

A Proposal to Recognize Component Works: How a Teddy Bears on the Competing Ends of Copyright Law

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We live in an age of technological revolution, where much technological progress builds upon prior innovation. Yet copyright law categorically denies protection to works that build on existing copyrighted works. This Comment proposes extending copyright protection to component works—those that function only in conjunction with the preexisting work. The author argues that recognizing component works would further copyright law's two opposing goals: it would provide authors with incentives to create works and would improve the public's accessibility to knowledge and innovation. Since a component work does not replace the preexisting work but functions with it, one must purchase the preexisting work to use the component works doctrine can maximize the other goal of expanding the public's access to innovation.

INTRODUCTION

In the wake of the computer revolution, copyright is perhaps the most volatile area of law. Only a few years after Congress enacted the 1976 Copyright Act,¹ which comprehensively overhauled copyright law, parts of the new Act were outdated. New technological developments have raised questions unthinkable in 1976. As commentators have observed, "As young as the 1976 Copyright Act is, and as prescient as its drafters may have been, the statute has nonetheless been overtaken—and its text put under stress—by the advent and growth of technologies."² Since rewriting the 1976 Act to accommodate these developments could take years, if not decades,³ the courts are now without congressional gui-

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1. 1976 Copyright Act, 90 Stat. 2541 (codified at 17 U.S.C. §§ 101-914 (1988)).

2. A. LATMAN, R. GORMAN & J. GINSBURG, COPYRIGHT FOR THE NINETIES at vii (3d ed. 1989).

3. Copyright law was previously overhauled in 1909. See Copyright Act, ch. 320, 35 Stat. 1075 (1909) (current version at 17 U.S.C. § 101-914 (1988)). The Act is particularly difficult to amend due to its very broad subject matter coverage. See, e.g., Cohen, *Software Issue Kills Liberal*

dance to grapple with the emerging problems.

One new problem springs from the nature of modern technology and technological advances. Much technological progress builds upon existing technology. Moreover, technology is peculiarly susceptible to upgrades and improvements, rather than simple replacement. A computer program that can make a personal computer run a particular application more quickly is one such improvement. Yet to the extent the two have program codes that are at all similar, courts may deem the later improvement a copyright infringement and prohibit its dissemination.⁴

This Comment proposes to solve this problem by recognizing a new type of work, a "component work."⁵ A component work is a work that goes with another work; it does not replace it. Indeed, it improves it.⁶ Thus, the existence of the component work will enliven the market for the original work. A computer chip that makes a particular personal

Amendment to Copyright Laws, N.Y. Times, Oct. 13, 1990, § 1, at 1, col. 1 (Congress rejected a bill allowing authors to quote liberally from unpublished material because protection of computer software would be diminished).

4. See, e.g., *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741 (N.D. Ill. 1983).

5. The concept "component work" has not been recognized before. The 1909 Copyright Act referred to component works in the context of individual articles in "magazines, periodicals and the like," but the term there was used to mean merely "section" or "part." *Markham v. A.E. Borden Co.*, 206 F.2d 199, 200-01 & n.1 (1st Cir. 1953) (quoting 17 U.S.C. § 3 (1909)). The term was rendered obsolete and was not employed in the 1976 Act. *Brylawski, E.T.: An Extraterrestrial Caught in a Copyright Dilemma*, 52 GEO. WASH. L. REV. 395, 396-97 (1984).

One earlier commentator wrote of a concept somewhat like component works, but referred to them as "dependent works." See Gemignani, *Copyright Protection: Computer-Related Dependent Works*, 15 RUTGERS COMPUTER & TECH. L.J. 383, 383-87 (1989). To Gemignani, a dependent work is one based on a preexisting work. Gemignani's concept is overly broad and fails to exclude works that replace the original work. Deeming Gemignani's dependent works noninfringing would thus fail to protect authors' incentives. Moreover, Gemignani did not adequately address the derivative nature of dependent works. See *id.* at 385, 409-10; see also Note, *Toward a Unified Theory of Copyright Infringement for an Advanced Technological Era*, 96 HARV. L. REV. 450, 459 (1982) (noting that new technology applied to existing works may "benefit the copyright owner by generating additional demand for his work and ultimately increasing the work's dissemination").

Courts have never explicitly recognized component works. Although cases have arisen involving nonreplacing, enhancing works, the courts have decided these cases without enunciating a component works concept. These courts have applied varied tests. See, e.g., *Vault Corp. v. Quaid Software, Ltd.*, 847 F.2d 255, 267-68 (5th Cir. 1988) (finding no infringement using the "substantial similarity" test); *Worlds of Wonder, Inc. v. Veritel Learning Sys.*, 658 F. Supp. 351, 355-56 (N.D. Tex. 1986) (finding infringement using the "look-and-feel" test); *Worlds of Wonder, Inc. v. Vector Intercontinental, Inc.*, 653 F. Supp. 135, 139-40 (N.D. Ohio) (same), *later proceeding* 1 U.S.P.Q.2d (BNA) 1982 (N.D. Ohio 1986); *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. 999, 1012-14 (N.D. Ill. 1982) (finding infringement using the "substantial similarity" test), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 464 U.S. 823 (1983); *New York Times Co. v. Roxbury Data Interface, Inc.*, 434 F. Supp. 217 (D.N.J. 1977) (finding no infringement using a "fair use" analysis).

One court, however, has employed a concept similar to component works. See *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 78-79 (D. Mass. 1990) (using the term "add-in" to describe programs designed to be used in conjunction with another program). For further discussion of *Lotus*, see *infra* text accompanying notes 189-97.

6. Thus, in this Comment component works are characterized as "nonreplacing, enhancing works" until the concept of component works is more fully defined at *infra* Part III.

computer more powerful, for instance, may be considered a component work.

This Comment argues that such component works should be deemed noninfringing under copyright law. Courts should carefully label component works, applying existing doctrines to deem component works noninfringing.⁷ Copyright law seeks to promote opposing goals—to reward authors by granting them exclusive rights, and to enhance public knowledge by ensuring access to the authors' creations. Because component works respect the balance between the original author's interest in rewards and the public's interest in progress, and because the courts must solve problems not addressed by the 1976 Copyright Act, this Comment argues for an explicit, judicially recognized exception for component works.

Part I of the Comment provides an overview of copyright law as an introduction to copyright law's basic policies and provisions. Part II explores the unreliability of traditional copyright law infringement tests in correctly evaluating nonreplacing works that enhance existing technologies. Part III proposes a component works doctrine which the courts could use to create an exception to the definition of infringing works. The Comment concludes by arguing that this doctrine would promote copyright law's central goals and would be consistent with current copyright law doctrines.

I

AN INTRODUCTION TO COPYRIGHT LAW

Copyright law embodies two competing goals: to protect authors (thus providing incentive to create new works)⁸ and to promote public access to information and knowledge.⁹ The purpose of copyright law is therefore "to create the most efficient and productive balance between protection (incentive) and dissemination of information."¹⁰ This dichot-

7. I do not address whether component works are themselves copyrightable. I argue only that they do not infringe upon any other person's copyright.

8. The Constitution authorizes Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8.

9. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) (describing the difficult balance between the interests of authors and society's interest in the free flow of information). Note that courts consider the public interest goal to be the more important. *See Zacchini v. Scripps-Howard Broadcasting Co.*, 433 U.S. 562, 576-77 (1977) (citing *United States v. Paramount Pictures*, 334 U.S. 131, 158 (1948)).

10. *Whelan Assocs. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1235 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987); *see also Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 545-46 (1985) (purposes of copyright law are to increase public knowledge and give authors a "fair return for their labors"); Hazen, *Contract Principles As a Guide for Protecting Intellectual Property Rights in Computer Software*, 20 U.C. DAVIS L. REV. 105, 113 (1986) (the ideal copyright

omy in copyright goals is expressed both in the limited period of copyright protection¹¹ and in the determination of what is copyrightable.

These competing goals are embodied in the 1976 Copyright Act. The Act recognizes copyright in literary works, musical works (including any accompanying words), and audiovisual works, such as motion pictures or computer video games.¹² Copyright protection does not extend, however, to any idea, concept, or system.¹³ This rule is popularly known as the "idea-expression" distinction.¹⁴ If ideas could be monopolized, copyright law would stifle creativity, directly contradicting copyright law's constitutional mandate.¹⁵ Thus, in contrast to patent law, copyright law protects only the expression of the idea and not the idea itself.¹⁶

For example, the story of two star-crossed lovers caught between feuding families is an unprotectable idea, whereas the characters of Romeo and Juliet caught in a conflict between the Capulets and the Montagues is an expression of that idea, and is therefore protectable.¹⁷ If

law "strikes a fair balance between the creators' right to the fruits of their labors and society's interest in sharing knowledge and technological advancements").

11. Under the Copyright Act of 1976, the period of protection is limited to the life of the author plus 50 years, or a period of 75 years from the year of first publication of an anonymous work, a pseudonymous work, or a work made for hire. 17 U.S.C. § 302(a), (c) (1988). A work that is not copyrightable or whose copyright period has expired is unprotected and said to be in the "public domain."

12. *Id.* § 102(a). This section also extends protection to pantomimes, sculptural works, sound recordings, and dramatic works.

13. *Id.* § 102(b). Nor does copyright protection extend to facts or information revealed in a work. H.R. REP. NO. 1476, 94th Cong., 2d Sess., 56 (1976) [hereinafter H.R. REP. NO. 94-1476] ("Copyright does not preclude others from using the ideas or information revealed by the author's work."), reprinted in 1976 U.S. CODE CONG. & ADMIN. NEWS 5659, 5669-70; see *Miller v. Universal City Studios, Inc.*, 650 F.2d 1365, 1371 (5th Cir. 1981) (The current scope of copyright protection "serves an important purpose in copyright law. It provides a means of balancing the public's interest in stimulating creative activity, as embodied in the Copyright Clause, against the public's need for unrestrained access to information.").

14. See *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1237 (3d Cir. 1986) (the court's goal is to "advance the basic purpose underlying the idea/expression distinction"), *cert. denied*, 479 U.S. 1031 (1987); Goldstein, *Derivative Rights and Derivative Works in Copyright*, 30 J. COPYRIGHT SOC'Y 209, 218-19 (1983) ("Courts applying the idea-expression distinction to claims of literary infringement hold that themes and bare plots are no more than unprotectable ideas . . ."); Nimmer & Krauthaus, *Copyright and Software Technology Infringement: Defining Third Party Development Rights*, 62 IND. L.J. 13, 41 (1986) (discussing the elasticity of the "idea-expression" distinction).

15. See U.S. CONST. art. I, § 8, cl. 8.

16. See *Baker v. Selden*, 101 U.S. 99, 102-05 (1879) (distinguishing between patent law and copyright law protection of ideas). Unlike copyright law, patent protection provides a complete monopoly for the inventor in that no one may copy the idea and no one may use the idea or the expression. 35 U.S.C. §§ 154, 271 (1988). As a result, patents are more difficult to acquire. Whereas for copyright protection the author must show minimal creativity, in patent law the inventor must show the invention to be useful, novel, and non-obvious. *Id.* §§ 101-103. Moreover, patent protection lasts for only 17 years. *Id.* § 154.

17. Of course, Shakespeare's play *Romeo and Juliet* is now in the public domain. Cf. *supra* note 11 (defining copyright period and "public domain").

the idea can be expressed in only one way, however, the expression is said to be "merged" with the idea. Accordingly, "merged" expression is not protected, for to protect it would give the author a monopoly in the idea.¹⁸

Furthermore, unlike patent law, copyright law does not proscribe a third party's use of a copyrighted work.¹⁹ For example, in the famous case of *Baker v. Selden*,²⁰ the Court held that no one could copy the author's description of his new accounting system, but that anyone could use the accounting system itself.²¹ Additionally, copyright law does not protect useful articles, since authors may not monopolize functional creations. So with a functional creation or "useful article" like a belt buckle, only separable aesthetic features may be protected, such as the creative design on the buckle.²² Hence, to protect the public interest, copyright law provides only a limited monopoly to authors.

An original author also may create a subsequent work based on her original creation, and she retains the exclusive right to prepare these subsequent works.²³ These subsequent works are termed "derivative works." The 1976 Copyright Act defines a derivative work as one "based upon one or more preexisting works," or any "form in which a work may be recast, transformed, or adapted."²⁴ So, for example, a novelist has the exclusive right to make a movie based on her novel. Similarly, if a toy company wants to make wind-up plastic figures of Mickey Mouse, it must acquire a license or other authorization from the Walt Disney Company. In other contexts, however, the concept of a derivative work is more difficult to define and apply.²⁵ For example, what of a cubist

18. See, e.g., *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971) (granting no copyright protection where "idea" and "expression" are not separable).

19. See 17 U.S.C. §§ 101, 113(b), (c) (1988); *Baker*, 101 U.S. at 102-03. *Baker* explained the distinction:

The difference between the two things, letters-patent and copyright, may be illustrated by . . . [the case of medicines]. Certain mixtures are found to be of great value in the healing art. If the discoverer writes and publishes a book on the subject . . . [and copyrights it], he gains no exclusive right to the manufacture and sale of the medicine; he gives that to the public.

Note that use of a copyrighted work might not include the right to perform it, as that is separately covered under the 1976 Act. 17 U.S.C. § 106(4) (1988).

20. 101 U.S. 99 (1879).

21. *Id.* at 101-04.

22. *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 992-93 (2d Cir. 1980); see also *Mazer v. Stein*, 347 U.S. 201, 213-14 (1954) (allowing copyright of china statuette used as a lamp base).

23. 17 U.S.C. § 106(2) (1988). The Copyright Act of 1976 gives owners five exclusive rights: reproduction, adaptation, publication, performance, and display. *Id.* § 106.

24. *Id.* § 101; see also H.R. REP. NO. 94-1476, *supra* note 13, at 62 ("To be an infringement the 'derivative work' must be 'based upon the copyrighted work' Thus, to constitute a violation . . . the infringing work must incorporate a portion of the copyrighted work in some form"), reprinted in 1976 U.S. CODE CONG. & ADMIN. NEWS 5659, 5670-71.

