COPYRIGHT LAW'S CURIOUS TREATMENT OF IMPROVEMENTS

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INTRODUCTION

Traditional property ordinarily comprises rights that exist in a discrete, identifiable "res."[1] Much of the discussion surrounding property rights supposes that the res is constant and unchanging.[2] But that supposition ignores reality. The objects in which property rights exist change and evolve.

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1. *See, e.g.*, James Y. Stern, *Property, Exclusivity, and Jurisdiction*, 100 VA. L. REV. 111, 132-33 (2014).

2. *See* Deepa Varadarajan, *Improvement Doctrines*, 21 GEO. MASON L. REV. 657, 657 (2013) (noting that traditional property law typically involves "protecting the stability of ownership and 'the subjective expectations particular owners have in particular things'").

In some cases, the changes stem from outside sources such as weather or seismic activity. Other changes are brought about by human hands.

The law has rules to allocate the financial impacts of changes to property.[3] Some changes are harmful and decrease the value of the object.[4] Others improve the object, generating actual or potential additional value.[5] Legal regimes have developed rules as to when someone must compensate the owner for detrimental changes and whether the benefit of improvement should go to the owner or the improver.[6] At times, these rules give the owner a legal right not only to recover damages or other money for changes that were made, but also to prevent the change from being made in the first place.[7]

Analogous issues arise in the world of "intellectual property."[8] Of course, intellectual property differs from more traditional property in many ways. One of the most important differences is that intellectual property rights typically subsist not in tangible objects, but in intangible products of the human mind. A utility patent does not exist in a particular machine or chemical, but instead in the "invention" underlying the machine or chemical.[9] The particular machine or chemical is merely an "embodiment" of the invention—in some cases, one of multiple possible variations.[10] Similarly, an author owns a copyright in a "work," not in the physical book, painting, sculpture, or sheet music in which that work has been fixed.[11] Unlike the objects of traditional property law, inventions and works are, in the parlance of economics, "non-rival": any number of users could use the invention or work without decreasing its utility to the owner of a particular patented machine or the aesthetic pleasure derived from the owner of the music recorded on a CD.[12]

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3. *See infra* Section I(A).

4. *See id.*; *see also infra* text accompanying note 14.

5. *See infra* Section I(A); *see also* Mark A. Lemley, The Economics of Improvement in Intellectual Property Law, 75 TEX. L. REV. 989, 1007 (1997).

6. *See, e.g.*, 17 U.S.C. § 504; 35 U.S.C. § 284.

7. *See, e.g.*, 17 U.S.C. § 502; 35 U.S.C. § 283.

8. The custom of calling patents, copyrights, trademarks, and other rights "intellectual property" is an unfortunate accident of history. The problem is that use of the label "property" to describe these rights tends to lead courts, legislatures, and others to assume that these rights must exhibit all the same features as rights in tangible property. While this article does discuss the rules governing alterations of tangible property, it does not ask the reader to assume that these same rules should apply to patents and copyrights.

9. *See* 35 U.S.C. § 271 (defining an infringer as someone who "without authority makes, uses, offers to sell, or sells *any patented invention*" (emphasis added)).

10. *See* Pursche v. Atlas Scraper & Eng'g Co., 300 F.2d 467, 479 (9th Cir. 1961) ("every embodiment of an invention need not be described in the specifications nor illustrated by the drawings in a patent so long as the form of the device is not the principle of the invention").

11. *See* 17 U.S.C. §§ 102 (copyright comes into being when the author fixes the "work" in a tangible medium of expression), 106 (lists the exclusive rights of the copyright owner, which are rights to do certain things with the "work," such as reproduce it).

12. Trademarks are a notable exception to the principle that the objects of intellectual property are non-rival. David W. Barnes, *A New Economics of Trademarks*, 5 NW. J. TECH. &

Such non-rivalry, however, does not make the world of intellectual property immune to change. Admittedly—and, at least at first glance, paradoxically—it actually is quite difficult to "alter" the underlying patented invention or copyright work. While a second inventor or author may come up with a new *version* of the invention or work (perhaps borrowing heavily from the original), the new version leaves the original untouched.[13] However, the new version may affect the *value* of the original, especially if distributed in competition with the original.[14] Because of this effect on value, it is not surprising that the law of intellectual property would likewise contain rules regulating similar, but altered, versions of patented inventions and copyright works.[15]

This article compares how patent and copyright deal with such changes. Notwithstanding the many basic similarities between the two forms of intellectual property, patent and copyright deal with alterations in significantly different ways.[16] At the outset, it is important to note that—contrary to how they are often described—neither a patent nor a copyright is a legal monopoly.[17] People other than those holding a patent or copyright remain generally free to compete by producing different inventions or works that appeal to the same audience. However, both patent and copyright do create a limited "zone of exclusivity" around the protected intention or work where others cannot compete.

The zone of exclusivity in patent law is fairly narrow.[18] It primarily covers only items that contain all the key elements of the patented invention.[19] As a result, patent law is far more forgiving of alterations than

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INTELL. PROP. 22, 23–24 (2006). If I begin to sell a brown cola as COCA-COLA, the COCA-COLA mark is less valuable to the Coca-Cola company. However, as this article deals only with patents and copyrights, the implications of how trademarks differ lie beyond its scope.

13. *Id.* A patent is defined by a set of specifically-defined "claims." 35 U.S.C. § 112(b). While someone may come up with a different way to achieve the same end, that different way would involve a different set of claims, and not actually "change" the original patent. While copyright does not use claims, it is still difficult to alter the original work. 17 U.S.C. §§ 102-03. Again, a second author may tell the same story in a different way, but that does not affect the integrity of the original work. In both cases, the old and new invention or work exist side by side.

14. *See Authors Guild v. Google, Inc.*, 804 F.3d 202, 223 (2d Cir. 2015) ("Even if the *purpose* of the copying is for a valuably transformative purpose, such copying might nonetheless harm the value of the copyrighted original if done in a manner that results in widespread revelation of sufficiently significant portions of the original as to make available a significantly competing substitute.").

15. *See* 17 U.S.C. § 103(b) (discussing copyright law as it pertains to derivative works).

16. *See infra* Section I(B)-(C).

17. *See* Schenck v. Nortron Corp., 713 F.2d, 782, 786 n.3 (Fed. Cir. 1983) ("Nowhere in any statute is a patent described as a monopoly. The patent right is but the right to exclude others, the very definition of "property."); 17 U.S.C. § 106 (listing an author's six exclusive rights).

18. *See* 35 U.S.C. § 271 (patent infringement usually involves the copying of "all or a substantial portion of the components of a patented invention").

19. *Id.* The "key elements" of the patented invention are set out in the claims in the patent instrument. 35 U.S.C. § 154(a).

copyright law. A second inventor is free to develop a new version of an invention as long as the new version contains at least one element that differs in a meaningful way from one of the original invention's elements.[20] In fact, the second inventor may even be able to obtain a new patent on the altered invention.[21]

Copyright is far stricter. The "zone of exclusivity" in copyright law is defined by the exclusive rights of the copyright owner, most of which are set out in § 106.[22] Unlike in patent law, a new version of a work may infringe even if not identical.[23] A copyright owner's exclusive right of "reproduction"[24] draws a narrow zone around the work itself. However, as interpreted by the courts, the reproduction right covers not only identical works, but also works that are substantially similar.[25] More significantly, copyright's "derivative works" right[26] extends the zone of exclusivity to works that are not reproductions in any sense of the word, but are simply recognized as "based on" the original.[27] For example, a sequel to a popular novel will often qualify as a derivative work, even if the story line is quite different and highly original.[28] The resulting zone of exclusivity in copyright is much broader than in patent, thereby limiting the ability of others to produce alterations.

Section I of the article discusses these rules in greater depth. Section II analyzes whether there is any justification for the differences. It concludes that while Congress could rationally decide to allow the copyright owner some control over alterations, the current U.S. law extends this control much

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20. In the terminology of patent law, the "elements" of an invention mainly comprise the various limitations set out in the claims in the patent instrument. *See* 35 U.S.C. § 102.

21. 35 U.S.C. § 101 ("Whoever invents any new and useful process, machine, manufacture, or composition of matter, *or any new and useful improvement thereof*, may obtain a patent therefor") (emphasis added).

22. 17 U.S.C. § 106 is not the only provision that grants exclusive rights; see also 17 U.S.C. §§ 602 (right to import), 109(b) (right to rent certain types of works), and 106A (a set of "moral rights" that exist in certain works of visual art; these rights remain in the author even if the copyright is assigned).

23. H.R. REP. NO. 94-1476 at 61 (1976) ("As under the present law, a copyrighted work would be infringed by reproducing it in whole or in any substantial part, and by duplicating it exactly or by imitation or simulation. Wide departures or variations from the copyrighted works would still be an infringement as long as the author's 'expression' rather than merely the author's 'ideas' are taken.").

24. 17 U.S.C. § 106(1).

