

It Walks Like a Duck, Talks Like a Duck, . . . But Is It a Duck? Making Sense of Substantial Similarity Law as it Applies to User Interfaces

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In copyright law, a plaintiff must prove copyright infringement through proof of valid copyright ownership and copying. Copying may be proved through circumstantial evidence of access to the copyrighted material and "substantial similarity" between the protected work and the allegedly infringing work. In the Ninth Circuit, the case law has created confusion about how to apply the substantial similarity test to different kinds of subject matter, especially software user interfaces. Moreover, recent cases do not comport with the original Ninth Circuit test announced in *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*¹; the test may "walk like a substantial similarity test and talk like the *Krofft* test," but it is not clear that the same results are achieved. This Comment addresses these recent Ninth Circuit cases, explains why they are nevertheless desirable, and examines how the court should apply substantial similarity analysis to user interfaces in the future.

I. INTRODUCTION

Congress enacted copyright law, which grants limited monopolies to authors in the exclusive use of their writings, to further the constitutional mandate of promoting science and the useful arts.² Copyright law also seeks to balance two com-

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1. *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1163 (9th Cir. 1977).

2. The U.S. Constitution empowers Congress to "promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the

peting social interests: (1) rewarding an individual's creativity in order to encourage progress; and (2) enabling others to use and build upon the fruits of such creativity as soon as possible.³ To balance these competing goals, copyright law rewards and protects creativity by limiting other individuals' rights to use an author's creation. However, copyright protection is limited to the author's expression—the ideas embodied in the creation are freely available for public use.⁴

In light of these goals, Congress and the courts have developed a set of principles and doctrines that define copyrightable subject matter and that limit protection within such subject matter to the incident expression. Incident expression is expression that is not essential for the realization of an idea.

The United States Copyright Act explicitly defines the subject matter that can be protected.⁵ The Act is supplemented by doctrines such as the idea/expression dichotomy,⁶ merger, and scenes a faire, all of which limit the protectable matter to the author's original and incident expression.⁷ Only

exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8.

3. *Krofft*, 562 F.2d at 1163; Michael Bixby, *Synthesis and Originality in Computer Screen Displays and User Interfaces: The "Look and Feel" Cases*, 27 WILLAMETTE L. REV. 31, 33 (1991).

4. For example, the idea of producing a book to help people manage their time is not protectable; however, the book's description of how to accomplish time management is probably protectable.

5. 17 U.S.C. § 102(a) (1976). The Act limits copyright protection to "original works of authorship fixed in any tangible medium of expression." *Id.* It also enumerates all possible categories of copyrightable subject matter and includes: "(1) literary works; (2) musical works . . . ; (3) dramatic works . . . ; (4) choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works." *Id.* The Act further limits what is protectable by specifically excluding ideas, procedures, processes, systems, methods of operation, concepts, principles, and discoveries (e.g., preexisting factual information). *Id.* § 102(b).

6. For any subject matter, one of the most difficult problems in litigating copyright infringement is distinguishing between the unprotectable elements, such as ideas, and the protectable expression. John Wiley, Jr., *Copyright at the School of Patent Law*, 58 U. CHI. L. REV. 119, 121-24 (1991). This analysis is often referred to as the idea/expression dichotomy. For a comprehensive discussion of the idea/expression dichotomy, see MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §§ 2.03[D], 13.03[A][1], [B][2][a]-[2][b] (1992) [hereinafter NIMMER ON COPYRIGHT]. Judge Learned Hand's "abstractions test" is often quoted as the leading judicial method for separating idea from expression. See discussion *infra* notes 29, 244.

7. The merger doctrine states that when an idea can only be expressed in one or a limited number of ways, the expression is considered inseparable from the idea and therefore is not protectable. *Shaw v. Lindheim*, 908 F.2d 531, 538 (9th Cir. 1990), *amended, reh'g denied en banc*, 1990 U.S. App. LEXIS 20420 (9th Cir. 1990). Concomitant with merger, the scenes a faire doctrine denies protection to that which is

original and incident expression is protectable by copyright law; otherwise, an author would indirectly receive a monopoly on the underlying idea because no one else could use the idea without including the author's expression.

Application of these doctrines and principles has not always been consistent as copyright law has evolved to embrace new technologies, such as computer software. Few people would disagree that computer software is copyrightable subject matter.⁸ However, courts continue to struggle with the scope of protection appropriate for different parts of computer software, such as the screen displays and user interfaces.⁹ In addition, courts struggle with the application of traditional copyright doctrines to software programs.

Typically, courts confront these issues under the umbrella of the "substantial similarity" analysis. Courts use substantial similarity analysis to infer improper appropriation when the expression contained in two works is so alike that one appears to be copied from the other.¹⁰ In deciding whether a work is substantially similar to another, a court must use various copy-

considered "standard treatment" of an idea within a particular industry. *Data East U.S.A. v. Epyx*, 862 F.2d 204, 208 (9th Cir. 1988). For an overview of the merger and scenes a faire doctrines, see NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[B][3]-[4].

These doctrines can be viewed as either limiting the scope of protectable expression, or as defenses to what would otherwise constitute infringement of protected expression. Nimmer prefers the latter view because it means that the expression will be evaluated in light of the specific facts of the case instead of declared exempt from protection. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[B][3].

8. See *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992); *Telemarketing Resources v. Symantec*, 1990 Copyright L. Dec. (CCH) ¶ 26,514 (N.D. Cal. 1989), *aff'd in part and vacated in part*; *Data East*, 862 F.2d 204; *Broderbund Software v. Unison World*, 648 F. Supp. 1127 (N.D. Cal. 1986); see also Gregory C. Damman, *Copyright of Computer Display Screens: Summary and Suggestions*, IX COMPUTER/L.J. 417 (1989), for an explanation of the development of the law on this topic.

9. The user interface of a computer program (or application) is that part of the software that communicates with the user, allowing the user to guide the program to perform specific tasks and allowing the program to give the user feedback about what is taking place or what tasks can be performed. Loosely, the user interface includes all of the screen displays, sounds, input devices, and software necessary to accomplish this communication. Typically, a user interface supports several mechanisms for achieving this communication, including some kind of command or menu interface and an interface to a keyboard or "mouse" (graphical cursor) device. In addition, most modern graphical user interfaces support sophisticated displays with colored images that help promote the specific "style" of a particular user interface. The specific components of any user interface, its behavior, and its style will vary, according to the program's intended use and audience.

10. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.01[B].

right doctrines¹¹ that define and limit protectable elements of the infringed work.

In general, different courts apply different versions of the substantial similarity test. The Ninth Circuit's version of the substantial similarity test is particularly difficult to apply to user interfaces for two reasons: First, the application of copyright law to user interfaces is inherently problematic. Second, recent developments in the case law have obfuscated the test.

The first difficulty in applying the substantial similarity test to user interfaces relates to the inherent dual nature of such software: the mixed functional and aesthetic nature of user interfaces makes it difficult to separate protectable from unprotectable elements. On the one hand, a user interface serves the fundamental purpose of enabling a user to communicate with the software (and the underlying computer) in order to accomplish specific tasks. Functionally essential elements of the interface that are necessary embodiments of procedures, processes, and ideas, are specifically excluded by the copyright statute.¹² In general, utilitarian works are given a limited scope of copyright protection.¹³

11. These doctrines include merger and scenes a faire. See *supra* note 7.

12. The pertinent language in § 102(b) states as follows: "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work." 17 U.S.C. § 102(b) (1976).

13. See § 101 definition of "Pictorial, graphic, and sculptural works," which limits protection of the design of useful articles to the features that are capable of independent existence from the utilitarian aspect. *Id.* § 101. This restriction may motivate attorneys to promote copyright protection for display screens under the "literary works" category because the screens may be more likely to receive broader protection if they are not categorized as "useful articles." Note, however, that the classification of a work does not prevent application of the useful article exception. See, e.g., *Harper House v. Nelson, Inc.*, 889 F.2d 197 (9th Cir. 1989) (applying the useful article exception to non-textual utilitarian features of a work with extensive textual components). In a recent case, *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 12219 (N.D. Cal. 1992), the court applied the useful article exception to user interfaces.

Many authors debate the scope of protection to be granted to user interfaces. Some of the scope of protection problems peculiar to user interfaces involve the interrelationship between patent protection and copyright protection, the applicability of the "useful article" defense to copyright infringement, the role of functionality in determining proper scope of protection, and the meaning of originality and derivative work. *Last Frontier Conference Report on Copyright Protection of Computer Software*, 30 JURIMETRICS JOURNAL 15, 16 (1989) [hereinafter *Last Frontier Conference*]. For a thorough discussion of the issues involved in the overlap and interface between patent and copyright protection of user interfaces, see Symposium, *Computer Programs: The Patent/Copyright Interface*, 17 AIPLA Q.J. 173 (1989-91).

On the other hand, the presentation of a user interface may have aesthetic purposes; it may differentiate one software product from another with similar capabilities by providing different visuals or behavior. In addition, the user interface may provide a "mood" for the software that entices a user to choose a particular system or that makes the system appear easy to use.¹⁴ To the extent that user interface elements exhibit aesthetic expression, they should be protectable like other literary and visual works.

The second difficulty in applying the substantial similarity test to user interfaces, especially under Ninth Circuit case law, is that the substantial similarity test has evolved to a point of confusion.¹⁵ Because of the divergent case law, it is no longer obvious which elements the trier of fact may take into account when determining substantial similarity. For example, several recent decisions applying the substantial similarity test to factual and functional works have precluded the trier of fact from examining anything other than the protected expression when judging the works as a whole for similarity.¹⁶ It is not clear from these cases whether user interfaces should be treated like functional works for this purpose.¹⁷

In addition, as a result of the divergent case law, the court's role in the substantial similarity test seems to have changed. For example, recent Ninth Circuit decisions have allowed courts to examine the similarity of expression between works with the aid of expert testimony and detailed analysis before submitting the issue to a trier of fact.¹⁸ Moreover, one

14. This latter concept is often referred to in the software industry as the "user-friendliness" of software. The aesthetics are but one of the factors that determine whether a piece of software is user-friendly. Other relevant factors include speed, accuracy, simplicity of presentation and function, and intuitive sequence of responses or requests.

15. See *infra* notes 53-65 and accompanying text.

16. *McCulloch v. Price, Inc.*, 823 F.2d 316 (9th Cir. 1987); *Harper House v. Nelson, Inc.*, 889 F.2d 197 (9th Cir. 1989), *on remand*, 1991 U.S. Dist. LEXIS 11790 (C.D. Cal. 1991).

During the intrinsic test, in which the trier of fact examines the works as a whole without the aid of expert testimony, the trier of fact is confined to look at the "total concept and feel" of the protected expression, rather than to the whole work. See *infra* notes 112-66 and accompanying text.

17. Nevertheless, user interfaces should be treated this way because their dual functional and aesthetic nature will give rise to the same scope of protection concerns present in cases involving factual and functional subject matter. See *infra* notes 157-61 and accompanying text.

18. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992); *Shaw v. Lindheim*, 908 F.2d 531 (9th Cir. 1990); see *infra* notes 66-111 and accompanying text.

decision applied this new principle directly to user interface software infringement and implied that this principle should be applied to all subject matters.¹⁹

Thus, the Ninth Circuit case law has created confusion about which aspects of the substantial similarity test apply to which kind of subject matter. Moreover, these cases do not comport with the original Ninth Circuit test laid down in *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*²⁰ However, this Comment asserts that changes embraced by these cases are necessary and desirable to promote the goals of copyright law and advocates a more uniform test for achieving more uniform results.

Towards that end, this Comment recommends how courts should apply the substantial similarity analysis to user interfaces. Specifically, this Comment (1) delineates the state of the law in the Ninth Circuit and explains how the recent changes should be interpreted with respect to user interfaces; (2) establishes an analytic framework for evaluating proposed substantial similarity tests through the enumeration of a set of goals specific to user interfaces; and (3) uses this analytic framework to evaluate and endorse a test that applies traditional copyright doctrine in a logical and consistent manner.

To accomplish these objectives, the remainder of this Comment is divided into four sections. Section II lays out the traditional substantial similarity test under *Krofft* and discusses how the test has been modified by recent cases. This section also addresses the possible application of these modifications to user interfaces and describes a recent decision involving user interfaces.²¹ Because courts have sufficiently deviated from the *Krofft* test, because the Ninth Circuit has recently addressed the confusion with respect to user interfaces, and because there is at least one user interface case currently before the court, a rare opportunity exists for the Ninth Circuit to clarify the substantial similarity test in general, and as it applies to user interfaces.²²

19. See *Brown Bag Software*, 960 F.2d 1465.

20. 562 F.2d 1157, 1163 (9th Cir. 1977); see *infra* notes 41-65 and accompanying text.

21. See *Brown Bag Software*, 960 F.2d 1465.

22. The *Apple Computer v. Microsoft Corp.* case, No. C-88-20149-VRW (N.D. Cal.), is currently before the court. Part of the case reached final judgment in *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 5986 (N.D. Cal. 1992). The remainder is scheduled for trial.

Section III of this Comment sets up an analytic framework for evaluating any proposed revisions of the test. This section lays out a set of goals that should be addressed by a substantial similarity test from the user interface perspective. These goals include the following: (1) promote standardization and compatibility; (2) foster competition; (3) account for the dual functional and aesthetic role; (4) enable fine differentiation where limited protection is available; (5) provide useful guidelines to developers and designers; (6) enable consistent application of principles; and (7) enable fair resolutions.

Section IV then identifies and compares the approaches that the Ninth Circuit could adopt. One approach consists of tests that are peculiar to the subject matter protected. Some recent changes in the law indicate a trend in this direction. Another approach consists of tests that are sufficiently general to encompass all subject matter. An example of this latter approach is the "successive filtering method."²³

Finally, Section V analyzes the successive filtering method according to the analytic framework established in Section III. This section also demonstrates the successive filtering method's practicability by illustrating how it can be used to analyze the alleged infringements in the *Apple Computer v. Microsoft Corp.*²⁴ case.

II. STATE OF CONFUSION: SUBSTANTIAL SIMILARITY IN THE NINTH CIRCUIT

A. *Proof of Infringement and the Krofft Test*

To establish copyright infringement, a plaintiff must prove ownership of a valid copyright and "copying"²⁵ of the protected expression by the defendant.²⁶ Copying can be proven either directly through evidence of actual copying, or indirectly through circumstantial evidence of defendant's access to the copyrighted work and substantial similarity between the defendant's work and the copyrighted work.²⁷ If the degree of

23. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][1]-[6].

24. *Apple Computer v. Microsoft Corp.*, 759 F. Supp. 1444 (N.D. Cal. 1991).

