes more concrete, expressed and fixed to constitute a copyrightable “work”; T_2 when the work-turned-product is released; T_3 when the product matures and reaches the peak of its commercial success; T_4 when it becomes obsolete but is still under copyright protection; and T_5 when the copyright expires and the work falls into the public domain.

Generally speaking, the commercial value of a work across time will correspond inversely to the number of available close substitutes, as depicted in figure 1.⁶⁹

65. Kretschmer et al., *supra* note 62, at S63.

66. SHAPIRO & VARIAN, *supra* note 63, at 5.

67. See Landes & Posner, *supra* note 5, at 474; Heald, *Property Rights*, *supra* note 63, at 1036; Heald, *Testing the Hypothesis*, *supra* note 63, at 5.

68. Hughes *supra* note 6, at 788.

69. Hughes *supra* note 6, at 788, draws a similar graph. The main differences between the graphs are that the earliest point in time in Hughes’s graph is T_2 in the current graph. This reflects Hughes’ focus on the far end of copyrighted works’ life cycle. Hughes’ graph also contains a few additional peaks. I add them below in figure 4. Note that the graph does not purport to depict an accurate measure of works’ value over time, or how widely spread the various T s are from each other. It only intends to articulate graphically the general theme of this part of the article.

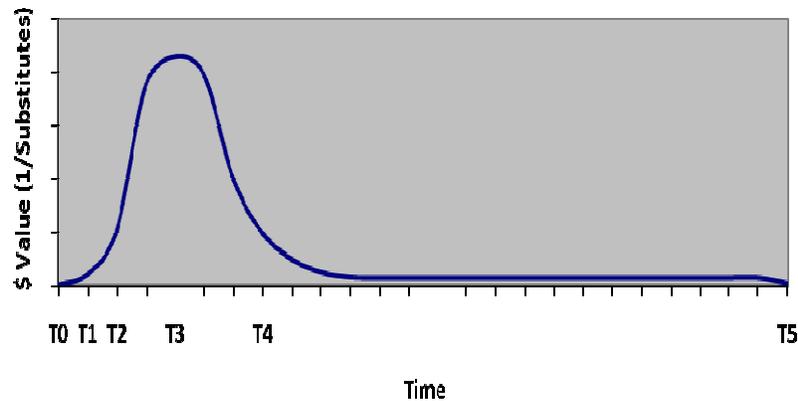


Figure 1. A Copyrighted Work's Typical Life Cycle

While literal and merely duplicative copying might expose the work or the product to substitutive effects at every period,⁷⁰ nonliteral and transformative copying might have different effects at different stages. At some points such latter copying may threaten the work by plain substitution, whereas in others, if it harms the work at all, it may threaten it mainly by “creative destruction.” Let us explore these various points over the life cycle in more detail.

A. T_1 —The Prototype

At T_1 a work (comprised of an idea, initially conceived, expressed and fixed in material form) competes against many other works in the market for publishing; it competes for an opportunity to enter a stage of transformation from “work” or a prototype of a product into a complete “product” in the consumer market. Two features make the market at T_1 highly competitive. At T_1 the work's value seems to lie predominantly in its intrinsic qualities and often in the ideas contained therein. But mere ideas are not protected, and the intrinsic quality of the work is often hard to discern at this stage, either because most people do not possess the necessary expertise, or because ultimately the quality may depend on what other people think about the work.⁷¹ Therefore, at T_1 the work has to compete vigorously against many other works in a wide category—not only works that may express similar ideas but also works expressing different ideas but serving a similar function.

An example that illustrates the high substitutability of works at T_1 , and with which readers of this article may be familiar, is the typical and banal statement sent by law review editors rejecting a submission, apologizing that they must reject many fine articles from the hundreds or thousands submitted.

70. Unless such forms of sharing-copying-piracy actually increase the demand, as mentioned above, *supra* note 21.

71. CAVES, *supra* note 57, at 173–74.

For the editors, differences among many of the submitted manuscripts are minute. Not only may they find it difficult to determine which of the submitted papers in a particular area, say copyright, is indeed worth publishing, they do not necessarily have any particular reason to prefer a copyright paper over one dedicated to constitutional history or any other topic. This results in an extremely competitive market, dominated by substitution effects. Therefore, at T_1 even nonliteral copying of the work can be as devastating as flagrant literal copying, wiping away whatever miniscule advantage that being the first conveyor of an original idea could possibly confer upon the author. In the eyes of publishers who consider which work to publish, the differences between the authentic work, a literal copy of it, or a nonliteral copy may be minute. As prototypes of products yet to be developed, they all function as fairly close substitutes. Moreover, whatever quality differences exist among them that might confer an advantage on one over the other would be discounted because of the *nobody knows* attribute—the uncertainty and unpredictability of future demand.⁷² Moreover, it may not even be clear at this *ex ante* stage whether a work that claims to build upon and improve a previous one really does so. Therefore, given the dominance of substitution effects at this stage, the social cost associated with allowing the author to prevent improvements and Schumpeterian competition at T_1 is relatively small.

B. T_2 — From Prototype to Product

At T_2 the competitive dynamics change. Additional creative and noncreative complementary inputs transform the work into a product with higher potential value. The value of the product now stems not only from the ideas the work conveys and the raw form of their expression, but also from the combination of the work's intrinsic value and the value added by coproducers and the synergies among them all. This process increases the uniqueness of the work and decreases its substitutability relative to other works against which it had competed at T_1 . However, the actual quality of the work and how other people will react to it is still unknown. Therefore, similar works within the same genre or other broad category may still substitute for it quite easily.

To demonstrate the difference between T_1 and T_2 consider a pop song, as illustrated in figure 2.⁷³ At T_1 the work may consist of a musical composition comprising both lyrics and music. At T_2 the musical composition has turned into an arranged, performed, and recorded song, carefully selected and influenced by the skills of the record label's Artists and Repertoire (A&R) staff and other executives.

72. The name and reputation of the author, of course, may create a big difference in allowing the works of some authors to stand out among works that may otherwise be considered as close substitutes.

73. The diagram and the description were inspired by David Teece's seminal article, *supra* note 14, at 289–92.

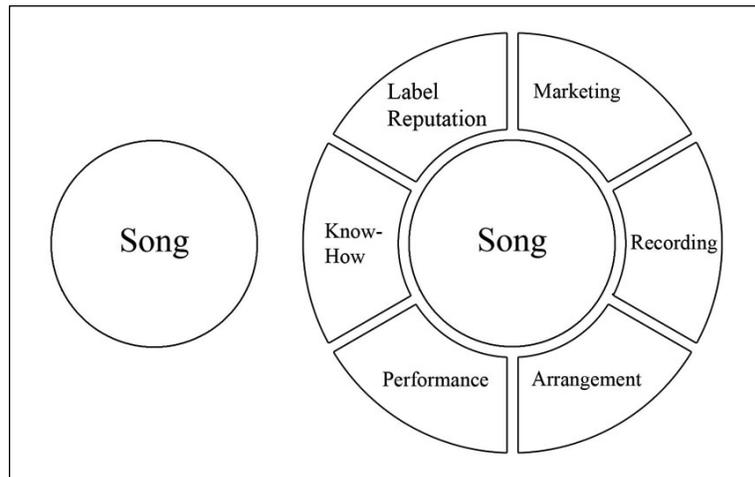


Figure 2. From Work to Product

At T_1 duplicating the musical composition would create an identical product, and extensive borrowing from it could create a very close substitute. At T_2 , however, much more comprehensive copying is required in order to produce an identical product. To achieve that, one has to duplicate not only the musical composition but also the sound recording, or at least copy every element thereof, including the arrangement and the performers' voices. By contrast, a sound recording using the same musical composition, but performed by another performer (even using the same arrangement), would yield only a similar, but not the same, product, and emulating the label's executives' insights and judgment may be impossible because of the tacit form of the knowledge they contribute. But still, at T_2 it is difficult to determine *ex ante* which of the two sound recordings is more valuable,⁷⁴ so despite the differences both works might function as relatively close substitutes in the market.