25. In the terminology of copyright law, the term "substantially similar" technically is used only in the first stage of the infringement analysis, when the court is trying to determine if the infringement defendant has copied. *See* Peter Letterese & Assocs. v. World Inst. of Scientology Enters., 533 F.3d 1287, 1293 (11th Cir. 2008). However, a functionally similar analysis is also used in the second step: the ultimate determination of whether the second work appropriates enough of the original to constitute a reproduction. This article will use the term "substantially similar" in a non-technical way to refer to this latter step in the analysis.

26. 17 U.S.C. § 106(2).

27. *See id.*; H.R. REP. NO. 94-1476 at 61 (1976).

28. Thomas F. Cotter, *Transformative Use and Cognizable Harm*, 12 VAND. J. ENT. & TECH. L. 701, 750 (2010) ("Sequels generally are derivative works.").

too far. Section III discusses ways in which copyright law could be changed to bring it more into line with the more lenient rules in patent. These changes would mainly affect the derivative works right touched on just above. Although the basic concept of a derivative works right does make sense, the right should be narrowed—both in scope and in duration—to give others more freedom to build upon prior works by others without the need to obtain a license or other form of permission.

As the title to this article suggests, the main focus is on "improvements"—altered versions of an invention or work that are in some way superior to the original. Because society benefits from improved versions of inventions and works, improvements present the greatest tension between the principles of intellectual property protection and the interests of society as a whole.[29] Nevertheless, much of the analysis in the article applies with equal force to situations where the altered version is inferior. After all, as a general matter, the patent and copyright rules governing infringement do not differentiate based on whether the allegedly infringing creation is better or worse.[30] Moreover, individual consumers may disagree as to what makes a new version "better."[31] In the case of a mobile phone, for example, users may disagree whether a version with 50% faster processing speed, but which sells for 50% more, is better than the cheaper, slower model. Therefore, although the focus is on improvements, the discussion uses the terms "alteration" and "improvement" interchangeably. For both terms, however, it is important to remember that the reference is to a different version of the patented invention or copyright work, not an actual change in the contours of the original.

I. RULES GOVERNING IMPROVEMENTS

A. "Traditional" Property

Ordinarily, change to property matters only when the original owner has some sort of reversionary or joint interest. Therefore, the question typically arises in connection with co-owners, a lease, license, or a mortgage, rather than when the party in possession has full ownership. Moreover, in traditional property law, most of the rules dealing with change involve

29. Varadarajan, *supra* note 2.

30. *See, e.g.*, Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251 (1903) ("it would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations, outside of the narrowest and most obvious limits"). Further complicating matters is that copyright has certain special rules dealing specifically with deleterious alterations. However, due to certain core differences that will be discussed below, these rules are not included in this analysis. See *infra* text accompanying notes 42 to 50.

31. *See generally* Paul A. Herbig & Bradley S. O'Hara, *Quality Is in the Eye of the Beholder*, J. Pro. Servs. Mktg. 19, 20 (1994) (finding that "perceived quality differs significantly . . . it is indeed in the eye of the beholder.").

realty.[32] For personalty, the parties usually set out the rules themselves in the license or conveyancing instrument.

Many of these real estate rules deal with negative alterations.[33] The doctrine of "waste" in real property law allows the owner to prevent (if the threatened change is detected in time) or to recover (if discovery occurs after the fact) acts by a co-owner, tenant, or term estate holder that would diminish the value of the realty.[34] With respect to improvements, by contrast, the party in possession has more freedom.[35] Unless the terms of a lease or other conveyancing instrument provide otherwise, the party in possession may improve the property—e.g., by painting buildings or adding or changing fixtures—without the permission of or payment to the reversionary owner.[36]

The "catch," of course, occurs when the occupant relinquishes possession.[37] If the improvement may be removed without harm to the value of the realty—e.g., possibly a changed light fixture—the occupant may be able to remove it and take it with her.[38] In other cases, however, the improvement must remain with the property, which allows the reversionary owners to enjoy any future benefit without compensation to the altering party for the costs of or value added by the improvement.[39]

B. Patent

As discussed above,[40] a third party rarely alters the actual invention subject to the patent. Improvements in patent law involve altered versions of the invention, which often borrow heavily from the first inventor's work.[41] To the extent these improvements appeal to the same group of buyers as those considering the original, they may have a significant effect on the return the original patentee receives from the patent.[42]

Whether the patentee may stop or recover from the improver depends on the degree to which the key elements of the inventions overlap.[43] Patents are defined by one or (typically) more "claims," which are explicitly set forth in the patent instrument.[44] Each claim contains limitations: specific features of the patented invention that the patentee owns during the term of the

32. *See id.*
33. *See* WILLIAM B. STOEBUCK & DALE A. WHITMAN, THE LAW OF PROPERTY 146–48 (life estates), 206 (co-owners), and 272–73 (leases) (3rd ed. 2000).
34. *Id.*
35. *Id.* at 353.
36. *Id.*
37. *See id.* at 354–55.
38. *Id.*
39. *Id.*
40. *See supra* text accompanying notes 13-15.
41. *See* Dan L. Burk, *Inventing around Copyright*, 109 NW. U. L. REV. ONLINE 64, 68 (2014-2015).
42. *See id.*
43. *See generally* 35 U.S.C. § 271.
44. JANICE M. MUELLER, AN INTRODUCTION TO PATENT LAW 53 (2nd ed. 2006).

patent.[45] If *all* the limitations also appear if in the alleged infringing machine, chemical, or process, the second party is liable.[46] However, if the second party's version lacks at least one of the limitations, there is no infringement.[47] In such a case, the improver is free not only to make and use its version of the machine, chemical, or process, but may even be able to obtain a new patent on its version.[48] Of course, the improvement, like the original, must satisfy the other requirements to obtain a patent, including utility,[49] novelty and lack of a statutory bar,[50] and non-obviousness.[51]

As a simple example, consider the modern drip coffeemaker. Suppose the person who invented the device obtained a U.S. patent on the drip brewing process.[52] The patent claims would describe a process for brewing ground coffee beans and then would list several features to distinguish the new process from the "prior art"—the state of coffee-brewing technology as it existed at the time of the invention. Suppose that prior to the invention, coffee was brewed by percolating it in a percolator. A key difference between a drip coffee maker and a percolator is that, while a percolator uses only a single "water container" (which contains both the original water and, after brewing is complete, the brewed coffee), a drip machine has a *separate* water reservoir and a receptacle for the brewed coffee. Thus, in addition to various limitations necessary to achieve the desired end (such as a water reservoir, heating mechanism, and a filter to slow the passage of water through the grounds), the patent would include claims describing the use of a separate watertight receptacle.

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45. *Id.* at 67.

46. *Id.* at 287.

47. For an exception to this principle—patent law's doctrine of equivalents—see *infra* note 55.

48. Section 101 of the Patent Act explicitly lists "improvements" as patent-eligible inventions. 35 U.S.C. § 101. Improvement patents present unique and complex questions involving not only what makes an improvement "non-obvious," but also concerning how the claims are drafted. 35 U.S.C. § 103. Those technical issues are beyond the scope of this article.

49. 35 U.S.C. § 101 ("useful").

50. 35 U.S.C. § 102. Patent experts tend to speak of novelty and statutory bar in the same breath. Conceptually, however, they are different. "Novelty" deals with acts by *others* that occur before the effective date of the patent application. *Id.* The purpose of the requirement is to prevent the patenting of knowledge that is already known to a sizable element of the public. Statutory bar deals with acts done by the *inventor* (or those who derive their knowledge from the inventor). Statutory bars serve several purposes, including preventing the patentee from effectively extending the period of exclusivity by unduly delaying filing for the patent. The language of 35 U.S.C. § 102 deals with this by listing certain events that may defeat a patent (such as public use), but then by giving the patent applicant a one-year "grace period" if the act was performed by the inventor or someone who learned of the invention from the inventor. *Id.*

51. 35 U.S.C. § 103.

52. Another possibility would be to patent the machine that carries out the process. In fact, it is fairly common for an inventor like our hypothetical drip brewing method inventor to patent *both* the machine (a "manufacture") and the process or method the machine employs. The analysis in the text would not change if the patent was on the machine rather than the process, or on both. *See* Mueller, *supra* note 44, at 213.

Suppose further that the patentee is marketing its invention, by using the invention itself to brew coffee, licensing it to coffee shops, and/or selling drip coffeemaking machines. The patentee uses a glass receptacle in the embodiment it markets. Because drip coffee is often less bitter than that brewed in a percolator, many people strongly prefer it, leading to significant revenues for the patentee.

A second inventor might come up with several ways to improve on this patented process. Suppose a second inventor discovers that an insulated heat-resistant plastic receptacle is superior to a glass receptacle in two ways. Glass breaks. It also cools more quickly than insulated plastic. Therefore, the patentee's process needs to include a second heating element to keep the coffee warm after brewing. Use of such an element, however, can "burn" the coffee and lead to an unpleasant taste. The second inventor's insulated receptacle design avoids burning, and may also reduce the cost (as there is no need for a second heating element).