25. Copying, in this context, refers to infringement of any of the exclusive rights that could be granted to a copyright owner, including: (1) reproduction; (2) adaptation (preparing derivative works); (3) publication; (4) public performance; and (5) public display. 17 U.S.C. § 106 (1976).

26. *Shaw v. Lindheim*, 908 F.2d 531, 534 (9th Cir. 1990).

27. *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1163 (9th Cir. 1977).

similarity rises to the level of "striking similarity," access may be inferred.²⁸

Within this general model, courts in different circuits have diverged in their analyses of substantial similarity.²⁹ The analyses differ as to the role of the court and the triers of fact, the admissibility of expert testimony, and the appropriateness of analytic dissection.³⁰ Most tests for determining substantial similarity have evolved from some variation of an ordinary observer or "audience test." This test asks whether the spontaneous and immediate reaction of the lay observer or intended audience would find the works to be the same,³¹ without the

28. Striking similarity may occur, for example, when intentional errors have been placed in the copyrighted work and these appear in turn in the defendant's work with no other possible explanation for their presence except from copying. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[C].

29. For a comprehensive analysis of the varying substantial similarity tests, see *id.* § 13.03[A][1]-[2]. Nimmer divides the world of copying into "comprehensive nonliteral similarity" and "fragmented literal similarity." *Id.* The latter category covers verbatim copying. Here, the similarity of ideas is a given fact and the main problem is to determine whether the copying was sufficient to be considered substantial. In any given case, the answer depends upon the quantitative and qualitative amount of the material copied. *Id.* § 13.03[A][2].

Comprehensive nonliteral similarity, covers paraphrasing to the point of plagiarism. Most of the substantial similarity tests focus on this problem. Here, it is necessary to separate the ideas from the expression when comparing works because copying that results in the similarity of ideas is allowed. Examples of such tests include Judge Learned Hand's "abstractions test"; Professor Chafee's "pattern test"; and the Ninth Circuit's "extrinsic/intrinsic" test. *Id.* § 13.03[A][1][a]-[c]. In addition, special tests have been developed for software development, such as the *Uniden* iterative test, *E.F. Johnson v. Uniden Corp.*, 623 F. Supp. 1485 (D. Minn 1985), and the *Whelan* test, *Whelan Associates v. Jaslow Dental Laboratory*, 797 F.2d 1222 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987). NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[A][1][d]. The *Uniden* test confines the infringement analysis to literal copying or translation, but recognizes that expert testimony is critical to the similarity analysis involving computer programs. *Id.* The *Whelan* test extends copying protection to the structure, sequence, and organization of a program and also relies on expert testimony. *Id.* This test separates idea from expression by allowing a program's primary function to define its sole idea and what remains is expression. The Second Circuit recently renounced this test and adopted a test that combines Judge Learned Hand's "abstractions test" with Nimmer's successive filtering test. *Computer Associates International, Inc. v. Altai, Inc.*, 1992 U.S. App. LEXIS 14305, at *18-20 (2d Cir. 1992).

30. Analytic dissection refers to the comparison of works by examining their particular constituent elements instead of comparing the works as a whole using a gestalt method. Dissection (analysis) can be used to separate the protectable expression from the ideas or unprotectable expression. It can also be used to aid in deciding what has been copied. Often, expert testimony is used both to perform the dissection and to compare the similarities. See, e.g., *Shaw v. Lindheim*, 908 F.2d 531 (9th Cir. 1990).

31. Courts have been inconsistent as to whether the substantial similarity test should use an ordinary observer standard or an intended audience standard. MARSHALL A. LEAFFER, UNDERSTANDING COPYRIGHT LAW 275 (1989). Given the highly

aid of critical analysis or expert testimony.³²

The Ninth Circuit uses a variation of the audience test that is commonly known as the *Krofft* test or the "extrinsic/intrinsic" test.³³ It is based on the bifurcated approach developed in the Second Circuit in *Arnstein v. Porter*.³⁴ *Arnstein's* bifurcated approach addressed some shortcomings of the audience test by allowing a more critical objective analysis of the works under comparison at one stage of the test.³⁵ Hence, the *Arnstein* bifurcated approach separates the substantial similarity analysis into two steps: copying and unlawful appropriation.³⁶

The *Arnstein* test first establishes, using expert testimony and analytic dissection, whether there has been copying.³⁷ Only then is the trier of fact required to judge, based solely on a lay observer response, whether the copying is inappropriate.³⁸ However, *Arnstein* does not state what is compared during each step to determine similarity.³⁹ Instead, it focuses on who is to judge each step and what kind of evidence is allowed.⁴⁰

Similar to *Arnstein*, the extrinsic/intrinsic test of *Krofft* divides the analysis into two steps, but the steps are different.

technical nature of computer programs, the intended audience (user) of a computer program would be in the best position to judge whether any differences between the infringing and infringed software programs are relevant to their actual use. For example, a lay observer judging the similarity of two word processing programs may find that all word processing programs look the same because the observer does not understand the range of differences of expression that can possibly exist in computer programs. Furthermore, without the ability to use the software program, the lay observer has no idea how to locate pertinent differences, such as how to locate the different user dialogs available for a particular function.

32. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][1].

33. *Sid & Marty Krofft Television Prods., Inc. v. McDonald's Corp.*, 562 F.2d 1157 (9th Cir. 1977).

34. 154 F.2d 464 (2d Cir. 1946); *see Krofft*, 562 F.2d at 1164.

35. The major problem with the audience test is that because it involves a visceral, gestalt-type of response, a lay observer can perceive infringement when copying does not exist. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][2]. On the other hand, the lay observer will more likely miss an instance of infringement when the works involve implementations in different mediums. *Id.*

36. *Arnstein*, 154 F.2d at 468-69.

37. "The trier of facts must determine whether the similarities are sufficient to prove copying. On this issue, analysis ('dissection') is relevant, and the testimony of experts may be received. . . ." *Id.* at 468.

38. *Id.* Inappropriate copying exists when "a defendant took from plaintiff's work so much of what is pleasing to the ears of lay listeners . . . that defendant wrongfully appropriated something which belongs to the plaintiff." *Id.* at 473.

39. *See infra* note 47 and accompanying text.

40. *Arnstein*, 154 F.2d at 468-69.

In the first step of the *Krofft* test, the court analyzes the similarity of *ideas* between the defendant's work and the copyrighted work.⁴¹ If the ideas are similar, the second step calls for an evaluation of the similarity of the *expression* of these ideas.⁴² The first step is generally referred to as the extrinsic test because "it depends not on the responses of the trier of fact, but on specific criteria which can be listed and analyzed."⁴³ Analytic dissection (analysis of these criteria) and expert testimony are appropriate at this stage.⁴⁴ The second step is generally referred to as the intrinsic test because it depends on "the response of the ordinary reasonable person."⁴⁵ Analytic dissection and expert testimony are inappropriate here.⁴⁶

Recent developments in Ninth Circuit law arise from two problems related to *Krofft* and *Arnstein*. The first problem is found in the first step of the two tests. Unlike *Arnstein*, *Krofft* only examines the work's *ideas* in the first step and then leaves the entire expression analysis to the trier of fact.⁴⁷

41. *Krofft*, 562 F.2d at 1164.

42. *Id.*

43. *Id.*

44. *Id.*

45. *Id.*

46. *Krofft*, 562 F.2d at 1164. One recent change allows analytic dissection in the intrinsic part of the test when necessary to separate protected from unprotected expression. See *infra* notes 167-81 and accompanying text.

47. Although *Krofft* claims to have based its test upon *Arnstein*, the *Krofft* interpretation of *Arnstein* is not logically compelled. *Krofft*, 562 F.2d at 1165. Specifically, it is not necessary to read *Arnstein's* first step of "copying" (which is not of itself infringement) as restricted to the copying "merely of the work's *idea*," as the *Krofft* analysis claims. *Id.* As the *Krofft* opinion states, "when the court in *Arnstein* refers to 'copying' which is not itself an infringement, it *must* be suggesting copying merely of the work's idea, which is not protected by the copyright." *Id.* (emphasis added). The court goes on to say that it is attempting to clarify the issues involved. *Id.* However, other elements of a work may be copied permissibly. For example, copying *expression* is permissible if the expression has merged with the idea, or if it is unprotected stock treatment as limited by the scenes a faire doctrine, or if it has been given limited protection under some other doctrine. See *supra* note 7 for a discussion of the merger and scenes a faire doctrines. Another possible doctrine that could limit the protectability of expression is "fair use," codified in the 1976 Copyright Act. 17 U.S.C. § 107 (1976). Fair use permits copying under certain circumstances, such as for research and education purposes, taking into account factors intended to balance the parties' interests. *Id.*

NIMMER ON COPYRIGHT supports the position that the *Arnstein* test did not dictate *Krofft's* logic. Nimmer argues that the cases cited in *Arnstein* for illustrating permissible copying show that the *Arnstein* "copying" step requires a determination of the similarity of expression, regardless of the protectability of such expression. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][3].

The *Krofft* court was careful not to predicate its result on a proper analysis of

Thus, the court has a reduced role in what it can examine as a matter of law.⁴⁸ *Krofft's* elimination of any evaluation of expression in the first part of the test (using expert testimony and analytic dissection) is precisely one of the problems sought to be overcome by the newer Ninth Circuit tests.⁴⁹ The newer tests allow courts to analyze similarity of expression with the aid of expert testimony and dissection.

The second problem is found in the second part of the two tests. Neither test addresses whether the second step (the visceral audience response) is confined to an examination of protectable expression,⁵⁰ and neither opinion instructs a court on how to perform this analysis.⁵¹ Again, recent decisions in the

Arnstein. The *Krofft* court specifically stated that it "believe[s] that the *Arnstein* court was doing nearly the same thing. But the fact that it may not have been does not detract from our analysis." *Krofft*, 562 F.2d at 1165 n.7. After all, *Arnstein* was not binding precedent, and the *Krofft* court was attempting to clarify the practical application of the idea/expression principles. *Id.* at 1165.

48. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][3]. Theoretically, most suits for infringement will involve similar ideas; otherwise, the parties would not have brought suit. Therefore, most of the issues will be left for the trier of fact in the audience test (step 2) of the analysis. *Id.* Also, in summary judgment motions, the plaintiff will have less to prove in the *Krofft* test than in the *Arnstein* test because the plaintiff need only demonstrate a genuine issue regarding similarity of ideas; whereas in *Arnstein*, assuming one does not accept *Krofft's* interpretation, the plaintiff needs to demonstrate genuine issues regarding similarity of ideas and expression. *See Arnstein*, 154 F.2d 464.

However, Ninth Circuit decisions have not strictly adhered to this reduced role of the court. Although most decisions examining summary judgment state that summary judgment on issues of substantial similarity is not favored, they state that it is appropriate when the court can conclude that "no reasonable juror could find substantial similarity of ideas and expression." *See, e.g., Narell v. Freeman*, 872 F.2d 907, 909-10 (9th Cir. 1989). Many Ninth Circuit decisions have affirmed summary judgment, implying that the court does not believe its role should be so restrained. *See, e.g., Narell*, 872 F.2d 907; *Aliotti v. Dakin*, 831 F.2d 898 (9th Cir. 1987); *Berkic v. Crichton*, 761 F.2d 1289 (9th Cir.), *cert. denied*, 474 U.S. 826 (1985); *Litchfield v. Spielberg*, 736 F.2d 1352 (9th Cir. 1984), *cert. denied*, 470 U.S. 1052 (1985).

49. *See, e.g., Shaw v. Lindheim*, 908 F.2d 531 (9th Cir. 1990), which adds the objective analysis of expression to the first part of the test in the case of literary works. *See also infra* notes 66-111 and accompanying text.

50. Nimmer believes that *Arnstein* meant to restrict the intrinsic test to protectable expression, although no explicit reason is given. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][3].

In the Ninth Circuit, the intrinsic test is also known as the "total concept and feel" test, which might imply that any dissection or separation into protectable and unprotectable parts is inappropriate. *Litchfield* referred to the test as involving an analysis of the total concept and feel citing *Krofft*; however, *Krofft* made no use of this term. *Litchfield*, 736 F.2d. at 1357.

51. For example, should a court allow the trier of fact to determine what is protectable expression without expert aid or analysis or should the court allow use of expert testimony confined to this purpose?

Ninth Circuit have sought to address these two problems.⁵²

B. Recent Trends and Confusion with the Substantial Similarity Test

Judge Walker, in a preliminary ruling in *Apple Computer v. Microsoft Corp.*, alluded to the confusion in the Ninth Circuit copyright law when he expressed concern that the law was suggesting "that elements of [a copyrighted work] found to be 'unprotectible' must be eliminated from consideration in the substantial similarity of *expression* analysis."⁵³ He went on to question whether this method of analysis is correct.⁵⁴ If correct, he said, it would prohibit a finding of substantial similarity in cases like compilations, which involve a creative selection and arrangement of unprotectable components: because unprotectable components would all be removed from the analysis beforehand, no substantial similarity could be found.⁵⁵

Judge Walker astutely noticed that the law, at least in certain subject matter areas, is implicitly moving towards removing unprotected elements from the intrinsic step of substantial similarity analysis, even though the cases have not all explicitly stated this proposition.⁵⁶ His reasoning should be taken one step further: If unprotected elements are to be removed from the intrinsic analysis, then they should be examined and sifted out in the extrinsic step. This method would enable the trier of fact to identify protectable expression with the aid of expert testimony and dissection. Several recent cases have allowed analytic dissection for this purpose,⁵⁷ but they have not clarified whether the dissection took place in the intrinsic or extrinsic step.⁵⁸

52. See, e.g., *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485, 493 (9th Cir. 1985) (restricting the intrinsic test for factual works by limiting the total concept and feel language to protectable expression). See *infra* notes 121-27 and accompanying text.

53. *Apple Computer v. Microsoft Corp.*, 779 F.Supp 133, 135 (N.D. Cal. 1991) (order granting motion for reconsideration) (emphasis supplied).

54. *Id.*

55. *Id.* at 136.

56. See, e.g., *Cooling Systems*, 777 F.2d at 493, in which this method was first used with factual works. But see *McCulloch v. Price, Inc.*, 823 F.2d 316, 321 (9th Cir. 1987), which limited the *Cooling Systems* holding to non-artistic works.

57. See, e.g., *Olson v. National Broadcasting Co.*, 855 F.2d 1446, 1453 (9th Cir. 1988); *Data East USA, Inc. v. Epyx Inc.*, 862 F.2d 204, 208 (9th Cir. 1988); *Aliotti v. Dakin & Co.*, 831 F.2d 898, 901 (9th Cir. 1987).