C. T_3 — From Product to Platform

At T_3 the competitive dynamics change even further. Network effects of various kinds have turned one product into a winner, to the exclusion of similar products with which it previously competed at T_2 . At T_3 the "product" is not the same product as in T_2 . Now it derives its value not only from the intrinsic qualities of the "work" and the additional inputs that other cocreators contributed, but also from its situation in a specific cultural or technological context and from its ability to serve as a platform upon which other products, works, and social and cultural interactions have been built.⁷⁵

74. Again, this ignores the effect of the author's or performer's existing reputation. See *supra* note 72.

75. I am not suggesting here that that work's value will always increase with the size of the network or the platform, see *supra* note 63. Rather, I limit my argument to how the transformation into a platform (of whatever size) makes the work less substitutable.

Consider the pop song discussed in the previous example. At T_3 the value of the song emanates not only from the T_1 musical composition and the inputs added at T_2 , but also from various other complementary assets and interactions, as illustrated in figure 3. A successful song and its performers may spur the creation of formal and informal fan clubs, they may be the subject matter of heated watercooler discussions, or they may precipitate cover versions or define a new genre or new interpretations. The song may become a subject of parodies, commentary, or teaching, and it may serve as a spring board for other complementary goods such as concert tours and various forms of merchandise.

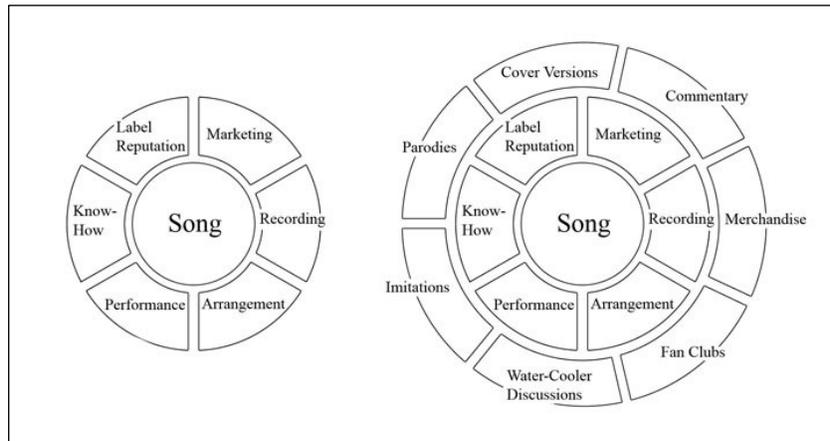


Figure 3. From Product to Platform

Of course, this characterization of what the product is at T_3 applies only to a minority of works, the winners. For the losers, the difference between T_2 and T_3 is rather small, except that at T_2 there was at least potential value that no longer exists at T_3 .⁷⁶

The difference between what the product is at T_2 and what it is at T_3 affects the relative strengths of the competitive forces to which the product will be vulnerable. While the winner may always remain vulnerable to Schumpeterian competition, the threat of merely substitutive competition at T_3 may be rather limited and come almost entirely from unauthorized identical copies—from flagrant “piracy.”⁷⁷ It seems rather unlikely that nonliteral copying of the work, or even the product, would be able to replicate all the elements that have

76. This is of course oversimplification. An insignificant number of works, while not reaching a status of superstardom, may still create enough interest in smaller markets or market niches and generate, albeit on much smaller scale, the same type of network effects. See generally CHRIS ANDERSON, *THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE* (Hyperion 2006).

77. I note that even the effects of flagrant piracy may not always be detrimental to the copyright owners of the pirated work. See *supra* note 21.

contributed to its success and made it a platform.⁷⁸ Returning to the previous example of recorded songs, even a very close cover version of a song is unlikely to be viewed by consumers as a close substitute and is unlikely to undermine the song's market. The cover version, by definition a duplicate of the musical composition, can imitate many aspects of the song as a product, but cannot easily imitate the platform.⁷⁹ If it harms the market of the original song, the probable reason is creative destruction. The new version may have added something new—additional value—which the first song lacked.⁸⁰ The point can be even more clearly demonstrated by considering those few classic works whose T_3 effectively extends far beyond any copyright term and in essence defy Schumpeterian competition (at least as yet). Consider the *Mona Lisa*, the most famous painting in the world.⁸¹ Although it already had been regarded as a masterpiece in 1568, sixty years after being painted,⁸² and although some of its artistic features were novel,⁸³ it reached its current status eclipsing all other paintings only during the 1960s,⁸⁴ not as the result of “the work of a single historical agent but the result of a complex set of circumstances and chance events.”⁸⁵ Although for most of its history other paintings were more highly regarded, nowadays the *Mona Lisa* has been intertwined in such a complex network of cultural meanings that no other painting, or any other work, could substitute for its cultural significance. While very few works benefit from such an enduring T_3 value, the principle applies to all works that reach that stage.

78. The following anecdote illustrates the point. The Wall Street Journal recently published a story about the troubles that birthday party organizers face when they invite popular cartoon character impersonators to kids' parties. In recent years, corporations that own the rights to some of the most popular characters, such as Dora the Explorer, SpongeBob or Spiderman, have become more legally assertive and threaten companies who market unauthorized character impersonators. As a result, many costume companies began sending differentiated characters with names such as “Big Red Tickle Monster” instead of Elmo, and “Explorer Girl with Backpack” rather than Dora. These substitutes have not always been welcome by finicky toddlers. As one Mom explained, the impersonator of the differentiated Dora the Explorer was badly received. “When [the modified] Dora came out . . . none of the kids would go to Dora, including my daughter, and a few of the kids started crying.” Katherine Rosman, *Why Dora the Explorer Can't Come To Your Kid's Birthday Party*, WALL ST. J., July 22, 2008, at A1.

79. See Karjala, *supra* note 5, at 1076–77 (discussing why the fact that public domain works such as Leonardo da Vinci's *Mona Lisa*, the opening of Beethoven's 5th Symphony, or Van Gogh's paintings, all of which have been freely manipulated, interpreted and debased, would not limit the value of the work had copyright been theoretically restored in them).

80. Indeed, many of Shakespeare's works borrowed from previous works.

81. Donald Sassoon, *Mona Lisa: The Best-Known Girl in the Whole Wide World*, 51 HIST. WORKSHOP J. 1 (2001).

82. *Id.* at 5–6.

83. *Id.* at 6.

84. *Id.* at 14.

85. *Id.* at 5.

We can see, therefore, that across time, as the work evolves from a prototype to product and from product to platform, the relative strengths of the two competitive forces in play—substitutive competition and Schumpeterian competition—vary. Substitution effects dominate T_1 . They remain significant at T_2 but become dominated by Schumpeterian effects at T_3 . Because copyright seeks to maintain the incentives for creative activity more by limiting substitutive destruction but less by limiting creative destruction, it may make sense to vary the scope of copyright protection accordingly. This observation implies that strong legal protection against competitive literal and nontransformative copying (namely, piracy) may be justified at every stage, but that protection against nonliteral copying may be strongly justified at T_1 , moderately justified after T_2 , but only weakly justified at T_3 . Strong protection at T_1 , perhaps even stronger than that available under current law, would provide the author enough time to form the optimal contractual and organizational ties necessary to transform her work into a complete product, while reducing the risk of being scooped in the process. In contrast, after T_2 , and especially at T_3 , the combination of the work's integration into a product and network effects buttresses its competitive position vis-à-vis close substitutes and renders strong protection against nonliteral copying superfluous. At these stages strong protection could jeopardize the Schumpeterian process of creative destruction.

D. T_4 — Sic Transit Gloria Mundi

At T_4 the work has become obsolete yet is still subject to copyright protection. Obsolescence for our purposes does not mean that the work has no value, only that it has passed the peak of its commercial success. It may still be valuable for others either as a standalone work or as an input in the production of other works, yet in both cases it will probably have many substitutes. It also may perform a comeback in the same or a related market.⁸⁶ However, unlike the case at T_1 or T_2 , the availability of many substitutes does not justify similarly strong protection, mainly for the reasons advanced by Liu and Hughes—from an incentive perspective, the present value of income loss for old works is smaller compared to the same loss suffered by newer works.⁸⁷

E. Single or Multiple Life Cycles?

In real life, the shifted-to-the-left bell shape of typical works' life cycle described in figure 1 may be more complicated, with additional peaks of various heights. In some cases, it may look like this:

86. Karjala, *supra* note 5, at 1077 n.27 mentions the example of the film *It's a Wonderful Life*, which performed an impressive comeback when it went into the public domain after "gather[ing] dust in the copyright owner's studio."