Whether the second inventor has infringed by using or selling its improved process depends on how the limitation regarding the receptacle is phrased in the patent. If the claim merely states a "watertight receptacle" without specifying material, the second inventor would infringe because its device or process also uses a watertight receptacle. But if the patent claims specify a *glass* container, the second inventor would not infringe because his container is not made of glass.[53] In this case, the second inventor would be free to make and sell his invention to the public.[54]

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53. In most cases, the reference to glass would have to appear in the claims, not in the other parts of the patent, in order to limit the patent. *Id.* at 67. It is a maxim of patent interpretation that limitations appearing in the specification (the prose description of the invention) do not limit the claims unless it is clear they were meant to. *Id.* at 285. Thus, if the patent specification describes a particular embodiment that includes a glass receptacle and a heating element, but the claims stated only a watertight receptacle, without mentioning material and the heating element, the patent would cover the insulated plastic receptacle in our hypothetical.

54. Of course, those with a background in patent law will immediately recognize a possible exception to the statement in the text; namely, infringement under the "doctrine of equivalents." For an excellent discussion of the doctrine, including its historical development, *see* Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 21, 24–25 (1997). Under this doctrine, if a particular of the patented invention does not appear in the alleged infringing device, it is still possible to find infringement if the defendant's device contains an "equivalent" element. *Id.* at 40. To qualify as an equivalent, the element in the defendant's device must perform the same function, in the same way, and through the same combination of elements in the machine or process. *Id.* at 38. An insulated plastic receptacle might or might not be deemed equivalent to a glass receptacle, depending on the extent to which post-brewing heating is part of the patented process.

Doctrine of equivalents analysis is further complicated by several exceptions. For example, if the claims are limited to glass, but the use of insulated plastic is revealed in the specifications, insulated plastic, as a matter of law, cannot be deemed an equivalent. Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co., 285 F.3d 1046, 1055 (Fed. Cir. 2002). To avoid discussion of this complex patent law topic, it is sufficient for present purposes simply to acknowledge that the doctrine of equivalents may expand the zone of exclusivity of a patent to reach various improvements that are not identical. *See generally* Mueller, *supra* note 44, at

Even more significantly, as long as the second inventor does not infringe, it might be able to obtain a new "improvement" patent.[55] If the use of an insulated plastic container is both novel and nonobvious (admittedly unlikely here, but the purpose of the example is to keep things simple),[56] the second inventor could obtain a patent for the new version of the drip coffee process. This new patent would have no direct legal effect on the original patentee. That patentee would remain free to make, use, and sell its version with the glass container. While the original patentee could not use an insulated plastic container without the second inventor's permission, it could experiment and come up with other improvements.[57] However, although there is no legal effect on the original inventor's ability to continue in its business, there is an obvious economic effect: if consumers consider the new insulated plastic version superior, sales of the original patented version may suffer.

In short, patent law often gives others significant leeway to improve existing patented inventions. As long as the improvement involves a difference in at least one of the limitations set out in the patent, the patentee can do nothing to prevent it. If the improvement is a significant, non-obvious advance, the improving party may even be able to obtain a new patent for its creation.

C. Copyright

Copyright operates without explicit claims and limitations. A copyright exists in a "work," a final product that may include both original and non-original aspects.[58] Because no government body has explicitly identified the protected and unprotected components of the work, or the importance of the various parts, courts must deal with these issues on a case-by-case basis in infringement actions.[59] Analysis of the "reach" of a copyright involves an essentially intuitive approach, under which a court attempts to break the copyright work down into protected and unprotected elements, and then—with a focus on the protected portions—determine whether the alleged

294–95. However, the doctrine by no means reaches all improvements. Moreover, like literal infringement, patent law does not consider the extent to which the altered version supplants the original in the market.

55. *See* 35 U.S.C. § 101 (specifically allowing patents for "improvements" to existing inventions.).

56. Use of a metal container would fail this test. Percolators (the prior art) held the brewed coffee in a metal container. Even though that container is not separate, it does exist in the prior art. While this would shield X from an allegation of infringement based in the doctrine of equivalents—if an alleged equivalent appears in the prior art, it cannot serve as an equivalent under "ensnarement" exception to the doctrine of equivalents—it would prevent X from obtaining a new patent. *See* Jang v. Bos. Sci. Corp., 872 F.3d 1275, 1285 (Fed. Cir. 2017).

57. *See generally* 35 U.S.C. § 271 (infringement of patent).

58. 17 U.S.C. § 106 (speaks of the "work").

59. MARSHALL A. LEAFFER, UNDERSTANDING COPYRIGHT LAW 431 (5th ed. 2010).

infringer has violated any of the exclusive rights of the copyright owner.[60] For purposes of dealing with improvements, two of these rights are of particular relevance: the rights to reproduce the work and to prepare "derivative" works.[61] Both of these will be discussed in turn, along with a third right that sometimes can play a role in alterations, but lies outside the scope of this article.

1. Reproduction

Unlike literal infringement in patent, the § 106(1) right of reproduction is not limited to verbatim, 100% copies.[62] Such an approach would be unworkable in many cases.[63] While it could easily work in music file-sharing cases, many copiers make minor changes.[64] If someone who wanted to reproduce this article without permission could avoid infringement liability simply by dropping a footnote or two—or adding a new footnote of her own—the exclusive right of reproduction would be of little value.[65] Instead of a precise test, courts apply a substantially similar analysis. If, after removing the unprotected elements of the copyright work from consideration (e.g. facts, items copied from earlier authors, and *scenes a faire*) the allegedly infringing work is substantially similar to the protected elements of the copyright work, the defendant has infringed.[66] The analysis is qualitative rather than quantitative, and defendants can be held liable for reproducing a small percentage of the original material.[67] Of course, the fact of infringement does not mean the defendant is ultimately liable. Unlike patent, copyright has a multitude of defenses.[68] Nevertheless, the reproduction right,

60. *See id.*; *see also* 17 U.S.C. § 106 (exclusive rights).
61. *See* 17 U.S.C. § 106.
62. 17 U.S.C. § 106(1); s*ee* Leaffer, *supra* note 59, at 303.
63. *See generally* Leaffer, *supra* note 59, at 303–305.
64. *See id.*
65. *See generally id.*
66. This analysis is typically couched in terms of a three-step test, called abstraction-filtration-comparison. *See, e.g.*, Nichols v. Universal Pictures Corp., 45 F.2d 119, 121 (2d Cir. 1930) (an early case often cited for this analysis); *see also* Steinberg v. Columbia Pictures Indus., 663 F. Supp. 706, 711 (S.D.N.Y. 1987) (a more recent application). The final stage is called "impermissible appropriation." Once we know that the defendant took from the copyright owner's work, the final stage asks whether it took "too much". But these phrases, standing alone, do not really tell us how much is "too much." One particularly useful analysis of the appropriation analysis is set out in CHARLES R. MCMANIS AND DAVID J. FRIEDMAN, INTELLECTUAL PROPERTY AND UNFAIR COMPETITION IN A NUTSHELL 339 (7th ed. 2013), which discusses "comprehensive non-literal similarity" and "fragmentary literal similarity", either of which can constitute impermissible appropriation.
67. *See, e.g.*, Harper & Row Publishers, Inc. v. Nation Enters, 471 U.S. 539, 569 (1985) (a newspaper was held liable for reproducing a mere 300 words from a book).
68. *See id.*; *see also infra* text accompanying notes 129–149 (copyright defenses).

standing by itself, is already broader than patent, as it reaches improvements that do not borrow all the key elements of the original.[69]

2. Derivative works

A copyright owner's exclusive right to prepare derivative works, set out in 17 U.S.C. § 106(2), further expands the zone of exclusivity surrounding the work, and thereby further limits the ability of others to produce altered versions.[70] The Copyright Act defines a derivative work as "as work based upon one or more preexisting works."[71] Unlike a reproduction, a derivative work contains enough original material to qualify as an original work of authorship.[72] Therefore, if the copyright owner produces a derivative of her own work, she may obtain a second, separate copyright.[73] But if the work is produced without permission by anyone else (or even by the author of the original, if that author has assigned the copyright in the first work) not only is there no new copyright, but the author of the derivative work may have (depending on whether any defenses are available) infringed the copyright in the first work.

The derivative works right in U.S. law is considerably broader than comparable rights in other nations.[74] Many national copyright laws contain an adaptation right.[75] This right reaches changes such as abridgements,

69. 17 U.S.C. § 106; 35 U.S.C. § 102. Admittedly, there is another feature of copyright that narrows the zone of exclusivity. 17 U.S.C. § 106. The exclusive rights in § 106 all require that the alleged infringer have used the original in some way. To illustrate, if another scholar never saw this article, and writes her own article that is word-for-word identical, infringement does not occur. In fact, that second author would also have a copyright on her article. In practice, this requirement of use of the original does not significantly reduce copyright's zone of exclusivity. The likelihood of another scholar writing an article that is identical to this one—or even highly similar—is quite small. Although an article that involves the same thesis is more likely, copyright does not protect ideas, only the way those ideas are expressed.