58. See, e.g., *Data East*, which eliminated all of the similar expression as unprotectable due to merger in the intrinsic analysis. 862 F.2d at 208. However, the

However, for two reasons, Judge Walker is incorrect in implying that this change is necessarily detrimental to the similarity of expression analysis of works whose sole creative expression lies in their selection or arrangement, such as compilations. First, a plaintiff submitting a case on infringement of such a work should submit the arrangement or selection itself as an infringed element, rather than the underlying unprotected elements comprising the arrangement.⁵⁹ Then, after the unprotected elements are removed through dissection, the arrangement or selection element will remain on the list of infringed elements.⁶⁰

Second, the court now allows analytic dissection for the purpose of determining whether the similarities of expression result from *unprotectable* expression. Thus, the arrangement element on the list of infringements will not accidentally disappear as a result of dissection even though unprotected component items are removed.

Judge Walker's allusion is only the tip of the iceberg. Analysis of recent Ninth Circuit case law demonstrates a marked split between the treatment of factual or functional works and fictional or artistic works. Also, recent modifications of the substantial similarity test represent substantial diversions from the *Krofft* test. These modifications imply several new principles: (1) the extrinsic test should be expanded to include analysis of similarity of expression and not just similarity of ideas;⁶¹ (2) the intrinsic test should be confined to a

court in *Brown Bag* interprets this section of the *Data East* opinion as outside of the substantial similarity analysis and part of a scope of protection analysis. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1475-76 (9th Cir. 1992); see *infra* note 150. See also *Olson*, 855 F.2d at 1453, which referred to the analytic dissection it had performed in the extrinsic test when concluding that no substantial similarity existed in the intrinsic test because all similarity arose from "unprotect[a]ble scenes a faire."

59. This list of infringements could be submitted at the pleading stage or on a summary judgment motion after discovery.

60. This reasoning assumes that the plaintiff's list is used as the basis for the analytic dissection. If not, then the court should make sure that the arrangement and selection is a component in the dissection. Also, if the arrangement and selection of unprotectable items remains on the list, the court would need to instruct the trier of fact to restrict similarity analysis to the arrangement and not to compare the underlying unprotected matter. In practice, this may be difficult. See, e.g., *Harper House v. Nelson, Inc.*, 889 F.2d 197 (9th Cir. 1989), in which jury instructions were not considered sufficient to differentiate between protected and unprotected analysis. In *Harper House*, the jury's intrinsic "total concept and feel" test should have been limited to protectable expression. *Id.*

61. See, e.g., *Brown Bag Software*, 960 F.2d 1465; *Shaw v. Lindheim*, 908 F.2d 531 (9th Cir. 1990).

comparison of protectable expression for factual works,⁶² functional works,⁶³ video games,⁶⁴ and other works whose scope of copyright protection is limited; and (3) analytic dissection should be used to separate the protected from the unprotected expression.⁶⁵ The development of each of these principles is discussed in turn.

1. Expansion of the Extrinsic Test

The expansion of the extrinsic test to include expression is the primary contribution of a series of cases that began in the Ninth Circuit with the district court opinion in *Jason v. Fonda*,⁶⁶ which was later advocated by the Court of Appeals in *Litchfield v. Spielberg*,⁶⁷ and further expanded in *Brown Bag Software v. Symantec*.⁶⁸ This expansion of the extrinsic test has resulted in an increased role of the court, especially in its ability to grant summary judgment motions.

Jason v. Fonda involved a claim by the author of a book entitled "Concomitant Soldier—Woman and War," against the writers and producers of the motion picture "Coming Home."⁶⁹ In an appeal against summary judgment for the defendant, the *Jason* court was the first to describe a set of specific criteria that could be listed and analyzed for written works, as required by the *Krofft* extrinsic test.⁷⁰ The criteria were "plot, themes, dialogue, mood, setting, pace, and sequence."⁷¹ The opinion did not examine these criteria in detail; rather, the court described the general subject of the two works as involving unprotectable ideas such as morality and the effects of war

62. See, e.g., *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

63. See, e.g., *Harper House*, 889 F.2d 197.

64. See, e.g., *Data East*, 862 F.2d 204.

65. See, e.g., *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987).

66. 526 F. Supp. 774 (C.D. Cal. 1981), *aff'd*, 698 F.2d 966 (9th Cir. 1982).

67. 736 F.2d 1352 (9th Cir. 1984), *cert. denied*, 470 U.S. 1052 (1985).

68. 960 F.2d 1465 (9th Cir. 1992). See also *Narell v. Freeman*, 872 F.2d 907 (9th Cir. 1989); *Olson v. National Broadcasting Co.*, 855 F.2d 1446 (9th Cir. 1988); *McCulloch v. Price, Inc.*, 823 F.2d 316 (9th Cir. 1987); *Berkic v. Crichton*, 761 F.2d 1289 (9th Cir. 1985).

69. *Jason v. Fonda*, 526 F. Supp. 774 (C.D. Cal. 1981), *aff'd*, 698 F.2d 966 (9th Cir. 1982).

70. The *Krofft* test listed criteria such as "the type of artwork involved, the materials used, the subject matter, and the setting for the subject." *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1164 (9th Cir. 1977). Arguably, these criteria are more general and abstract than recently posed criteria.

71. *Jason*, 526 F. Supp. at 777.

on women and injured veterans.⁷² The court stated, however, that it found the movie and book to have substantial differences in "contexts, characters, and language."⁷³

*Litchfield v. Spielberg*⁷⁴ and *Berkic v. Crichton*⁷⁵ applied the same extrinsic test to movies and screen treatments.⁷⁶ In *Litchfield*, the plaintiff accused Steven Spielberg of copying her musical play called "Lokey from Maldemar" in his movie "E.T."⁷⁷ The court explicitly invoked the *Jason* test, stating that "[s]imilarity of ideas may be shown by an extrinsic test which focuses on alleged similarities in the objective details of the works. The extrinsic test requires a comparison of plot, theme, dialogue, mood, setting, pace, and sequence."⁷⁸ The court then performed the extrinsic analysis and concluded that even though some similarity existed in the opening scenes, no substantial similarity existed between "the sequences of events, mood, dialogue, and characters of the two works."⁷⁹ The court also concluded that any plot similarities were unprotectable because they existed at a very general level.⁸⁰

In *Berkic*, another movie infringement case, the court used the *Jason* test and expanded its language. In *Berkic*, the plaintiff accused Michael Crichton and others of basing the book and movie "Coma" on a screen treatment called "Reincarnation, Inc.," which the plaintiff had submitted for review to a studio.⁸¹ The defendants did not deny access to the screen treatment, but claimed that "Coma" was, as a matter of law, not substantially similar to "Reincarnation, Inc."⁸² In review-

72. *Id.*

73. *Id.*

74. 736 F.2d 1352 (9th Cir. 1984), *cert. denied*, 470 U.S. 1052 (1985).

75. 761 F.2d 1289 (9th Cir. 1985).

76. Like *Jason*, both cases involved appeals of summary judgment orders for the defendants.

77. *Litchfield*, 736 F.2d at 1354.

78. *Id.* at 1356 (citations omitted) (emphasis added). The change in the extrinsic test to the objective/subjective language of *Shaw v. Lindheim*, 908 F.2d 531 (9th Cir. 1990), took place as early as the *Litchfield* opinion. Neither the *Krofft* opinion nor *Jason* used the phrase "similarities in the objective details," even though it was cited in *Litchfield* as coming from *Krofft*. *Litchfield*, 736 F.2d at 1356. *Krofft* simply referred to "specific criteria" and gave examples. *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1164 (9th Cir. 1977). *Jason* quoted *Krofft* verbatim. *Jason*, 526 F. Supp at 777.

79. The court did not describe the details of this analysis. *Litchfield*, 736 F.2d at 1356-57.

80. *Id.* at 1357.

81. *Berkic v. Crichton*, 761 F.2d at 1289, 1291 (9th Cir. 1985).

82. *Id.* at 1292.

ing the two works, the *Berkic* court cited the extrinsic test as stated in both *Litchfield* and *Jason*.⁸³ The court further stated that the substantial similarity of ideas test "compares, not the basic plot ideas for stories, but the *actual concrete elements that make up the total sequence of events and the relationships between the major characters*."⁸⁴ In finding that the works were not similar, the court compared some of the sequences of events, the settings, and the major romantic relationship.⁸⁵ The court found that any similarities that did exist resulted from unprotectable stock scenes or incidents flowing from the choice of a particular plot or ideas.⁸⁶

Unlike *Jason*, *Litchfield*, and *Berkic*, the court in *McCulloch v. Price*⁸⁷ applied the *Litchfield* language of the extrinsic test to an artistic work.⁸⁸ *McCulloch* involved the copying of a red decorative plate with a floral design and the words "You Are Special Today" in white lettering, to be used to "honor someone at dinner."⁸⁹ The defendant company produced a white plate with red lettering bearing the same phrase and containing a floral design.⁹⁰

In judging the similarity of the works in the extrinsic test, the *McCulloch* court summarily stated that *Litchfield* could be read as saying that similarity of ideas "may be shown by focusing on the similarities in the objective details of the works."⁹¹ The *McCulloch* court then found that the district court's finding of fact that the two works were "confusingly similar in appearance" was sufficient to satisfy the substantial similarity of ideas.⁹² To draw this inference, the appellate court must have presumed that the district court examined the objective

83. See *supra* notes 70-71, 78 and accompanying text.

84. *Berkic*, 761 F.2d at 1293 (emphasis added). For comparison, the court's statement of the intrinsic test is the similarity of "'the mood evoked . . . as a whole' . . . and in the 'total concept and feel of the works.'" *Id.* at 1294 (citations omitted). The intrinsic analysis is conclusory and provided in one statement: "We are confident that no reasonable reader or moviegoer would recognize . . . *Coma* as a 'picturization' or 'dramatization' of *Reincarnation*." *Id.*

85. *Id.*

86. *Id.* at 1293-94.

87. 823 F.2d 316 (9th Cir. 1987).

88. The *Litchfield* test parallels the *Jason* test but adds language that refers to the analysis of the similarities of objective details. See *supra* note 78 and accompanying text. Most courts after *Litchfield* and *Berkic* cite those cases for the test language. See, e.g., *Narell v. Freeman*, 872 F.2d 907 (9th Cir. 1989).

89. *McCulloch*, 823 F.2d at 318.

90. *Id.*

91. *Id.* at 319.

92. *Id.*

details of the works. Because the comparison was not recorded in the opinion, one cannot tell what the *McCulloch* court substituted for the *Jason* test of "plot, theme, dialogue, mood, setting, pace, and sequence."⁹³ However, any comparison of appearance would probably involve elements of expression and not just ideas.

In *Narell v. Freeman*,⁹⁴ the court added characters to the list of objective criteria to be analyzed in the extrinsic test and changed "sequence" to "sequence of events."⁹⁵ In *Narell*, the author of a primarily non-fiction, mass biography book entitled "Our City: The Jews of San Francisco," brought an infringement claim against the author of fictional romance novel entitled "Illusions of Love."⁹⁶ The actual extrinsic analysis in the *Narell* opinion is not particularly elucidating.⁹⁷ The court focused on plot and theme oriented comparisons such as the book types (historical versus romantic) and the history of the Jews common to both books.⁹⁸ The court concluded that the works were dissimilar in terms of mood, pace, and sequence.⁹⁹

Finally, in *Shaw v. Lindheim*,¹⁰⁰ the court asserted that the above line of cases had reformulated the *Krofft* extrinsic test into an objective test of the similarity of *expression*, instead of a test of the similarity of ideas. The court stated:

Now that it includes virtually every element that may be

93. *Jason v. Fonda*, 526 F. Supp. 774 (C.D. Cal. 1981), *aff'd*, 698 F.2d 966 (9th Cir. 1982).

94. 872 F.2d 907 (9th Cir. 1989).

95. *Id.* at 912 (citing *Berkic v. Chrichton*, 761 F.2d 1289, 1293 (9th Cir. 1985)); *Shaw v. Lindheim*, 908 F.2d 531, 534 (9th Cir. 1990).

Approximately sixth months before the *Narell* decision, the court, in *Olson v. National Broadcasting Co.*, applied the *Litchfield* objective elements extrinsic test to a comparison between a television series called the "A-Team" and a screen treatment for a T.V. pilot called "Cargo." 855 F.2d 1446 (9th Cir. 1988). The opinion provides a helpful example of analyzing the various elements including the plot, theme, mood, pace, and characters. However, the opinion did not add anything to the legal analysis of the test.

96. *Narell*, 872 F.2d at 909.

97. The entire part of the opinion pertaining to the substantial similarity analysis is arguably dicta. The court itself stated that summary judgment was appropriate because no protected expression had been copied based upon *Narell*'s list of copied passages. *Id.* at 912. Indeed, this stance is supported by Justice Halls' special concurrence: "Because I conclude that no protected expression was copied, . . . the district court properly granted summary judgment In my view, this conclusion ends the analysis It becomes unnecessary to reach the issue[] of substantial similarity" *Id.* at 915.

98. *Id.* at 912.

99. *Id.* at 913.

100. *Shaw v. Lindheim*, 908 F.2d 531, 535 (9th Cir. 1990).

considered concrete in a literary work, the extrinsic test as applied to *books, scripts, plays, and motion pictures* can no longer be seen as a test for mere similarity of ideas. . . . The two tests are more sensibly described as objective and subjective analyses of *expression*, having strayed from *Krofft's* division between expression and ideas. . . . Indeed, a judicial determination under the intrinsic test is now virtually devoid of analysis [It] has become a mere subjective judgment as to whether two *literary* works are . . . similar.¹⁰¹

The *Shaw* court's task was to review a summary judgment motion made against the plaintiff. The plaintiff alleged an infringement of his pilot script "The Equalizer" by a television series treatment also entitled "The Equalizer."¹⁰² The court, following *Jason* and its progeny, analyzed the themes, plots, characters, and some dialogue of both works and decided that "reasonable minds might differ as to the substantial similarity between the protected *ideas* of the respective works."¹⁰³ Therefore, the court held that summary judgment was inappropriate and announced a new rule for literary works: If a plaintiff can satisfy the extrinsic test by showing that there is a genuine issue of fact with respect to the objective elements of expression, then a court may not grant summary judgment.¹⁰⁴ Otherwise, a court would substitute its own subjective analysis for that of the trier of fact.¹⁰⁵

101. *Id.* at 535 (emphasis added except to the word "expression").

102. *Id.* at 533.

103. *Id.* at 536.

104. *Id.* at 537.