25. "In a broad sense almost all works are derivative works in that in some degree they are

painting of a copyrighted photograph, or a computer unlocking program designed to match another author's computer locking program?

Whether a subsequent work is an infringing derivative work ultimately turns on what constitutes an infringing use of an original author's work. To prove copyright infringement, the plaintiff must show that "substantial similarities" exist between his work and the defendant's work. Unfortunately, the substantial similarity test has varied from court to court and over time,²⁶ and applies awkwardly to derivative works. Infringement by copying is like piracy: the infringer adds nothing to the stolen expression. Derivative works, on the other hand, are not usually made up of pirated material, but often are creative and original works in their own right. Indeed, consider a movie based upon a novel: creating the movie may require more skill and originality than did writing the novel. Further, though the movie is by definition a derivative, it may in its final version be only slightly similar to the original novel.²⁷ Hence, some courts ignore the substantial similarity test and apply a market test to determine infringement. Under that test, if the later work economically harms the author of the original, the later work is an infringing one.²⁸

Finally, there is an affirmative defense to a charge of infringement—the doctrine of "fair use." Fair uses are deemed noninfringing, even if the uses consist of pure copying. The reason for this defense is that a fair use is considered a socially beneficial application of copyrighted material. The 1976 Act provides some examples of "fair use," including criticism, comment, teaching, and research.²⁹ Even these beneficial uses, however, may not constitute "fair use" if they cause economic harm to the original author.³⁰

derived from pre-existing works . . . 'In truth, in literature, in science and in art, there are, and can be, few, if any, things which, in an abstract sense, are strictly new and original throughout.' " 1 M. NIMMER & D. NIMMER, NIMMER ON COPYRIGHT § 3.01 (1990) [hereinafter NIMMER ON COPYRIGHT] (quoting *Emerson v. Davies*, 8 F. Cas. 615, 619 (C.C.D. Mass. 1845) (No. 4436)). Further, one must consider the copyrightability of that part of the original incorporated into the derivative. *Id.* §§ 3.01, 13.03[F] n.281. A work based on the *idea* of an original work does not infringe, since the idea is not protected. *See, e.g.,* *Financial Information, Inc. v. Moody's Inv. Servs.*, 808 F.2d 204, 205 (2d Cir. 1986), *cert. denied*, 484 U.S. 820 (1987).

26. *Compare* *Steinberg v. Columbia Pictures Indus.*, 663 F. Supp. 706, 711 (S.D.N.Y. 1987) (substantial similarity means that "an average lay observer would recognize the alleged copy as having been appropriated from the copyrighted work") (quoting *Ideal Toy Corp. v. Fab-Lu, Ltd.*, 360 F.2d 1021, 1022 (2d Cir. 1966)) with *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487, 489 (2d Cir. 1960) (substantial similarity means that "the ordinary observer, unless he set out to detect the disparities, would be disposed to overlook them, and regard their aesthetic appeal as the same").

27. Goldstein, *supra* note 14, at 219-20.

28. *See* *West Publishing Co. v. Mead Data Cent., Inc.*, 799 F.2d 219, 1227-28 (8th Cir. 1986), *cert. denied*, 479 U.S. 1070 (1987); *see also infra* text accompanying notes 126-37.

29. 17 U.S.C. § 107 (1988).

30. *Id.*

Although the basic copyright doctrines delineated above allow the courts to identify infringing works accurately in many contexts, these doctrines lead to illogical outcomes when applied to nonreplacing, enhancing works. Part II examines these doctrines in greater detail and explains why these outcomes are flawed.

II

THE INADEQUACIES OF EXISTING INFRINGEMENT DOCTRINES WHEN APPLIED TO NONREPLACING, ENHANCING WORKS

A. *The Definition and Scope of "Derivative Works"*

A "derivative work" is a creation based upon one or more preexisting works.³¹ Under existing copyright law, only the owner of a copyright for a preexisting work may produce a derivative of her work.³² Without recognizing the component works issue, several courts have implicitly described nonreplacing works that build on existing technology as derivatives, and thus infringements of the original author's exclusive right to prepare derivatives.³³ Quite simply, under present law, if a nonreplacing work is deemed a derivative, it will be held as infringing.

The courts are mistaken in treating nonreplacing, enhancing works as unlawful derivatives. As commentators have noted, the existing definition of derivative work is vague and difficult to apply.³⁴ As a result, it is often impossible to predict what will or will not be determined a derivative work. Authors of possibly infringing works may therefore play it safe to avoid lawsuits, and decide not to innovate.³⁵ This outcome directly contravenes the constitutional mandate of copyright law, which

31. *Id.* § 101. Note that "derivative work" is sometimes used generally to describe a subsequent work based in part on the original work. Alternatively, the term is often used as a label for a subsequent work that is based in part on the original work and that has been determined to infringe.

32. *Id.* § 106(2).

33. See cases cited *supra* note 5.

34. Hazen, *supra* note 10, at 116-17, 128-29 (the broad definition makes determining what is a derivative work an uncertain, highly fact-specific inquiry); see also Goldstein, *supra* note 14, at 211 ("courts have had no general theory to guide them in the evenhanded resolution of cases involving derivative rights and derivative works"); Note, *Infringement of the Exclusive Right to Prepare Derivative Works: Reducing Uncertainty*, 73 MINN. L. REV. 1521, 1521 (1989) (authored by Michael Wurzer) (the "substantial similarity" requirement for a derivative work makes the test too vague and unpredictable).

35. See Gemignani, *supra* note 5, at 393-94 (discussing the application of this argument in the computer software industry). One could argue that the vague definition of derivative works increases original authors' incentives because they know that fewer people will make works based on their original creations. However, the uncertainty of what will be characterized as an infringing derivative does not necessarily enhance original authors' incentives, as there is no predicting how much protection they will have. See Note, *supra* note 34, at 1538-41. Thus, clarifying the law in favor of component authors will not further harm the original authors' incentives.

is "[t]o promote the Progress of Science and useful Arts."³⁶

The case law reflects this vague definition of derivative works. For example, *Worlds of Wonder, Inc. v. Vector Intercontinental, Inc.*³⁷ involved an animated, talking toy bear named Teddy Ruxpin, operated by cassette tapes inserted into his back. The defendant manufactured its own tapes for Teddy Ruxpin, which enabled Teddy to tell fairy tales. The plaintiff had a copyright on the audiovisual effect produced by Teddy Ruxpin, and argued that the defendant's tape infringed this copyright. Noting the similarity of the audiovisual effects of Teddy with his own tapes and Teddy with the defendant's tapes, the court held that the defendant's tape was "at least" a derivative work.³⁸

Simply because a subsequent work "almost" violates the original author's exclusive right to make copies does not necessarily make it "at least" a violation of the exclusive right to make derivatives. Like the test for copying, the test for a derivative requires a showing of substantial similarity.³⁹ The leading copyright law commentator, Professor Melvin Nimmer, has noted that the section 106(2) exclusive right to prepare derivatives "may be thought to be completely superfluous,"⁴⁰ since the right to make derivative works will not be infringed unless the right to make copies is also infringed. In fact, Professor Paul Goldstein has noted that "virtually none of the decisions has drawn a principled line capable of separating derivative rights from reproduction rights."⁴¹

One result of this uncertainty has been an increasingly broad interpretation of the definition of derivative works. The most expansive interpretation would encompass subsequent works with any degree of similarity to the original. Thus, any work that does not violate the prohibition against copying would at least violate the prohibition against derivatives, to the extent there is any similarity between the two creations. Yet the copyright law does not contemplate this result. After all, "in a broad sense almost all works are . . . derived from pre-existing works. . . . '[I]n literature, in science and in art, there are, and can be, few, if any, things which, in an abstract sense, are strictly new and original throughout.'"⁴²

36. U.S. CONST. art. I, § 8, cl. 8.

37. 653 F. Supp. 135 (N.D. Ohio), *later proceeding* 1 U.S.P.Q.2d (BNA) 1982 (N.D. Ohio 1986).

38. *Id.* at 140.

39. *See* Vault Corp. v. Quaid Software, Ltd., 847 F.2d 255, 267 (5th Cir. 1988) ("To constitute a derivative work, 'the infringing work must be substantially similar to the copyrighted work.'") (quoting *Litchfield v. Spielberg*, 736 F.2d 1352, 1357 (9th Cir. 1984), *cert. denied*, 470 U.S. 1052 (1985)).

40. 2 NIMMER ON COPYRIGHT, *supra* note 25, § 8.09[A].

41. Goldstein, *supra* note 14, at 215.

42. 1 NIMMER ON COPYRIGHT, *supra* note 25, § 3.01 (quoting *Emerson v. Davies*, 8 F. Cas. 615, 619 (C.C.D. Mass. 1845) (No. 4,436)). Indeed, "[the contention]—that 'Progress of Science

The expansive interpretation of derivative works, therefore, has been widely criticized.⁴³ In an address before a gathering of copyright scholars, Professor Ralph Brown declared that the definition of derivative work "is not only expansive, it is still expanding."⁴⁴ He warned that the widening definition has begun to encompass ideas and processes—both of which are expressly exempted from copyright protection.⁴⁵ Courts also have broadened the definition of derivative works by erroneously considering the parties' conduct in determining infringement,⁴⁶ and by straining the definition of derivative works to fit existing licensing agreements.⁴⁷

and useful Arts' cannot occur unless authors and inventors are privileged to build upon earlier progress and earlier innovation—has long been a virtually unchallenged premise in all branches of the law of intellectual property." *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 77 (D. Mass. 1990). The *Lotus* court quoted Isaac Newton: " 'If I have seen further it is by standing on ye shoulders of Giants.' " *Id.* (quoting a letter to Robert Hooke (Feb. 5, 1675/1676), quoted in R. MERTON, *ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT* 31 (1965) (articulating the "OTSOG" principle, an acronym for "On The Shoulders Of Giants," and a new catchword in the computer industry)).

43. See Brown, *The Widening Gyre: Are Derivative Works Getting Out of Hand?*, 3 CARDOZO ARTS & ENT. L.J. 1, 2-3, 9-10 (1984) (lecture delivered on Oct. 19, 1983) (noting the adverse effects of the expansive definition of "derivative work"); Gemignani, *supra* note 5, at 409-10 (arguing that "derivative work" should be interpreted narrowly in the area of software copyright); Goldstein, *supra* note 14, at 221-23 (stating that copyright law attempts to do too much, and citing cases using liberal definition of "derivative work").

44. Brown, *supra* note 43, at 2.

45. *Id.* at 9-10. Under the 1976 Copyright Act, ideas and processes are statutorily excluded from copyright protection. 17 U.S.C. § 102(b) (1988).

One common explanation for the unwarranted extension of copyright law is that courts use copyright law to do the work of patent, unfair competition, and trade secret law. Brown, *supra* note 43, at 2-3; Goldstein, *supra* note 14, at 222; cf. *Diamond v. Diehr*, 450 U.S. 175, 194-98 (1981) (Stevens, J., dissenting) (suggesting patent law is poorly equipped to protect computer software); Note, *Defining the Scope of Copyright Protection for Computer Software*, 38 STAN. L. REV. 497, 503-06 (1986) (authored by Susan A. Dunn) (arguing that copyright protection is needed to augment patent and trade secret law in order to provide complete protection).

But this problem is no longer as acute: "Now that . . . patent protection is presently available for virtually all software inventions[,] . . . copyright . . . law will again be able to resume [its] traditional scope[.] . . ." Maier, *Software Protection—Integrating Patent, Copyright and Trade Secret Law*, 68 J. PAT. & TRADEMARK OFF. SOC'Y 151, 165 (1987); see also Comment, *Federal Intellectual Property Protection for Computer Software Audio-visual Look and Feel: The Lanham, Copyright and Patent Acts*, 4 HIGH TECH. L.J. 279, 297-307 (1989) (authored by Gregory J. Wremi) (discussing how patents are now available for software).

46. It should not matter whether the author of the derivative work earlier sought a copyright license. Whether or not the alleged infringer feared her work might be a derivative has no relevance to the definition of a derivative. Goldstein, *supra* note 14, at 226. But courts have often made this mistake. Professor Goldstein thinks it is "no coincidence that the principal cases establishing broad rights against infringement by derivative works characteristically involve situations in which the alleged infringer had at some earlier point sought a license." *Id.* at 221. Goldstein concludes that "[t]he tendency in these cases, always unarticulated because legally irrelevant, is to take the earlier quest for a copyright license as evidence that one was needed." *Id.*

47. *Id.* at 220-21. Licensing agreements may be used for reasons that are completely irrelevant to the question of copyright. For instance, many firms buy time by paying original authors for rights in the event that the subsequent creation, when completed, may be similar enough to incite an infringement suit. *Id.* at 220. Such conscientious behavior should not reshape copyright law, any

This widening definition may seriously hamper innovation,⁴⁸ particularly in the computer field, where progress occurs incrementally. Better programs come about not from scratch, but through improvements of existing programs. Thus, the expansive interpretation of what constitutes a derivative work will inevitably harm the software industry.⁴⁹ The public will be denied improved works, since a reluctance to risk liability will discourage those who improve technology from practicing their craft. Criticizing the expansive definition of derivative work, one commentator warned that "its far reaching potential renders it a time-bomb."⁵⁰ The expansive definition overprotects original authors at the expense of the public interest in improved works. Particularly when applied to nonreplacing works that build on existing technologies and do not harm original authors, the expansive definition makes little sense: expansive protection for original authors is unnecessary when there is no chance of harm.