70. 17 U.S.C. § 106(2); *see generally* Pamela Samuelson, *The Quest for a Sound Conception of Copyright's Derivative Work Right*, 101 GEO. L.J. 1505 (2013).

71. 17 U.S.C. § 101.

72. *Id.*

73. Of course, for a new copyright to come into force the material that distinguishes the derivative from the first version must be original to the author. *Id.* If the author merely adds material copied from another, or unprotected elements such as facts, the new work will not merit a new copyright. *See id.*

Unlike an improvement patent, a second copyright on a derivative work often will not increase the term of copyright protection. In the case of known, human authors, a copyright lasts for the life of the author plus 70 years. 17 U.S.C. § 302. Thus, if the same author prepares the original and the derivative, the copyright on the latter will begin on a later date, but will end on the same date as the copyright on the original. *See id.* In the case of anonymous/pseudonymous works and corporate authorship pursuant to the work made for hire rule, by contrast—all of which have a fixed term—the copyright on the derivative may outlast the copyright on the original. *See* 17 U.S.C. § 302(c).

74. *See* PAUL GOLDSTEIN & P. BERNT HUGENHOLTZ, INTERNATIONAL COPYRIGHT: PRINCIPLES, LAW, AND PRACTICE 207 (3d ed. 2013).

75. *Id.*

linguistic and Braille translations,[76] and perhaps plays, films, and the like based on a literary work.[77] These types of adaptations share a common theme: namely, that the adaptation competes, more or less directly, with the original, and therefore potentially reduces the revenue received by the copyright owner.[78] The U.S. derivative works right, by contrast, covers all these changes, but also items such as a prequel or sequel to a book or film,[79] a parody or satire,[80] a video game based on a work,[81] a "quiz book" testing knowledge of facts from a copyrighted television series,[82] and even a collector plate containing an artist's rendition of a character from a famous film.[83] None of these works are substitutes for the original. Indeed, in some cases—such as the quiz book, the commemorative plate, and many prequels and sequels—the derivative *complements* the original, as familiarity with the original is a prerequisite to demand for the derivative.[84] In these cases, the derivative may actually *increase* demand for the original.[85]

Such a broad derivative works right gives the copyright owner significant control over alterations to her work.[86] As long as the new work would be recognized by consumers as "based upon" the original, only the copyright owner has the legal right to produce it.[87] By definition, something is an "alteration" (as opposed to an independent work) only if it borrows heavily from the old work.[88] The copyright owner's right to control derivatives further distinguishes copyright from patent law, as a derivative,

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76. *See id.* Note, however, that because of the 2013 *Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled*, Braille and other forms of reproduction may not result in infringement liability, provided they are made available only to the visually impaired. 17 U.S.C. § 121.

77. *See generally* Leaffer, *supra* note 59, at 60–67. In this passage Professor Leaffer also points out the discrepancy between the derivative works right in copyright and the improvements doctrine in patent. *Id.* at 67.

78. *See generally id*. at 304.

79. *See* 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.12[A][4] (1963).

80. See Leaffer, *supra* note 59, at 515.

81. Midway Mfg. Co. v. Artic Int'l, Inc., 704 F.2d 1009, 1013–1014 (7th Cir. 1983) ("But the amount by which the language of Section 101 must be stretched to accommodate speeded-up video games is, we believe, within the limits within which Congress wanted the new Act to operate.").

82. Castle Rock Ent., Inc. v. Carol Publ'g Grp., Inc., 150 F.3d 132 (2d Cir. 1998). Curiously, the court in *Castle Rock* never explicitly states that the quiz book was a derivative work. However, the analysis makes it clear that that is the way the court is approaching the case.

83. Gracen v. Bradford Exch., 698 F.2d 300 (7th Cir. 1983).

84. Glynn S. Lunney, Jr., *Copyright, Derivative Works, and the Economics of Complements*, 12 VAND. J. ENT. & TECH. L. 779, 783 (2010).

85. *Id.* at 783, 790.

86. Michael K. Erickson, *Emphasizing the Copy in Copyright: Why Noncopying Alterations Do Not Prepare Infringing Derivative Works*, BYU L. REV. 1261, 1262 (2005).

87. 17 U.S.C. § 106(2).

88. LEAFFER, *supra* note 59, at 60.

unlike most reproductions, contains enough new material to qualify as an independently-protected work.

3. A Side Note on the Moral Right of Integrity

In addition to the "economic" rights of § 106, the Copyright Act also grants the author various so-called "moral rights."[89] The primary Copyright Act provision dealing with these sorts of rights is 17 U.S.C. § 106A.[90] This provision, added to the Copyright Act in 1990, grants various rights to authors who produce a work of visual art such as painting, sculpture, or limited-edition print.[91] § 106A includes a right of "integrity": the right to prevent alterations to a work of visual art that might have a detrimental effect on the author's honor or reputation.[92]

Although the integrity right does give the author control over alterations, this article will not include it in the discussion. Several differences between the integrity right and the reproduction and derivative works right warrant this exclusion. First, moral rights like the right of integrity subsist in a particular physical painting or sculpture.[93] The economic rights, by contrast, subsist in the ephemeral mental "work" embodied in that painting or sculpture.[94] Therefore, the integrity right does not prohibit a party from preparing her own version of a painting, even if that painting might be considered a sort of "mutilation" of the original.[95] Second, the integrity right prevents only alterations that negatively affect the author's "honor or reputation."[96] This reputational focus is qualitatively different from the more economic question of who has the ability to benefit from or control

89. 17 U.S.C. § 106A. The label "moral rights" does not necessarily imply a connection with morality. Rather, it is an overly-literal translation of *droit moral*, the French term used to refer to this category of rights. The translation has over the years been problematic, as it has led to some resistance to the adoption of such rights in some nations. GOLDSTEIN & HUGENHOLTZ, *supra* note 74, at 20.

90. 17 U.S.C. § 106A. The Copyright Act is not the only source of moral rights. Analogous rights may also stem from other laws. For example, courts interpreting § 43(a) of the Lanham Act (the federal trademark statute), 15 U.S.C. § 1125(a), have also read that provision to provide rights of integrity, non-attribution, and even a limited right of attribution.

91. 17 U.S.C. § 106A. The key term "work of visual art" is defined in 17 U.S.C. § 101.

92. 17 U.S.C. § 106A(a)(3)(A).

93. 17 U.S.C. § 106A. The definition of a work of visual art in § 101 speaks in terms of the physical item: "A 'work of visual art' is … a *painting, drawing, print, or sculpture* …". (emphasis added). 17 U.S.C. § 101.

94. 17 U.S.C. § 106. In other words, a "work of visual art" (the subject of moral rights) is a physical object, while a "work" (the subject of the other rights) is a mental creation.

95. Robert C. Bird, *Moral Rights: Diagnosis and Rehabilitation*, 46 AM. BUS. L.J. 407, 429 (2009). Of course, that new painting might be considered a reproduction or derivative work. Moreover, even the moral rights provision might benefit the author in this situation. If the new author displays or markets the distorted version as a work of the original author, the new author may have violated the "non-attribution" right in § 106A. .

96. 17 U.S.C. § 106A(a)(3)(A).

improvements to a work.[97] An improvement, by contrast, might enhance the original author's honor or reputation.[98] Third, as reflected in the focus on honor and reputation, the policy justifications for moral rights are different than those underlying the economic rights.[99] Finally, while the economic rights in a work can be licensed and transferred to others, the moral rights—to the extent they exist at all—will remain in the author.[100] Thus, while the moral right of integrity does deal in one sense with alterations, it involves so many idiosyncrasies that including it in this discussion would unduly complicate matters. The only point worth mentioning here is that the integrity right is yet another example of how copyright gives authors more control over alterations than patent gives to inventors.

4. Copyright Defenses

The prior discussion of the reproduction and derivative works rights admittedly overstates the copyright owner's control over alterations. None of a copyright owner's rights are absolute. The Copyright Act contains numerous defenses…far more than the handful recognized in patent.[101] Sections 108 to 122 of the Act contain dozens of specific defenses.[102] As a fallback, § 107 sets forth a more general and flexible defense—the often-discussed defense of "fair use."[103] To the extent a defense applies, the copyright owner cannot recover against the alleged infringer.

In the case of alterations, however, specific defenses rarely apply.[104] Fair use, by contrast, can often help a defendant who has produced an altered version of a copyright work.[105] The fair use defense is especially useful to a party whose modified version borrows only small portions of an original, or whose derivative work is a parody of the original.[106] In the same vein, several courts consider the question of *transformation* when dealing with derivative

97. LEAFFER, *supra* note 59, at 66.

98. Brian Angelo Lee, *Making Sense of "Moral Rights" in Intellectual Property*, 84 TEMP. L. REV. 71, 83 n.55 (2011).

99. LEAFFER, *supra* note 59, at 18–22.

100. 17 U.S.C. § 106A(e). Note that unlike the economic rights, the moral rights of § 106A cannot be transferred (although they can be waived). Therefore, if moral rights exist at all, they will remain in the author.