Note the use of the word "ideas" in italics in the summary judgment holding. *Shaw*, 908 F.2d at 537. See *infra* note 110. First, the statement may be meant to support the court's belief that the extrinsic test is one of similarity of expression, given that ideas are not protectable. The court here, arguably, meant to include objective expression, which is protectable, in the term "ideas." Second, stating the summary judgment holding in this manner encompasses cases that might appear to contradict the *Shaw* rule. For example, *Aliotti* and its progeny, which involve summary judgment and the merger doctrine, could also be covered. See *infra* notes 131-52 and accompanying text. Summary judgment is appropriate in these cases, even though the extrinsic test may be satisfied due to the similarity of ideas, because no substantial similarity in the intrinsic test can be found as a matter of law when all the similarity is due to unprotectable expression that has merged with the idea(s). See, e.g., *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987). If the summary judgment extrinsic test is restated as protected "ideas," then these type of cases would instead fail the extrinsic test because no *protected* ideas are present. Then, a court could grant summary judgment because these scenarios would not contradict the *Shaw* summary judgment rule.

105. *Shaw*, 908 F.2d at 536. The court's reasoning is based on its repartitioning of

Shaw has interesting ramifications to user interfaces because they are typically protected as literary works. Although software is not specifically included in the *Shaw* court's analysis, and user interfaces do not have plots, themes, and characters, a *Shaw*-type analysis might still be useful because user interfaces do have objective elements of expression. For example, the sequence of dialogs presented to a user, the colors used in the graphical components, the means to input data to the program, and the function names chosen are all objective elements of expression that can be analyzed individually.¹⁰⁶

A recent Ninth Circuit case addressing user interfaces took this view. In *Brown Bag Software v. Symantec Corp.*,¹⁰⁷ the plaintiff appealed a summary judgment on the substantial similarity of two computer outlining programs. The plaintiff alleged infringement of its program, claiming similarity of the opening display screens, pulldown menus, color schemes, and other features.¹⁰⁸ The court affirmed the district court's examination of the objective elements of expression and acknowledged that the extrinsic test had been reformulated into an objective test of expression for user interfaces.¹⁰⁹ The opinion carefully avoided restricting the objective expression test to literary works, as in *Shaw*,¹¹⁰ implying that the new test applies

the test into objective and subjective steps. See *id.* at 536-37. If a court analyzes the objective expression, determines that a genuine issue of material fact exists, and grants summary judgment, it would be saying that its own subjective analysis had more weight than an objective analysis. See *id.*

106. This Author does not imply that these particular objective elements are or should be protectable or that this is the correct approach for analyzing substantial similarity in user interfaces.

107. 960 F.2d 1465 (9th Cir. 1992).

108. *Id.* at 1472-73.

109. *Id.* at 1475.

110. Arguably, *Brown Bag* did not resolve the issue of whether the *Shaw* summary judgment holding applies solely to literary works. The *Brown Bag* court ruled that the *Shaw* summary judgment holding does apply to user interfaces, stating that "we cannot conclude as a matter of law that the programs at issue here, or computer programs in general, are so nonliterary or so limited in their variety of expression as to avoid application of the rule announced in *Shaw*." *Id.* at 1476. However, the court did not decide the larger issue.

On the other hand, *Pasillas v. McDonald's Corp.*, 927 F.2d 440, 442 (9th Cir. 1991), stated that *Shaw*'s holding regarding the summary judgment test is to be restricted to literary works, as opposed to artistic works. The only issue before the *Pasillas* court was whether, after *Shaw*, a court can grant summary judgment based upon the intrinsic test. Because it addressed a case of merger, the *Pasillas* court differentiated *Shaw* and stated that it could grant summary judgment because there was no way the

to all subject matter.¹¹¹

In summary, *Jason*, *Litchfield*, *Berkic*, *Narell*, and *Shaw* extended the extrinsic analysis of traditional literary works to include "objective elements of expression" such as plot, theme, characters, dialogue, mood, setting, pace, and sequence of events. In addition, *McCulloch* applied a similar test to artistic works. *Shaw* went even further and established a rule for summary judgment, stating that it is inappropriate, after performing an objective analysis of expression, to grant summary judgment if genuine issues of material fact remain. *Shaw* also re-characterized the entire substantial similarity test as objective and subjective analyses of expression. Lastly, *Brown Bag Software* stated that the reformulated test applies to all subject matters. Thus, the Ninth Circuit has reformulated the extrinsic test and expanded its role in deciding infringement cases.

2. Confining the Intrinsic Test to Protectable Expression

The second new principle, limiting the intrinsic test comparison to protectable expression, appears to be a trend in recent Ninth Circuit cases.¹¹² This principle ensures that the trier of fact may use the intrinsic test to fairly conclude that a work has been impermissibly copied.¹¹³ Otherwise, a trier of fact could be influenced by the similarity of elements that the law permits to be copied and could gain an overall *impression* that a work has been impermissibly copied even though no protected elements were actually copied.¹¹⁴ A wrong overall impression of similarity could occur, for example, because the expression necessarily follows from the choice of an idea or is limited by the number of ways available to express the idea. As a result, the two works look almost identical even though

intrinsic test could ever succeed based upon unprotectable expression. *Id.* at 443. *But see supra* note 104, which suggests that this differentiation was not necessary.

111. "Recently, . . . we have recognized that the line is more properly drawn between objective and subjective analyses of expression [T]oday, however, the extrinsic test looks at more than just the similarity of ideas [It] has become an 'objective . . . analys[is] of expression.'" *Brown Bag Software*, 960 F.2d at 1474-75 (quoting *Shaw*, 919 F.2d at 1357 (emphasis in original)).

112. Cases that seem to support this principle typically state that the substantial similarity test requires the plaintiff to prove the "similarity of general ideas" under the extrinsic test and the "similarity of *protected* expression" under the intrinsic test. *See, e.g., Shaw v. Lindheim*, 908 F.2d 531, 534 (9th Cir. 1990) (citing *Olson v. National Broadcasting Co.*, 855 F.2d 1446, 1449 (9th Cir. 1988); *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1164 (9th Cir. 1977)).

113. *See NIMMER ON COPYRIGHT, supra* note 6, at § 13.03[E][2].

114. *Id.* § 13.03[E][1].

the copying is permitted.¹¹⁵

The Ninth Circuit has advocated limiting the intrinsic test to protectable expression when a particular type of work has acquired limited copyright protection. Thus, the Ninth Circuit has applied this principle to factual works,¹¹⁶ functional works,¹¹⁷ video games,¹¹⁸ and works whose expression is granted little protection because of the merger or scenes a faire doctrines.¹¹⁹ User interfaces should be treated similarly due to their functional nature; however, in a recent case, the court refused to rule on this issue.¹²⁰

The first case to limit the intrinsic test to protectable expression was *Cooling Systems and Flexibles, Inc. v. Stuart Radiator, Inc.*¹²¹ This case involved an infringement action between two distributors of illustrated radiator catalogs. Both works were factual works arranged into the same three sections: an illustrations section, an original equipment manufacturer section, and an applications section.¹²² The *Cooling Systems* court recognized the need to treat factual works differently from more artistic works because of the limited range of expression available to factual works.¹²³ The court affirmed summary judgment against the plaintiff and applied the principle announced in *Landsberg v. Scrabble Crossword Game Players, Inc.*¹²⁴ that "similarity of expression [might] have to amount to verbatim reproduction . . . before a factual work will be deemed infringed."¹²⁵ Thus, in applying the intrinsic test, it

115. See *infra* note 167 for a specific software example of the merger doctrine.

116. See, e.g., *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

117. See, e.g., *Harper House v. Nelson, Inc.*, 889 F.2d 197 (9th Cir. 1989).

118. See, e.g., *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988).

119. See, e.g., *Olson v. National Broadcasting Co.*, 855 F.2d 1446 (9th Cir. 1988); *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987).

120. See *infra* notes 157-61 and accompanying text.

Recently, however, the court for the Northern District of California applied this principle in the user interface case of *Apple v. Microsoft*, 1992 U.S. Dist. LEXIS 12219 (N.D. Cal. 1992). Judge Walker cited *Pasilas v. McDonalds Corp.*, 927 F.2d 440 (9th Cir. 1991), to state that the intrinsic test "entails a comparison of the portions of a work that can be the subject of copyright protection." *Apple*, 1992 U.S. Dist. LEXIS 12219, at *18. He then applied the limiting doctrines, such as merger and scenes a faire, to analyze whether the expression found similar under the extrinsic test was protected and thus able to survive summary judgment. *Id.* at *21-26.

121. 777 F.2d 485 (9th Cir. 1985).

122. *Id.* at 492.

123. *Id.* at 491.

124. 736 F.2d 485 (9th Cir. 1984).

125. *Cooling Systems*, 777 F.2d at 491 (citing *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F.2d 485 (9th Cir. 1984)).

is insufficient to look at the similarity of the whole work because a lay observer could easily find the two works similar *as a whole*.¹²⁶ Significantly, such a result would not necessarily amount to verbatim copying as required. Instead, the lay observer must examine "whether the very small amount of protectible [sic] expression . . . is substantially similar . . ."¹²⁷

Within two years, *McCulloch v. Price* severely limited this principle, holding it inapplicable to literary works.¹²⁸ Like *Cooling Systems*, the *McCulloch* opinion cited *Landsberg*, but this time it lent support to the opposite principle: a non-factual work should receive much broader protection because of the variety of expression available to implement ideas.¹²⁹ The *McCulloch* court stated that the intrinsic test should require "the work be considered as a whole, including any elements which may not be independently copyrightable apart from the work."¹³⁰

Retreating from the harsh stance of *McCulloch*, a series of cases beginning with *Aliotti v. Dakin & Co.*¹³¹ impliedly restored the principle of limiting the intrinsic test to protectable expression in works, regardless of subject matter, where the doctrines of merger or scenes a faire limit available protection. Where all the similarities between two works are deemed unprotectable due to merger or scenes a faire, the court will not permit any substantial similarity to be found in the intrinsic test *as a matter of law*.¹³² Thus, any lay observer analysis in the intrinsic test of the "total concept and feel," which by definition includes unprotectable expression, becomes pointless after the court has determined that it will not permit a finding of substantial similarity of expression.¹³³ This result is consistent with the *Landsberg* principle that the less protectable a work, the more a court requires verbatim copying to constitute

126. *See id.* at 493.

127. *Id.*

128. *McCulloch v. Price, Inc.*, 823 F.2d 316 (9th Cir. 1987). *See supra* notes 87-93 and accompanying text for a discussion of the facts of *McCulloch*.

129. *Id.* at 321 (citing *Landsberg*).

130. *Id.*

131. 831 F.2d 898 (9th Cir. 1987).

132. *Id.* at 901. The court stated that "no substantial similarity may be found under the intrinsic test where analytic dissection demonstrates that all similarities in expression arise from the use of common ideas." *Id.*

133. For this reason, the *Shaw* court later recognized that in this type of merger case, as differentiated from literary works, a court is "well-suited to make the required determination of similarity on a motion for summary judgment." *Shaw v. Lindheim*, 908 F.2d 531, 538 (9th Cir. 1990).

infringement.¹³⁴

The *Aliotti* case illustrates the principle that if *all* similarities are found to be unprotectable through merger or scenes a faire, no substantial similarity can be found as a matter of law.¹³⁵ Specifically, *Aliotti* involved the alleged infringement of a line of stuffed animal dinosaurs by allegedly similar toy dinosaurs.¹³⁶ Although the court determined that the ideas encompassed by the two works were identical "stuffed dinosaur toys," it found that all of the similarities of expression between the two lines of toys necessarily followed from the idea of a stuffed dinosaur toy.¹³⁷ For example, both product lines consisted of animals that were "gentle and cuddly," and because toys intended for children "are usually designed to be soft and nonthreatening," this expression would obviously follow to accomplish that result.¹³⁸ Thus, because all similarities resulted from merged expression or standard treatments of the idea of stuffed dinosaurs, the court found that there was "no substantial similarity of protectable expression."¹³⁹

Following *Aliotti*, several cases involving the merger of idea and expression and the scenes a faire doctrine applied the *Aliotti* doctrine to different subject matter. These cases include *Olson v. National Broadcasting Co.*¹⁴⁰ and *Data East USA, Inc. v. Epyx, Inc.*¹⁴¹ First, in *Olson*, the court affirmed a judgment notwithstanding the verdict order against the plaintiff in a case involving infringement of a screenplay and treatment for a television pilot called "Cargo."¹⁴² The *Olson* court first examined the allegedly infringing work, a television series called "The A-Team," for similarity of the objective details of the works in the extrinsic test.¹⁴³ After concluding that the works lacked plot similarity, the court decided that any similarities due to the theme, mood, and pace of the works were expression that followed from the genre of action-adventure

134. See *supra* note 125 and accompanying text.

135. *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987).

136. *Id.* at 900.

137. *Id.* at 900-01.

138. *Id.* at 901. In addition, that "Aliotti's Pterodactyl and Dakin's Peranodon were designed as mobiles [does not support substantial similarity,] given that each was a winged creature." *Id.* at 901-02 n.1.

139. *Id.* at 902.

140. 855 F.2d 1446 (9th Cir. 1988).

141. 862 F.2d 204 (9th Cir. 1988).

142. *Olson*, 855 F.2d at 1452.

143. *Id.* at 1450.

television series.¹⁴⁴ Therefore, the similarities of expression resulted from unprotectable elements and did not “demonstrate substantial similarity.”¹⁴⁵ As a result, the court found that the works were “not substantially similar under the extrinsic test.”¹⁴⁶

Finally, applying the intrinsic test, the *Olson* court used the *Aliotti* doctrine to find that “no substantial similarity of protectable expression [exists] under the intrinsic test.”¹⁴⁷ Even though a “reasonable jury” might have found substantial similarity under the lay observer standard, the fact that *all* of the similarities resulted from unprotectable scenes a faire was sufficient to determine that no substantial similarity *could* be found.¹⁴⁸

A second Ninth Circuit case, *Data East*, applied the *Aliotti* doctrine to video games.¹⁴⁹ The *Data East* court determined in the intrinsic test that all of the similarities of expression found were unprotectable due to the merger or scenes a faire doctrines.¹⁵⁰ For example, “the game procedure, the common karate moves, . . . a referee, computer graphics, . . . result from either constraints inherent in the sport of karate or computer restraints . . . [and] are not protectable.”¹⁵¹ Therefore, the court ruled that there was no “protectable substantial similarity.”¹⁵²

One year after *Data East*, the *Cooling Systems* principle of

144. *Id.*

145. *Id.* at 1451. The court also decided that because the characters in “Cargo” were not protectable, a “claim of substantial similarity [could not be] based upon [the] similarities in characters.” *Id.* at 1451-53. Although characters are sometimes protectable, the *Olson* court deemed the characters in “Cargo” too “thinly” described to merit protection. *Id.* at 1453.

146. *Olson*, 855 F.2d at 1453.

147. *Id.*

148. *Id.*

149. *Data East USA Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988).

150. *Id.* at 209.