Moreover, Professor Nimmer finds the right to make derivatives no different from the right to make copies.⁵¹ In other words, if a work is not a "copy," it is not a derivative. This is the narrowest possible definition. In the realm of computer programs and other useful works, it is imperative to avoid restraining the march of progress. The narrower the definition of derivative works, the less the confusion of authors, resulting in more works and thus greater public benefit.⁵² Some use of the original author's work must be permitted. As Zechariah Chafee declares, "[t]he very policy which leads the law to encourage his creativeness also justifies it in facilitating the creativeness of others."⁵³ Thus, a narrow definition benefits society with minimal harm to the original authors.⁵⁴

Indeed, nonreplacing, enhancing works are not contemplated under

more than should the shortcomings of patent and unfair competition law. *But see* Conley & Bryan, *A Unifying Theory for the Litigation of Computer Software Copyright Cases*, 63 N.C.L. REV. 563, 597 (1985) (arguing that courts should focus on conduct of the parties to determine copyright infringement).

48. Walter, *Defining the Scope of Copyright Protection*, 14 RUTGERS COMPUTER & TECH. L.J. 1, 84-85 (1988) (overbroad protection of existing programs destroys incentive to make improvements). Although Gemignani responds to Walter's argument by pointing out that the software industry has continued to thrive, he does not conclude that the liberal definition of derivative is therefore not harmful. Gemignani, *supra* note 5, at 397, 409-10.

49. Walter, *supra* note 48, at 84-85.

50. Note, *The Incompatibility of Copyright and Computer Software: An Economic Evaluation and a Proposal for a Marketplace Solution*, 66 N.C.L. REV. 977, 1015-16 (1988) (authored by Vance Franklin Brown) (discussing the computer software industry in particular).

51. 2 NIMMER ON COPYRIGHT, *supra* note 25, § 8.09[A]; *see also* Brown, *supra* note 43, at 6. Indeed, another commentator, who advocates expanded rights for original authors, still admits that the "Copyright Act's derivative work provisions refine rather than enlarge the [original author's] rights." Note, *supra* note 45, at 511.

52. Gemignani, *supra* note 5, at 409-10.

53. Chafee, *Reflections on the Law of Copyright: I*, 45 COLUM. L. REV. 503, 511 (1945).

54. Indeed, Professor Hazen argues that original authors deserve more protection, but he

the literal definition of derivative works in the 1976 Copyright Act. The Act defines derivatives as "work[s] based upon one or more preexisting works . . . or any . . . form in which a work may be recast, transformed, or adapted";⁵⁵ moreover, a "work consisting of . . . modifications which, as a whole, represent an original work of authorship, is a 'derivative work.'"⁵⁶ This definition implies that a derivative work must stand on its own. In contrast, although a nonreplacing, enhancing work does employ preexisting material, it merely tries to improve a part of the original. Thus, in some sense, a nonreplacing, enhancing work is not a separate work but a part of the original work. It does not, as a whole, represent an original work of authorship since it is dependent on the original work—it cannot stand on its own.

Most importantly, the nonreplacing, enhancing work should not be defined as a derivative, for it typically does not harm the original author. This harm is what the exclusive right to prepare derivatives intends to prevent. All the examples of derivative works given in the Act—"translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgement, condensation"⁵⁷—can stand on their own and replace the original work. Nonreplacing, enhancing works cannot. Since they do not harm original authors, they should not be treated like derivative works.

B. The Substantial Similarity Test for Infringement

To prove copyright infringement, a plaintiff must show that the defendant's work is "substantially similar" to the plaintiff's copyrighted work. The judge or jury compares the two works, and must decide "whether an average lay observer would recognize the alleged copy as having been appropriated from the copyrighted work."⁵⁸ If so, then the new product is deemed substantially similar to the original work, and is thus infringing.⁵⁹ Yet the substantial similarity test is misplaced where a work is based on, but does not copy, an original work. The test is inappropriate since the new work is *dissimilar* to the original work.⁶⁰ It

would provide it by means of contracts and licensing agreements, not by unduly expanding copyright law. See Hazen, *supra* note 10, at 128-29.

55. 17 U.S.C. § 101 (1988).

56. *Id.*

57. *Id.*

58. *Ideal Toy Corp. v. Fab-Lu Ltd.*, 360 F.2d 1021, 1022 (2d Cir. 1966); see also *supra* notes 26-28 and accompanying text.

59. The plaintiff must also demonstrate that the defendant had access to the plaintiff's work, in order to disprove any possibility of the defendant's independent creation of a similar work—which would not be a copyright violation. See, e.g., *Gaste v. Kaiserman*, 863 F.2d 1061, 1066 (2d Cir. 1988) ("Because copiers are rarely caught red-handed, copying has traditionally been proven circumstantially by proof of access and substantial similarity.").

60. Note, *supra* note 34, at 1534 ("A derivative work by its nature is dissimilar to the original

makes little sense to apply a similarity test that is designed to determine if something is a copy, in order to determine if something dissimilar (such as a nonreplacing, enhancing work) is infringing.

*Midway Manufacturing Co. v. Artic International, Inc.*⁶¹ provides a useful illustration. In this case, the defendant created a computer chip for insertion into the plaintiff's video game, to make it play faster. The plaintiff alleged infringement of its audiovisual copyright, which protects the game's sounds and graphics. The court implicitly applied the substantial similarity test: the audiovisual display of the video game with the defendant's chip was substantially similar to the game's display without the chip, so the chip was deemed an infringing derivative.⁶² But the defendant's computer chip itself had no audiovisual display to compare with the video game's copyrighted audiovisual display. The defendant's work was simply a sequence of computer code that relied upon the plaintiff's work to produce an audiovisual display. In essence, the court analyzed the similarity of a computer chip (an object) to an audiovisual display (a series of sights and sounds). Since these works are dissimilar, the substantial similarity test is ill-suited to determine infringement.⁶³

In addition, the substantial similarity test fails in two respects to promote original authors' incentives. First, the unpredictability of such a clumsy test prevents authors from accurately gauging the extent of protection for new works.⁶⁴ There is little incentive if an author cannot rely upon the reward. Second, dissimilar works that destroy the demand for the original are noninfringing under the substantial similarity test. For example, in *Vault Corp. v. Quaid Software, Ltd.*,⁶⁵ the defendant was sued for marketing a computer program that unlocked the plaintiff's computer locking program. Because it had a different (indeed, an opposite) function, the defendant's program was not substantially similar.⁶⁶ Thus, there was no infringement.⁶⁷ The problem, of course, is that the defendant's program destroys the market for the plaintiff's work. Few

work and, therefore, using 'substantial similarity' as the basis of the test for infringement . . . creates uncertainty.").

61. 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 464 U.S. 823 (1983).

62. *Id.* at 1013-14. The court must have applied this test, since it merely noted that the displays were similar and then found that the defendant had infringed.

63. See Note, *Copyright Infringement of Computer Programs: A Modification of the Substantial Similarity Test*, 68 MINN. L. REV. 1264, 1292-94 (1984) (authored by Howard Root) (arguing that we must reevaluate the substantial similarity test: since software technology progresses by making incremental changes to existing software, creative innovations may still fail the test).

64. Note, *supra* note 34, at 1535.

65. 847 F.2d 255 (5th Cir. 1988).

66. The court found neither the quantity nor the quality of the copying was enough to result in substantial similarity. *Id.* at 267.

67. *Id.* at 268. But cf. *Addison-Wesley Publishing Co. v. Brown*, 223 F. Supp. 219 (E.D.N.Y. 1963) (copyright to textbook infringed by publication of answer guide to problems in textbook);

people will buy a locking program when anyone with the defendant's product can unlock it. The substantial similarity test fails to protect the original author's financial incentives to create, even though copyright law is supposed to promote those incentives.

C. *The Look-and-Feel Doctrine*

Some courts have begun to use the "look-and-feel" doctrine to find nonreplacing, enhancing works infringing. The look-and-feel doctrine, which originated in *Roth Greeting Cards v. United Card Co.*,⁶⁸ is a method of demonstrating substantial similarity. In *Roth*, the court found that the defendant's allegedly copied greeting cards were substantially similar to the originals in "total concept and feel," though not in any protectable expression.⁶⁹

Significantly, this doctrine has also been extended to the computer field, where it has met with heated debate. In *Whelan Associates v. Jaslow Dental Laboratory, Inc.*,⁷⁰ the defendants hired the plaintiff to create a computer program to run a dental laboratory. After the plaintiff created the program, the defendants made their own dental laboratory program without directly copying any of the plaintiff's program code. The court nonetheless found infringement because the defendants had copied the structure, sequence, and organization of the plaintiff's program.⁷¹ In *Broderbund Software, Inc. v. Unison World, Inc.*,⁷² the court extended the look-and-feel doctrine further, holding that the defendant was liable for emulating the look and feel of the audiovisual screen displays of the plaintiff's program.⁷³

1. *The Look-and-Feel Doctrine Is Fundamentally Misguided and Rests on Faulty Premises*

The look-and-feel cases usually arise with audiovisual copyrights, for creations such as video game displays, since the look and feel of an audiovisual display are more tangible than, for example, the look and feel of a novel. Indeed, look-and-feel doctrine is especially relevant to the computer context, since the Copyright Office has decreed that a copyright on a program also protects the audiovisual output of that program.⁷⁴ Thus, the look and feel of every copyrighted program's

Procter & Gamble Co. v. Moskowitz, 127 U.S.P.Q. (BNA) 523 (E.D.N.Y. 1960) (copyright to contest entry blank infringed by publication of contest answers).

68. 429 F.2d 1106 (9th Cir. 1970).

69. *Id.* at 1110.

70. 797 F.2d 1222 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987).

71. *Id.* at 1238-39, 1246-48.

72. 648 F. Supp. 1127 (N.D. Cal. 1986).

73. *Id.* at 1137.

74. Manufacturers Technologies, Inc. v. Cams, Inc., 706 F. Supp. 984, 990-91 (D. Conn. 1989)

audiovisual output is potentially protected.

The broadest interpretation of the look-and-feel doctrine was presented in *Broderbund*,⁷⁵ where the district court protected the look and feel of the audiovisual display of the plaintiff's programs.⁷⁶ The court alleged that its holding relied upon *Whelan*.⁷⁷ Yet *Whelan* had found that a program copyright protected the structure, sequence, and organization of that program,⁷⁸ but did *not* protect the audiovisual display. Thus, *Broderbund* rests upon faulty premises. As one court explained:

The *Broderbund* court extended the reach of *Whelan* by equating computer program copyright protection for the structure, sequence and organization of a program with protection of the screen outputs. However, the *Whelan* court said only that, as an evidentiary matter, that screen outputs could be indirect and inferential evidence useful in establishing copying of the underlying computer program.⁷⁹

Yet even *Whelan*'s more limited protection of programs' structure and sequence is under attack. For example, in *Digital Communications Associates, Inc. v. Softklone Distributing Corp.*,⁸⁰ the court rejected the look-and-feel analysis. It held that the plaintiff must show evidence of copying of source and object codes,⁸¹ as well as copying of the structure, sequence, and organization of a program.⁸² Thus, the *Softklone* court

(citing *Copyright Office Notice on Computer Screen Registration*, 36 Pat. Trademark & Copyright J. (BNA) 152, 155 (1988)). The Copyright Office considers screen displays and their underlying programs a "single work" to be registered on a single application form. See 37 C.F.R. 202.3(b)3; see also Note, *Single Copyright Registration for Computer Programs: Outdated Perceptions Bite the Dust*, 54 BROOKLYN L. REV. 965, 968 (1988) (authored by Steven M. Levy) (approving of this development as more practical). The concept of a screen display and its underlying application as a single work is a break from past practice. See, e.g., *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 872-73 (3d Cir. 1982) (treating as separate works a video game's audiovisual effects and its computer program).

75. *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127 (N.D. Cal. 1986).

76. *Id.* at 1137.

77. *Id.* at 1133 (citing *Whelan Assocs. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1224 n.1, 1240 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987)).

78. *Whelan*, 797 F.2d at 1239-40.

79. *Manufacturers Technologies, Inc. v. Cams, Inc.*, 706 F. Supp. 984, 992 (D. Conn. 1989) (citation omitted). One commentator suggests courts should either compare the computer source codes for substantial similarity, or observe the sounds and screen displays to determine infringement. Perelman, *Proving Copyright Infringement of Computer Software: An Analytical Framework*, 34 COPYRIGHT L. SYMP. 99, 134-35 (1987).

80. 659 F. Supp. 449 (N.D. Ga. 1987).

81. Source code is the computer program written in programming language. Object code is the source code translated into the binary number language that the computer reads.

82. *Softklone*, 659 F. Supp. at 455-56. The status of *Softklone*'s holding is unclear today, for it considered the effect of a program copyright at a time when audiovisual and program copyrights were considered separate. Cf. *supra* note 74 and accompanying text (describing Copyright Office's new policy considering these aspects of the software together).

did not protect the look and feel of the plaintiff's audiovisual display, but merely the actual expressive elements displayed.

In *Synercom Technology v. University Computing Co.*,⁸³ the defendant copied the logic, sequence, and arrangement of the plaintiff's input formats.⁸⁴ The court held that while the formats were copyrightable, the sequence and arrangement were merely ideas, and not part of the protectable expression.⁸⁵ In contrast, under a look-and-feel test the court might have found the input formats infringing on the basis of similar sequence and arrangement.

The *Synercom* court reasoned that the sequence and organization were ideas, rather than expression, by using the example of the "figure-H" pattern of an automobile shift stick.⁸⁶ The pattern chosen is arbitrary, but once chosen it is the only one that will work. The pattern, like the input format, may be expressed in different ways, such as with a photograph, a diagram, or a description in a driver's manual. As the court noted: "Each of these expressions may presumably be protected through copyright. But the copyright protects copying of the particular expressions of the pattern, and does not prohibit another manufacturer from marketing a car using the same pattern. Use of the same pattern might be socially desirable, as it would reduce the retraining of drivers."⁸⁷ Similarly, a photograph or description of an audiovisual display is protected, but the look and feel, or the structure and sequence of the display, is not.