101. LEAFFER, *supra* note 59, at 530–39.

102. 17 U.S.C. § 108–122.

103. Fair use is also a defense to a moral rights claim. *See* 17 U.S.C. § 107 ("Notwithstanding the provisions of sections 106 *and 106A* … "). (emphasis added)

104. 17 U.S.C. § 108–122. Of course, certain specific defenses may apply in particular narrow situations. For example, § 114(b) limits the scope of the reproduction right in sound recordings to situations where the defendant "samples" actual sounds contained in the copyright work. Thus, a cover band is free to imitate the sounds of a more famous band (as long as there is either no copyright in the musical composition being performed, or the cover band has a license or other permission to perform the composition). § 115 provides for a compulsory license to make sound recordings of sheet music and other musical works.

105. LEAFFER, *supra* note 59, at 490.

106. *Id.* at 515.

works.[107] Other things equal, a defendant whose work transforms the original into something qualitatively different is more likely to prevail on a fair use defense.[108] A work is transformative if it uses the original material "in a different manner or for a different purpose."[109] Thus, a work that borrows heavily from an original to criticize the original—including a parody—often is protected by fair use.[110] More broadly, using another's expression to express a different idea can be transformative fair use, even if the purpose is not to criticize or comment.[111] Certain modifications may involve such a transformation and accordingly not result in liability.

Nevertheless, while fair use may protect some parties who alter a work (and accordingly narrows the scope of the copyright owner's effective zone of protection), it will not apply to many others.[112] Not all derivative works transform. Moreover, a key factor in fair use analysis is whether the allegedly infringing work affects the market for the original. If a derivative work may divert sales from the copyright owner, fair use is, other things equal, far less likely to apply.[113]

Therefore, even though the zone of exclusivity in copyright is reined in by the fair use limitation, a copyright owner still retains a much greater ability to prevent altered versions than a patent owner has to prevent improved versions of its invention. In patent, as long as the improved version does not include *all* the limitations set out in the granted patent (or qualifying equivalents), the second inventor is free to make, use, and sell the improvement—and potentially even obtain a new patent.[114] In copyright, while the copyright owner may be able to obtain a new copyright when she improves her own work (at least if the new version is sufficiently original to qualify as a derivative work), others who produce such altered versions may face liability as an infringer.[115] The next section discusses whether there are any policy reasons that justify this significant difference in the treatment of improvements and alterations.

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107. *Id.* at 490-92.

108. *Id.*

109. Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990). This phrase is widely quoted in the case law.

110. Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 578-79 (1994). The widely-discussed (not only in the United States, but also in other nations) Supreme Court decision in *Campbell v. Acuff-Rose Music, Inc.* contains a useful discussion of how parodies are more likely to qualify as fair use.

111. LEAFFER, *supra* note 59, at 490.

112. *Id.* at § 13.05[B][6].

113. One of the four "factors" set out in § 107 is the effect of the new work on the market for the copyright work. 17 U.S.C. § 107(4). In the *Campbell* case, one of the factors strongly influencing the Court's finding of fair use was that the defendant's parody did not usurp any actual or likely markets for the original. *Campbell*, 510 U.S. at 590.

114. *Id.*

115. *See* text accompanying notes 70-73.

II. POSSIBLE JUSTIFICATIONS FOR THE DIFFERENCE

Are there good reasons to allow inventors far more freedom to improve on existing inventions than authors have to improve on earlier works? Of course, the core policies underlying patent and copyright are not identical. Nevertheless, at their core both regimes attempt to achieve the same purposes: to provide an incentive for authors and inventors both to *create* new works and inventions and to *disseminate* those works to the public.[116] While the grant of rights may be an economic boon to the author or inventor, the ultimate intended beneficiary of the system is society.[117] And if an existing work or invention is improved, the benefit to society may be even greater. This section explores possible reasons why copyright tends to prefer improvements by the author, while patent encourages improvements by both the inventor and others.

A. The More "Personal" Nature of Copyright

Copyright is often described as more "personal" than patent.[118] Copyright's focus is the creator, while patent is more focused on what the creator creates (the invention).[119] To illustrate, in some civil law societies, copyrights are available only if the author has injected some aspect or element of her personality into the work.[120] Although no such requirement exists in the United States or most of the other common-law nations, there are still certain ways in which U.S. copyright has a more personal feel than U.S. patent law.[121] The so-called "moral rights" briefly discussed above[122]—

116. Ned Snow, *Moral Bars to Intellectual Property: Theory & Apologetics*, 28 UCLA ENT. L. REV. 75, 80 (2021). Dissemination is an often-overlooked goal of the patent and copyright systems. Instead, the focus is often only on innovation. However, the notion of dissemination is inherent both in the copyright and patent statutes, as well as the constitutional provision justifying the two. The constitutional provision, U.S. Const. art. I, § 8, cl. 8, indicates that the goal of patents and copyrights is to further progress in knowledge and technology. Innovation and creation are far more likely to lead to lasting progress if they are made available to society. Moreover, the mechanics of both systems encourage dissemination. The patent and copyright laws do not provide a grant to those who create. Rather, they commoditize the creation. Generally speaking (and without getting into things like blocking patents) the patent or copyright owner obtains a financial benefit only if it markets the work.

Dissemination is admittedly less universal in copyright. An author can protect purely private works like a personal diary or a draft. In addition, copyright does not require registration in order to obtain protection. Therefore, there is no guarantee the public will ever see the creation. LEAFFER, *supra* note 59, at 31.

117. Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

118. Gregory N. Mandel, *Left-Brain Versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283, 321 (2010).

119. Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441, 1445–1151 (2010).

120. GOLDSTEIN & HUGENHOLTZ, *supra* note 74, at 20–21.

121. *Id.* at 359.

122. *See supra* text accompanying notes 41 to 49.

which have no counterpart in patent law—focus on the individual author's reputation and sense of self-worth. In addition, because copyright vests on fixation and requires no registration, an author can protect purely private works such as a diary or a rough draft and thereby keep those works out of the public eye in order to avoid embarrassment. Others have argued that even in the United States copyright works include some component of the author's "soul."[123]

Whether this personal/personality paradigm is unique to copyright is open to debate.[124] Personal factors play a far greater role in the world of science than courts and commentators acknowledge.[125] But even if copyright is somehow more individual-focused and personal than patent, such difference does not explain a broad right for authors to control alterations. An author may in fact inject part of her personality into the work she creates. However, the issue being discussed here is an *alteration* … something other than what the author has produced. Especially in the case of derivative works, but also for some reproductions, the second author has injected enough of himself into the altered version that it no longer is intimately tied to the original author. Nor does allowing an altered version somehow dissociate the original author from her original work. Provided copies of the original work remain,[126] the embodiment of the author's personality in the original remains unaffected.[127] In short, even if there is some validity to the notion that copyright is more focused than patent on personality—an assertion that this author argues is at best a matter of degree, not kind—that notion does not justify the broad degree of control copyright law gives to the authors over altered versions of their works. While it does support copyright's somewhat broader notion of "reproduction," it does not support anything as broad as the current derivative works right.

B. Copyright's (Almost) Complete Lack of Functional Constraints

An inventor who seeks to improve an existing invention faces numerous physical, real-world constraints. Take the coffeemaker example discussed earlier. In the end, the device must still brew coffee. Therefore, the improvement must heat water, place the heated water in contact with coffee grounds, and deliver the brew to some receptacle. There are a limited number of ways to achieve that end.

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123. ROBERTA ROSENTHAL KWALL, THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES xiii (2010).

124. *See* John T. Cross, *An Attribution Right for Patented Inventions*, 37 U. DAYTON L. REV. 139, 148 (2012).

125. *See id.* at 148.

126. For another discussion of the importance of whether additional copies of the work exist, see John T. Cross, *Reconciling the "Moral Rights" of Authors with the First Amendment Right of Free Speech*, 1 AKRON INTELL. PROP. J. 185, 244 (2007).

127. *See id.* at 272.

Authors, by contrast, face few, if any, such real-world constraints.[128] A copyright protects the expression of an idea, not the idea itself.[129] Therefore, someone who wants to "improve" upon an existing work merely needs to find a different way to express the same (or similar) idea. The different expression need not even involve the same means of communication. A painting, for example, can be used to express the same idea as that underlying a book or a musical composition. The converse is also true—consider Modest Mussorgsky's musical suite "Pictures at an Exhibition." While—contrary to what some courts and commentators have said—there are not an "infinite number" of alternative expressions, the number of alternatives is ordinarily far, far greater than in patent.[130]

At first glance, this difference might seem to justify a rule that treats third-party borrowing more harshly in copyright than in patent. An author does not really need to borrow from earlier works to express a given idea. Given the lack of functional constraints, there are numerous highly original—*i.e.* not derivative—methods to change the way an idea is expressed.[131] Giving the original author the ability to control substantially similar and derivative expressions merely forces the follow-on author to be more creative and original.