The Ninth Circuit recently interpreted the *Data East* analysis of the protectability of the similarities of expression found in the extrinsic test as a separate analysis of the scope of protection of the copyright rather than as part of the intrinsic test. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1475-76 (9th Cir. 1992). However, the text of the *Data East* opinion, arguably, placed this analysis in the intrinsic test. See *Data East*, 862 F.2d at 208. The discrepancy is probably due to *Brown Bag's* incorporation of *Data East* into a model based upon the reformulated extrinsic test, whereas in *Data East* all analysis of expression was performed outside of the extrinsic test.

151. *Data East*, 862 F.2d at 209.

152. *Id.*

restricting the intrinsic test to protectable expression was invoked again, without the requirement of merger or scenes a faire, upon a functional and factual work.¹⁵³ In *Harper House v. Nelson, Inc.*, the court remanded to decide the infringement of a time management organizer because the jury instructions did not adequately instruct the jury how to compare the works as wholes in the intrinsic test.¹⁵⁴ Specifically, the instructions needed to instruct the jury to focus only on the protectable expression contained in the text of the organizer or the arrangement of the compilation.¹⁵⁵ The court found that *Cooling Systems* limited the total impact and effect test to a comparison of protectable expression where the work, as in the organizer, contained little that could be protected.¹⁵⁶

Because their functional nature is similar to the time organizers in *Harper* and the video games in *Data East*, user interfaces ought to be subject to the *Cooling Systems*' restricted intrinsic test. However, in *Brown Bag Software v. Symantec*, the court refused to decide this issue.¹⁵⁷ Although the district court performed analytic dissection of the similarities of expression between the two user interfaces and found them to result from unprotectable expression,¹⁵⁸ the Ninth Circuit characterized this analysis as part of the copyright ownership analysis for the purpose of defining the scope of the

153. See *Cooling Systems & Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

154. *Harper House v. Nelson, Inc.*, 889 F.2d 197, 207-08 (9th Cir. 1989).

155. *Id.* at 206. Although an instruction had been given that correctly required the plaintiff to "make a showing of substantial similarity between 'protectable expression' in the organizers," the court stated that the instruction was inadequate because it did not tell the jury how to differentiate protectable from unprotectable expression. *Id.* at 207.

156. *Id.* at 207.

157. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992). See *supra* notes 107-08 and associated text for a description of the case.

158. After the district court determined that the idea of using an opening menu was similar (in the extrinsic test), it determined that the only similarity of expression of these menus was in their use of the same functions (in what appears as the intrinsic test). *Telemarketing Resources v. Symantec*, 1990 Copyright L. Dec. (CCH) ¶ 26,514, at 23,088 (N.D. Cal. 1989). Because these functions were then found inherent in the idea of using an opening menu, the court found that "the expression of the two screens [was] not substantially similar, as a matter of law." *Id.* This statement implies that there were no similarities found in the intrinsic test that were protectable expression. Finally, the court in its summary implied that it used the *Aliotti* limitations, describing the process of evaluating the opening screen similarities as "redacting that material which is not protected under the copyright [and performing] the required extrinsic and intrinsic tests." *Id.* at 23,089.

plaintiff's copyright.¹⁵⁹ In a footnote, the court hedged in stating the effect this analysis might have on the intrinsic test.¹⁶⁰ Specifically, because the district court was not required to perform the intrinsic analysis in order to rule on summary judgment, it was not necessary for the court of appeals to resolve the issue.¹⁶¹

In summary, *Cooling Systems* established the principle that for a factual work the intrinsic test should be limited to a consideration of protectable expression.¹⁶² This holding was based on the belief that the less protectable a work, the more a court should require verbatim copying before finding infringement.¹⁶³ After *McCulloch* attempted to limit *Cooling Systems* to factual works, a series of cases beginning with *Aliotti* impliedly reintroduced the *Cooling Systems*' principle, at least where merger or scenes a faire limits available expression.¹⁶⁴ As a result, the intrinsic test has been limited to protectable expression in cases involving factual works, functional works, video games, and works whose scope of copyright protection appears limited.¹⁶⁵ Finally, although the intrinsic test ought to be similarly limited when applied to user interfaces, *Brown*

159. *Brown Bag*, 960 F.2d at 1475-76.

160. "The degree to which unprotected or unprotectable features must be eliminated from a comparison of two works is difficult to say." *Id.* at 1476 n.4. Apparently, the word "comparison" refers to the intrinsic test because the text cites to a discussion in NIMMER ON COPYRIGHT concerning the intrinsic test. *Id.* See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][1].

Contrary to *Brown Bag*, Judge Walker in a recent *Apple Computer v. Microsoft Corp.* order explicitly eliminated unprotectable features from the intrinsic test. 1992 U.S. Dist. LEXIS 12219, *1-2 (N.D. Cal. 1992). See *supra* note 119.

161. The court affirmed the district court's summary judgment based on a finding that no similarity of "copyrighted components" resulted from application of the extrinsic test. *Brown Bag*, 960 F.2d at 1477. Arguably, the court of appeals recharacterized the district court's analysis to coincide better with the reformulated *Krofft* test, which was not considered by the district court. Thus, the appellate court placed the analysis of expression that would have been considered part of the intrinsic test by the district court into the extrinsic test. Because the district court never performed a subjective analysis of the total concept and feel under *Aliotti* (no protectable similarities remained), none of the district court analysis remains as part of the intrinsic analysis in the court of appeals opinion. See *Brown Bag*, 960 F.2d at 1475-77; *Telemarketing Resources*, 1990 Copyright L. Dec. (CCH), at 23,088.

162. *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

163. *Id.* at 491 (citing *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F.2d 485 (9th Cir. 1984)).

164. See *McCulloch v. Price, Inc.*, 823 F.2d 316 (9th Cir. 1987); *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987).

165. See, e.g., *Harper House v. Nelson, Inc.* 889 F.2d 197 (9th Cir. 1989); *Data East USA v. Epyx*, 862 F.2d 204 (9th Cir. 1988); *Olson v. National Broadcasting Co.*, 855 F.2d 1446

Bag Software left this issue open.¹⁶⁶

3. Using Analytic Dissection to Separate Protectable Expression

When applying the third principle, that analytic dissection of *similarities* is appropriate for separating protectable from unprotectable expression, the underlying issue is whether expert testimony will be allowed to aid the analytic dissection. The use of expert testimony to separate protectable expression, either during or before the intrinsic text, could prevent the problem inherent in the audience test; namely, that a lay observer might find superficial similarity when the unprotectable expression requires expertise to discern or overlook similarity when it is hidden, as between different media. These were the same reasons expert testimony was introduced in the extrinsic test.¹⁶⁷ Especially with respect to high technology cases, expert testimony would help with the dissection.¹⁶⁸

Most of the cases, however, that have allowed analytic dissection of similarities of expression have limited this analysis to the intrinsic test, implying that expert testimony is not permitted to aid in the analysis.¹⁶⁹ In some cases, this phenome-

(9th Cir. 1988); *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987); *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

166. See *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1476 n.4 (9th Cir. 1992).

In addition, a recent United States Supreme Court case, *Feist Publications v. Rural Telephone Service*, 111 S. Ct. 1282 (1991), may mandate limiting the intrinsic test to protectable expression. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][1][b]. The *Feist* court stated that to establish infringement, a plaintiff must prove the "copying of constituent elements of the work that are original." *Feist*, 111 S. Ct. at 1296. However, because the defendant in *Feist* engaged in verbatim copying, the case turned on the doctrine of "fair use" instead of requiring a substantial similarity analysis. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[E][1][b]. Thus, the import of the language of *Feist* remains to be determined. *Brown Bag*, although decided after *Feist*, did not clarify the issue.

167. See also *supra* notes 35-36 and accompanying text.

168. For example, a user interface designer may order the sequence of commands on a "menu" (a list of available options) according to the optimal means to search the sequence. Thus, there may be very few ways to actually express this same sequence, although many seem possible. Under the merger doctrine, such expression should not be protectable. Because many similar situations in user interfaces exist, a non-expert will probably find that user interfaces for products with the same functions, targeted to the same market, look alike. Without the help of expert testimony, it is highly likely that protection will be granted to certain kinds of expression, thereby limiting healthy competition. See also *infra* notes 184-205 and accompanying text.

169. See, e.g., *Data East USA Inc. v. Epyx, Inc.*, 862 F.2d 204 (9th Cir. 1988); *Aliotti v. Dakin & Co.*, 831 F.2d 898 (9th Cir. 1987); but see *Olson v. National Broadcasting Co.*, 855 F.2d 1446 (9th Cir. 1988).

non may depend more on where this rule was discussed in the court's opinion.¹⁷⁰ Also, most of the opinions addressing this issue were written before the sanctioned expansion of the extrinsic test. Thus, in these earlier opinions, all analysis of expression was discussed with reference to the intrinsic test. In contrast, *Brown Bag* devised yet another approach by including the dissection of similarities of expression as part of copyright ownership analysis and not part of the extrinsic or intrinsic test at all.¹⁷¹

For example, in *Aliotti*, the court implied that the analytic dissection separating out protected expression should be done in the intrinsic test. First, the court ended its discussion of the extrinsic test when it stated that "the extrinsic test is satisfied here because both lines of products depict the same subject matter—stuffed dinosaur toys," and that the district court improperly relied upon dissection of the *dissimilarities*¹⁷² in the intrinsic part of the test.¹⁷³ Second, the court stated that analytic dissection of the *similarities* to separate out the protected expression should be done, to the extent necessary, in the intrinsic test.¹⁷⁴ Third, the Court analyzed the similarities and concluded that none of them consisted of protectable expression.¹⁷⁵ Thus, the *Aliotti* court intended the analysis to be (1) different from the analysis done in the extrinsic test, and (2) performed separately in the intrinsic part of the test.¹⁷⁶

Contrary to *Aliotti*, in *Olson*, the court used the analysis it performed in the extrinsic test to separate out the protected expression later in the intrinsic test.¹⁷⁷ Also, unlike *Aliotti*,

170. See, e.g., *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985) (where the court only reviewed the intrinsic analysis and, as a result, performed analytic dissection during the intrinsic analysis).

171. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1475-76 (9th Cir. 1992).

172. Dissection of the dissimilarities appears to refer to the separation of ideas from expression in the extrinsic test. The court maintains that this kind of dissection would still be inappropriate in the intrinsic test because it "distracts a reasonable observer from a comparison of the total concept and feel of the works." *Aliotti*, 831 F.2d at 901.

173. *Id.*

174. "To the extent that it is necessary to determine whether similarities result from unprotectable expression, it is appropriate under *Krofft's* intrinsic test to perform analytic dissection of similarities." *Id.*

175. See *supra* notes 135-39 and accompanying text.

176. *Data East* also supports this view. It not only used the *Aliotti* language verbatim when it described the intrinsic test, it also emphasized the difference between the words "dissimilarities" and "similarities." *Data East USA Inc. v. Epyx, Inc.*, 862 F.2d 204, 208 (9th Cir. 1988).

177. See *Olson v. National Broadcasting Co.*, 855 F.2d 1446 (9th Cir. 1988).

the *Olson* opinion did not distinguish between analysis of the similarities and the dissimilarities. Instead, the court analyzed the similarities and dissimilarities of the plot, theme, mood, pace, and characters in the extrinsic test.¹⁷⁸ Then, in the intrinsic part, the court found that “[b]ecause those similarities that do exist arose from unprotectable scenes a faire, there exists no substantial similarity of protectable expression under the intrinsic test.”¹⁷⁹ The opinion did not perform another analysis of expression, but impliedly used its analysis from the extrinsic text. Therefore, unlike *Aliotti*, the analysis in *Olson* was performed as part of the extrinsic test where expert testimony can be heard. Because *Olson* used the reformulated extrinsic test, which includes an analysis of objective expression, there was no need to repeat the analysis of similarities in the intrinsic test.¹⁸⁰

In summary, although the Ninth Circuit Court supports the use of analytic dissection to separate protected from unprotected expression, it is not clear whether this analysis includes the use of expert testimony. Also, *Brown Bag* establishes that with the reformulated extrinsic test, this analysis is separate from the substantial similarity analysis.¹⁸¹ It would not make sense to allow expert testimony to find that every similarity was unprotectable in the objective analysis, and then find the same similarities protectable in the subjective analysis simply because the lay observer was not informed.

4. Future Ramifications to User Interfaces

In summary, recent Ninth Circuit cases have established at least three new principles: (1) that the extrinsic test includes an objective analysis of expression; (2) that the intrinsic test should be limited to protected expression for works whose scope of copyright protection is limited; and (3) that analytic

178. *Id.* at 1451. For example, even though the court found similarities in the theme, mood, and pace of the two works, it decided that these similarities were “common to the genre of action-adventure television series.” *Id.*

179. *Id.* at 1453. This is the second principle that limits the intrinsic test to protectable expression. See notes 140-48 *supra* and accompanying text.

180. A court must decide whether the expression is protectable in the extrinsic test in order to decide whether such expression supports a claim of substantial similarity.

181. See *infra* note 169 and accompanying text.

The *Brown Bag* court arguably made it easier to reformulate or clarify this principle by removing the dissection outside the substantial similarity analysis where it no longer must accommodate *Krofft*.

dissection can be used to separate protected from unprotected expression. Only the first of these principles has been explicitly applied to user interfaces.

At least one scholar has advocated incorporation of these principles into modern copyright law. In his treatise on copyright law, David Nimmer incorporates all three of these new principles into his approach to the substantial similarity test called "successive filtering analysis," which he advocates applying to user interfaces.¹⁸² This test is discussed in Sections IV and V of this Comment.¹⁸³

III. AN ANALYTIC FRAMEWORK FOR EVALUATING REVISED SUBSTANTIAL SIMILARITY TESTS

Assuming the Ninth Circuit will refine its substantial similarity test, this section defines a framework for analyzing proposed substantial similarity tests for user interfaces. This framework is comprised of a set of goals that are intended to maintain the careful balance between giving authors incentive by rewarding their creativity with limited monopolies and reserving the results of new creativity for unrestricted public use. In this respect, the goals for a user interface substantial similarity test are no different than those for any subject matter. On the other hand, the goals for a user interface substantial similarity test must also account for the unique aspects of user interfaces.

Perhaps the most unique aspect of user interfaces is that creativity is significantly restrained by the objectives embodied in every software program.¹⁸⁴ The irony is that modern "graphical user interfaces"¹⁸⁵ appear to use more creative forms of expression than older style user interfaces, but in fact

182. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F]. The "successive filtering" method discussed in the treatise is based upon David Nimmer et al., *A Structured Approach to Analyzing the Substantial Similarity of Computer Software in Copyright Infringement Cases*, 20 ARIZ. ST. L.J. 625 (1988).

183. See *infra* notes 226-30, 237-84 and accompanying text.

184. One such objective is run time efficiency. Run time efficiency is the speed at which the program performs while it is carrying out its designated task.