87. Liu, *supra* note 6, at 425–28; Hughes, *supra* note 6, at 783.

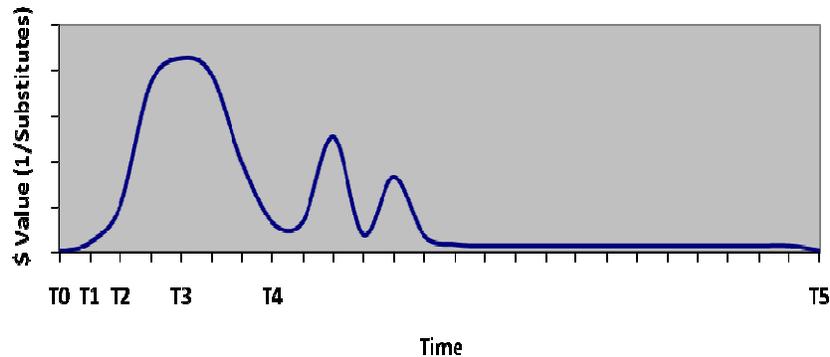


Figure 4. A Multipipeak Copyrighted Work's Life Cycle

As Hughes mentions in the case of film, while the most important peak represents “the gain[s] from the theatrical release box office,” additional peaks may represent gains from “VHS and DVD release, cable television exploitation, broadcast television exploitation, and, eventually, internet on-demand delivery.”⁸⁸ In some cases, and increasingly, DVD sales exceed theatrical box-office sales.⁸⁹ Additional peaks may result not only from additional releases of the same work in a different market, but from the release of derivative works. For example, a novel may be a long-time member of the T_4 works group, and then experience new life (and a rejuvenated stream of income) when transformed into a script for a successful film. These phenomena do not fundamentally change the analysis of this article. Rather, we may think of each such new market as a separate life cycle, identify the various T s, and ask, with regard to nonliteral copying of the work at these points, whether the copying creates a mere substitute, or whether its potential effect is mostly Schumpeterian.

Thus, in the case of a film's DVD release, as the film has been previously produced and released, the life cycle in the DVD market effectively begins at T_3 . Pirated copies of the DVD may generate strong substitution effects, but nonliteral copies of the film, even when released on DVD simultaneously with it, are much less likely to be merely substitutive. In contrast, when a film producer seeks to use a novel as the basis of a script, the novel and its less-than-perfect copies can function as good substitutes to each other.⁹⁰ Thus, even if the novel qua novel is a T_4 work when the film is produced, as a basis for a film it is a T_1 work. If the potential to generate income from the derivative film is part of the incentive package that was necessary to encourage the novelist to

88. Hughes, *supra* note 6, at 788.

89. Patrick Goldstein, *No Longer a Scarlet Letter: R-Rated Comedies, Often Box-Office Busts, Are Making a Comeback, Thanks to Big DVD Sales*, L.A. TIMES, July 5, 2005, at E1.

90. The reputation of the novel or its author may counter this substitution effect. See *supra* note 72.

write it in the first place, then protecting against nonliteral but still substitutive scripts makes sense. It remains the case, however, that the importance of this incentive decreases over time.⁹¹

F. The Economics of Attention

The economics of attention magnify the lesser substitutability of works after T_2 . Information goods are often “experience goods,” goods whose quality is difficult to discern before consumption. In many cases laymen may be unable fully to discern the quality even after consumption.⁹² This makes it more difficult for consumers to decide which among many new works to choose. Moreover, “information overload” exacerbates the problem; each new work published increases the cost of choice.⁹³ Each work faces a challenge of how to stand out from the crowd. These observations raise several implications for our time-based analysis of copyright. For some kinds of works (certainly not all), one of the services that publishers provide, and for which authors compete at T_1 , is quality certification by the publisher. In many cases the publisher is more reputable than the author, and therefore the publisher has more to lose from failing to deliver the promised quality. As a result, the consumer (or more often the intermediaries between the consumer and the publisher) knows that buying a work published by that publisher is less risky.⁹⁴ Moreover, because there are fewer publishers and even fewer reputable publishers than authors or works, the number of works competing at T_2 is smaller compared to T_1 . This helps such works to stand out from the rest, and enables the consumer to choose more easily, but it also reduces the number of competing substitutes. The work chosen by the publisher is now less substitutable by a similar work, which has not been so chosen. The economics of attention also means that at T_3 the successful works clearly stand out from their previous competitors and would be much less substitutable by them.

This section described the typical life cycle of copyrighted works and the degree to which they may be vulnerable to substitutive or Schumpeterian competition, or both. The next sections will examine how these insights may

91. See Liu, *supra* note 6, at 436–37.

92. I use the term quality here not to imply that there exists an inherent level of quality which experts (as opposed to laymen) are able to discern. Rather, experts can often better apprehend the various ways in which a work corresponds with other works, how a work is situated within a particular historical, social or artistic context; whether and how a work builds or improves upon older ones and so on.

93. See Frank Pasquale, *Copyright in an Era of Information Overload: Toward the Privileging of Categorizers*, 60 VAND. L. REV. 135, 169–71 (2007).

94. The degree to which consumers rely on the identity of the publisher may vary across types of works. It may be very strong in the case of newspapers and other periodicals, whereby the reader, having no real way to determine the quality of the new content prior to reading it, must strongly rely on the reputation of the periodical. The reputation of the publisher or producer probably plays a minor role in the case of music, film, or fiction literature, where other tastemakers such as critics, radio stations, newspapers, and vendors may provide information to the consumer. However, even in these cases the reputation of the publisher or producer may be important for convincing the tastemakers to review or stock the work.

bear upon several copyright rules and doctrines. It will provide a selection of examples in which the law's attentiveness to the importance of time varies.

III. THE MECHANICAL COMPULSORY LICENSE

The compulsory license regime under Section 115 of the US Copyright Act nicely reflects the differences in how others' subsequent use of a musical work affects the work over time. It is therefore a rare example of a case in which copyright law is explicitly sensitive to time within the copyright term. Section 115 allows "any person," under certain conditions, to make and distribute sound recordings ("phonorecords") of a nondramatic musical work when sound recordings of the musical work have been previously distributed to the public in the United States under the authority of the copyright owner, provided that the using person, the licensee, notifies the copyright owner and pays a specified royalty. While the compulsory license applies to the musical composition, it does not authorize the licensee to duplicate and distribute the sound recording that contains the musical work.⁹⁵ Therefore, the licensee must assemble "his own musicians, singers, recording engineers and equipment, etc. for the purpose of recording anew the musical work that is the subject of the compulsory license."⁹⁶

Interestingly, Section 115 distinguishes between different time points at which the scope of copyright holders' rights change fundamentally. The event that triggers the compulsory license is the distribution of sound recordings authorized by the copyright owner. That is, the compulsory license is available only after the transition from work to product released to the market is complete ($T > T_2$). But so long as the work remains between T_1 and T_2 , copyright owners retain full exclusive rights. It is noteworthy that under the 1909 Copyright Act, the comparable compulsory license was triggered much earlier, sometime between T_1 and T_2 , upon the making or licensing of the first recording even if no authorized records had been distributed to the public.⁹⁷ In 1976 Congress considered the availability of the compulsory license at this period "unfair and unnecessarily burdensome on copyright owners"⁹⁸ and moved the trigger to a later point, after T_2 . Moreover, the compulsory license is available only if the licensee's primary purpose is making sound recordings for distribution to the public for private use, as distinguished from sound recordings intended primarily for use by commercial users such as broadcasters, jukebox operators, and background music services.⁹⁹

95. Other than those sound recordings made under the license. See NIMMER & NIMMER, *supra* note 23, § 8.04[A].

96. *Id.*

97. *Id.* § 8.04[C].

98. H.R. REP. NO. 94-1476, at 107 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5722 (referencing H.R. REP. NO. 90-83, at 66-67 (1967) and stating the current Committee's conclusion is the same as in 1967).