Yet this argument ultimately fails to justify copyright's broad degree of control. The most important flaw with the argument is that it is inconsistent with copyright's otherwise minimal originality requirement. Take the original work...the one someone else now wants to alter. The original author merely needed a modicum of originality to obtain the initial copyright. If prior works expressing that idea are in the public domain, the author could obtain a copyright by including a small amount of original material—essentially the same standard as for a derivative work. Similarly, if the author wants to produce a derivative of her *own* work, she gets a new copyright even if she added similarly small amounts of original material.[132] Why grant the original author a copyright in these situations? After all, in either case the first author could have steered clear of the existing corpus of material and produced something "truly original." If the original author warrants a copyright for such a derivative work, the same standard should apply to those who would improve a prior copyright work. Put differently, there is no need to treat the original author more favorably merely because she previously produced a work.

Moreover, there will often be good reasons why a second author might not want to be "truly creative" and instead would rather borrow from

128. *See id.*

129. *See* 17 U.S.C. § 102.

130. Joseph P. Fishman, *Creating Around Copyright*, 128 HARV. L. REV. 1333, 1337 (2015).

131. *See id.*

132. *See* 17 U.S.C. §§ 101, 103.

one or more existing works.[133] A sequel, for example, may portray the characters from the original in a different light and thereby serve as a form of useful criticism or commentary. Similarly, to the extent an author wants to express something to a particular audience, basing a work on an earlier work known to that audience gives the second author a relatively easy way to target the work to the desired group.[134]

In short, while the greater freedom a second author enjoys because of lack of functional, physical-world constraints may justify defining an infringing *reproduction* more broadly in copyright than in patent, it does not justify the even broader zone of protection that stems from the derivative works right. Copyright values "originality," but at the same time sets the bar for originality quite low.[135] Derivative works often meet this minimum standard,[136] regardless of whether they are produced by the author of the earlier work or someone else. There is accordingly no compelling reason to force a second author to take pains to distinguish his work from the earlier work. Such a rule would set a higher standard of originality for avoiding liability for (and obtaining copyright in) derivative works than exists for non-derivative works.

C. Authors Need the Benefits Stemming from Derivative Markets

Perhaps the different rules for adaptations in patent and copyright are due to economic factors.[137] Both patents and copyrights are meant to spur innovation and creation by providing a financial incentive to create and distribute the creative product.[138] It could be that while an inventor can earn a sufficient reward simply by controlling the market for the specific version of the invention covered by the patent, an author needs control over not only that narrow market, but also the market for works that derive from the original. Giving the author control over related markets could help increase the reward earned by authors and thereby generate more original works.[139]

Admittedly, no hard evidence currently exists to support this general proposition. There are certainly "starving artists." But there are also starving inventors. Moreover, when compared to patent, copyright in some ways already has features to increase the revenues earned by the copyright owner.

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133. Daniella Scott, *Why are there so many film and TV remakes right now?*, COSMOPOLITAN (Nov. 4, 2021), https://www.cosmopolitan.com/uk/entertainment/a37787577/film-tv-reboots-why-so-many/ [https://perma.cc/9TJL-KKW8].

134. *See id.*

135. Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 449 U.S. 340, 345 (1991).

136. The derivative work will not always result in separate copyright. If the new material in the derivative is not original, but instead borrowed from other sources, the new work will not qualify for a copyright.

137. *See* Cross, *supra* note 124, at 153.

138. *See id*. at 155.

139. *See id*.

A utility patent typically costs tens of thousands of dollars to obtain[140] and remains in force only if the patent owner pays a periodic fee.[141] Copyright is for all intents and purposes free as it comes into being when the author merely fixes the work in a tangible medium of expression.[142] A copyright also has both a broader and a longer zone of exclusivity.[143] Even the reproduction right—which covers substantially similar but not identical works—is already broader than the zone in patent, which turns on identity (or equivalence) to the patent claims.[144] The zone of exclusivity also remains in force for a much longer period in copyright. While a utility patent has a term of twenty years from the effective date of the application (provided the patent owner pays the maintenance fees),[145] a copyright produced by an identified human author remains in force, without the payment of any fees, for the life of the author plus seventy years.[146] Thus, in many ways copyright is already far more generous than patent.

Nevertheless, it would not necessarily be irrational for Congress to draw a distinction between patent and copyright on the basis of enhancing the financial benefit to authors. First, although it seems unlikely, Congress might be more interested in incentivizing the creation of new art, literature, and the like than it is in spurring new inventions. Second, and probably far more likely, inventors may not need to rely solely on intellectual property rights for their economic reward. Many inventors already have a salaried position at a university or firm.[147] Moreover, in many fields there are large grants available to fund needed research.[148] While grants may also be

140. The best source for patent cost data lists the average cost of obtaining a utility patent at more than $50,000. *2021 Report of the Economic Survey*, AM. INTELL. PROP. LAW ASS'N, https://www.aipla.org/detail/journal-issue/2021-report-of-the-economic-survey (last accessed Dec. 9, 2022) [https://perma.cc/7RCY-EPDP]. As an average, however, this figure is skewed by a small number of very costly patent applications. The total costs include filing fees, attorney fees, background search fees, and issuance fees under 35 U.S.C. § 41.

141. *See id*.

142. *See* 17 U.S.C. § 102. While in the case of "United States works" registration is required in order to sue for infringement, 17 U.S.C. § 411, registration is simple and cheap, and can usually be done by the author herself.

143. *See* 17 U.S.C. § 106; *see also* 17 U.S.C. § 302.

144. *See supra* text accompanying notes 18-28 (ALSO maybe 54? or 69?).

145. 35 U.S.C. § 154(a)(2). This provision also allows for adjustment of this term in various circumstances.

146. 17 U.S.C. § 302(a). A "life plus" term is unfeasible for works where the author is unknown (anonymous and pseudonymous works), or when the author is not human. In these situations, § 302(c) provides for a fixed term.

147. *See generally* Steven Cherensky, *A Penny for Their Thoughts: Employee-Inventors, Preinvention Assignment Agreements, Property, and Personhood*, 81 CALIF. L. REV. 595, 610 (1993). True, many authors also have full-time jobs. Take authors of law review articles, who usually work for a university or private law school, or as attorneys or judges. But in many cases, the works produced by these employee-authors are not sold for money.

148. *See generally Invention Grants-There is money out there for your invention*, THE INVENTIONS HANDBOOK, https://www.inventions-handbook.com/invention-grants.html [https://perma.cc/Q2MT-FXPN] (illustrating the significant amount of patent grant options out there for inventors).

available in the area of copyright, they are far fewer in number, often far less generous in amount, and vied for by a far greater number of potential recipients.

If Congress considered the reward received from controlling close copies inadequate, it could increase that reward by expanding the scope of copyright to include derivative works. Does that require a derivative works right as broad as that which currently exists in U.S. law? To address this argument, it is useful to divide alterations into two categories; namely (a) alterations that compete with the original work, and (b) alterations that do not compete with (and may even complement) the original.[149] The latter category is easier. If the altered work does not compete, sales of that work do not reduce the revenue received by the original author from the sales of her work. If the original author is not selling enough to earn an adequate return, that is due to the fact that the work does not appeal to the relevant market. True, giving the author control over all other markets somehow loosely connected to the market for the author's work could increase the author's revenues. But that additional revenue would be nothing more than a windfall. The better solution to the problem of an author who is not making enough is for that author to produce superior, and hopefully more appealing, works—not to allow the author to recover when *others* produce the superior, non-competing work.

On the other hand, in some cases, the derivative work will "piggyback" on the popularity of the original. Demand for a sequel will often, other things equal, be directly proportional to how popular the original has proven to be.[150] The party who produced the commemorative plate for *The Wizard of Oz*[151] would likely have sold next to nothing had potential plate buyers not seen the film. In these situations, there is a sense that the second party is free-riding on the success created by the original author's hard work.[152]

Intellectual property law sometimes does try to rein in this sort of free-riding.[153] This principle is most evident in trademark law. For example, a party that produces key chains or other affiliation goods containing another company's well-known logo may be liable to that other company for

149. *See* Samuelson, *supra* note 70, at 1519, 1548–49 (providing examples of work that are in competition and not in competition with the original).

150. *See* Viva R. Moffat, *Borrowed Fiction and the Rightful Copyright Position*, 32 CARDOZO ARTS & ENT. L.J. 839, 866 (2014) ("Such demand follows from the fame and notoriety of the author, as much as, if not more than, the quality of the original works.").

151. Gracen v. Bradford Exch., 698 F.2d 300 (7th Cir. 1983).

152. *See id.*; Stan J. Liebowitz, Unbundling Copyright from Patents to inform the Analysis of Notice Costs and Monopoly, 96 B.U. L. REV. 1149, 1150–51 (2016) (highlighting that by free riding off the success of the original, the derivative does not have to use as many resources to promote the sale of their work).