185. A graphical user interface, in its most simple form, is a user interface that takes advantage of bitmapped display hardware (screens) to draw text and graphics on the screen simultaneously, instead of drawing graphical objects using textual characters within lines of text. A bitmapped display is a display which allows a program to communicate with it in terms of "X, Y" coordinates instead of rows and columns. A bitmapped display is "drawn to" by turning on and off individual pixels (lightable points) on the screen. For a more thorough explanation of graphical user

they are restrained by a whole new set of external problems.¹⁸⁶ Therefore, it is important to have some understanding of these restraints before discussing the goals for a user interface substantial similarity test.

A. Restraints on User Interface Expression

Software, including user interfaces, is restrained by many external factors. First, choices for implementing a particular feature may be limited by efficiency and logic concerns.¹⁸⁷ For instance, a particular software solution may be faster and more "elegant."¹⁸⁸ Protecting a functionally optimal solution in such instances effectively grants a monopoly to one person and makes it difficult for others to compete.¹⁸⁹

Second, the nature of the problem to be solved, or the particular customer to which the interface is targeted, may limit

interfaces and their future in the personal computer market, see Jim Seymour, *The GUI: An Interface You Won't Outgrow*, PC MAGAZINE, Sept. 12, 1989, at 97.

Some examples of graphical user interfaces are Microsoft's Windows (TM), Apple's Macintosh Finder (TM), and Sun Microsystems' Sun/Open Look (TM). Most graphical interfaces include some form of windows (bordered, usually rectangular boxes) in which application programs place their information and menus, which allow the user to select tasks to perform. An example of a character-based interface on the personal computer, which implemented a primitive form of windows, is Microsoft's DOS Shell.

186. For example, a flashing effect on the screen when moving "objects" around with a pointing device such as a mouse or joystick creates a problem specific to graphical user interfaces.

187. Nimmer proposes that efficiency and logic should dictate elimination of the resultant limited range of choices from the list of protectable expression under the merger doctrine. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][2].

188. For example, it is more user task efficient and computer time efficient to use something called "cascading menus" or "nested menus" for user options that are intimately related. A cascading menu typically uses main menus and submenus such that each submenu appears to slightly overlay its parent when displayed on the screen. This technique allows a user, who employs a hardware mouse, to manipulate the screen pointer with very little hand movement when making selections of particular options. This promotes computer-human interface design principles by maintaining user efficiency and simplicity. See *infra* notes 201-04 and accompanying text.

189. At a recent conference on both the legal and computer aspects of copyright protection of computer software, conferees endorsed the proposition that functionally optimal solutions should not be protected. Although there was not agreement on all issues, the conferees agreed that copyright should not protect aspects of an interface that optimize, in a way for which there is no viable substitute, such design goals as rapid execution, accuracy of results, error reduction, number and/or speed of keystroke functions, or time, effort, or cost of becoming skilled at using the programs. Such functionally optimal aspects of an interface should not be protected regardless of whether the original designer consciously employed systematic design analysis aimed at optimization or simply discovered an optimal interface aspect by intuition. *Last Frontier Conference*, *supra* note 13, at 28.

suggestions and, therefore, expression.¹⁹⁰ For example, a customer may request a user interface for an accounting program and may dictate the choice and sequence of certain procedures. If only one vendor were allowed to copyright the expression involved in the arrangement and selection of such procedures, other vendors might not be able to compete for enhancements or new versions of the software in subsequent contract bids.

Third, external requirements, such as hardware standards and compatibility with other software interfaces, may restrain the expression available to a user interface designer.¹⁹¹ For example, a word-processing program that can manipulate charts from a spreadsheet program must be able to communicate with the spreadsheet program and receive data from it. In order to communicate, the word-processing program needs to understand the spreadsheet program's data format. This requirement may dictate the use of particular data structures¹⁹² that show up in the user interface, such as in dialogs that allow the user to manipulate the spreadsheet chart information.

Fourth, software industry standards may restrict the flexibility of expression in an interface.¹⁹³ Many system software vendors¹⁹⁴ provide user interface guidelines to promote a particular "style and behavior"¹⁹⁵ of applications. Many vendors consider these guidelines to be "de facto" industry standards and the wave of the future.¹⁹⁶ Thus, applications will typically honor these guidelines in order to be considered part of the

190. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][3][d].

191. See *id.* § 13.03[F][3][a]-[b].

192. "Data structures" are programmatic units for keeping track of data. Often they contain multiple parts for different types of related data. See, e.g., *id.* § 13.03[F][1] n.288.

193. See *id.* § 13.03[F][3][c].

194. "System software" refers to any software that runs under typical end-user applications, such as word-processing and spreadsheet programs. For example, system software includes the operating system, which is software that controls hardware and software resources such as the printers, the mouse, and the screen. System software also includes the basic user interface ("shell") that is shipped with the system, to perform basic file management, access printers, and execute applications.

195. The term "look and feel" has been overused, is devoid of meaning, and is often confused with the copyright term "total concept and feel." See *id.* § 13.03[F] n.277, for an explanation of the evolution of the term "total concept and feel."

196. For example, IBM advocates the Common User Access SAA ("IBM CUA") standard for PC interfaces running on top of OS/2, while Apple Computer Corp. advocates its style-guide for Macintosh applications, and Microsoft Corp. advocates its Windows style-guide for Windows applications. See, e.g., Jim Seymour, *Who Owns the Standards*, PC MAGAZINE, May 26, 1987, at 174.

system family and to enable users to move freely between applications. The result is that many user interfaces running on the same system software look very similar.¹⁹⁷

Fifth, some copyright adverse computer professionals believe that the evolution of the industry depends on the ability of programmers and designers to build upon the work of their predecessors.¹⁹⁸ This belief is not really a restraint, but an opinion that certain types of expression are major breakthroughs that ought to be left in the public domain. Thus, if these breakthroughs are protected, the progress in the industry may be stifled.¹⁹⁹ Perhaps one way to address this concern is under the idea/expression dichotomy doctrine: major breakthroughs, as viewed by software industry experts, could be classified as unprotectable ideas during analytic dissection.²⁰⁰

Sixth, although user interface design is an art, science may also dictate particular design choices.²⁰¹ If a user interface designer is sensitive to computer-human interaction ("CHI") principles, certain choices will be preferred.²⁰² For example, some studies show that blue is not a good color for readable

197. A wide variety of user interface expression is covered in these guidelines, such as what keys are to be used for what types of functions, how long names of commands can be, what the names should be for particular functions like "Help" and "Open File," where icons are to be placed on the screen, and how the menu bar looks and is arranged. See, e.g., INTERNATIONAL BUSINESS MACHINES, COMMON USER ACCESS ADVANCED INTERFACE DESIGN GUIDE (1989); APPLE COMPUTER, INC., HUMAN INTERFACE GUIDELINES: THE APPLE DESKTOP INTERFACE (1987). These are just samples of the many stylistic choices governed by these standards.

198. See Bixby, *supra* note 3, at 48.

199. *Id.*

200. For example, there is much dispute as to whether "overlapping" windows as opposed to "tiled" windows is an idea or expression. This feature was one of the alleged infringements in part of the Apple Computer v. Microsoft and Hewlett-Packard lawsuit. See *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 12219.

201. *The Last Frontier Conference* conferees did not agree on how copyright law should consider restraints caused by computer-human interaction principles. Because it is a developing field, some were concerned that vendors may use some of these factors as "(a) an excuse to copy in avoidance of investing their own development costs, or (b) an unfair free ride on another's popular creation." *Last Frontier Conference*, *supra* note 13, at 26. These principles are verifiable by testing and do influence design decisions.

202. Also, it is becoming more prevalent for software vendors to test their interfaces on potential customers before releasing them. This process is called "usability testing." If one believes that these CHI principles have merit, then usability testing may yield results that will indicate that a particular type of expression is consistently better than another, perhaps with respect to ease of learning, ease of use, or task efficiency. These test results then may cause two different interfaces to incorporate similar choices of expression for implementing the same ideas. It would be grossly unjust to protect these types of optimal solutions.

text on computer screens.²⁰³ Also, because people skim text from the upper left to the lower right, important information should be placed in the upper left corner where it is easy to locate.²⁰⁴ User interface designers sensitive to these factors will use them in their designs.

Many of these restraints are not obvious to those who do not design user interfaces. A lay observer may mistakenly determine that two user interfaces are similar because they appear similar, even though the details of their implementation may be very different. Thus, it makes sense to limit the lay audience review of user interface similarities to protectable expression using the approaches taken by *Cooling Systems*, *Data East*, and other cases involving factual or functional works.²⁰⁵ Moreover, given the complexity of analysis involved, expert opinion may be required. In any event, a substantial similarity test suitable for user interfaces must allow for the sifting out of expression that is not protectable due to these restraints.

B. Goals For a Revised Test

Because of their restricted nature, user interfaces should be granted limited copyright protection. The goals listed in this section balance incentive with the uniquely restricted nature of user interface expression and promote reasonable copyright protection of user interfaces. Significantly, however, the goals associated with user interface substantial similarity tests may apply equally as well to other functional works and factual compilations because they also merit limited copyright protection.

1. Allow and Promote Standardization and Compatibility

The software industry is concerned with providing easy-to-learn and easy-to-use software through standardization and compatibility.²⁰⁶ As discussed earlier, standardization or com-

203. Gerald Murch, *Physiological Principles for the Effective Use of Color*, 4 IEEE COMPUTER GRAPHICS AND APPLICATIONS 49 (Nov. 1984).

204. This theory supplies one of the reasons, for example, in graphical user interfaces that the "File" menu is often placed as the first menu, in the upper left corner. See, e.g., ANDREW MONK, *FUNDAMENTALS OF HUMAN-COMPUTER INTERACTION* 155 (1985).

205. See *supra* notes 121-27, 149-56 and accompanying text.

206. In terms of promoting progress of the arts and sciences, there is a tension here between promoting user friendliness as progress in and of itself and simply

patibility may restrain the freedom of expression available to user interface designers.²⁰⁷ Assuming that standardization and compatibility are desirable, as a matter of policy, expression effectuating standardization or compatibility should not be protected by copyright.²⁰⁸ In such situations, therefore, the substantial similarity test should allow the trier of fact to sift out such expression.

2. Foster Competition

One method of maintaining the constitutional mandate to promote science and the useful arts²⁰⁹ is to foster competition. If monopolies are inadvertently granted to those with the optimal solutions, then competition will be hampered. The second-comers' user interfaces will be less desirable because they are not the best. Perhaps the only way left to compete would be through cheaper, inferior products—a result that arguably does not promote science or the useful arts.

On the other hand, if too little protection is given, vendors might not invest in user interfaces that cost a lot of money to develop and test.²¹⁰ Although copyright could be an incentive to software development,²¹¹ software developers and vendors are typically motivated by a combination of profit and the crea-

promoting new features. Standardization, which will promote user friendliness, may in practice discourage the development of new features in some areas because standardization usually implies that "difference is bad." However, this tension is really no different than purely scientific progress in other industries that may be held back, for example, by environmental concerns. Perhaps a more enlightened view of "progress in the arts and sciences" would include a concept of "healthy progress."

207. See *supra* notes 191-97.

208. Perhaps the merger doctrine could be invoked to support this policy.

There are those who believe that copyright protection of these standards will work directly against promotion of the standards because licensing costs would be prohibitive.

209. The U.S. Constitution empowers Congress to "promote the Progress of Science and the 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.

210. This theory is the basis behind an entire article devoted to the application of copyright law using lessons learned from patent law. See Wiley, *supra* note 6. This article advocates that copyright protection should only be given where it was necessary as an incentive to develop the product. *Id.* at 149. Expert testimony would be used to determine whether copyright protection would have been objectively necessary. *Id.* at 149, 180. The test promoted presumes that copyright would have been needed, and it is the responsibility of the defendant to prove otherwise. *Id.* at 151.

211. User interface designers should at least consider the ex post facto effect of infringement.

tive challenge of furthering technology.²¹²

The doctrines of copyright law must be sufficiently flexible to balance competition with protection. In particular, the substantial similarity test must allow the trier of fact to prohibit making similar expression protectable when such protection would inhibit necessary competition. On the other hand, when protection is necessary as an incentive to invent, or when unnecessary to achieve competition, similarity in expression should be protectable, if possible.

3. Account for the Functional and Aesthetic Role

Because user interface software has both a functional and aesthetic role,²¹³ the substantial similarity test should provide protection to only the aesthetic portions of the interface. CHI principles may shed light on whether particular expression choices have been made for functional reasons. Also, software and hardware compatibility restraints may dictate that certain expression has a predominantly functional role. In these cases, copyright law must not protect ideas, functions, or processes. The trier of fact must, therefore, have sufficient expertise and data during the substantial similarity test to differentiate between the functional and aesthetic roles of particular elements of expression.

4. Enable Fine-Line Differentiation Where Protection Should Be Limited

With user interfaces, as with other subject matter, it is difficult to distinguish between protectable and unprotectable expression and between unprotectable ideas and expression. An understanding of many of the restraints discussed above can help a trier of fact to differentiate what is protectable from what is not. Therefore, the substantial similarity test must allow sufficient analysis or dissection to enable these fine distinctions.

212. Perhaps, however, copyright protection would have greater incentive, in addition to profit motives and technical challenge, if the scope of protection were not so thin.

213. See *supra* notes 12-14 and accompanying text for a discussion of the dual purpose of user interfaces.

5. Provide Useful Guidelines to User Interface Designers and Software Developers

Because copyright law as applied to user interfaces is unpredictable, user interface software designers and developers do not know what "ideas" they are allowed to copy from their predecessors and what they must reinvent to avoid expensive and wasteful lawsuits.²¹⁴ As the courts clarify substantial similarity law in other user interface cases, they will establish guidelines to avoid infringement.

Although different approaches have been taken to avoid infringement, many are impractical because they do not allow a designer or developer to build on others' work in a compatible way.²¹⁵ Developing user interfaces that are different from one another may not be in the best interest of the consumer: the consumer is charged with learning costs and other communication costs when interfaces are incompatible.

6. Enable Consistent Application of Principles

As is true with all areas of the law, any substantial similarity test should be formulated such that it can be applied consistently in a vertical manner across all user interface (and software) decisions and in a horizontal manner across all subject matter.

7. Enable Resolutions Perceived as "Fair"

Software developers sometimes feel that their industry is different because they have been permitted for years to appropriate others "expression."²¹⁶ Such a difference, however, may not necessarily exist. Perhaps the industry as a whole has a more lenient definition of what an "idea" encompasses, thus allowing more "expression" to be copied. Maybe this view is due in part to the difficulty of separating function from form.