99. NIMMER & NIMMER, *supra* note 23, § 8.04[D].

Historically, the compulsory license was born in 1909 out of Congress' intention to reconcile two competing interests. On the one hand, Congress wanted to grant musical works' copyright owners the right to control the "mechanical reproduction" of their works and overturn the Supreme Court's opinion in *White-Smith Music Publ'g Co. v. Apollo Co.*,¹⁰⁰ which ruled that player piano rolls were not "copies" but rather were component parts of machines.¹⁰¹ At the same time, however, Congress sought to address the concern that one piano roll company, the Aeolian Company, would dominate the market for piano rolls.¹⁰² Apparently, the Aeolian Company anticipated (and encouraged) the law's recognition of the mechanical rights and bought much of these soon-to-be-created rights from America's major music publishers. So a compulsory license was a solution permitting the grant of a new right while enabling competition in the market for piano rolls.¹⁰³

Whatever its concerns were in 1909, some of the specific details of the *current* regime enacted in 1976 may reflect Congress' recognition (even if implicit) of the difference in the competitive forces that musical works face across time. Presumably, extending a compulsory license to duplicates of the authorized sound recording would create a perfect (or close to perfect) substitute for these sound recordings. This could harm not only the producers of the sound recording but also the copyright owners in the musical work because the prospect of perfect competition would restrict producers' willingness to pay royalties higher than those set statutorily, or even to pay any royalties. It therefore makes sense to prohibit duplicates of the sound recordings at any stage. Similarly, prior to T_2 (that is, at $T < T_2$), a sound recording made under a compulsory license also has the potential to function as a close substitute for the one authorized by the copyright owner, so similarly it makes sense not to allow a compulsory license at this stage either. However, a cover version of a song already distributed (that is, at $T > T_2$) is not likely to be a perfect substitute for the one already on the market, especially as T approaches T_3 , and even more so beyond T_3 . At this point, the value of the song lies not only in the musical work but also in the specific way in which it has been performed and recorded, as well as in the network value that it has generated. Therefore, it seems highly unlikely that music fans would be willing to substitute a cover version for the original. In fact, as T approaches T_3 music fans would probably reject very close imitations, although they might appreciate cover versions that add unique interpretation to the song (which may or may not hurt the demand for the original). If they do prefer that later version over the original, it is an example of Schumpeterian competition.

100. 209 U.S. 1 (1908).

101. Lydia Pallas Loren, *Untangling the Web of Music Copyrights*, 53 CASE W. RES. L. REV. 673, 680–81 (2003).

102. *Id.* at 681.

103. PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX* 52–53 (Stanford Univ. Press 2003).

The distinction between sound recordings made primarily for distribution to the public for private use (which may rely on the compulsory license), and sound recordings made primarily for commercial use (which may not), reflects a similar logic. The demand for sound recordings by private users (many of which are by definition music fans) is probably less elastic than the demand by commercial users who use individual songs as relatively more fungible inputs necessary to compose attractive playlists or background music. Therefore, consumers from each group would respond differently to cover versions made under a compulsory license. Unlike private users, commercial users might be more willing to substitute a cover version for the authentic version if offered a lower price and if the cover version perfectly or closely imitates the original. Moreover, because many commercial users (especially broadcasters) play a vital role as tastemakers,¹⁰⁴ their willingness to substitute a cover version for the original can be devastating for the original's prospect of commercial success. The compulsory license thus preserves full exclusive rights in those instances when the work is most vulnerable to substitution—at T_1 and when used primarily for commercial purposes—but allows others more easily to build upon the work after T_2 when the threat of substitutive competition wanes and the potential benefits of Schumpeterian competition increase.

IV. LICENSES, DRM, REVERSE ENGINEERING, PREEMPTION, AND COPYRIGHT MISUSE

Distinguishing how time influences the types of competition affecting copyrighted works may also shed light on the controversy about copyright holders' use of licensing terms and digital rights management technologies (DRM) to supersede the initial allocation of entitlements under the Copyright Act. The question to what extent copyright owners should be permitted to use contract or technological measures to prevent their customers or licensees from criticizing the work, reverse engineering it, or otherwise building upon or modifying it, as well as to prevent the copying of noncopyrightable matter, has generated considerable ongoing debate. Such attempts sometimes have been attacked on grounds of preemption, antitrust or copyright misuse, with the occasional sympathy of the courts. But in most cases courts have upheld such restrictions, finding such contractual terms and their technological equivalents valid, enforceable and not preempted by federal copyright law.¹⁰⁵

104. See Ariel Katz, *The Potential Demise of Another Natural Monopoly: Rethinking the Collective Administration of Performing Rights*, 1 J. COMPETITION L. & ECON. 541, 582–87 (2005) (discussing the role of broadcasters in stimulating sales of records).

105. See e.g., *Bowers v. Baystate Techs., Inc.*, 320 F.3d 1317, 1325–26, 1336 (Fed. Cir. 2003), cert. denied, 539 U.S. 928 (2003) (“[P]rivate parties are free to contractually forego the limited ability to reverse engineer a software product under the exemptions of the Copyright Act” and “a state can permit parties to contract away a fair use defense or to agree not to engage in uses of copyrighted material that are permitted by the copyright law, if the contract is freely negotiated.”). See also *Davidson & Assocs. v. Jung* 422 F.3d 630, 639 (8th Cir. 2005) (“By signing the TOUs and EULAs, Appellants expressly relinquished their rights to reverse engineer.”).

Critics of such restrictive practices raise the concern that they upset the delicate balance created by copyright law. They argue, for example, that if copyright law considers fair use essential in the service of the public interest, or allows reverse engineering under some circumstances, copyright owners should not be allowed to replace the law of the land with their own contract-made or technology-backed law.¹⁰⁶ The typical response to these arguments is that contract claims are qualitatively different from copyright claims, and therefore the concern simply misconceives the issue. As Judge Easterbrook explained: “[a] copyright is a right against the world. Contracts, by contrast, generally affect only their parties; strangers may do as they please, so contracts do not create ‘exclusive rights.’”¹⁰⁷ Therefore “licenses are enforceable unless their terms are objectionable on grounds applicable to contracts in general (for example, if they violate a rule of positive law, or if they are unconscionable).”¹⁰⁸ I do not intend to resolve this debate here. Instead, my purpose is only to demonstrate how time-based analysis of copyright can contribute to the debate, by illuminating how factoring in time can affect the legitimacy of such contractual-licensing-technological restrictions. Earlier in time, at T_1 , there are more legitimate reasons, consistent with copyright law’s underlying policies, to uphold such restrictions. Further along the life cycle, however, when the work reaches T_3 and beyond, many of these legitimate reasons dwindle away.

In describing the typical life cycle of copyrighted works, we noted how a T_1 prototype “work” transforms into a T_2 “product” and later becomes a T_3 “platform.” Also, the transition from T_1 to T_2 usually involves contributions by various coproducers, and at T_1 the work often may be easily substituted by other works. We can now add another characteristic of works at T_j : the vulnerability of authors or coproducers to opportunistic behavior by each other. The information an author conveys to her coproducers cannot be unlearned, and the coproducers, instead of performing their part in turning the work into a product, may renege on their contractual obligations. For example, they may substitute a noninfringing version of the work and produce a product that would function as a very close substitute for the one agreed on, or they may use the threat of doing so in order to renegotiate what had been agreed on. The author may behave opportunistically as well. For example, after receiving valuable inputs from her coproducers (which may be even just a publisher’s willingness to publish the work—a valuable market signal about its quality), she can threaten to offer the work, or a similar version of it, to a competing publisher in order to renegotiate the terms she had agreed to. As Arora observed in the context of patents, “[t]his double sided opportunism is an important impediment to efficient transfer of technology”¹⁰⁹ and, as he shows in his model,

106. See generally, Margaret Jane Radin, *Regime Change in Intellectual Property: Superseding the Law of the State with the “Law” of the Firm*, 1 U. OTTAWA L. & TECH. J. 173 (2004).

107. *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1454 (7th Cir. 1996).

108. *Id.* at 1449.

109. Arora, *supra* note 58, at 43.

broad patent rights can help the parties reduce their incentives to renege, thus facilitating more efficient transfer of technology.¹¹⁰ Courts can observe relatively easily whether codified knowledge has been transferred or infringed, but they are less capable of verifying contractual performance relating to tacit knowledge.¹¹¹ Therefore, by bundling codified and tacit knowledge, parties can create self-enforcing contracts. This depends on the degree of complementarity between the codified and tacit knowledge and on the scope of the bundled IP rights. If the two types of knowledge are not very useful without each other, and if the IP rights are broad (meaning that inventing around the IP right will be highly costly if the contract is terminated), the parties will have an incentive not to renege on the contract.¹¹²

Relative to patents, however, the scope of copyrights is narrow. This may imply, applying Arora's insights, that the narrow scope of copyright may increase the chances of double-sided opportunism described above and be an impediment for efficient contracting between authors and their coproducers. This insight can explain why at T_1 contracting parties may seek to write contracts, which may seem to extend the breadth of the copyright, and why it makes sense for the law to uphold such contractual provisions. At the same time, these insights may provide a normative basis for greater suspicion towards such restrictions when applied to the postproduction stage, that is when $T \geq T_2$. At this stage the restrictions are no longer necessary to prevent coproducers from behaving opportunistically, and the concern that the restrictions are aimed at limiting Schumpeterian competition or other legitimate activities are greater. The following examples will demonstrate these differences.