153. *See* Laurie L. Hill, *The Race to Patent the Genome: Free Riders, Hold Ups, and the Future of Medical Breakthroughs*, 11 TEX. INTELL. PROP. L.J. 221, 223 (2003) (expressing concern for free riding in the world of patenting genomes).

trademark infringement.[154] However, liability under trademark law requires a finding that consumers are likely to mistakenly believe that the trademark owner is somehow connected with or approves the sale of the affiliation item.[155] The issue here is whether the copyright owner should also have a right to recover against a party who piggybacks even when it is clear to consumers there is no connection between the copyright owner and the second party.

There is no reason for copyright to go this far.[156] True, there may be a sense of unfairness when someone free-rides on the success of others.[157] But that phenomenon is not unique to copyright. It occurs constantly in the world of competition. Indeed, without allowing some copying, competition would not be possible. If a copyright owner can recover against someone who produces an affiliation good like a commemorative plate, there is no reason why a party who holds a patent in a mobile phone should not be entitled to recover against a party who designs and sells a case that fits that phone. Extending liability that far would effectively give the patent or copyright owner not only exclusive rights in the invention or work, but anything custom-made to be used in connection with that work. Such a broad grant is just a windfall.

And in some ways, the windfall is even more objectionable when the second author produces a complementary work like a sequel.[158] As noted above,[159] demand for the sequel is greater if the reader is already familiar with the original. Therefore, sales of the sequel may actually have the effect of increasing sales of the original, thereby resulting in more revenue to the original author. In other words, the original author is already enjoying some of the additional fruits generated by sales of the "piggyback" work.

The second broad category of derivative works comprises those that compete with the original. Here there is a greater tension. Sales of a competing alteration may reduce the revenue received by the original author from sales of her work. Allowing the original author to recover for (or enjoin) the derivative, competing work would therefore enhance that author's revenues.

But that is not necessarily a convincing reason for a derivative works right, even if that right was limited to competing works. Copyright is not a legal monopoly.[160] Any number of other authors can compete in the market for expressions of a particular idea. All copyright does is to create a zone of exclusivity around the particular expression the author has produced. As long

154. *See* Auto. Gold, Inc. v. Volkswagen of Am., Inc., 457 F.3d 1062, 1065 (9th Cir. 2006).
155. 15 U.S.C. § 1051(a)(3)(D).
156. *Accord* Samuelson, supra note 70, at 1524.
157. *See* Liebowitz, *supra* note 152, at 1150–51.
158. *See* Samuelson, *supra* note 70, at 1524.
159. *See supra* text accompanying notes 99 to 104.
160. *See* Liebowitz, *supra* note 152, at 1162–64.

as competing work falls without that zone, copyright allows it even if it reduces the financial reward earned by the copyright owner.[161] The only issue, then, is how expansive this zone of exclusivity should be. A zone of exclusivity that includes derivative works is already far broader than the comparable zone in patent.[162] Moreover, barring other authors from borrowing has the effect of depriving society of potentially beneficial improvements to the original.[163] Therefore, even allowing the copyright owner to recover from those who produce competing derivatives involves a tradeoff.[164]

III. SO WHERE FROM HERE?

The thesis of this article is that U.S. copyright law, as currently formulated, gives a copyright owner too much control over the production of altered versions of her copyright works. This limit on the ability of others to improve on existing works both denies society the benefit of many possible improvements[165] and squelches the improver's ability to express himself. That broad control may benefit copyright owners, but in many cases the benefit is little more than a windfall. Decreasing the copyright owner's control would be more consistent with copyright policy as well as bring copyright more into line with the greater freedom to improve set out in patent law.

Any change in copyright law should come from Congress.[166] This article does not recommend any reduction in the scope of the § 106(1) reproduction right. Although this right, standing alone, is already broader than the degree of control in patent law, this broader control is justifiable because of the lack of precise "claims" in copyright and the absence of significant physical constraints facing the party who chooses to alter.[167] Nor does the article recommend complete abolition of the derivative works right in § 106(2).[168] Admittedly, the "ideal" system might well be one that contained no derivative works right.[169] Such a rule would allow others to

161. *See* Dan L. Burk, *Inventing Around Copyright,* 109 NW. U. L. REV. ONLINE 64, 69–70 (2015) (resulting from the exclusive rights created by copyright, people partake in this "inventing around" objective to avoid the zone of exclusivity).

162. *See supra* Introduction.

163. *See* Lemley, *supra* note 5, at 992; *see also* Varadarajan, *supra* note 2, at 657.

164. *See* Lemley, *supra* note 5, at 992; *see also* Varadarajan, *supra* note 2, at 657.

165. Of course, it is also possible that the copyright owner will improve her own work. However, the copyright owner's incentive to improve will often be less than the incentive of others. After all, the copyright owner is already earning income from her original work, an income stream that may disappear if the improved version is published.

166. *Cf.* Eldred v. Ashcroft, 537 U.S. 186, 213–14 (2003) ("We have also stressed, however, that it is generally for Congress, not the courts, to decide how best to pursue the Copyright Clause's objectives.").

167. *See supra* text accompanying notes 58-60; 128-130. [ALSO maybe 13??].

168. *See infra* Sections III(A)-(B).

169. *See* Samuelson, *supra* note 70, at 1510 (acknowledging that most legal scholars

borrow from a work, as long as they added sufficient material of their own. But as a practical matter, Congress is unlikely to make so radical a change. Certain vested interests, especially in the film and music industries, would vehemently oppose outright abolition of the derivative works right.[170] However, a more limited refinement of the right may be possible.[171] The law as it currently exists favors authors too greatly and consequently harms the ability of others to benefit society by producing improved versions of a work.[172] Given that the line between a reproduction and a derivative work is extremely vague, the copyright owner perhaps needs some ability to control works that are "based on" the copyrighted work but involve just enough new material so that they are not a mere reproduction. A more limited derivative works right could provide some protection to authors, while giving greater freedom for others to improve.

The issue, then, is how to change the right to something more directly tailored to these ends. Congress should narrow the derivative works right in two ways. First, the right should apply only when the derivative competes with the original. Second, the term of the right should be drastically reduced, to ten years or even less. The rationale underlying both these suggestions follows.

A. Limitation to Competing Works

Although not explicitly so confined, copyright's *reproduction* right mainly affects competing works.[173] A reproduction often serves as a substitute for the copyright work.[174] Someone who obtains a song or software through illegal file sharing will likely forego purchase of the copyright version.[175] And because a party who reproduces often has a much lower up-front production cost, the reproduction can often be sold for a lower price

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are opposed to the derivative works right).

170. *See* Jed Rubenfeld, The Freedom of Imagination: Copyright's Constitutionality, 112 Yale L.J. 1, 58 (2002) (acknowledging that a limitation on the derivative works right would have serious economic consequences for the entertainment industry).

171. *Cf.* Samuelson, *supra* note 70, at 1510 n.24 (citing numerous commentator's proposals for how the derivative works right should be narrowed).

172. *See supra* notes 150–152, 259–262 and accompanying text.

173. *See* Paul Goldstein, *Derivative Rights and Derivative Works in Copyright*, 30 J. COPYRIGHT SOC'Y USA. 209, 217 (1983); Patrick R. Goold, *Why the U.K. Adaptation Right Is Superior to the U.S. Derivative Work Right*, 92 NEB. L. REV. 843, 876–77 (2014); Jake Linford, *Copyright and Attention Scarcity*, 42 CARDOZO L. REV. 143, 149 (2020).

174. Of course, as with most general statements, there are exceptions. For example, if the reproduction is marketed in a distinct geographic market, or a distinct and discrete subset/submarket of buyers (e.g. prisoners), it will not affect the revenues currently being earned by the copyright owner.

175. *See* Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 926 (2005) ("[T]he evidence shows that substantial volume [of file sharing] is a function of free access to copyrighted work.")

than the original[176]—or, as in situations like file sharing, literally given away. Thus, sales of the reproduction cut into the financial reward the copyright owner derives from her work.[177]

For the same reasons, the derivative works right should be limited to situations where the derivative competes with the original.[178] Extending the right to non-competing works allows the copyright owner to recover even when there is no threat to the income stream.[179] Basically, the derivative works right as applied to noncompeting works gives the copyright owner a right to usurp some of the profits earned in other markets.[180] And yet, the copyright owner may never enter that corollary market, or indeed even consider the possibility of doing so.[181] As this article has stressed, nothing in copyright policy justifies so broad a preemptive power.[182]

Congress could effect this suggestion simply by amending the § 101 definition of derivative work to incorporate notions of competition.[183] Of course, the devil lies in the details. As those well-versed in antitrust/monopoly and unfair competition law already know, defining "competition" can be quite tricky.[184] Therefore, in revising the derivative

176. Lunney, *supra* note 84, at 782 ("Absent a legal right to [control reproductions], a would-be competitor could simply copy another's work, thereby avoiding the authorship costs entailed in creating the work, and offer competing copies of the work for less.").

177. *See* A&M Records, Inc. v. Napster, Inc.,239 F.3d 1004, 1017 ("Having digital downloads available for free . . . necessarily harms the copyright holders' attempts to charge for the same downloads."); Lunney, *supra* note 84, at 782 (explaining that the primary justification for the reproduction right is that sales of reproductions directly reduce the money that the original author could expect to earn).