Further dissatisfaction with the look-and-feel doctrine is reflected in *Plains Cotton Cooperative Association v. Goodpasture Computer Service, Inc.*,⁸⁸ where the Fifth Circuit followed *Synercom* rather than *Whelan*. The court rejected the plaintiff's claim of "organizational" copying of his cotton market computer program, finding that many of the structural similarities in the two programs were dictated by the features of the cotton market itself.⁸⁹ The court thus "decline[d] to hold that those patterns could not constitute 'ideas.'"⁹⁰

83. 462 F. Supp. 1003 (N.D. Tex. 1978). The *Whelan* court admitted its holding was "at odds with Judge Higginbotham's scholarly opinion [in *Synercom*]." *Whelan*, 797 F.2d at 1239.

84. "In using a program one must have a format for input so that the input of data and the instruction to the computer are compatible with its program." *Synercom*, 462 F. Supp. at 1005.

85. *Id.* at 1012-14. The court also mentioned that if the sequence of the formats were expression, then the alternative holding would be that the expression and the idea were merged, and the formats thus were not copyrightable. *Id.* at 1014. But the court did not limit its holding to cases where idea and expression were merged. "[T]here are many more possible choices of computer formats, and the decision among them more arbitrary [than a stick shift pattern], but this does not detract from the force of the analogy." *Id.* at 1013.

86. *Id.* at 1013.

87. *Id.*

88. 807 F.2d 1256 (5th Cir.), cert. denied, 484 U.S. 821 (1987).

89. *Id.* at 1260-62.

90. *Id.* at 1262. Even though the *Plains Cotton* court favored *Synercom* over *Whelan*, it may have limited *Synercom*'s holding by applying it to a situation where market factors determined the

It is clear, then, that many courts have been critical of *Whelan* and the look-and-feel test.⁹¹ Commentators, too, have roundly criticized *Whelan*. For example, Professor Nimmer writes that *Whelan*'s

sweeping rule and broad language extend copyright protection too far. Providing protection for such amorphous concepts as the "overall structure" of a program, without considering whether such a structure is protectable under traditional copyright theories, increases the risk of granting copyright holders protection on a par with that provided to patent holders. Such a result could be disastrous⁹²

Not only is *Whelan*'s result harmful, its logic is misguided. It separated idea from expression by defining the purpose of the work as the idea, and everything not necessary to that purpose as protectable expression of the idea.⁹³ Thus, in *Whelan*, the purpose of the program was to operate a dental laboratory. Everything else was protectable expression. *Whelan* erred in assuming that a computer program has only one idea.⁹⁴ On the contrary, every program embodies several functions, and thus several ideas, some more abstract, some more specific. The outcome under *Whelan* thus depends on which idea the court thinks the program embodies. This arbitrary result only worsens the existing uncertainty.

Whelan also includes as expression the way the program carries out a certain function.⁹⁵ This could reasonably be interpreted to say that a

structure; that is, there were few or no other ways of expressing the structure. *Id.* This comes close to the concept of "merger"—an expression of an idea is not protected when there is only one way to express it—a concept that *Synercom* did not require.

91. See, e.g., *Telemarketing Resources v. Symantec Corp.*, 12 U.S.P.Q.2d (BNA) 1991, 1996 (N.D. Cal. 1989) (finding a computer program's look and feel (functions, editing screen, menu bar, pull-down windows, and color scheme) merely "idea," and not protectable expression); *Data E. USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988) (refusing to protect the look and feel of a karate video game). But see *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 63-68 (D. Mass. 1990) (protecting the user interface of a spreadsheet program).

Presently, two big look-and-feel cases are pending. Lotus has sued a competitor who produced an independently programmed version of Lotus' 1-2-3 spreadsheet program. *Lotus Dev. Corp. v. Mosaic Software, Inc.*, No. 87-74K (D. Mass. filed Jan. 12, 1987). Apple is suing Microsoft for marketing a program that contains an Apple-like overlapping window display. *Apple Computer, Inc. v. Microsoft Corp.*, No. C88-20149-WWS (N.D. Cal. filed Mar. 17 1988); see Abramson, *Look and Feel of Computer Software*, CASE & COM., Jan.-Feb. 1990, at 3, 3-4.

92. 3 NIMMER ON COPYRIGHT, *supra* note 25, § 13.03[A][1][d].

93. *Whelan*, 797 F.2d at 1236.

94. 3 NIMMER ON COPYRIGHT, *supra* note 25, § 13.03[F][1] ("The crucial flaw in this reasoning is that it assumes that only one 'idea,' in copyright law terms, underlies any computer program, and that once a separable idea can be identified, everything else must be expression.").

95. *Whelan*, 797 F.2d at 1239. Another case from about the same time went the other way. See *Q-Co Indus., Inc. v. Hoffman*, 625 F. Supp. 608 (S.D.N.Y. 1985). In *Q-Co*, the two parties had each developed a computer disk to turn a television into a teleprompter. The display effects were similar, but the underlying computer programs were different. One program was for an IBM computer, and the other for an Atari computer. The court found no infringement, even though the defendant had copied the function of the plaintiff's program, since this was idea, not expression. *Id.* at 616; see also *Synercom Technology, Inc. v. University Computing Co.*, 462 F. Supp. 1003, 1013 (N.D. Tex. 1978) (use or function elements not copyrightable).

copyright, which covers expression, also covers a process or a procedure.⁹⁶ Yet the Copyright Act explicitly rejects protection for any system, process, or procedure.⁹⁷ Thus, in applying look-and-feel to the structure, sequence, and organization of a computer program, the *Whelan* court has overextended copyright law by violating the express terms of the Copyright Act.⁹⁸

Professor Pamela Samuelson argues that the look-and-feel doctrine, invented by two commentators, has virtually no standing in copyright law.⁹⁹ The "total-concept-and-feel doctrine," from which the look-and-feel doctrine derived, was designed to complement a detailed, analytic dissection test, so the court would not miss the forest for the trees. Thus, it is wrong to use by itself even the more limited total-concept-and-feel doctrine. Yet the courts have done just this. Indeed, the total-concept-and-feel doctrine was intended only for fanciful or artistic works, and not functional works like computer programs. Further, functional writings can receive only "thin" copyrights, which protect only against nearly identical copying. Thus, she concludes that since the user interface is functional and not fanciful, it should not receive total-concept-and-feel protection (let alone look-and-feel protection).

Additionally, powerful policy reasons argue against the "look-and-feel" or "total-concept-and-feel" doctrine. First, the doctrines threaten the idea-expression distinction. Nimmer warns that

the touchstone of "total concept and feel" threatens to subvert the very essence of copyright, namely the protection of original *expression*. "Concepts" are statutorily ineligible for copyright protection; for courts to advert to a work's "total concept" as the essence of its protectible character seems ill-advised in the extreme.¹⁰⁰

Second, as Nimmer argues, the uncertainty created by the look-and-

96. Gemignani, *supra* note 5, at 404.

97. 17 U.S.C. § 102(b) (1988).

98. See Forsten, *It Walks and Talks Like my Duck, So How Come It's Not Infringement?: The Case Against "Look and Feel" Protection for Computer Programs*, 70 J. PAT. & TRADEMARK OFF. SOC'Y 639, 646 (1988) (arguing that the Commission on New Technological Uses of Copyrighted Works, which Congress commissioned to report on changing technology and the Copyright Act, disapproved of the look-and-feel doctrine); see also Sutton, *Equities, Evidence, and the Elusive Scope of Copyright Protection for Computer Software*, 69 J. PAT. & TRADEMARK OFF. SOC'Y 551, 564 (1987) (noting that "effort" does not make a work copyrightable, and arguing that "the *Whelan* court relied too heavily on the amount of effort put into developing the arrangement of the computer program").

99. Samuelson, *Why the Look and Feel of Software User Interfaces Should Not Be Protected By Copyright Law*, 32 COMM. OF ACM 563 (1989); see also *Kepner-Tregoe, Inc. v. Carabio*, 1979 Copyright L. Dec. (CCH) ¶ 25,107, at 15,638-39 (E.D. Mich. 1979) (arguing "total concept and feel" applicable to artistic works, not useful arts).

100. 3 NIMMER ON COPYRIGHT, *supra* note 25, § 13.03[A][1][c]; see also Stallman & Garfinkel, *Viewpoint Against User Interface*, 33 COMM. OF ACM 15 (1990) (articulating ten reasons to oppose look-and-feel protection).

feel cases hampers development in the computer field, as no clear infringement guidelines exist. Developers may therefore avoid expansion or improvements of existing programs.¹⁰¹ In addition, if the look-and-feel doctrine persists, it might weaken severely U.S. software developers' ability to compete with foreign developers. The European Economic Community, in attempting to define a consistent copyright doctrine, has proposed limiting or even abolishing the look-and-feel doctrine by denying protection for computer interfaces.¹⁰² If this proposal passes, software development in EEC countries could progress at a much faster rate than it does in the United States.

Third, the look-and-feel doctrine is objectionable in light of the economic incentive policy that underlies copyright law. The look and feel of a program is not easily "copied." A developer must spend appreciable time and effort to write a program that copies the feel of the original program. Developing does not fit the classic mold of copying, where someone simply duplicates a program, and should not be treated as such.¹⁰³

Fourth, requiring a completely dissimilar look and feel for different computer programs is wasteful, since learning to use a computer program involves training costs. Once the user has expended the costs, he has little incentive to switch to a competing program that would require retraining.¹⁰⁴ This "lock-in effect" could "easily result in a virtual monopoly if one particular program or approach were to gain widespread acceptance."¹⁰⁵ Compatibility poses a related problem: if most computer users have one system, others must use that system or else they will be unable to communicate with the majority.¹⁰⁶ This too builds in a monopoly for the first inventor. The danger in providing patent monopoly protection through copyright law is obvious. Patent law limits the monopoly to seventeen years. Conversely, copyright law would not only fail to require utility, novelty, and non-obviousness, it would extend the monopoly for about seventy-five years.

Finally, the cases establishing the look-and-feel doctrine often appear to be based upon the perceived bad faith of the defendant, rather than on principles of copyright law. As one commentator noted: "One

101. 3 NIMMER ON COPYRIGHT, *supra* note 25, § 13.03[A][1][d].

102. See *Draft Report on a Proposal for a Council Directive on the Legal Protection of Computer Programs*, EUR. PARL. DOC. (No. C3-56) (Committee on Legal Affairs and Citizens' Rights) art. 1, amend. II, at 5 (Nov. 20, 1989).

103. Forsten, *supra* note 98, at 660-61.

104. See, e.g., *Synercom Technology, Inc. v. University Computing Co.*, 462 F. Supp. 1003, 1008 (N.D. Tex. 1978) (defendant's program was written to be compatible with plaintiff's format so that users could switch to the new program with minimal training).

105. Forsten, *supra* note 98, at 661.

106. *Id.* at 662; see also Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1340-45 (1987) (discussing this problem of externalities).

recurring theme in *Whelan* . . . and *Broderbund* which is absent from *Synercom*, *Plains Cotton*, and *Softklone*, seems to be an element of bad faith in the defendant's behavior."¹⁰⁷ In *Whelan* and *Broderbund* the plaintiffs established that the parties had previous contractual dealings, and that the defendants had generous access to the plaintiffs' program. In the other cases, the plaintiffs failed to prove that the defendants had such access to the programs.¹⁰⁸ Thus, where the court wants to punish the defendant but traditional copyright law permits the behavior, courts have used the look-and-feel test as a last resort to punish the defendant. If courts do indeed focus on the conduct of the defendants in reaching their decisions, "it is inappropriate and hurts those not guilty of such conduct [by not] allowing them to develop competing programs."¹⁰⁹

2. *The Look-and-Feel Doctrine Is Particularly Inappropriate for Nonreplacing, Enhancing Works*

Courts have used the look-and-feel doctrine in the audiovisual context to find nonreplacing, enhancing works infringing. The application of the doctrine to these works is particularly inappropriate. Since these works cannot function on their own, they produce no audiovisual display and thus their look and feel cannot be compared to that of the original work. The author of the enhancing work does not produce a copy of the original work, but rather copies only the idea of the original work and provides something to go with it.

The two Teddy Ruxpin cases illustrate this problem with the look-and-feel doctrine.¹¹⁰ Teddy Ruxpin, the talking toy bear, is animated by

107. Forsten, *supra* note 98, at 663.

108. *Id.* at 663-64 (access described in *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127, 1136 (N.D. Cal. 1986), and *Whelan Associates v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222, 1232 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987)). One commentator asserts that the inconsistent decisions are acceptable. He argues that each court balances the competing motives on a case-by-case basis. If the work is worth protecting, the court calls it expression. If it is not, the court will deem it idea. See Pilarski, *User Interfaces and the Idea-Expression Dichotomy, or, Are the Copyright Laws User-Friendly?*, 15 AIPLA Q.J. 325, 347-53 (1987).

109. Forsten, *supra* note 98, at 664. Forsten suggests that other types of actions, such as fraud, misappropriation, or unfair competition, would be preferable means of seeking relief from bad-faith defendants. *Id.*; see also *infra* note 179. *Lotus Development Corp. v. Paperback Software International*, 740 F. Supp. 37 (D. Mass. 1990), is also a look-and-feel case, though Judge Keeton disapproved of that phrase, see *id.* at 62-63. But *Lotus* involved copying of the *entire* user interface, not merely parts of it. Moreover, it too involved bad faith on the part of the defendant. Paperback attempted to copy exactly Lotus' 1-2-3 spreadsheet program to usurp Lotus' market, and Paperback even boasted about that fact in its literature. "[Our spreadsheet] is a feature-for-feature workalike for 1-2-3. . . . It has the same command tree. It allows the same kind of calculations, the same kind of numerical information. Everything 1-2-3 does, [our program] does." *VP-Planner Manual*, at 1.11, quoted in *Lotus*, 740 F. Supp. at 69-70. For further discussion of *Lotus*, see *infra* text accompanying notes 189-97.