Suppose a software company hires a group of experts to run a beta version of its program, examine it, identify bugs and possible security holes, and suggest improvements. The experts may find it attractive, after learning not only the benefits of the software but also its flaws, to create and market their own competing and possibly improved software. Alternatively, they may simply threaten to do so in order to renegotiate their contractual terms. Anticipating this possibility, the software company may seek to prevent the experts from distributing the improved version of the software without its consent. Copyright law may allow the company to obtain an injunction against the experts if they breach and distribute copies containing its source code and other copyrightable elements, but would not help if the experts write a new, noninfringing code, perhaps by reverse engineering the software and copying only elements, which are not subject to copyright. To address these concerns, the company may seek to prevent the experts from reverse engineering its product or even from writing any competing code without its consent. The software company is also concerned that, if the security holes are disclosed, writers of malicious code may take advantage of them before they are fixed. So the company may require the experts not to disclose the flaws that they find, even

110. *Id.*

111. *Id.* at 41.

112. *Id.* at 46.

though disclosing such flaws may confer some reputational benefits on the experts.

So far, such contractual restrictions, designed to address these particular risks, do not seem to be objectionable, despite the fact that the contract may derogate some of the rights to which the experts would ordinarily be entitled under copyright law. For example, copyright law does not prevent others from writing competing but noninfringing code. With some restrictions, the law also does not prohibit the experts from creating improvements or reverse engineering the software. And, the fair use doctrine and the Constitution certainly allow the experts to publicly criticize flaws that they discover. But unless we believe that the set of entitlements defined by copyright law is always socially optimal, it is difficult to think of reasons why we could not regard this set of entitlements as a default template, around which parties can contract to create the most efficient results. Judge Easterbrook's distinction between the *in rem* and *in personam* effects of copyright versus contract¹¹³ may indeed be useful to alleviate the concern that the contractual restrictions may stifle innovation, democratic discourse, and the like. It is true that the *in personam* characterization of contracts in this context ignores the externalities created by such contracts on third parties (including the public at large), in the sense that the restrictions impose a negative externality on consumers who would have bought the improved product¹¹⁴ or generally would have been interested in the information generated by the experts. But the externalities created at T_1 are relatively small. So long as only the particular group of experts is bound by the contract restrictions, whereas other experts remain free to create competing and improved programs and say whatever they wish about the software, the concern that such negative externalities would be serious seems remote. Therefore at T_1 such restrictions cannot be highly objectionable.

At T_3 however, a similar set of restrictions, imposed on users as part of the software's End User License Agreement (EULA) or Terms of Use (TOU), justifiably would look more problematic.¹¹⁵ These restrictions would seem to create much greater social costs, while not yielding the same benefits as before. The end user is not a coproducer who may behave opportunistically, and assuming that the software has already secured significant market share,¹¹⁶ the concern that the restrictions may hamper the process of creative destruction seems more plausible. At least, whatever legitimate concerns the restrictions

113. *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1454 (7th Cir. 1996).

114. See Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 170 (1999).

115. See e.g., *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970, 979 (4th Cir. 1990) (holding that a clause in a standard licensing agreement of software barring licensees from developing any competing software constituted copyright misuse).

116. Presumably, works that gain greater market share are the ones that would attract others to build upon.

are designed to address, they must be weighed against this concern.¹¹⁷ Moreover, the distinction between copyright and contract is less useful at T_3 as many more people are bound by the restrictions.¹¹⁸ In fact, the distinction breaks down completely if the restrictions are encoded into the software and circumventing them becomes illegal, as they practically bind even those who are not privy to the contract.¹¹⁹ The minor negative externalities created by the restrictions at T_1 may become a major social cost at T_3 . Even if the restrictions may serve some beneficial outcomes at T_3 , their potential to stifle creativity and discourse may justify greater suspicion. Consider another example. As is commonplace in academia, draft versions of this article were distributed to conference attendees bearing a plea “Draft, please do not cite without permission.” Ignore for the sake of argument that legally the plea is only a courteous request, not a binding commitment on readers.¹²⁰ Even the most avid defenders of the public domain, I believe, would honor such a request, and even the most avid supporters of expansionist copyright would denounce a similar request if affixed to a published article or book. The difference seems to lie in the purpose served by such request: the request supports creativity in the case of a work in progress (at T_1) but hinders it after the work is published (at $T \geq T_2$). Recall that review by others is an important aspect in the transformation from a work to product, but also that the value of a work often depends on what other people say about it. Therefore, a negative review at T_1 can be devastating to the work’s future success. Authors understandably seek to get comments from others (even negative ones) so that they can improve their work, but would not necessarily want the comments to become public prematurely, that

117. In *ProCD*, for example, Judge Easterbrook highlighted how the prohibition on the copying of facts allowed the producer of the database to price discriminate between high-value and low-value users and thereby to sell more copies at lower prices, presumably a benign purpose. 86 F.3d at 1449–50. *Davidson & Assocs.* presents a more complicated trade-off. In this case, plaintiff Blizzard Entertainment created Battle.net, an online gaming service that allowed owners of Blizzard’s popular computer games to play against each other online. Blizzard, however, implemented an access control technology designed to prevent pirated versions of its games from being played online. The defendants were members of a nonprofit open source project, the “bnetd project.” By reverse engineering of Blizzard’s games (in violation of the EULA and TOU), they created bnetd, and launched an alternative to Battle.net called “bnetd.org” which Gateway hosted for free. Bnetd was designed to address some of the players’ frustrations with Battle.net, but at the same time lacked access control measures, thus allowing players to use pirated versions of Blizzard’s games. The prohibition on reverse engineering seems to have been used by Blizzard to halt the development of an alternative gaming platform, as well as for making pirated copies of its games less attractive. *Davidson & Assocs. v. Jung* 422 F.3d 630, 633–37 (8th Cir. 2005). While the first purpose may be of concern, as it may slow down Schumpeterian competition, the second seems more legitimate, as it addresses merely substitutive competition. Note however that in both *ProCD* and *Davidson & Assocs.*, the purportedly beneficial purpose of the restrictions served only as background reasoning, whereas the contracts were upheld simply on the basis of the distinction between contract and copyright.

118. Arthur R. Miller, *Common Law Protection for Products of the Mind: An “Idea” Whose Time Has Come*, 119 HARV. L. REV. 705, 771–72 (2006).

119. Lemley, *supra* note 114, at 148.

120. To overcome this difficulty, we can imagine an electronic depository of working papers, such as SSRN, offering authors a feature of a “clickwrap” license that allows readers to read or download the paper only if they agreed to such a no-citing term.

is, before they have determined that the work is complete. Academic authors optimize this trade-off by disseminating their drafts widely while including a no-citation condition. If the condition cannot be honored, authors would prefer disclosing work in progress only to a small circle of peers whom they can trust highly. The expected result would be less prepublishing scrutiny, leading to lower quality of published works, as well as an additional delay in the dissemination of new cutting-edge ideas that benefit scholars greatly, even if they are still not fully developed or articulated. Therefore, in this example, fostering creativity justifies a T_1 limitation on one of readers' most fundamental and least controversial liberties, the right to cite and comment on others' work.¹²¹ By contrast, by publishing the work the author can no longer improve it. This is not to say that she cannot improve the information conveyed by the work by writing new editions or additional works that build upon it, but so can other authors. Therefore, the no-citation condition at this stage cannot serve the interest of improving the work, but can only suppress the creation of additional works. An optimal rule, therefore, would treat others' right to cite as a default rule at T_1 , but as an inalienable right from T_2 onward.