214. Bixby, *supra* note 3, at 47.

215. One example of such an approach is the clean room procedure. Independent development is done without allowing the developers or designers to be exposed to competitors' programs. See, e.g., *Last Frontier Conference*, *supra* note 13, at 23. There are several problems with this approach. First, ideas may be reinvented unnecessarily thereby creating a cost to society. Second, compatibility may not be fostered where needed. Third, it is unlikely, with the prevalence of personal computer software on the market, that designers and developers of user interfaces have not been exposed at some time to most of what is available publicly. How does one implement a clean room procedure for someone with twenty years of industry experience?

216. See Bixby, *supra* note 3, at 48.

In any case, this view will change as the industry becomes older and the creative leaps available become smaller.

Whether or not this difference really exists, the substantial similarity test should promote decisions that are perceived as "fair" and "just." Perhaps courts and attorneys should incorporate computer industry views, not just legal views, of past court decisions when defining and arguing new law. If some decision has evoked an outcry of "unfairness," courts may not be maintaining the overriding goals of promoting science and the useful arts for the computer industry. Although no clear answer to the problem of promoting fair decisions exists, any answer will evolve over time.

Thus, the goals for a substantial similarity test for user interfaces include the following: (1) promote standardization and compatibility; (2) foster competition; (3) account for the dual functional and aesthetic role; (4) enable fine differentiation where limited protection is available; (5) provide useful guidelines to developers and designers; (6) enable consistent application of principles; and (7) enable resolutions perceived to be fair.

IV. TWO ALTERNATIVE APPROACHES FOR REVISION

The last two sections explored recent changes in the substantial similarity law in the Ninth Circuit and discussed an analytic framework for evaluating substantial similarity tests applied to user interfaces. The next two sections focus on approaches available to the court for revising the substantial similarity test. Specifically, this section discusses the approaches the court could take to revise the test and identifies the choices on opposite ends of the spectrum. The last section advocates an approach and evaluates it using the analytic framework developed in Section III.

As discussed in Section II, the law currently differentiates substantial similarity tests based on subject matter. *Shaw*²¹⁷ reformulated the test from an extrinsic/intrinsic approach to an objective/subjective expression approach, at least in the case of classic literary works.²¹⁸ Arguably, *Brown Bag Software* extended this reformulation to all subject matters.²¹⁹

217. *Shaw v. Lindheim*, 908 F.2d 531, 535 (9th Cir. 1990).

218. *Id.* See *supra* notes 100-106 and accompanying text for a discussion of the changes announced in *Shaw*.

219. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992). See

Also, for functional works, factual works, video games, and other works with limited copyright protection, the court limits the intrinsic test to a comparison of protectable expression.²²⁰ Thus, the court could revise the test as applied to user interfaces by developing another subject matter-specific version of the test. Alternatively, the court could develop a generic substantial similarity test. These two options are addressed in turn.

A. Subject Matter-Specific Substantial Similarity Test

A subject matter-specific version of the test would involve an abstract list of objective elements of expression for computer software, similar to that used for classic literary works, to be used in the extrinsic analysis.²²¹ This test would require identifying the specific concrete elements for the comparison of user interfaces, similar to the "plot, themes, dialogue, mood, and setting" compared in classic literary works.²²² The concrete element categories would not necessarily indicate *protectable* expression, they would simply identify what should be analyzed and compared to find substantial similarity.

The court in *Brown Bag Software* applied such an analysis in the extrinsic evaluation of two user interfaces.²²³ Although the Ninth Circuit seems to favor a subject matter-specific approach, it did not decide this issue in *Brown Bag Software* because user interfaces have traditionally been treated as literary works. The user interface elements mentioned in Symantec's opening appellate brief in *Brown Bag Software* provide useful examples of possible categories for analyzing user interfaces.²²⁴ These elements are the structure, sequence, and terminology of menus; keystroke shortcuts; color; and graphical layout.²²⁵ Other possible elements include the procedures available for accomplishing tasks (similar to a "dialogue" comparison); the tasks available to be performed (similar to a

supra notes 107-111 and accompanying text for a discussion of the changes announced in *Brown Bag*.

220. See *supra* notes 112-66 and accompanying text for a discussion of the cases in which this test has been applied.

221. See *supra* notes 66-111 and accompanying text for a discussion of the test that evolved from *Jason* and its progeny.

222. See *Shaw v. Lindheim*, 908 F.2d 531, 534 (9th Cir. 1990).

223. See *Brown Bag Software*, 960 F.2d at 1465.

224. See Appellee's Opening Brief, *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465 (9th Cir. 1992) (No. 89-16239).

225. *Id.*

“theme” comparison); and the graphical representations chosen, including the location of particular elements on the display screen. Also, examining the structure, sequence, terminology, and visual representation of the various identifiable parts on the screen, such as menus and icons, appears similar to analyzing characters in a classic literary work.

One difficulty in devising such categories is that graphical interfaces embody different elements than character-based interfaces. Therefore, developing an abstract set of elements that might work across all user interfaces (and software in general) would be a difficult task. To some extent, this difficulty applies to classic literary works. For example, a movie contains sound and words, but a book only contains words; thus, all of the same elements are not present in both works.

In summary, a subject matter-specific approach is initially appealing because it parallels recent case trends; however, this approach would be cumbersome because it requires multiple tests.

B. Generic Substantial Similarity Test

An alternative approach to the subject matter-specific approach would be to analyze objective expression in the extrinsic test and limit the intrinsic test to protectable expression,²²⁶ but abandon the subject matter-specific definitions.²²⁷ Such a generic test could be applied across all subject matter. One example of this approach is “successive filtering,” which breaks an infringed work into its component parts and then applies the various copyright limiting doctrines, such as merger, to analyze each component for protectability.²²⁸ At each successive stage, the doctrine eliminates the unprotectable components (expression), so that only protectable expression remains. The trier of fact then compares this remaining protectable expression to the infringing work to find substantial similarity.²²⁹

226. See *Shaw*, 908 F.2d 1465; *Cooling Systems and Flexibles v. Stuart Radiator, Inc.*, 777 F.2d 485 (9th Cir. 1985).

227. This approach would leave behind objective criteria as defined for literary works in *Shaw* and the tie to factual works essential to limiting the intrinsic test in *Cooling Systems*. See *supra* notes 100-05, 121-27 and accompanying text.

228. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][1]-[5]. See also, David Nimmer et al., *Analyzing Substantial Similarity in Computer Software Infringement Cases (Part 2)*, 6 THE COMPUTER LAWYER 1, 1 (Feb. 1989) [hereinafter Nimmer, THE COMPUTER LAWYER].

229. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F]. Any resulting alleged

One difficulty inherent in this more general approach is that courts lack guidelines for determining how each work is to be broken down into its component parts.²³⁰ This difficulty is mitigated through expert testimony, which can help dissect the work into its components. In contrast, the subject matter-specific approach to literary works provides criteria for dissecting the works; however, the court must design separate tests for each class of subject matter. Thus, the subject matter-specific approach may lead to greater complexity and to confusion over the need for new specific subject matter tests. Also, devising sufficiently abstract and flexible subject matter categories is difficult. Therefore, the minor practical difficulties inherent in a general test are outweighed by the complexities inherent in developing a repertoire of subject matter-specific tests.

C. *Other Approaches*

Ignoring legal precedent momentarily, other approaches have addressed different aspects of the substantial similarity test. One such approach, suggested by Professor Marshall A. Leaffer, is "flexibility."²³¹ Professor Leaffer advocates an approach that depends on "the media involved, the variety of copyrightable subject matter, and the fact situation."²³² According to Professor Leaffer, some situations lend themselves to a single, old-fashioned ordinary observer test, while others lend themselves to a bifurcated test, or even a single test that allows both lay and expert testimony.²³³ This approach, however, is unpredictable, resulting in problems, especially for litigation preparation. Also, a court would require time to decide which test to apply.

Another approach, specifically addressed to computer display screens, has been suggested by Gregory C. Damman.²³⁴ Mr. Damman suggests that instead of protecting these highly

infringement is subject to the usual defenses. The usual defenses include de minimis copying, independent creation, and fair use. *Id.* § 13.03[F][5].

230. The "component parts" Nimmer refers to appear to be synonymous with the "concrete elements" or the "objective expression" referred to in *Shaw*. See, e.g., Nimmer, *THE COMPUTER LAWYER*, *supra* note 228, at 1, 5, in which Nimmer applies the test to *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986).

231. MARSHALL A. LEAFFER, *UNDERSTANDING COPYRIGHT LAW* 276 (1989).

232. *Id.* Each of these approaches has been used in other circuits.

233. *Id.*

234. Damman, *supra* note 8.

functional works, copyright law ought to create a rebuttable presumption that there is no copyright protection for the "sequencing and ordering of screen displays" and for "the positioning of text of the display screen."²³⁵ Mr. Damman reasons that this approach would increase standardization and decrease the number of inappropriate monopolies granted for optimal methods of expressing ideas.²³⁶ This approach, carried to an extreme, would protect very little in a user interface. Thus, it would countermand the progress of the arts and sciences through copyright incentive.

In summary, the generic approach has the fewest difficulties and incorporates the traditional copyright doctrines that courts have experience in applying. The next section illustrates these advantages through an examination of the successive filtering method.

V. THE SUCCESSIVE FILTERING METHOD APPLIED TO USER INTERFACES

The successive filtering method of substantial similarity analysis, as developed by Nimmer, uses a general approach that accommodates the needs of high technology.²³⁷ It incorporates recent modifications in Ninth Circuit substantial similarity law, such as the evaluation of objective expression in the extrinsic test and the limitation of the intrinsic test to protectable expression.²³⁸ This method also promotes the goals of copyright law as applied to user interfaces.²³⁹

This section illustrates how the successive filtering method can be used to determine the substantial similarity of user interfaces. After presenting this method, this section evaluates the successive filtering method with respect to the analytic framework set out in Section III. Finally, to show that this test is practical, this section applies the successive filtering method to a current user interface case.

A. *Description of the Successive Filtering Method*

The successive filtering method systematically applies copyright doctrine to the dissection of an allegedly infringed

235. *Id.* at 445.

236. *Id.*

237. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][1]-[5].

238. See *supra* notes 66-138 and accompanying text.

239. See *supra* notes 206-16 and accompanying text.

work to determine which elements are protectable.²⁴⁰ The test operates by successively narrowing the expression to be compared. As each doctrine is applied, unprotectable expression is eliminated from the analysis. After all the doctrines have been applied, only protectable expression remains.²⁴¹ The trier of fact then compares this protectable expression to the alleged infringing work to determine whether the elements copied were quantitatively and qualitatively important.²⁴² This latter part of the test is "essentially a value judgment."²⁴³

Specifically, before any doctrines are applied, the allegedly infringed work must be dissected into its constituent elements. Then, the following doctrines are applied in any order to eliminate the unprotectable elements (ideas or expression).

First, the court applies the idea/expression principles. At this time, all the elements that constitute ideas, processes, and methods are eliminated from further analysis. Unfortunately, Nimmer does not offer any new guidelines for what has been traditionally a very difficult subject-matter specific process.²⁴⁴

Second, the court applies the merger doctrine eliminating the expression that corresponds to ideas that can only be expressed in one or a limited number of ways. In the case of

240. Underlying the test is the notion that only protectable expression should be considered when judging whether a work has been infringed. Nimmer advocates this approach regardless of the subject matter. In this manner, his test differs from the current Ninth Circuit test, which has only applied this restricted intrinsic test to factual and functional works and video games. *Cf. supra* notes 112-66 and accompanying text.

241. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F].

242. *Id.*

243. *Id.*

244. Nimmer essentially resorts to Judge Learned Hand's famous "Abstractions Test" as the means for performing this evaluation. *Shaw* quoting Judge Learned Hand aptly states:

Any test for substantial similarity is necessarily imprecise: 'Upon any work, and especially upon a play, a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out . . . but there is a point in this series of abstractions where they are no longer protected, since otherwise the playwright could prevent the use of his ideas, to which, apart from their expression, his property is never extended.'

Shaw v. Lindheim, 908 F.2d 531, 534 (9th Cir. 1990) (quoting *Sid & Marty Krofft Television Prods. Inc. v. McDonald's Corp.*, 562 F.2d 1157, 1162 (9th Cir. 1977) (quoting *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930))).

For an enlightening discussion of some of the problems of applying successive filtering to the idea/expression analysis of software, see Richard Beutel, *Software Engineering Practices and the Idea/Expression Dichotomy: Can Structured Design Methodologies Define the Scope of Software Copyright?*, 32 JURIMETRICS 1, 21-32 (Fall 1991).

computer programs, application of this doctrine eliminates all elements dictated by functionally optimal solutions.

Third, the court applies the doctrines of scenes a faire and lack of originality.²⁴⁵ These doctrines prohibit copyright protection of elements that necessarily follow from the "idea" encompassed, that are standard treatments, or that originated with someone other than the author. Application of these doctrines to computer programs allows elimination of all elements dictated from external considerations, such as hardware standards, software standards, computer manufacturers' design standards (compatibility restraints), target industry practices, and computer industry programming practices (stock treatments).

Fourth, and finally, elements taken from the public domain are excluded from the analysis because they do not owe their origin to the author and are, consequently, unprotectable.

Once all of these doctrines have been applied, the set of protectable elements remains.²⁴⁶ The infringing work is then compared to this set of protectable elements to judge whether it has sufficiently "copied" the elements such that it can be found "substantially similar."

B. *Evaluation in Light of Test Goals*

To judge whether a new test may reasonably be applied to user interfaces, the test should be evaluated against some kind of analytic framework. The goals set out in Section III will be used for this purpose. These goals included the following: (1) promote standardization and compatibility; (2) foster competition; (3) account for the dual functional and aesthetic role; (4)

245. The scenes a faire and lack of originality doctrines should be applied separately, for expression may have originated with an author, yet be excludable under the scenes a faire doctrine. For example, suppose an author is the first to express an idea in a particular way, but this expression at some subsequent time becomes standard treatment in the relevant industry. Arguably, even though the expression originated with the author, it is *now* standard and should be excludable under the scenes a faire doctrine.

246. This test addresses Judge Walker's earlier mentioned concern regarding compilations in which unprotectable expression is removed from the intrinsic analysis leaving nothing for comparison. See *supra* notes 53-55 and accompanying text. In a protectable compilation, in which the arrangement and selection are protectable but the constituent parts are not, the selection and arrangement is one of Nimmer's protectable elements that remain. Therefore, contrary to Judge Walker's analysis, items remain on the list for comparison.

enable fine differentiation where limited protection is available; (5) provide useful guidelines to developers and designers; (6) enable consistent application of principles; and (7) enable resolutions perceived to be fair. Unlike the unpredictable and seemingly inconsistent nature of the current Ninth Circuit substantial similarity tests, the successive filtering method appears to satisfy many of these goals.