110. *Worlds of Wonder, Inc. v. Veritel Learning Sys.*, 658 F. Supp. 351 (N.D. Tex. 1986) (order granting preliminary injunction); *Worlds of Wonder, Inc. v. Vector Intercontinental, Inc.*, 653 F.

motors in his eyes, nose, and mouth, a modified cassette player and speaker, and programmed cassette tapes inserted into his back. The cassette tape contains two tracks, similar to stereo cassette tapes. One track, for audio, contains songs and stories about Teddy Ruxpin. The other track, the command track, activates the motors in Teddy's face. The two tracks are synchronized so that the eyes, nose, and mouth move in a lifelike fashion as he sings and tells stories. The defendants marketed their own two-track cassette tapes to be inserted into Teddy Ruxpin, enabling Teddy to tell traditional fairy tales.¹¹¹

The audiovisual display of Teddy Ruxpin was of a talking, animated bear. Since the plaintiff copyrighted Teddy Ruxpin as an audiovisual work, it was this audiovisual display that the plaintiff protected.¹¹² If the defendants had marketed their own animated bear and tapes, the court could have compared the audiovisual display of Teddy Ruxpin with the audiovisual display of the competing bear.¹¹³ But the defendants' product was simply a cassette tape, and its audiovisual display required the machinery of Teddy Ruxpin. The look-and-feel test therefore could not adequately evaluate the two products.

The Teddy Ruxpin cases were brought against two separate defendants, one in Ohio and one in Texas. Each court found that the defendant's audiovisual display was substantially similar to the plaintiff's, based on the total concept and feel of the two works.¹¹⁴ Each court reached its decision by comparing the audiovisual effect of the defendant's tape with the audiovisual effect of the plaintiff's tape. Neither court perceived the problem that the defendant's work, being a component work, had no audiovisual display of its own.¹¹⁵ As a result, each court employed circu-

Supp. 135 (N.D. Ohio) (order granting preliminary injunction), *later proceeding* 1 U.S.P.Q.2d (BNA) 1982 (N.D. Ohio 1986) (order granting permanent injunction).

111. *Veritel*, 658 F. Supp. at 353; *Vector*, 653 F. Supp. at 137.

112. *Veritel*, 658 F. Supp. at 353; *Vector*, 653 F. Supp. at 138.

113. In fact, two California companies attempted to import and sell unauthorized copies of Teddy Ruxpin. Worlds of Wonder eventually settled a lawsuit it had filed against those companies. *Teddy Ruxpin's Maker Resolves a Lawsuit*, L.A. Times, Dec. 23, 1986, § 4, at 2, col. 5.

114. *Veritel*, 658 F. Supp. at 355 (Texas); *Vector*, 653 F. Supp. at 139-40 (Ohio).

115. Discerning copyright scholars might argue that the Teddy Ruxpin cases raise the issue of contributory infringement. Contributory infringement occurs where the defendant markets an item that permits users to infringe unlawfully the plaintiff's copyright. For example, selling a videocassette recorder (VCR) is not copying copyrighted movies, but a VCR does allow its owner to copy the copyrighted movies. Because it would be impractical to sue every individual VCR owner who copied a copyrighted movie, the law permits the movie copyright owner to sue the VCR manufacturer, who makes possible the unlawful behavior. *See Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984) (finding no contributory infringement because VCRs are capable of substantial noninfringing uses).

In the Teddy Ruxpin cases, however, the buyer is not able to create a copy of the original work (i.e., a new Teddy Ruxpin). The cassette tapes the defendants sold were not machines enabling the buyer to copy the plaintiff's bear. Indeed, buyers already owned the machine: Teddy Ruxpin himself. Although the defendants' tapes do produce a new audiovisual display, the display relies

lar reasoning in attempting to discern and compare two audiovisual displays from a single bear. Since the same bear was used to compare the defendant's and the plaintiff's tapes, the appearance, motions, gestures, and voice were obviously identical.¹¹⁶ Each court simply watched one bear perform twice and declared the displays the same.

The courts' flawed reasoning would restrict nonreplacing, enhancing works. These works will always be somewhat similar to the original in look and feel, since the nonreplacing, enhancing work is intended to "go with" the original. This compatibility, however, is precisely why the new works should be deemed noninfringing. By building on the original work, the new works minimize economic harm to the original author: one must still purchase Teddy Ruxpin to utilize the defendants' tapes.¹¹⁷

upon the original Teddy Ruxpin doll. Since one must always use the original to create the new audiovisual display, the original author's work remains valuable. In contrast, a VCR produces a new recording of the copyrighted movie, so that one no longer needs the original. Note that if the defendants sold an animated bear without tapes, this would be contributory infringement. It would allow a buyer to use the Teddy Ruxpin tapes to make an unlawful copy of Teddy Ruxpin. Of course, this would not constitute a component work, since the substantial part of the original whole was copied. See *infra* note 161.

One explanation for the Teddy Ruxpin cases is that the courts implicitly found that the tapes contributorily infringed. Although the tape itself has no audiovisual display, when placed in Teddy Ruxpin by the user it produces a new and infringing display. In fact, in a later proceeding in the Ohio Teddy Ruxpin case, the court summarily "found" contributory infringement. The court purported to derive this conclusion from the earlier opinion, where the issue was not addressed. *Worlds of Wonder, Inc. v. Vector Intercontinental, Inc.*, 1 U.S.P.Q.2d (BNA) 1982, 1983 (N.D. Ohio 1986).

This finding seems to fall outside the intended scope of contributory infringement, however. At some point, there must be a de minimis limit to contributory infringement. "Merely enabling" the user to infringe cannot be enough. Assume the *Sony* court had found that VCRs contributorily infringe. (Recall the reason the Court did not so find is that it found an exception: VCRs have substantial noninfringing uses, a finding the court of appeals had rejected. *Sony*, 464 U.S. at 428.) Is Sony's supplier of VCR parts also a contributory infringer? The parts unquestionably "enable" the home user to tape (i.e., copy) copyrighted shows. With no de minimis rule, the copyright owner of the show could sue the manufacturer of the plastic "play" button on the VCR control panel. See generally 3 NIMMER ON COPYRIGHT, *supra* note 25, § 12.04[A][2][b] (discussing the uncertain terrain of contributory infringement).

116. *Veritel*, 658 F. Supp. at 355; *Vector*, 653 F. Supp. at 139-40. Although the voice could have been different, the possible difference was limited by the capability of the speakers in Teddy's mouth. Similarly, the motions and gestures could not have changed much, since the range of motion depended on Teddy's mechanics.

117. The harm to the plaintiff from the defendants' tapes was probably minimal. Sales of the Ruxpin bear quickly declined anyway, due to competition from other talking toys. Brandt, *Worlds of Wonder: From Wall Street Charmer to Chapter 11*, BUS. WEEK, Mar. 21, 1988, at 74. Perhaps a new series of tapes would have rekindled interest. The only harm to the plaintiff was that it too sold tapes for the bear separately. See Stevenson, *The Selling of Toy "Concepts"*, N.Y. Times, Dec. 14, 1985, § 1, at 33, col. 3. These would have had to compete with the defendants' tapes.

In court, the plaintiff successfully argued that it was harmed because the defendants' tapes told stories that did not involve Teddy and his world, in a sense diluting his image. *Veritel*, 658 F. Supp. at 356. If this were truly harmful, of course, the plaintiff could still foreclose marketing of the component work by showing substantial harm. Moreover, the plaintiff might then have had a

The similar look and feel, in fact, is what allows the works to avoid harming the original author.

D. The Fair Use Doctrine

Even if the creator of a new product has directly copied the original creator's expression, the infringement may be ignored if the new use is a "fair use." The fair use doctrine allows educational and noncommercial uses. Nonetheless, even if the use is fair, the defendant still will be enjoined if the plaintiff shows he will be economically harmed by the proposed "fair" use. Thus, the fair use doctrine includes a harm exception,¹¹⁸ which focuses on the market effects of the alleged infringement.¹¹⁹ So unless the educational or beneficial use harms the demand for the original author's work, a fair use can exist.¹²⁰

Many nonreplacing, enhancing works thus may be deemed noninfringing under the fair use doctrine. In *New York Times Co. v. Roxbury Data Interface, Inc.*,¹²¹ for example, the court used the fair use doctrine to deem a nonreplacing work noninfringing. In *Roxbury*, the defendants created a personal name index to the plaintiff's *New York Times Index*. The court found the defendants' index noninfringing, applying the reasoning behind nonreplacing works. It declared that the defendants' index would "serve the public interest in the dissemination of information."¹²² Then, the court found the defendants' work dependent and nonreplacing: "Since defendants' index carries citations only to the New York Times Index, defendants' index is useless unless its user has access to the Times Index [P]urchase of defendants' index in no way supersedes the need for plaintiff's index; indeed, both the viability and the utility of the [defendants'] index depends entirely on the Times Index."¹²³ Since there was no replacing use—users would still need to

successful dilution suit under trademark law. Cf. *infra* note 179 (status as component work does not preclude actions under related doctrines).

118. See 17 U.S.C. § 107(4) (1988). Section 107 lists four factors to be considered in identifying a fair use:

(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.

119. See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 450-51 (1984) (applying a market test in a fair use case). For a discussion of the market test for infringement, see *infra* text accompanying notes 126-37.

120. For a clear application of the four-factor fair use test, see *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539 (1985) (finding no fair use where defendant published excerpts from President Ford's theretofore unreleased memoirs).

121. 434 F. Supp. 217 (D.N.J. 1977).

122. *Id.* at 221.

123. *Id.* at 223-24. The court noted that had this been a replacing use (for example, providing cites directly to the *New York Times*), the defendants' index would have infringed, because the

purchase the *Times Index*—the court found no harm to the plaintiff, and found the defendants' index noninfringing.¹²⁴

Although nonreplacing, enhancing works may often be found noninfringing under a fair use analysis, fair use cannot consistently protect these works. The courts traditionally have not applied the fair use exception to commercial works; rather, they have limited the doctrine's scope to noncommercial research and educational works. "[E]very commercial use of copyrighted material is presumptively an unfair exploitation of the monopoly privilege that belongs to the owner of the copyright"¹²⁵ Since many nonreplacing, enhancing works are commercial (particularly works of technological improvement), fair use doctrine may fail to protect many deserving, societally beneficial works that do not harm original authors. Therefore, rather than expanding the fair use doctrine to embrace commercial, nonreplacing, enhancing works, it is better to recognize nonreplacing, enhancing works explicitly and deem them noninfringing under a component works doctrine. This would avoid distorting traditional fair use doctrine, and allow courts to analyze nonreplacing, enhancing works under a better suited test.

E. The Market Test for Infringement: A Promising Approach

Courts and commentators have increasingly recognized the market test for infringement.¹²⁶ The market test is used in place of or in addition to the substantial similarity test. The market test focuses on the allegedly infringing work's economic effect upon the author of the original work.¹²⁷ If the subsequent work generates a significant demand that causes economic harm to the original author by replacing his work, then the subsequent work is deemed infringing. Copyright law employs the market test to determine infringement of various rights such as infringement of the right to display one's works¹²⁸ and to perform one's

defendants' work would be "in direct competition with the Times Index." *Id.* at 222. In other words, the new index could have stood on its own, and sales of the defendants' index would have hurt sales of the plaintiff's index.

124. *Id.* at 224.

125. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 451 (1984).

126. See, e.g., Goldstein, *supra* note 14, at 217, 232-33; Nimmer & Kranthaus, *supra* note 14, at 37-39; Pilarski, *supra* note 108, at 351-52; Note, *supra* note 34, at 1526-28 (some courts have identified derivative works by examining impact on market for original work); Note, *supra* note 5, at 462-64 (proposing an economic test for determining infringement); Comment, *Does Form Follow Function? The Idea/Expression Dichotomy in Copyright Protection of Computer Software*, 35 UCLA L. REV. 723, 776-77 (1988) (authored by Peter G. Spivack) (proposing a market test in the remedy stage of infringement determination). But cf. Ladd, *The Harm of the Concept of Harm in Copyright*, 30 J. COPYRIGHT SOC'Y 421 (1983) (basing copyright protection on a showing of economic harm will cause authors to forego producing risky works).

127. Note, *supra* note 34, at 1527.

128. Cf. H.R. REP. NO. 94-1476, *supra* note 13, at 80 (Congress forbade display of copyrighted

works,¹²⁹ as well as to determine fair use.¹³⁰ Here, however, we will focus on the market test for infringement with respect to derivative works.¹³¹

In *West Publishing Co. v. Mead Data Central, Inc.*,¹³² the court found infringement by using a market test.¹³³ West publishes legal case reporters containing cases in a certain order, consecutively page-numbered. The defendant markets LEXIS, an on-line legal computer database. LEXIS had already provided its subscribers with each case's starting page number in the West reporter, and then it introduced a system called the LEXIS Star Pagination Feature. This system allowed LEXIS users to obtain the exact West reporter page number for every LEXIS page of the case. Applying the market test, the court found Star Pagination infringing, since it replaced West's reporters:

With [defendant]'s star pagination, consumers would no longer need to purchase West's reporters to get every aspect of West's arrangement. . . . [Thus] the LEXIS star pagination feature would adversely affect West's market position. "[A] use that supplants any part of the normal market for a copyrighted work would ordinarily be considered an infringement."¹³⁴

Where the subsequent work eliminates the need for the original work, there is infringement, since the original author's incentive is destroyed. Thus, since copyright law seeks to promote authors' incentives, the market test achieves the proper result. LEXIS was allowed to continue using West's first-page numbers because, in contrast to Star Pagination, they do not allow a researcher to avoid using West's reporter entirely. In other words, they are a nonreplacing use; they do not harm the original author's incentive.

A reexamination of *Vault Corp. v. Quaid Software, Ltd.*¹³⁵ also demonstrates the advantage of the market test. Recall that under the sub-

work "in such a way that the copyright owner's market for reproduction and distribution of copies would be affected."), reprinted in 1976 U.S. CODE CONG. & ADMIN. NEWS 5659, 5694.

129. See *Teleprompter Corp. v. Columbia Broadcasting Sys., Inc.*, 415 U.S. 394, 410-13 (1974) (analyzing the market effects of reception and retransmission of certain broadcast signals, and determining whether they amount to "performance" and thus infringement).

130. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984) (both majority and dissent applying market test to assess economic harm from VCR manufacture and sales). In the first United States fair use case, *Folsom v. Marsh*, 9 F. Cas. 342, 344-45 (C.C.D. Mass. 1841) (No. 4,901), Justice Story examined the market effects of the plaintiff's work, denouncing uses that "supersede the use of the original." *Id.* at 345.

131. See generally Goldstein, *supra* note 14, at 217 (The right to prepare derivative works begins when "the contribution of independent expression . . . creates a new work for a different market.").

132. 799 F.2d 1219 (8th Cir. 1986).

133. See *id.* at 1227-28.

134. *Id.* at 1228 (quoting S. REP. NO. 473, 94th Cong., 1st Sess. 65 (1975)).

135. 847 F.2d 255 (5th Cir. 1988).

stantial similarity test, the court found that the defendant's unlocking program did not infringe the plaintiff's locking program.¹³⁶ Under the market test, the defendant's unlocking program would reduce any demand for the plaintiff's locking program; the unlocking program would thereby constitute an infringing work. The market test therefore protects the original author's incentive, restoring the constitutional balance between promoting new works and promoting public access to knowledge. As Professor Goldstein asserted: "More explicit and systematic attention to the economics of copyright's incentive system will produce better legislative and judicial decisions on derivative rights and derivative works."¹³⁷

F. Special Protection for Nonreplacing, Enhancing Computer Program Works

In 1976, Congress created the National Commission On New Technological Uses of Copyright (CONTU), to study the use of copyright in conjunction with computers and to recommend appropriate changes in copyright law. In 1978, CONTU produced its Final Report,¹³⁸ which, with one minor modification,¹³⁹ Congress enacted into law as section 117 of the 1976 Copyright Act. Section 117 states that

it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:

(1) that such new a [sic] copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner . . .¹⁴⁰

This section deals exclusively with computer programs and establishes a special infringement exception. Arguably, section 117 might protect nonreplacing, enhancing computer programs. Under section 117, although one cannot make a copy or an adaptation of a book or a movie, one can make an adaptation or copy of a computer program. This might allow computer program component works. Imagine, for example, a program that checks for spelling errors. The spelling program is

136. See *supra* text accompanying notes 65-67.

137. Goldstein, *supra* note 14, at 252. The market test, while a useful doctrine, alone would not suffice. A work that completely copied a prior work could still pass the market test if its effect on the original work was minor. Yet it would not add anything to the public wealth of knowledge, as required by component works doctrine.

138. NATIONAL COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT (1979).

139. CONTU recommended that the section 117 rights apply to the "rightful possessor" of the computer program. *Id.* at 12. Congress changed this to "owner." See 17 U.S.C. § 117 (1988).

140. 17 U.S.C. § 117 (1988). Note that the last phrase "used in no other manner" is to protect the interests of the original copyright holder, and means the adapter is forbidden from selling or otherwise transferring the adaptation. See *infra* text accompanying note 150.

designed to combine with a word processing program to produce an adapted word processing program. Since adaptations of computer programs are permitted, there is no infringement and the component work is allowed.¹⁴¹ *Nintendo of America, Inc. v. Lewis Galoob Toys, Inc.*¹⁴² illustrates the issue of component works under section 117. Nintendo makes video game cartridges to be inserted into the Nintendo computer. Galoob invented a computer chip that the home user can attach to the Nintendo cartridge before inserting the cartridge into the computer. The computer chip, called the "Game Genie," allows the video game user to provide his video game character with more lives or greater abilities, such as being able to jump higher or move faster. The Game Genie is clearly a nonreplacing, enhancing work: it is useless by itself and is dependent on the Nintendo cartridge. To use the Game Genie, the user must purchase a Nintendo cartridge and the Nintendo computer.

A court could have ruled that when one combines the Game Genie and the Nintendo cartridge, an adaptation is created. Even though it is unlawful to create an adaptation or derivative of someone else's work,¹⁴³ the Game Genie would fall under the section 117 exception for computer program adaptations.

Nintendo argued that Game Genie did not fall under section 117, because that section only allows adaptations essential to the use of the program. Since the game worked without the Game Genie, the Game Genie could not be "essential." This reading is too narrow, however. The CONTU Final Report, enacted almost verbatim and without debate, should be considered persuasive in interpreting section 117.¹⁴⁴ The Final Report states that features not present at the time of purchase can none-

141. A simple example explains why a person can copy a computer program (that she already owns) for her personal use, but can never copy a book, even for personal use. Unlike a book, a computer program can easily be destroyed or accidentally erased. A backup copy therefore is essential to preserve access to the program. On the other hand, a book is a solid object. While a book too could become damaged or lost, the owner has far less ability to protect a computer program.

142. No. 90-15936 (9th Cir. Jan. 24, 1991) (1991 U.S. App. LEXIS 1160) (affirming grant of preliminary injunction). Originally, Nintendo sought a temporary restraining order against Galoob, and it was denied. *Nintendo Denied in Court*, N.Y. Times, June 12, 1990, § D, at 20, col. 5. On June 29, 1990, however, Nintendo won a preliminary injunction. *Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc.*, No. CV90-1586 (N.D. Cal. June 29, 1990); see also Motamedi, *Galoob Loses Ruling on Video Game Device*, San Francisco Chron., June 30, 1990, at B1.

This Comment uses *Nintendo* to highlight certain copyright issues, and does not rely on the holdings in the court's unpublished opinion.

143. 17 U.S.C. § 106 (1988).

144. See, e.g., *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1252 (3d Cir. 1983) (Congress "wrote into the law the majority's recommendations almost verbatim."), cert. dismissed, 464 U.S. 1033 (1984); H.R. REP. NO. 1307, 96th Cong., 2d Sess., pt. 1, at 23, reprinted in 1980 U.S. CODE CONG. & ADMIN. NEWS 6460, 6482 (Section 117 "embodies the recommendations of [CONTU] with respect to clarifying the law of copyright of computer software.").

theless be added to the purchased program.¹⁴⁵ The term "essential" in the statute likely means essential to the buyer's utilization of the program. The buyer's desires should be the issue, and not the intention of the seller of the program.¹⁴⁶

Indeed, courts have construed the computer program user's section 117 adaptation rights broadly: "[T]he weight of the more recent cases and scholarly commentary is on the side of reading [section] 117 broadly, in conformity with the apparent intent of [CONTU]."¹⁴⁷ Moreover, because ordinary purchasers lack computer expertise, they can purchase equipment enabling them to adapt their computer programs for their desired uses.¹⁴⁸ Such equipment for sale to nonexpert purchasers is called a third-party program. The Game Gemie is such a third-party program since it provides the ability to make desired adaptations.¹⁴⁹

Another potential limitation of section 117 is that it allows only personal use of adaptations, and not sale or transfer of the adaptation.¹⁵⁰ Thus, a third party cannot sell the adaptation itself. It can only sell the "tools" to make adaptations. This distinction is perfectly consistent with the proposed component works doctrine. The adaptation itself is not a nonreplacing, enhancing work, for the adaptation would be a complete program—like the word processing program adapted with a program that checks spelling. For example, the Game Gemie and the Nintendo cartridge constitute an adaptation when they work together as an integrated computer game. The "tools," on the other hand, are dependent upon the original program and cannot be used without it. Thus, section 117 allows nonreplacing, enhancing works such as the Game Gemie to be marketed separately.

The preceding discussion, however, only analyzes the potential pro-

145. NATIONAL COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, *supra* note 138, at 13-14.

146. See, e.g., *Vault Corp. v. Quaid Software, Ltd.*, 847 F.2d 255, 261 (5th Cir. 1988) ("Section 117(1) contains no language to suggest that the copy it permits must be employed for a use intended by the copyright owner, and, absent clear congressional guidance to the contrary, we refuse to read such limiting language into this exception.").

147. *Foresight Resources Corp. v. Pfortmiller*, 719 F. Supp. 1006, 1009-10 (D. Kan. 1989); see also *RAV Communications v. Phillipp Bros.*, 1987-1988 Copyright L. Dec. (CCH) ¶ 26,263, at 21,782 (S.D.N.Y. 1988) (noting that section 117 should receive "a broader reading where the owner of a copy of a computer program adapts it for his own internal use").

148. Many computer program owners are not computer programmers and "lack the skills and equipment necessary to make adaptations to existing computer programs." *Foresight*, 719 F. Supp. at 1010 (quoting Stern, *Section 117 of the Copyright Act: Charter of Software Users' Rights or an Illusory Promise?*, 7 W. NEW ENG. L. REV. 459, 468 (1985)).

149. A related issue is whether the user can make an adaptation to the computer code only, or whether she can make an adaptation to the output (i.e., the screen display). The *Foresight* court held that, consistent with CONTU's intent, the program owner could employ third parties' programs to add features to the program that change the screen display. 719 F. Supp. at 1009.

150. See *supra* text accompanying note 140 (reprinting statute).

tection section 117 might provide to nonreplacing, enhancing works. The courts have not as yet ruled on whether section 117 will apply as suggested here. In addition, even if section 117 were interpreted to protect nonreplacing, enhancing works, it protects such works only in the computer context. Thus, although existing law may protect some computer program component works, it is hazardous to rely on speculation as to what courts might do. Moreover, it would be preferable to provide protection to nonreplacing, enhancing works on a broader spectrum, rather than relying on this narrow exception. This Comment will now address directly why separate recognition of component works is necessary.

III

PROPOSAL: THE COMPONENT WORKS DOCTRINE AND THE MARKET TEST FOR INFRINGEMENT

Part II demonstrated that the existing copyright doctrines do not adequately protect nonreplacing, enhancing works, even though the goals underlying copyright law call for protection of such works. Part III proposes a doctrine by which courts can provide this needed protection. First, this Part will set out the four-part definition of component works. Then, it will examine how the market test for infringement can determine substantial harm. Finally, this Part will argue that recognizing component works will best serve the purposes behind copyright law.

A. Component Works Are Defined by Four Characteristics

The fundamental purpose of copyright law is to further two competing goals: to protect authors' incentives, and to expand the public's realm of knowledge. Component works are justified in light of this dichotomy. Component works must (1) depend on the original work, (2) add value to the original, but (3) not replace the original work, (4) nor cause substantial economic harm to the original author, as measured by the market test for infringement.

1. Component Works Are Dependent

A defining feature of a component work is that it is designed to go with someone else's original work. It is dependent upon the original work, and cannot function on its own. As we have seen, an example is a computer chip made for insertion into a particular video game, to speed up the action.¹⁵¹ Another example is an answer sheet designed to go

151. For example, the computer chip in *Midway Manufacturing Co. v. Arctic International, Inc.*, 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert denied*, 464 U.S. 823 (1983), could have been deemed a component work.

with someone else's published test questions.¹⁵²

2. *Component Works Add to the Public Wealth of Knowledge*

Further, a component work must not be an exact copy of some part of the original work. Nor, in the case of an audiovisual work, may a component work act to create an identical audiovisual image. It must add something.¹⁵³ It must enhance the original work's utility. This ensures some advancement of the public knowledge—the underpinning upon which the concept of component works rests.

Professor Raymond Nimmer and Patricia Krauthaus distinguish between infringing copies and infringing derivatives.¹⁵⁴ They consider the twin opposing objectives of copyright law, and conclude that “the copyright holder's interest is offset by policies to maintain free use and access to aspects of a work that are or become central to the field of technology.”¹⁵⁵ Yet the copyright holder's interest is only offset if there is some public benefit from the infringing use. In other words, the second party must add something to the original work,¹⁵⁶ which is a “value-added use.”¹⁵⁷ Merely to copy, on the other hand, does not add anything to the public knowledge.¹⁵⁸ Thus, “[t]he second party's interests do not justify comprehensive, literal copying, but rather productive or developmental use.”¹⁵⁹ A derivative work, then, is superior to a copy, or pirated, work. Unlike the commercial pirate, the second developer contributes to the new product. More significantly, a component work is *better* than a

152. See *Harcourt, Brace & World, Inc. v. Graphic Controls Corp.*, 329 F. Supp. 517 (S.D.N.Y. 1971) (psychological test answer sheets with blank spaces for the answers could have been deemed component works).

153. For example, consider a word processing program that includes a program to check spelling. Another author cannot simply duplicate that program and call it a component work on the grounds that it is dependent on the word processing program, for it would not add anything. A better spelling program could be sold separately as a component work, however. See Nimmer & Krauthaus, *supra* note 14, at 29-30 (discussing the concept of “value-added use”).

154. *Id.* at 38-39. More precisely, Nimmer and Krauthaus refer to “would-be” infringing derivatives (i.e., works that would infringe but for this “value-added” idea).

155. *Id.* at 38.

156. *Id.* at 16; see also Chafee, *supra* note 53, at 514 (“There comes a point where the use of material is so close as not to give the public anything really new. At that point, the ideal of encouraging independent creation ceases to operate.”).

157. Nimmer & Krauthaus, *supra* note 14, at 13. Copyright law protects value-added use in other contexts, such as fair use. See, e.g., *Rosemont Enters. v. Random House, Inc.*, 366 F.2d 303, 307 (2d Cir. 1966) (requiring a public benefit from the allegedly infringing work before deeming it a fair use), *cert. denied*, 385 U.S. 1009 (1967); see also *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 478 (1984) (Blackmun, J., dissenting) (requiring a fair use to be a “productive” one).

158. Nimmer & Krauthaus, *supra* note 14, at 21, 29. “Value-added use is not equivalent to piracy. The pirate merely duplicates the program for commercial gain. . . . In contrast, the person who creatively enhances the original or uses aspects to develop a new product participates . . . in a comprehensive approach to promoting innovation.” *Id.* at 29.