V. THE IDEA-EXPRESSION DICHOTOMY

It is well established that copyright cannot subsist in ideas,¹²² only in the specific expressions thereof. While, with a few exceptions, no one can copy the expression without permission, the ideas contained therein are free to all. Of course, not only the exact words chosen in the "expression" are protected; copyright's scope is broader than that. As Judge Learned Hand noted long ago in *Nichols v. Universal Pictures Corp.*,¹²³ copyright "cannot be limited literally to the text, else a plagiarist would escape by immaterial variations."¹²⁴ As a leading treatise puts it, "[t]he economic motivation of creation that underlies copyright would be almost completely vitiated if anyone could, with impunity, take an author's work by the device of making a few changes in wording, or even by closely paraphrasing the entire work."¹²⁵ Hand's obvious assumption was that on the one hand copying with immaterial variations could result in a work that functions as a very close substitute for the original, thus undermining the incentive to create. But on the other hand, extending copyright to cover "ideas" would do disservice to the very purpose of copyright law, as it would stifle other creators' ability to create their own work and participate in the process of creative destruction. The idea-expression dichotomy therefore

121. The Berne Convention even provides at Article 10(1) that "it shall be permissible to make quotations . . ." thereby, according to Jane Ginsburg, creating an exception to copyright "that *must* rather than *may* appear in national laws" of the member countries, Jane C. Ginsburg, *Contracts, Orphan Works, and Copyright Norms: What Role for Berne and TRIPs?*, in *WORKING WITHIN THE BOUNDARIES OF INTELLECTUAL PROPERTY* (Rochelle C. Dreyfuss, Harry First & Diane L. Zimmerman eds, Oxford University Press (forthcoming, 2009).

122. 17 U.S.C. § 102(b) (2006).

123. 45 F.2d 119 (2d Cir. 1930), *cert. denied*, 282 U.S. 962 (1931).

124. *Id.* at 121.

125. NIMMER & NIMMER, *supra* note 23, § 19E.04[B][1] n.32.

seems to reflect and serve the distinction between substitutive and Schumpeterian competition. It prevents competition that comes from perfect or near-perfect copies, but preserves the ability of built-upon works to creatively destroy existing ones.

The idea-expression dichotomy serves that beneficial purpose if its merit is assessed at T_3 (or later). Realizing that at T_3 substitution effects come primarily from perfect or near-perfect copies, but much less so from imperfect ones, it makes sense to protect only the specific expression of ideas but not the ideas themselves. Yet earlier, at T_1 or even T_2 , it is less clear that the idea-expression dichotomy serves copyright's incentive purposes as well as it does at T_3 . At T_1 a work that copies another work's ideas but modifies their expression enough to fall on the safe side of the dichotomy may still function as a very close substitute. At this stage, both works are relatively fungible prototypes, and the work that copied another's ideas may undermine the first work's market without necessarily adding much of value.¹²⁶

Consider the following example. During his first year as an assistant professor of economics at Berkeley, George Akerlof wrote the paper "The Market for Lemons."¹²⁷ By June of 1967 the paper was ready and Akerlof sent it to *The American Economic Review* for publication. Shortly afterwards he received a rejection letter in which the editor explained that the *Review* did not publish papers on subjects of such triviality.¹²⁸ After a few other rejections on similar and other grounds, the paper was finally accepted and published by the *Quarterly Journal of Economics* in 1970.¹²⁹ In 2001 Akerlof shared a Nobel Prize in Economics.¹³⁰ In its decision to award the prize, the Royal Swedish Academy of Sciences explained that Akerlof's Lemons paper "is probably the single most important contribution to the literature on economics of information. This paper has all the typical features of a truly seminal piece. It introduces a simple but profound and universal idea, offers numerous interesting implications and points to broad applications."¹³¹ This is, of course, a T_3 *ex post* perspective. *Ex ante*, at T_1 , even experts in the field failed to recognize its value and thought that the paper was trivial, just one among many other trivial papers, another demonstration of the *nobody knows* property of creative

126. Even if the copy improves the original, because the value of either is yet unknown, the *ex ante* value of the improvement is small, and so is the social cost of preventing it. See *supra* Part II.B.

127. George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970).

128. George A. Akerlof, *Writing the "The Market for 'Lemons'": A Personal and Interpretive Essay*, Nov. 14, 2003, http://nobelprize.org/nobel_prizes/economics/articles/akerlof/index.html.

129 *Id.*

130. Akerlof shared the Prize with economists Michael Spence and Joseph Stiglitz. The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2001, http://nobelprize.org/nobel_prizes/economics/laureates/2001/index.html.

131. ROYAL SWEDISH ACADEMY OF SCIENCES, *MARKETS WITH ASYMMETRIC INFORMATION 2*, (Oct. 10, 2001), http://nobelprize.org/nobel_prizes/economics/laureates/2001/eoadv.pdf.

work.¹³² In fact, Akerlof's experience is not at all unique and has been experienced by many other prominent scholars.¹³³

While it may be true that the motivation of most academics to write and publish does not directly depend on copyright, many of them are driven by the prospect of winning promotion, recognition and prizes, which often depends on whether they publish original contributions and on how widely cited those publications become. Producing the first paper to come up with a new idea is important because it increases the chance that other scholars will cite the paper, and a cited paper is more authoritative than a similar but less cited one, and therefore is likely to be cited even further. Therefore, the ability to control the timing of making one's academic work publicly available is as important to academics as it is to other authors who rely on copyright more directly for their living. So suppose that, prior to its acceptance, someone else, who had read the manuscript and did recognize its ingenuity, decided to write her own version of Akerlof's theory, only to express it somewhat differently to render her expression noninfringing. Or suppose that she had heard Akerlof articulating his theory before ever writing it down.¹³⁴ Suppose that *she* had submitted it to the *Quarterly Journal of Economics*, just before Akerlof did, so that instead of accepting his paper, the editors had decided to accept hers. If that happened, Akerlof's prospects of publishing his original contribution (and winning a Nobel Prize) would have been frustrated, along with the academic incentive structure.¹³⁵ This hypothetical suggests that, from an incentive perspective, objecting to the copying of ideas at T_1 could be defensible. If the reward for the copyrighted work depends on the novelty of its underlying ideas, free copying of the ideas could undermine copyright's very purpose. Although this proposition may hold true at T_1 , further along the life cycle protecting ideas might be more harmful for creativity than allowing their copying. Post-publication, Akerlof's contribution has received the recognition it deserves (or at least had the opportunity to receive it), and allowing others freely to build upon those ideas is desirable for all of the well-known reasons that copyright jurisprudence frequently articulates.¹³⁶

132. As Larry Ribstein notes on his blog, Akerlof's rejection does not necessarily reflect a failure in the market for academic articles. The rejection is quite expected given the paper's ingenuity, which can be recognized ex post but cannot be expected to be widely realized ex ante. See Larry E. Ribstein, Akerlof's Lemon, Ideoblog, <http://www.webcitation.org/5VDP7q2B8> (Sept. 21, 2005).

133. See generally Joshua S. Gans & George B. Shepherd, *How Are the Mighty Fallen: Rejected Classic Articles by Leading Economists*, 8 J. ECON. PERSP. 165 (1994).

134. In which case there would be no copyrighted work, for lack of fixation.

135. This is true even if in her version she addressed some of the weaknesses in the original paper. Although the result is a *better* paper, substitution effects still dominate, as most of the value lies in the original contribution of the first paper, not in the improvement.

136. Unacknowledged copying may still cause harm at T_3 . But as Landes and Posner note, at this stage the principal victims are those who credited the plagiarist and bestowed upon her benefits that she does not deserve, or people who directly competed with her for those benefits. See LANDES & POSNER, *supra* note 52, at 62. The harm caused by plagiarism also depends on the genre. Readers of popular books are less interested in identifying the exact original contribution of the author than readers of professional literature. *Id.*

Nevertheless, copyright law does not distinguish between the debilitating effect that copying the ideas would have on incentives at T_1 and the beneficial effect of copying the same ideas at T_3 . In an academic setting this may not be terribly problematic. Assuming that the plagiarist from the previous example had submitted her paper without attribution to the manuscript she had read, she must have breached the strong norms against plagiarism in academia and consequently faced the risk of both formal and informal sanctions.¹³⁷ Therefore, copyright's uniform treatment of ideas across time may not be a serious problem in academia, as the incentives at T_1 are preserved by extra-legal norms. It is possible that such norms may be effective in other contexts as well.¹³⁸ However, where such extra-legal norms do not exist, the uniform treatment of ideas across time may be more troublesome.