178. *See* Naomi Abe Voegtli, *Rethinking Derivative Rights*, 63 BROOK. L. REV. 1213, 1267–68 (1997) (proposing that derivative works should be limited to works that unduly diminish economic prospects of the original); Goold, *supra* note 173, at 895 ("When novel derivative works potentially threaten the author's market, courts should ask whether the new work copies so much expression that it potentially serves as an economic substitute for the plaintiff's work and, therefore, whether it infringes the existing right of reproduction."); Lunney, *supra* note 83, at 782–83 (arguing that there is no straightforward justification for allowing copyright owners to control the production of derivative works that are complements to the original).

179. *See* William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 354 (1989); Stewart E. Sterk, Rhetoric and Reality in Copyright Law, 94 MICH. L. REV. 1197, 1215–17 (1996); Voegtli, *supra* note 179, at 1240–44.

180. *See* Rogers v. Koons, 960 F.2d 301, 303, 312 (2d Cir. 1992) (holding that a sculpture based on a copyrighted photograph was an infringing derivative work, despite the two works occupying separate markets); *see also* Lunney, *supra* note 84, at 790–91, 796–97; Sterk, *supra* note 179, at 1215–17; Voegtli, *supra* note 179, at 1240–44.

181. *See Koons*, 960 F.2d at 312; Sara K. Stadler, *Relevant Markets for Copyrighted Works*, 34 J. CORP. L. 1059, 1068 (2009) ("What if the plaintiff has no plans to occupy the derivative market at issue? No matter. Courts grant copyright owners the right to exploit derivative markets even if they never have shown any interest in doing so.").

182. *See supra* Section II.

183. *See* 17 U.S.C. § 101 (definition of "derivative work).

184. *See generally* Maurice E. Stucke, *Reconsidering Competition*, 81 MISS. L.J. 107, 110-11 (2011) (showing how no satisfactory definition of competition exists and discussing

works right, the definition of competition should incorporate two notions. First, a second work does not compete unless there is a significant amount of substitution of the new work for the original. Second, that substitution must be likely to occur in the current market or markets in which the original work is being made available.[185] Considering whether substitution might occur in "potential markets"—those not served by the copyright owner—should not count, contrary to the analysis some courts currently employ in these cases.[186]

This author has no delusions that defining competition will be easy, even with these factors.[187] Defining a market is certainly an imprecise analysis, and turns as much on perceptions as it does on hard, objective factors.[188] For example, consider a type of alteration that most nations would consider an infringement: namely, a translation of a novel from language X to language Y.[189] Whether the translation competes depends on whether buyers in the current market would consider buying the version in language X, but would prefer a version in a language Y. That in turn depends on how many readers are functionally bilingual. A translation from Norwegian to Swedish might divert a number of buyers currently in the market, while a translation from Norwegian to Navajo probably would not. To avoid such difficult and fact-intensive analysis, Congress could consider tinkering with the definition to make certain adaptations *per se* derivative works or not derivative works. Like in many nations, all linguistic translations and musical

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why various jurisdictions, economists, and legal scholars have different definitions of competition).

185. This second factor would have interesting implications for "private" works such as early drafts or a personal diary. In these cases, the author may choose *never* to publish the work. As a result, there is no ascertainable "market" for such a work—and accordingly no substitution. But denying relief to such a copyright owner is not a serious problem. Copyright in private works deals less with economic issues, and more with personal considerations such as privacy. (Indeed, the right in private works descends from privacy-centric common-law copyright, which was merged into statutory copyright in the 1976 Copyright Act.) A derivative work of a diary is less of an affront than a publication of the diary itself.

186. Consideration of potential markets is also a factor in fair use analysis. *See* 17 U.S.C. § 107(4); *supra* note 140 and accompanying text. This article does not propose making potential markets irrelevant in fair use analysis. However, if the changes urged by this article are implemented, that discussion would only arise in cases dealing with rights other than the derivative works right.

187. *See* Sara K. Stadler, *Copyright as Trade Regulation*, 155 U. PA. L. REV. 899, 935–36 (2007) (addressing the uncertainty regarding competition and relevant markets for derivative works).

188. *See id.*; Anna F. Kingsbury, *Market Definition in Intellectual Property Law: Should Intellectual Property Courts Use an Antitrust Approach to Market Definition*, 8 MARQ. INTELL. PROP. L. REV. 63, 86 (2004) ("What is unclear is how the courts identify and define the market for a work or a license for a work; equally unclear is how the courts *should* identify and define these markets.").

189. Unlike a musical transposition, a linguistic translation is not merely a reproduction. The translation involves numerous authorial choices, and the result is accordingly considered an adaptation or derivative work, not a reproduction.

arrangements could be considered infringing (subject, of course, to fair use and all other defenses).[190]

Even with this limitation to competing works, the derivative works right would give copyright owners far more control over alterations than patent owners have over altered inventions.[191] Again, patent owners have no say over altered inventions, provided the altered version differs in even one element of the covered claims. Patent allows such improvements even if the improved version completely supplants the original invention in the market. Moreover, the party who invents the improvement may even be able to obtain a patent.[192] A derivative work, by contrast, could still compete—and therefore infringe—even if numerous elements in the derivative were different.

B. Reducing the Term of the Derivative Works Right

The derivative works right effectively gives the copyright owner the first shot at producing an altered version of a work based on her existing copyright work. Some limited period of exclusivity may be justified. The author of a new academic textbook, for example, might want to improve her work by producing a second edition that corrects mistakes, rewords explanations for greater clarity, and reorganizes the materials into a more useful order. The composer of a song might similarly (should the song prove popular) rework it into a fully orchestrated version.[193] Allowing the author to improve on her own work allows her to build upon the effort expended in coming up with the original, as well as her intimate familiarity with the original work.[194] Moreover, in many cases (such as the textbook) the author's improvement almost completely replaces the original.

But the author's first shot at improving should not last forever … or even for the life plus seventy-year term of the other rights.[195] Rather, it should

190. *Cf.* 17 U.S.C. § 121 (specifically authorizing certain Braille and audiobook reproductions).

191. *See supra* Section I(B); *see also* Lemley, *supra* note 5, at 991–92, 1013.

192. 35 U.S.C. § 101.

193. *See* Jessica Silbey, Harvesting Intellectual Property: Inspired Beginnings and Work-Makes-Work, Two Stages in the Creative Process of Artists and Innovators, 86 NOTRE DAME L. REV. 2091, 2127 (2011); Samuelson, *supra* note 70, at 1530 ("Authors may well want to see how their works do in this market before making decisions about entry into derivative markets and formulating strategies for how to succeed in those markets.").

194. *See* Joseph P. Liu, Copyright and Time: A Proposal, 101 MICH. L. REV. 409, 437–38 (2002); Lemley, *supra* note 5, at 1017–19.

195. *See* Liu, *supra* note 194, at 437–42; Sarah E. Zybert, Note, *The Derivative Work Right: Incentive or Hindrance for New Literatur*e, 45 CONN. L. REV. 1083, 1107–08 (2013) (arguing that the derivative works right term should last ten years); Matthew A. Kaplan, *Rosencrantz and Guildenstern Are Dead, but Are They Copyrightable: Protection of Literary Characters with Respect to Secondary Works*, 30 RUTGERS L.J. 817, 839 (1999) ("[B]y making subsequent authors wait seventy-five years until the work goes into the public domain, society loses out on the creativity of those secondary authors."); *see generally* Edward C. Walterscheid, *The Remarkable—and Irrational—Disparity between the Patent Term and the*

be significantly reduced to a period of five to ten years.[196] In most cases, that period should be more than sufficient to allow the author to decide whether the original work could (as a matter of authorial input) and should (with consideration of potential demand) be improved. If the author does not take the opportunity to improve her own work within that window, others should be free to take up the slack. Should the new version prove better in some way, society can express its preferences by purchasing something the original author failed to produce.

CONCLUSION

This article has demonstrated that U.S. copyright law gives copyright owners too much control over the production of improved versions of their works. To bring copyright more into line with patent law's more favorable treatment of improvements, this article suggests changes to the Copyright Act. No change to the reproduction right is necessary. However, the derivative works right should be amended so that (a) the right is limited to works that compete with the copyright work, and (b) the term of the derivative works right is reduced to five to ten years. These changes will hopefully make it easier for those who want to prepare an altered version of an existing copyright work to do so without the need for a license or the fear of infringement liability. If the new work is indeed considered better by the public, society as a whole will benefit—a result fully in keeping with the purpose of copyright set out in the United States Constitution: "to promote the progress of Science . . . ."[197]

Copyright Term, 83 J. PAT. & TRADEMARK OFF. SOC'Y 233 (2001) (discussing the irrational disparity between the patent and copyright term).

196. Just to be clear, this article urges a term reduction only for the derivative works right, not for the other economic rights and moral rights. While the life-plus-seventy year term of a copyright is almost certainly far too long, the arguments for changing that fall well outside the scope of this article.

197. U.S. Const. art. I, § 8, cl. 8.