159. *Id.* at 39.

copy or a derivative work. In a value-added use, a subsequent developer adds her own innovation to prior work. This, by definition, is exactly what happens in a component work. Moreover, unlike mere value-added derivative use, the nonreplacing use will not render the original author's work obsolete. Thus, if one accepts the premise that value-added works should be deemed noninfringing, regardless of whether the new work replaces the original, a component work is even more acceptable. A component work has all the societal benefits of a value-added work, without the harm to original authors that is likely with ordinary replacing, value-added works.

3. *Component Works Are Nonreplacing*

Another central feature of a component work is that it does not replace or destroy the original work. Simply stated, such works do not eliminate the public's need for the original work. One example of a replacing work is a "clone" computer program—a cheaper, unauthorized version of an existing program, written for a different computer operating system.¹⁶⁰ This program, though for a different system, could ultimately cut into the market share of the original program: if the public begins to buy the new system to use the new program, sales of the old system will decrease, as will the demand for its programs. This is a replacing use. Since component works are ultimately justified on the delicate balance between the public interest in knowledge and the minimization of economic harm to original authors, component works are defined to exclude replacing uses.¹⁶¹ In sum, since component works are dependent on the original work and are nonreplacing, they do not typically harm the original authors' incentives, allowing copyright law to pursue its other goal: to increase the realm of public knowledge.¹⁶²

160. For an example of a derivative program that should not be considered an allowable component work, see *Q-Co Industries, Inc. v. Hoffman*, 625 F. Supp. 608 (S.D.N.Y. 1985). In *Q-Co*, the defendant developed a teleprompter program for IBM's personal computer based on the plaintiff's teleprompter program for Atari's computer. This is not a component work, since the defendant's program eliminated the need for the plaintiff's program, and could operate independently.

161. Note that I do not use "replacing" literally. If the purported component is really the substantial part of the original whole, then it is deemed to "replace" the original work. For instance, where a second author makes an infringing computer and alleges that the computer is the "component" for the original computer's software, it is clear that the component is really the software, and the computer is the substantial part of the work. See *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983), *cert. dismissed*, 464 U.S. 1033 (1984). Another example is a song. Both the music and the lyrics are substantial parts, so one could not market new words to a song as a component work. Or, consider a supplement for a case reporter. One could not market competing supplements and call them component works, for the supplement really stands on its own. One does not really need the original reporter to use the supplement.

162. Courts have decided cases by following explicitly the constitutional balance. For instance, the Ninth Circuit permitted a defendant to make a subsequent work, on grounds that restricting him "would effect the very opposite of the [Copyright Act]'s purpose." *Warner Bros. Pictures, Inc. v.*

4. *Component Works Do Not Cause Substantial Harm to Original Authors*

In general, the approach to component works discussed above will benefit both original authors and component works producers.¹⁶³ Nonetheless, the potential for harm to the original author, both in the component works market and in the original market, remains. In the component works market, the original author may be harmed because without a component works doctrine, he might have the exclusive right to a "helper" program, such as a program that checks spelling to go with his word processing program. Thus the existence of the new program may hinder sales of his own "helper" program.¹⁶⁴

Yet the gain from enhanced sales of his word processing program may overcome the potential loss in sales of his "helper" program. Or if his own "helper" program is better, sales of the new program may not be significant. Moreover, the original author could incorporate his own "helper" program into his word processing program, so that anyone buying the word processing program would already have a "helper" program.¹⁶⁵ Additionally, the component works doctrine also benefits the

Columbia Broadcasting Sys., Inc., 216 F.2d 945, 950 (9th Cir. 1954), *cert. denied*, 348 U.S. 971 (1955).

163. A potential criticism of the proposed component works doctrine is that since the component work by definition does not harm the original author, the original author would not need to enjoin its distribution. If this were true, no separate exception would be necessary. However, without the proposed doctrine, the original author could extort a license agreement from the component author, even if the component work benefited the original author. Given the disparate and inconsistent treatment component works have traditionally received, the threat of a lawsuit is very real, as it might succeed, particularly in the technology field. Since new works require lead time and pecuniary investment, would-be authors of improvements will be reluctant to develop component works if they can rely only upon the goodwill of the original author not to seek an injunction. Moreover, since the time and money will have been invested already, and the component author would need to market the new product to recoup the investment, the original author will have additional leverage to force an unfair licensing agreement upon developers.

Alternatively, if the law required component authors to acquire a license before marketing their work, then the lack of harm to the original author would become irrelevant, for the original authors would already have extorted a license. Indeed, to force authors of improvements first to acquire licenses, the original authors would have to sue all those who do not, to make the threat credible. Accordingly, a component works exception is necessary, because even harmless works would engender litigation.

Additionally, not all component works are beneficial to the original owners. Some works may have a neutral or slightly negative effect. In such cases, the problems delineated above will become more acute, and the need for a component works exception will increase correspondingly. In other words, the fact that component works do not substantially harm original authors will preclude neither the possibility of litigation, nor the resulting need for a separate component works exception.

164. *But see* New York Times Co. v. Roxbury Data Interface, Inc., 434 F. Supp. 217, 224 (D.N.J. 1977) (rejecting the argument that since the plaintiff could have come up with the work on its own, there exists some harm to the plaintiff).

165. Note that if component works were disallowed, the original author, having established an industry standard, could suddenly become the exclusive producer of components compatible with the industry standard. Menell, *supra* note 106, at 1344 ("By tying a product standard to

original author (as well as the component work author) by clarifying the nebulous "derivative works" test, thereby reducing uncertainty costs.¹⁶⁶

In any event, protection of the original author's work should probably not extend to the component works market if the component work has no substantially harmful effect on the original product. In that situation, his incentive to create is not impaired. Moreover, giving him monopoly power is likely to discourage further development.

On the other hand, component works that substantially harm the original author's product should be prohibited.¹⁶⁷ If the component work causes substantial economic harm to the original author, the new program should be prohibited as infringing.¹⁶⁸ But it should be noted that even a mildly negative effect on the original author is acceptable. The courts have been clear in emphasizing the public interest goal of copyright law, even at the expense of authors' incentives. That is, "reward to the owner [is] a secondary consideration."¹⁶⁹ Indeed, the Supreme Court has asserted that "[t]he sole interest of the United States and the primary object in conferring the monopoly lie in the general benefits derived by the public from the labors of authors."¹⁷⁰ Accordingly, as the public interest goal is the primary one, a slightly negative effect on authors' incentives is justified, if not common.

If the developer of the original [product] spent millions of dollars to create and market it, should an enhancer then be permitted to deprive the developer of some of the fruits of his or her labor by marketing a competing, possibly superior product that builds upon the original developer's own substantial investment? However our sense of justice might lead us to protect the original developer's investment, the open competition

complementary products, a monopolist can effectively discourage other firms from attempting to improve such complementary products This can delay socially valuable innovations").

166. See Hazen, *supra* note 10, at 128-29. A component works doctrine also would clarify the parties' rights and avoid needless harassment or threat of litigation. See *Durham Indus., Inc. v. Tomy Corp.*, 630 F.2d 905, 910-11 (2d Cir. 1980) (discussing threat of harassment arising in confusion over scope of derivative rights and licensing). This would also clarify the licensing situation. Licensees would know not to rely upon exclusive agreements to produce what would be a component work. Yet because the plaintiff would still have protection under the trademark laws, see *infra* note 179, a component works author could not use the plaintiff's logo, for instance. Thus, the plaintiff still would have something profitable to license.

167. "Substantial harm" is defined here as harm to the original author greater than the mildly negative effects allowed by the Supreme Court in its effort to encourage innovation.

168. See *infra* text accompanying notes 176-79.

169. *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 158 (1948).

170. *Id.* (quoting *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1947)); see also *Rosemont Enters. v. Random House, Inc.*, 366 F.2d 303, 307 (2d Cir. 1966) (To serve "the constitutional purpose in granting copyright protection in the first instance, to wit, 'To Promote the Progress of Science and the Useful Arts[.],' U.S. CONST. art 1 § 8," courts "must occasionally subordinate the copyright holder's interest in a maximum financial return to the greater public interest in the development of art, science and industry." (citation omitted)) (quoting *Berlin v. E.C. Publications, Inc.*, 329 F.2d 541, 544 (2d Cir. 1964)), *cert. denied*, 385 U.S. 1009 (1967).

described in the question has been commonplace¹⁷¹

Since, by definition, component works are nonreplacing and are dependent on the original work, they usually will not cause economic harm to the original author. Occasionally, however, a component work may cause economic harm to the original author.¹⁷² In each component works case, the owner of a copyright to the original work should be permitted to defeat the presumption of noninfringement with a showing of substantial harm. The best way to do this, under existing law, would be to employ the market test for infringement, which contains a built-in harm inquiry.

a. Substantial Economic Harm Can Be Measured by the Market Test for Infringement

By applying the market test in conjunction with the definition of component works, courts will be able to meet the goals of the copyright law while protecting original authors' incentives.¹⁷³ The market test is desirable since it already focuses on many factors emphasized in the definition of component works. First, the market test focuses on the subsequent work's replacement of the original work. Second, the market test considers whether the original author suffers economic harm. In *Vault Corp. v. Quaid Software, Ltd.*,¹⁷⁴ for example, the harm to the locking program's author would mandate a finding of infringement. Third, one commentator defines derivatives as works that "serve markets that differ from the market in which the original was first introduced."¹⁷⁵ Even under this version of the market test, component works are noninfringing. Component works do not serve different markets, since by definition they function only when used with the original work. Component works expand the market share, but within the market carved out by the original.

By any criterion, therefore, the market test for infringement permits component works to stand, even without recognizing them as a separate category. Although under existing law courts may implicitly recognize component works and find them noninfringing under a market test, it would be better to recognize them explicitly. Explicit recognition would help clarify authors' expectations. Further, many courts have not employed the market test. But explicit recognition of component works

171. Gemignani, *supra* note 5, at 409 (footnote omitted) (arguing that this "open competition" should be extended to the software context).

172. See *infra* text accompanying notes 176-79.

173. The market test alone would not suffice. A work that completely copied a prior work could still pass the market test if its effect on the original work was minor. Yet it would not add anything to the public wealth of knowledge, as required by component works doctrine.

174. 847 F.2d 255 (5th Cir. 1988); see *supra* text accompanying notes 65-67.

175. Goldstein, *supra* note 14, at 217.

would encourage or require use of the compatible market test. Finally, explicit recognition will lead to more well-reasoned, predictable opinions.

b. An Example of How the Market Test Will Measure Substantial Harm

By applying the component works doctrine with the market test, even when the original author has proven a negative impact he must make a showing of substantial harm to overcome society's interest in the dissemination of knowledge.¹⁷⁶ An example of substantial harm is *Hubco Data Products Corp. v. Management Assistance, Inc.*¹⁷⁷ Management Assistance, Inc. (MAI) marketed a series of personal computers. Each model had the same memory capability, but the less expensive models contained chips that limited the available memory. Hubco marketed a software program that could neutralize the memory-limiting chip, allowing the less expensive model to realize the same memory as the top-of-the-line model.¹⁷⁸ This component work computer program might enhance sales of MAI's computer. At the same time, it would decrease sales of MAI's more expensive model. If the decrease in sales of the expensive model substantially outweighed the increase in sales of the cheaper model, then the component work would infringe.

As noted previously, however, if the component work is truly dependent, the economic harm usually will be insubstantial. Consider an author who writes a different last chapter for another author's well-known mystery novel. Under the component works doctrine, the subsequent author can only market that new chapter, and not the rest of the book. Thus, the public will need the original to make any sense out of the component work, and sales of the original work should not suffer.¹⁷⁹ To allow component works would save many previously banned works that are not harmful. Thus, to deem component works noninfringing would not create an empty category. Indeed, recognition of the compo-

176. See Note, *supra* note 34, at 1551 (applying a fair use/harm exception to derivative works).

177. 219 U.S.P.Q. (BNA) 450 (D. Idaho 1983).

178. *Id.* at 452. The court issued a preliminary injunction restraining Hubco from using its method of neutralizing the memory-limiting chip. *Id.* at 457-58.

179. Note, however, that status as a component work does not exempt the work from the trademark, unfair competition, patent, and trade secret laws. For instance, if this subsequent author pretended the new last chapter was in fact written by the original author, the subsequent author would be liable under section 43 of the Lanham Act for "passing off." See 60 Stat. 427, 441 (1946) (codified at 15 U.S.C. § 1125(a)). Consider *New York Times Co. v. Roxbury Data Interface, Inc.*, 434 F. Supp. 217 (D.N.J. 1977), discussed at *supra* text accompanying notes 121-24. The plaintiff published the *New York Times Index*. The defendant published an index to the plaintiff's index, called the *Personal Name Index to 'The New York Times Index.'* To avoid liability for "passing off," separate from any copyright liability, the defendant's index included a disclaimer to show it did not come from the plaintiff: "An independent work not published or approved by The New York Times." *Id.* at 226 (emphasis omitted). Thus, without the disclaimer, this component work might have been subject to Lanham Act liability.

nent works doctrine would protect component works by presuming non-infringement. This presumption may be rebutted, however, if the original author can prove that the component work substantially harms the profitability of the original work.

In sum, the component works doctrine has four parts. To be a component work, the work must be dependent, nonreplacing, add something to the public knowledge, and avoid harming the original author's incentives, as measured by the market test.

B. Illustrations: Why the Component Works Doctrine Furthers Copyright Law's Essential Goals

As this Comment has emphasized, copyright law is designed to balance the competing goals of promoting authors' incentives and protecting the public's access to new works.¹⁸⁰ Thus, if *A* develops a product that is subsequently copied and sold by *B*, *B*'s work is deemed an infringement. Clearly, if the author's work is competing for sales with the infringing copy, the author suffers economic harm with every copy the infringer sells.¹⁸¹ As a result, sales of the unauthorized copy may be enjoined,¹⁸² even though an injunction will foreclose public access to *B*'s work. In such a case, the harm to *A*'s incentive (his profit motive) outweighs the public's interest in access to *B*'s work.