Consider the example of television formats. A writer generates a concept for a new TV series, or a "format," which may include "storylines, character descriptions, talent selection, settings, music, game rules, graphics, script treatments, production guidelines, etc. [which become a] blueprint for production."¹³⁹ She pitches the show to several interested broadcasters and enters into a contract with one broadcaster. But then another interested broadcaster who did not win the bid takes the idea and creates a similar show.¹⁴⁰ Copyright infringement claims in this context generally fail as courts often find that the similarity lies only in unprotected ideas or in *scènes à faire*, but not in the expression of those ideas.¹⁴¹ Moreover, on grounds of preemption, American courts often reject claims of conversion, misappropriation and quasi-contract under state law,¹⁴² leaving contract theories as the only viable cause of action against this form of plagiarism.¹⁴³ Yet relying on contract alone may not be satisfactory because it is inherently difficult to draft an appropriate contract. The producer may be reluctant to make strong commitments prior to hearing the ideas, and would have fewer reasons for agreeing not to use the ideas once he learned them. The author, on her part, would be reluctant to disclose her ideas without sufficient guarantees against their misappropriation. Moreover, even if a satisfactory contract is drafted, injunctive relief may not be available for its breach, damages may be hard to quantify and prove, and the contract may be valid only against the broadcasters but not against third parties who obtained the ideas from him but were not party to the contract.

The examples of the academic article and the TV format both exhibit significant differences in how copying one's work affects competition and the incentives to create as we move across time from T_1 to T_3 . At T_1 the value of the

137. See Adam Liptak, *Copying Issue Raises Hurdle for Bush Pick*, N.Y. TIMES, July 4, 2008, at A1, available at <http://www.nytimes.com/2008/07/04/washington/04judges.html> (discussing a recent incident of academic plagiarism and its consequences).

138. POSNER, *supra* note 13, at 107.

139. Jay Rubin, *Television Formats: Caught in the Abyss of the Idea/Expression Dichotomy*, 16 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 661, 662, n.1 (2006).

140. *Id.* at 662–63 (documenting several recent examples of this scenario).

141. *Id.* at 668.

142. Miller, *supra* note 118, at 711.

143. Rubin, *supra* note 139, at 679–88.

work lies predominantly in the ideas it conveys. Therefore, a paper that merely copies another's ideas can function as a very close substitute. If the two compete over who gets published, the publisher has no clear reason to prefer the one over the other. Because the payoffs for the one who gets published first may be much greater than for the second, plagiarism at T_1 can be devastating for the original author. The original author of an academic paper may find that no publisher is interested in his work anymore or, even if he does make it to T_2 , that the prospect of being cited and make it to T_3 has been preempted by the plagiarist's earlier publication. The same is true for the TV format. At T_1 the broadcaster can be quite indifferent between the two similar formats, the original and the copied. Even if both shows make it simultaneously to T_2 , viewers may not necessarily have good reason to prefer the original over the copycat, and both may have equal opportunity to make it to T_3 . If making it to T_3 is the reward for investment in stages T_1 and T_2 , the absence of tools to prevent others from preemptively making it to T_3 can adversely impact the incentive to create in the first place.

In contrast, once a TV format is aired, the lack of copyright protection in the format seems less problematic from an incentive perspective. Viewers would probably prefer watching the original and would not easily switch to another show which copies the format, unless the new show uses the similar ideas in some preferable way. Protecting the ideas at this stage has a weaker incentive-based justification and may deter, or at least raise, the cost of subsequent creativity. An indication that lack of protection of ideas is less problematic at T_3 is that a thriving international licensing market for TV formats has emerged.¹⁴⁴ Although copyright law does not protect the format as such, the law prevents other broadcasters from broadcasting the successful show in its entirety, and may provide protection to some elements of the show, which may also be trademarked. These limitations on full-fledged reproduction, as well as the short shelf life of TV formats¹⁴⁵ combined with the advantage of behind-the-scenes expertise (a form of tacit knowledge),¹⁴⁶ may render the option of licensing the format more attractive than "reverse engineering" it for those who wish to take advantage of the success of the format without adding much of their own. This may suffice in protecting the successful show against merely substitutive competition. But at the same time, leaving the ideas free for other producers to borrow and build upon allows them to compete by offering something else that the first one lacked. If they are successful, it is because the process of creative destruction is at work.

The preceding discussion suggests that some protection of ideas at T_1 may be desirable from an incentive perspective, even if such protection should be

144. Gautam Malkani, *Television—Haven't We Seen That Programme Somewhere Before? Got Any Good Ideas? If So, Beware the Copycats, as Protection of TV Formats is Weak and You'll Need a Detailed 'Bible' to Stop the Rip-offs*, FIN. TIMES (LONDON), Sept. 21, 2004, Creative Business, at 8 (noting that the TV format licensing business is worth hundreds of millions of British pounds in licensing revenues).

145. *Id.*

146. *Id.*

rejected at T_3 . This proposition may raise several objections. The first is conceptual. After all, unlike doctrines such as fair use, the idea-expression dichotomy does not lend itself as easily to the same degree of flexibility. Although “[n]obody has ever been able to fix [the] boundary [between ideas and expressions], and nobody ever can,”¹⁴⁷ conceptually the boundary clearly exists. Hence, if the copyright law categorically considers ideas noncopyrightable subject matter it is difficult to see how time-based analysis can change that, even if it is desirable to do so. But of course, the law may be reformed, and the insights suggested in this article may influence courts’ approach towards state-based “law of ideas,” which comprises a mix of state common law doctrines attempting to recognize property interests in ideas or invoking notions of quasi-contract, unjust enrichment or breach of confidence.¹⁴⁸ Courts similarly might reconsider the question of whether such state law is preempted by the federal Copyright Act or can actually complement it.¹⁴⁹

Another type of objection may involve arguments about cost of error. Assuming that the idea-expression dichotomy serves well the purpose of copyright at T_3 but less so at T_1 , the question is whether we can tailor a rule that will allow appropriate protection at T_1 and deny it at T_3 . The challenge is to craft such a rule that would not allow either T_3 copyright owners to successfully fend off legitimate competitors by disguising themselves as T_1 victims, or T_1 copiers to falsely pass themselves off as innocent T_3 borrowers of ideas. The problem may be compounded by the fact that ideas—much like scientific discoveries—are often arrived at independently by more than one person.¹⁵⁰ Protecting the idea, then, might mistakenly penalize an independent originator of a similar idea. Another serious problem that should be considered is that allowing T_1 claims for idea protection would increase the number of nuisance plaintiffs harassing successful copyright owners, claiming that their ideas were stolen. Even now many content producers refuse to accept nonsolicited ideas for fear of litigation.¹⁵¹ Such policies are a source of inefficiency. After all, some nonsolicited ideas may be quite good, and refusing to consider them, while rational given the risk of litigation, may be wasteful. The risk of such litigation likely would grow if suing becomes easier.

If we cannot avoid or minimize these costs, then perhaps we are better off with the current rule, which ensures that ideas remain in the public domain even if occasionally the result is some disincentives at T_1 . We saw that at least

147. *Nichols v. Universal Pictures Co.*, 45 F.2d 119, 121 (2d Cir. 1930), *cert. denied*, 282 U.S. 962 (1931).

148. Miller, *supra* note 118, at 771–72.

149. For a recent proposal favoring expansion of the “law of ideas,” *see id.*

150. The observation that most scientific discoveries are independent multiple discoveries rather than discoveries made only once in the history of science was famously made by sociologist of science Robert Merton. *See* Robert K. Merton, *Singletons and Multiples in Scientific Discovery: A Chapter in the Sociology of Science*, 105 PROC. AM. PHIL. SOC. 470 (1961), *reprinted in* ROBERT K. MERTON, *THE SOCIOLOGY OF SCIENCE* 343 (Univ. of Chicago Press, 1973).