On the other hand, if *B* produces a work that has either a neutral or positive effect on the sales of *A*'s product, distribution of *B*'s work should be permitted. *A*'s incentive to create has not diminished, and the public store of knowledge has increased. In other words, the two goals become compatible in component works. As the Supreme Court has stated:

The purpose of copyright is to create incentives for creative effort. . . . But a use that has no demonstrable effect upon the potential market for, or the value of, the copyrighted work need not be prohibited in order to protect the author's incentive to create. The prohibition of such . . . uses would merely inhibit access to ideas without any countervailing benefit.¹⁸³

The component works doctrine promotes both goals of copyright

180. See *supra* text accompanying notes 8-11.

181. Indeed, the infringer, with little or no development costs, may be able to offer the work at a drastically lower price, reducing sales of the original product even further.

182. 17 U.S.C. § 502(a) (1988) ("Any court having jurisdiction of a civil action arising under this title may . . . grant temporary and final injunctions on such terms as it may deem reasonable to prevent or restrain infringement of a copyright.").

183. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 450-51 (1984). Although the Court applied this reasoning to noncommercial activity, that fact does not preclude its applicability to commercial activity. The only difference between commercial and noncommercial activity in this context is that in the former case, the developer of the component work experiences financial gain. This difference is irrelevant to the inquiry into whether the market for the original work suffered harm.

law on precisely this rationale. For example, suppose *A* creates a word processing program, *WriteWell*. *B* then develops a spelling checker, *Spell'R*, that is based on and designed to be used with *WriteWell*. *Spell'R* is a component work. First, *Spell'R* is dependent upon *WriteWell*, and cannot function on its own, since buying *Spell'R* will not allow the purchaser to do word processing. Second, *Spell'R* enhances the original word processing program. Using both products, the consumer can create documents and check the spelling. *Spell'R* does not replace *WriteWell* or make it obsolete, and a sale of *Spell'R* does not prevent a sale of *WriteWell*. On the contrary, *Spell'R* makes *WriteWell* more marketable, since the combined programs will result in a more effective word processing system. Sales of *WriteWell* would likely increase, decreasing the potential for economic harm to *WriteWell*'s author. *WriteWell*'s author's incentive to create still remains, and the public ability to do word processing has expanded. Thus, the conjunction of the original and component works helps meet both of copyright law's goals.

Additionally, the idea-expression distinction supports component works. It has long been settled that an idea, in contrast to expression of an idea, is not copyrightable.¹⁸⁴ In other words, everyone is free to copy an idea. With Teddy Ruxpin, for instance, the defendant merely copied and capitalized on the idea of a talking bear—he did not attempt to market his own competing expression of the bear. Had the defendant sold a talking bear to go with the tapes, he would have been copying the plaintiff's expression. Had he sold a bear, however, his work would no longer have been dependent upon the original, and would no longer have been a component work. Audiovisual component works thus do not infringe.

Recall *Midway Manufacturing Co. v. Artic International, Inc.*,¹⁸⁵ where the defendant marketed a computer chip to be placed inside the plaintiff's video game. The expression is the audiovisual display of the video game. A computer chip, by itself, cannot produce an audiovisual display at all. It thus is not expression. The computer chip copies the same idea, of course, but that is permissible. Since component works cannot copy the substantial part of the original, and cannot produce a display without the original work, the original work itself must always produce the audiovisual display. Only the idea has been copied. The expression—the display—has not. In addition, as the defendant's work copies the plaintiff's idea but not the plaintiff's expression, the compo-

184. See *supra* notes 13-18 and accompanying text; see, e.g., *Whelan Assocs. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1234-35 (3d Cir. 1986) (providing a brief history of the dichotomy in copyright law between idea and expression), *cert. denied*, 479 U.S. 1031 (1987).

185. 547 F. Supp. 999 (N.D. Ill. 1982) (order granting preliminary injunction), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 464 U.S. 823 (1983); see *supra* text accompanying notes 61-63; see also *infra* text accompanying notes 198-203.

nent work is insulated from the look-and-feel doctrine. The look-and-feel doctrine, while it attempts to protect the feel of a work, claims to respect the rule that ideas are not protected.

Interpreting the component work as a copy of the idea would pose little difficulty. Indeed, the malleability of the line between idea and expression is what makes the issue so complex.¹⁸⁶ As Judge Learned Hand observed: "Obviously, no principle can be stated as to when an imitator has gone beyond copying the 'idea,' and has borrowed its 'expression.' Decisions must therefore inevitably be *ad hoc*."¹⁸⁷ Courts are free to define component works as copying only the idea of the original, the original itself producing the expression—the audiovisual display. As the Ninth Circuit observed:

The critical distinction between "idea" and "expression" is difficult to draw. . . . At least in close cases, one may suspect, the classification the court selects may simply state the result reached rather than the reason for it. . . . The guiding consideration in drawing the line is the preservation of the balance between competition and protection reflected in the patent and copyright laws.¹⁸⁸

Thus, not only are the courts free to view component works as copying only ideas, this result is mandated by the rationale behind the determination: to minimize harm to authors' incentive while maximizing the public's interest in knowledge. Since the component work is justified in light of this balance between competition and protection, "idea" must be defined to include component works. Accordingly, component works would be deemed noninfringing under all tests.

Indeed, recognizing component works would not constitute a drastic departure from copyright law, but a step in the right direction—implicitly approved by copyright decisions. In the landmark case of *Lotus Development Corp. v. Paperback Software International*,¹⁸⁹ Judge Keeton recognized the possibility of component works. In this case Lotus sued because Paperback's new spreadsheet program resembled Lotus' best-selling *Lotus 1-2-3* spreadsheet program. *Lotus 1-2-3* dominates the spreadsheet market.¹⁹⁰ In other words, people only knew one

186. One commentator aptly described the idea-expression distinction's elusiveness by quoting W.B. Yeats: "O body swayed to music, O brightening glance,/ How can we know the dancer from the dance?" Comment, *supra* note 45, at 293 n.81 (quoting W. B. YEATS, *Among School Children*, in W.B. YEATS: THE POEMS 217 (R. Finneran ed. 1983)).

187. *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*, 274 F.2d 487, 489 (2d Cir. 1960); see Nimmer & Krauthaus, *supra* note 14, at 41 (observing that in audiovisual cases the courts manipulate the idea-expression distinction in order to achieve the proper balance between the interests of original and subsequent authors).

188. *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971) (citations omitted).

189. 740 F. Supp. 37 (D. Mass. 1990).

190. *Id.* at 78-79. Paperback's "industry standard" argument implied that *Lotus 1-2-3* was

way to use a spreadsheet—the *Lotus 1-2-3* way. Thus, Paperback concluded, all new spreadsheet programs *must* resemble *Lotus 1-2-3*. Judge Keeton disagreed, finding Paperback's spreadsheet substantially similar and therefore infringing. Paperback, rather than copying, should have sought a license, or tried to sell its ideas to Lotus.¹⁹¹

Judge Keeton offered a third alternative, however: Paperback could have marketed a component work, or what he called an "add-in" program.¹⁹² He defined an add-in as "a program designed to be used in conjunction with another program."¹⁹³ It would not be "a stand-alone product that completely replaces" the plaintiff's program, as did Paperback's spreadsheet.¹⁹⁴ By way of example, Judge Keeton observed that "HAL is a program that is used in conjunction with 1-2-3—a user must have both HAL and 1-2-3—which allows a 1-2-3 user to enter commands in simple sentences . . . rather than by selecting commands from the menus."¹⁹⁵ This dependent, nonreplacing use exactly fits the proposed definition of component work. To use the component work, one must purchase *Lotus 1-2-3*; thus, the component work benefits the original author and his incentives to create.

Further, not only are component works noninfringing, Lotus Corporation actually encourages them. "To encourage the creation of add-in programs (which, in turn, make [Lotus] 1-2-3 a more attractive program to potential customers), Lotus has published . . . [d]eveloper [t]ools that help[] developers write add-in programs."¹⁹⁶ In noting that these component works made *Lotus 1-2-3* "a more attractive program to potential customers,"¹⁹⁷ Keeton implicitly found that there was no substantial harm to the original author. Under the name "add-in" works,

analogous to the QWERTY typewriter. A QWERTY typewriter is one with the usual arrangement of keys. The name derives from the first six letters, from left to right, of the top letter line of a standard typewriter. All manufacturers must use this arrangement of keys (to which no one has a copyright). After all, even if a different order might be more efficient, why would anyone buy a typewriter with keys in a different order, forcing one to relearn how to type? This explains the lack of success of the more efficient Dvorak keyboard.

191. *Id.*

192. *Id.* at 78.

193. *Id.*

194. *Id.* at 79. Thus, each sale of an add-in program would require a purchase of *Lotus 1-2-3* as well, while each sale of Paperback's complete spreadsheet program meant one less sale for Lotus.

195. *Id.* at 78. Note the similarity of the *HAL* example to the *WriteWell* example employed at *supra* text following note 183.

196. *Id.* at 78-79. Apple Computer, Inc. also provides developer tools to outside developers, to encourage them to create component works for Apple's computers. McGeever, *Appletalk Leans on Third Parties*, INFO WORLD, Mar. 11, 1985, at 20 ("Apple is relying completely on third-party developers to supply the hardware and software necessary.").

197. *Lotus*, 740 F. Supp. at 78-79. Recall that a component work that causes substantial economic harm to the original author will be disallowed, since authors' incentives will be at risk. See *supra* text accompanying notes 126-37 & 164-72.

then, Judge Keeton has attached judicial imprimatur to the concept of component works.

Judicial recognition of component works would help courts reach well-reasoned decisions. Consider again the case of *Midway Manufacturing Co. v. Artic International, Inc.*¹⁹⁸ The plaintiff manufactured the video game *Galaxian*. The defendant produced a computer chip to be placed in the console, speeding up the game. The chip was clearly a component work—it was dependent on the original work, and did not replace it. Even though the court determined that the plaintiff could not lose any sales as a result of the defendant's product, it still found the speed-up kit infringing.¹⁹⁹

The court's real problem was its failure to recognize the component works issue. It merely examined the effect of the speed-up kit on the original work, and concluded that

Artic's speed-up kit modifies Midway's *Galaxian* game in such a way as to make it considerably more difficult, for the unskilled player in particular. It is very possible, if not likely, that that will discourage those individuals from playing Midway's video games and so reduce the overall demand for [Midway's] games.²⁰⁰

This conclusion is erroneous. Video games tend to lose popularity as more and more people master them or get used to them.²⁰¹ Since the effect of the speed-up kit is to encourage players to try to re-master *Galaxian*,²⁰² the component work increases the demand for the game. Thus, the court should have concluded that the speed-up kit was not an infringement.

The result in *Midway v. Artic* could have been avoided if the court had employed the rationale behind the component works doctrine. The court should not have made its own determination of "harm."²⁰³ Rather, the plaintiff should have had the burden of showing substantial harm. With the test more clearly delineated in advance, plaintiffs will

198. 547 F. Supp. 999 (N.D. Ill. 1982), *aff'd*, 704 F.2d 1009 (7th Cir.), *cert. denied*, 464 U.S. 823 (1983).

199. *Id.* at 1014.

200. *Id.*

201. "A [video] game's commercial popularity often terminates abruptly after a short period of time. The average game generally would lose its appeal within a year of being introduced on the market." *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 473 (D. Neb. 1981); *see also* Nimmer & Krauthaus, *supra* note 14, at 58.

202. *See* *Midway Mfg. Co. v. Strohon*, 564 F. Supp. 741, 744 (N.D. Ill. 1983).

203. Since *Midway v. Artic* involved a preliminary injunction, the harm analysis was conducted using the irreparable harm standard. Thus, perhaps it is unfair to criticize the court for finding harm here, since "the burden on the plaintiff to show irreparable harm necessary to support a preliminary injunction is very light." *Midway v. Artic*, 547 F. Supp. at 1014. Yet if substantial economic harm to the original author were an explicit element in identifying component works, perhaps cases like *Midway v. Artic* would be more carefully decided, even on a motion for preliminary injunction.

have clearer guidance in briefing and arguing their position. As a result, courts will more easily come to carefully reasoned decisions.

With the harm analysis conducted properly, the courts can pursue both of copyright law's opposing goals. If the work is a component work and does not cause harm to the original author, then allowing the component work's distribution does not harm the original author; his incentives are secure. Moreover, since the public will now have access to the component work, which will enhance performance of the original work, the public interest will be advanced as well. Thus, component works delicately balance the two competing ends of copyright law, and manage to achieve both.

CONCLUSION

The concept of component works has yet to be recognized expressly. Nonetheless, as this Comment has argued, existing copyright law provides the tools required to protect component works. The narrow definition of derivative work, the market test for infringement, and the idea-expression distinction all serve to protect component works. In the other direction, the liberal test for derivative works, the substantial similarity test for infringement, and the look-and-feel doctrine disrupt the fundamental balance underlying copyright law when applied to prohibit component works. The public interest in the promotion of technology and access to knowledge is precariously balanced against the authors' interests in financial rewards. Yet when the authors' incentives are guaranteed, copyright law can afford to maximize the public's interest in knowledge. In other words, when one end of the scale is unchangeable, society can pursue the other end without disrupting the balance. Component works allow that pursuit and maintain the balance.

Finally, although existing law can protect component works, unwitting protection of component works in erratic decisions is unsatisfactory. Thus, this Comment proposes judicial recognition of component works, by judicially created exception, or with explicit protection under existing doctrines. Such judicial creation is hardly novel in the copyright arena. Indeed, "fair use" is a judicially created doctrine. Judicial creation is needed to bridge the void between 1970s copyright law and 1990s technology. Every statute relies upon judicial gloss for fine tuning, if not explanation. The course of progress has raised many new copyright questions, and the Supreme Court has provided a means for responding: "When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of [its] basic purpose."²⁰⁴

204. *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975); *see also* *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390, 396 (1968) ("We must read the statutory language . . . in the light of drastic technological change.").

The component works doctrine addresses the frontiers of our burgeoning copyright law by hearkening to its two fundamental goals.