151. *See e.g.*, *Preston v. 20th Century Fox Can. Ltd.*, [1990] 33 C.P.R. (3d) 242, para. 8 (describing the policy of Star Wars producer George Lucas and his company Lucasfilm to return all unsolicited scripts and materials and to isolate George Lucas from reception of all incoming mail).

in academia the extra-legal norms against plagiarism address the problem,¹⁵² and as Posner points out, these norms may be effective in other contexts as well.¹⁵³ Therefore, it may be useful to know the extent of the problem in other areas (such as TV formats) before deciding that upsetting the idea-expression dichotomy would be desirable. In fact, as Christopher Fay, the managing director of the German-based Format Recognition and Protection Association noted: “TV lives from borrowing from what has gone before . . . The worst thing would be for a judge to make the wrong decision, such as granting a monopoly on chat shows.”¹⁵⁴

The legitimate concerns about nuisance and opportunistic litigation, however, may be addressed by reforming the available remedies for a prevailing plaintiff. What often motivates such lawsuits is the ability to get an injunction against the production or distribution of the work. Often such lawsuits are brought after considerable investment in the work already has been sunk, causing any delay that postpones the influx of revenue to be extremely costly to the producer.¹⁵⁵ The threat of injunction thus allows the plaintiff to hold up the producer and may motivate the producer to settle by paying the plaintiff in excess of the *ex ante* worth of the misappropriated ideas. The availability of statutory damages for copyright infringement may have a similar effect. Thus, the harsh consequences following a finding of liability, which may effectively give the plaintiff much more than the value of her contribution, provide another reason for the law’s reluctance to extend protection to ideas. However, had the remedy been determined according to a liability rule—namely, compensating the plaintiff for the damage she had suffered, which normally would be equal to the payment that would have been agreed on had a license been obtained *ex ante*—the potential for hold up would be diminished, as would the motivation for nuisance litigation.¹⁵⁶ In other words, calibrating the remedies may allow extending legal protection to ideas misappropriated at T_1 , while avoiding some of the problems arising under the current legal regime. Similarly, adjusting the remedy, from the full panoply of remedies available for the infringement of copyright, to a more limited remedy of reasonable compensation for the provision of one’s previously undisclosed ideas, may allay some of the concerns about the effect of extending copyright over ideas on their free flow.¹⁵⁷

There might be other ways in which courts might de facto provide greater protection to works at T_1 , and effectively to the ideas that underlie them, without undermining copyright law’s categorical refusal to protect ideas. For ex-

152. Arguably, such norms seem to be a better solution than copyright within academia. The vision of academics suing each other for copyright infringement is quite disturbing.

153. POSNER, *supra* note 13, at 107.

154. Malkani, *supra* note 144.

155. CAVES, *supra* note 57, at 8.

156. The US Supreme Court’s recent decision in *eBay v. MercExchange*, which departs from the previous automatic issuance of injunctions in patent (and copyright) cases, may signal a step in this direction. 547 U.S. 388, 394 (2006).

157. Miller, *supra* note 118, at 775–76 (discussing *quantum meruit* claims in idea submission cases and why they might survive preemption).

ample, substantial similarity, or materiality of the material copied, is an essential element of copyright infringement,¹⁵⁸ and these are determined not only quantitatively but also qualitatively.¹⁵⁹ Because at T_1 works tend to be leaner than the products they are later incorporated into, it is easier to satisfy the quantitative test for infringement. But perhaps more importantly, it might be easier for a court to find that a material part had been taken at T_1 compared to at a later stage when the same part is only one element of a much greater whole. The leaner nature of the work at T_1 might also make it easier for courts to find that what had been copied was the expression rather than mere ideas. Lastly, in fair use analysis, the fact that copying at earlier stages might seriously undermine the later marketability of a work can be a determinative factor preventing a finding of fair use under the “effect on the market” prong of fair use in 17 U.S.C. § 107(4).¹⁶⁰ These are all techniques that courts might (and probably do) adopt to effectively enlarge the scope of copyright protection at T_1 , without necessarily undermining the categorical distinctions among ideas, facts and expression.

The general noncopyrightability of facts, combined with the limited protection given to facts under a “hot news” *INS*-type claim,¹⁶¹ is also compatible with the time-based thesis of this article. As stressed by Justice O’Connor in *Feist v. Rural*, just like ideas, facts are not protectable subject matter.¹⁶² This is not a result of legislative neglect, but rather a feature of copyright law, designed to “encourage others to build freely upon the ideas and information conveyed by a [copyrighted] work.”¹⁶³ Moreover, one can freely use the facts contained in another’s publication even when the facts are used to produce a competing work, so long as the competing work does not feature the same selection and arrangement.¹⁶⁴ But here lurks a puzzle. *Feist* stands for the proposition that the freedom to use one author’s ideas and the information conveyed by him will not apply to producing a competing work that is the same as the original one. Thus, this freedom only applies if the competing work is sufficiently differentiated. This is compatible with copyright law’s general tendency to restrict substitutive competition but permit the creative destruction of existing works. But what if the freedom to copy the facts and use them in the new competing-yet-not-infringing work would undermine the incentive of the first compiler of facts to invest in collecting them in the first place? What about those cases in which Schumpeterian competition takes place too early and becomes just as counterproductive as substitutive competition? *Feist*’s outright rejection of “sweat of the brow” theories of copyright

158. PATRY, *supra* note 8.

159. *Id.* § 9:64.

160. See *Harper & Row Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539, 561, 568 (1985) (referencing 17 U.S.C. § 107(4) (2006), which states one of the factors relevant for determining fair use is the “effect of the use upon the potential market for or value of the copyrighted work.”).

161. See *infra* notes 167–68 and accompanying text.

162. *Feist Publ’ns, Inc. v. Rural Tel. Servs., Inc.*, 499 U.S. 340, 350 (1991).

163. *Id.* at 349–50 (citing *Harper & Row v. Nation Enters.*, 471 U.S. 539, 556–57 (1985)).

164. *Id.* at 349.

apparently suggests that this concern is not copyright law's business;¹⁶⁵ that "copyright rewards originality, not effort."¹⁶⁶ But interestingly, to support this proposition, Justice O'Connor cites *INS v. Associated Press*,¹⁶⁷ which affirmed the noncopyrightability of facts, while prohibiting, on noncopyright grounds, the misappropriation of time-sensitive facts by a competitor, in situations where doing so would undermine the incentive to collect the information in the first place.¹⁶⁸

Thus, *INS v. Associated Press*—at least as properly and narrowly construed—solves the abovementioned puzzle. Generally, the noncopyrightability of facts supports the emergence of Schumpeterian competition. But in time-sensitive situations, when such competition threatens to undermine the incentive to collect and relay information in the first place, a limited misappropriation claim against the competitor may be available.¹⁶⁹



This article provides two key insights. First, copyrighted works are affected by two types of competitive forces: substitutive competition and Schumpeterian competition. Second, the relevant magnitude of each of these competitive forces changes at various points over the life cycle of copyrighted works. The earlier stages of a work's life cycle, when many other works can function as very close substitutes, are dominated by substitution effects. As the work develops to a full product, in the process of which many other inputs are added, it becomes less easily substitutable. This process intensifies as network effects of various kinds secure successful works' market position and render them less vulnerable to competition from close imitations. Now the competitive threat to which such works may be exposed becomes more Schumpeterian in nature—competition from other works, which offer something new, and potentially preferable. Generally, copyright law unequivocally discourages merely substitutive competition, but is much less interested in discouraging Schumpeterian competition. This article's time-based analysis provides both a justification of this distinction, as well as grounds for evaluating various existing rules and doctrines. It suggests that broader copyright protection (perhaps broader than that extended by current law) may be desirable at the early stages of works' life cycle, whereas narrower protection (perhaps narrower than that extended by current law) may be justified at later stages.

165. *Id.* at 354.

166. *Id.* at 364.

167. *Id.* at 353–54; *Int'l News Serv. v. Associated Press*, 248 U.S. 215 (1918).

168. *Int'l News Serv.*, 248 U.S. at 246.

169. *See Natl. Basketball Assn. v. Motorola, Inc.*, 105 F.3d 841, 845 (2d Cir. 1997) (holding that in order to survive preemption by the Copyright Act, "hot-news" *INS*-like claim must be "limited to cases where: (i) a plaintiff generates or gathers information at a cost; (ii) the information is time-sensitive; (iii) a defendant's use of the information constitutes free riding on the plaintiff's efforts; (iv) the defendant is in direct competition with a product or service offered by the plaintiffs; and (v) the ability of other parties to free-ride on the efforts of the plaintiff or others would so reduce the incentive to produce the product or service that its existence or quality would be substantially threatened.").