First, the test promotes standardization and compatibility by permitting the court to remove the expression necessary to support standardization and compatibility in the scenes a faire portion of the analysis. In most cases, standardization and compatibility dictate the way in which a particular user interface idea can be expressed. For example, compatibility with the IBM CUA²⁴⁷ specification will dictate use of the Help key in a particular manner.²⁴⁸ Thus, the court can eliminate this unprotectable expression through the scenes a faire doctrine because the expression of the Help key necessarily follows from the choice of the idea of standardization or compatibility with the IBM CUA specification.

Second, the test fosters competition through its flexibility of application. For example, the court can balance the copyright protection needed to induce development with the free access needed to foster competition using the merger doctrine. Because competition is hampered when there are a limited number of ways to express something,²⁴⁹ the court can use the merger doctrine to eliminate this restrained expression from further analysis leaving it unprotected.

Successive filtering also fosters competition through manipulation of the idea/expression analysis. By manipulating the level of abstraction, expression needed to foster competition could be considered an idea and rendered unprotectable.²⁵⁰

247. See *supra* note 196.

248. See *supra* notes 193-197 and accompanying text for a description of the effect of system software standards.

249. For example, protecting a functionally optimal solution may prevent others from marketing products of equal quality. See *supra* notes 209-212 and accompanying text.

250. To illustrate, assume an electronic mail application user interface displays a list of available users who receive mail from Customer A. For convenience, this list is organized according to the frequency Customer A has contacted each company because this organization replaces a procedure previously done by hand. If the idea of the user interface is expressed simply as "maintaining a list of mail recipients," then there might be many ways to express this idea and the form of the list would be considered protectable expression. As a result, other mail application suppliers would not be able to meet the requirements of Customer A. If, on the other hand, the idea was

Third, the test differentiates between the functional and aesthetic role of user interface expression and only protects the aesthetic elements. The successive filtering test differentiates well because it allows expert testimony to aid in the dissection.²⁵¹ Furthermore, the court can eliminate the functional elements of the user interface from the list of protectable expression in multiple stages of the test, including the idea/expression analysis, the merger analysis, and the scenes a faire analysis; thus, the court will unlikely miss an opportunity to eliminate a functional element.²⁵²

Fourth, the test supports fine line differentiation between protectable and unprotectable elements. The court can accomplish this differentiation because the test applies standard copyright doctrines that are sufficiently malleable: within the successive filtering test, each doctrinal analysis is as flexible as the parties make it. Significantly, a court may manipulate a doctrine by changing the level of abstraction of the analysis to achieve a particular outcome. However, results may be skewed by the level of abstraction chosen.²⁵³

Fifth, although the successive filtering test does not provide guidelines to user interface designers and software developers, it does provide a predictable form of analysis; predictability promotes the development of guidelines. In practice, a test will accomplish this goal only through consistent judicial application of the doctrines and the test.

Sixth, the test allows a court to apply its principles consistently. Specifically, the test is defined at a high enough level of abstraction that a court can perform the same steps in the test for each subject matter.²⁵⁴

Finally, successive filtering's flexibility enables fair resolutions because each step of the test may be applied as the court wishes, and because the parties influence the applicable level

expressed as "maintaining a list of mail recipients organized by company in order of contact frequency," then the form of the list would be considered an unprotectable idea.

251. See NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F].

252. At some point, however, the court will have difficulty eliminating elements with mixed functional and aesthetic roles that can be broken down no further. In that case, the court should probably classify the element based upon its predominant role.

253. See, e.g., Beutel, *supra* note 244, at 21-30.

254. However, consistency across all types of software is more difficult because the test does not provide any guidelines for applying each of the steps. The test relies on a court's adeptness at applying legal precedent.

of abstraction.²⁵⁵ In this manner, the test can evolve without changing its form.

In summary, from a theoretical perspective, Nimmer's successive filtering test supports the goals discussed in Section III and should be applied to user interfaces.

C. *Practicability of the Test*

For a test to be useful in practice, it must yield reasonable results and lend itself to easy application. This subsection applies successive filtering to *Apple Computer v. Microsoft Corp.*,²⁵⁶ a current case addressing the protectability of user interface expression.²⁵⁷ The focus here is on ease of application of the test and not on whether the particular results are right or wrong.²⁵⁸

In 1988, Apple alleged that Microsoft Windows 2.03 (TM) environment and Hewlett-Packard Co.'s NewWave environment infringed many of the user interface components²⁵⁹ of Apple's Macintosh operating system.²⁶⁰

255. Note, however, that it contains no explicit mechanisms or checks for ensuring fairness of its application.

256. This case has produced several interim court orders, including the granting of Microsoft's motion for partial summary judgment regarding Windows 2.03. See *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 12219 (N.D. Cal. 1992) (order reaffirming partial summary judgment motions in response to Apple's motion for reconsideration); *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 5986 (N.D. Cal. 1992) (order granting defendant's partial summary judgment motion on Windows 2.03); *Apple Computer v. Microsoft Corp.*, 779 F. Supp. 133 (N.D. Cal. 1991) (preliminary order granting defendant's motion to reconsider affirmative defense of lack or originality of constituent elements); *Apple Computer v. Microsoft Corp.*, 759 F. Supp. 1444 (N.D. Cal. 1991) (order addressing miscellaneous interim motions); *Apple Computer v. Microsoft Corp.*, 717 F. Supp. 1428 (N.D. Cal. 1989) (granting partial summary judgment); *Apple Computer v. Microsoft Corp.*, 709 F. Supp. 925 (N.D. Cal. 1989) (order addressing miscellaneous interim motions).

257. See *supra* note 9 for the definition of a user interface.

258. An example of this test applied to older user interface technology has been covered elsewhere. See, e.g., Nimmer, *THE COMPUTER LAWYER*, *supra* note 228, at 1, 5 (applying successive filtering to *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222 (3d Cir. 1986)).

259. The infringement allegation is complicated by a licensing agreement between Apple Computer and Microsoft Corp., which is not discussed in this Comment.

260. See *supra* note 256 for case history.

The Macintosh operating system includes a component called the "Finder," which is the graphical interface to system capabilities such as file and application management, printer installation, and control of many other internal system capabilities. See *supra* note 184 for a general explanation of graphical user interfaces. The Finder uses graphical objects such as windows, icons, and pull-down menus. These objects have functional as well as aesthetic roles and are currently the subject of debate regarding the scope of user interface protection. See, e.g., Brown Bag Software

After several phases of litigation, the Court narrowed the alleged similarities of Windows 2.03 to ten visual items:²⁶¹

- (1) overlapping windows in front of a muted background;
- (2) windows appearing partly on and off screen;²⁶²
- (3) top overlapping window displayed as the active window;²⁶³
- (4) window brought to top of stack when mouse clicked;²⁶⁴
- (5) gray outline of window dragged along with cursor when mouse pressed on window's title bar;²⁶⁵
- (6) window dragged to a new position when the mouse is released after dragging the window's outline;
- (7) newly exposed areas on screen are redisplayed after the window is moved;²⁶⁶
- (8) icon may be moved to any part of screen by dragging

v. Symantec Corp., 960 F.2d 1465 (9th Cir. 1992) (holding that the idea of pulldown menus is not protectable). A graphical interface shell is also present in the Windows 2.03 environment and it provides many similar functions to those provided by the Macintosh Finder and uses windows, icons, and pull-down menus. The NewWave environment also provides similar capabilities and is built upon the Windows 2.03 system.

261. *Apple Computer v. Microsoft Corp.*, 759 F. Supp. 1444, 1449-50 (N.D. Cal. 1991). These ten items formed the basis for the court's analysis of Microsoft's partial summary judgment motion regarding Windows 2.03, which was granted in April 1992. *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 5986 (N.D. Cal. 1992). The alleged infringements regarding NewWave and Windows 3.0 will not be addressed.

262. This item literally means that only part of the window is displayed on the screen because the other part is logically off the screen. The opposite of this capability is restricting the user's movement of windows so that they must appear completely on the screen.

263. This item refers to the system's ability to designate which window has been selected by the user to receive keyboard or mouse input.

264. This item refers to the action that occurs when there is a "stack" (similar to a pile of cards) of more than one window and the user selects, using a mouse, a window that is not the topmost. This item specifies that the system will respond to such a selection by making the selected window the topmost window.

265. This item addresses the user feedback that occurs when the mouse is pressed on the title area of a window. In the Macintosh and Windows systems, this feedback occurs when the user attempts to move a window to a new position by dragging its title bar around the display using a mouse pointer. The movement is completed when the user releases the mouse button in the desired position. The gray outline of the window shape follows the user's movement of the mouse pointer to show the user where the window will be positioned if the user releases the mouse button.

266. This item refers to whether the screen display is refreshed when a window, now moved, exposes an area of the display that it previously covered. If that area is redisplayed, the contents previously obscured by the window appear on the screen display.

along with cursor when user pressed mouse on icon;²⁶⁷

(9) display of icons on screen behind any open windows;²⁶⁸ and

(10) icon's title displayed beneath icon

Recently, the court ruled, on reconsideration of several partial summary judgment motions, that all ten of these elements are unprotectable due to merger, scenes a faire, or other limiting doctrines.²⁶⁹ The court did not, however, divulge any of its reasoning in the opinion. These ten items comprise some of the constituent elements of the Apple interface and, allegedly, the Windows interface. Therefore, they provide a good sample for analyzing how easy it is to separate out protectable from unprotectable expression under the successive filtering test.

Applied to these items, the successive filtering test first breaks the infringed work into its constituent elements.²⁷⁰ The successive filtering test then applies the idea versus expression principle to the ten elements, removing any unprotectable ideas.²⁷¹ Depending on the level of abstraction chosen, many of the ten items may be removed from the list as unprotectable ideas. For example, one can define the idea behind item ten as "using icons with their titles displayed beneath them" instead of as "using icons." As another example, one can define the movement of windows on the screen as "moving a gray outline of a window, along with the cursor," as "the mouse is pressed on the window's title bar." These examples illustrate the flexibility of the idea versus expression doctrine and the potential problems in applying the doctrine consistently.

Next, successive filtering analysis removes expression that is unprotectable under the merger doctrine. Nimmer states that this step involves expression restrained by logic and effi-

267. This item refers to the ability to move icons (graphical objects typically emulating physical objects) similar to any other window. In many systems, this capability exists because icons are implemented as a type of window and thus inherit the capabilities of other windows.

268. This item refers to the ability of a window to obscure icons on the screen.

269. *Apple Computer v. Microsoft Corp.*, 1992 U.S. Dist. LEXIS 12219 (N.D. Cal. 1992). An extensive analytic dissection of these software elements can be found in this recent order. *Id.* The analysis in this paper is similar to the *Apple* court's.

270. This analysis does not intend to be comprehensive, it intends only to illustrate the principles and steps involved.

271. These doctrines (steps) may be applied in any order. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F] n.284.

ciency.²⁷² The fifth item, a gray window outline displayed as user feedback when a window is moved, provides a good example of these restraints. First, the user interface software can more efficiently move an outline of a window rather than the entire window.²⁷³ This efficiently and accurately gives the user feedback that portrays what is happening in the system.²⁷⁴ Second, an outline typically appears gray as a result of coloring every other pixel,²⁷⁵ or every third pixel, and is dependent on the algorithm (mathematical formula) used to keep track of the previous color of the pixel as the outline is moved over the display.²⁷⁶ Because logic and efficiency limit the number of optimal and reasonable solutions, it would be counterproductive to the purposes of copyright law to protect this expression.

Next, the successive filtering test removes items that are unprotectable under the scenes a faire doctrine. This category includes items that are standards within the software industry or items that are dictated by external constraints, such as hardware standards or programming practices.²⁷⁷ The tenth item in the *Apple* case, displaying an icon's title beneath the icon, falls into this category. Very few reasonable variations exist for displaying the names of an icon: not displaying the title at all,²⁷⁸ displaying the title within, above, below, to the left, or to the right of the icon; or varying whether the title is centered, left, or right justified.²⁷⁹ Arguably, a de facto industry standard exists to place a title above or below an icon because users

272. *Id.* § 13.03[F][2].

273. To move the entire window, including its contents, by mouse would require substantial memory and is typically limited by the speed of the computer. An entire copy of the window would have to be stored in memory and the repainting of the screen image would cause a flashing effect.

274. The capability of accurately portraying what is happening on the display is referred to as "what you see is what you get" or "WYSIWYG."

275. For the purpose of this analysis, assume that a pixel is simply a lightable dot on the hardware display.

276. One standard algorithm maintains the solid or dotted gray look, whereas the other common algorithm, which uses the complementary color of whatever is displayed, changes color, depending upon what the outline passes over.

277. NIMMER ON COPYRIGHT, *supra* note 6, at § 13.03[F][3][a]-[c].

278. This choice was initially made in IBM and Microsoft's OS/2 Presentation Manager, much to the chagrin of the user community. This violates the fundamental CHI principles of not hiding information from the user, or of displaying information that magically comes and goes, outside of user control.

279. Usability testing reveals that the most quickly scanned options display the title above or below the icon because the titles are physically closest to the icon in those positions. Also, a customer expects titles to be centered because of common writing conventions.

expect to find an icon's title there, just as titles are generally centered below framed pictures.²⁸⁰

Under successive filtering analysis, a court may remove elements during more than one step. For example, user interface designers and developers commonly use overlapping windows to implement the idea of a stack of paper, which is central to the notion of a desktop metaphor.²⁸¹ Because a physical desktop can be expressed in limited ways, the most effective of which uses overlapping windows, a court may eliminate the overlapping windows element through the merger doctrine. Furthermore, because overlapping windows are commonplace in the industry, a court may eliminate this element through the scenes a faire doctrine. Lastly, one can argue that the concept of overlapping windows is an idea or a method of organizing information on the screen and is too fundamental a concept to be protected by copyright.

This analysis changes little if the constituent element is stated as "overlapping windows in front of a muted background." However, overlapping windows on a muted background could be protectable expression of the unprotectable idea of overlapping windows. For this proposition to be true, the muted background must be protectable expression so that, in connection with the overlapping windows, the entire element is protectable. However, the muted background is probably an unprotectable element under the merger doctrine²⁸² because it provides an optimal method for displaying a background that will contrast with the windows, yet be unobtrusive and support readable text.²⁸³ Therefore, because no subpart is

280. One could quibble with the number of implementations it takes to constitute a de facto standard. In this case, such argument would be fruitless because one can also argue that the limited set of reasonable solutions makes such expression unprotectable under the merger doctrine.

281. Graphical user interfaces intending to emulate the office environment must incorporate this metaphor. *Last Frontier Conference*, *supra* note 13, at 29.

282. *Nimmer* might classify this restriction under the scenes a faire doctrine, in which he places external constraints that dictate choices of expression. *NIMMER ON COPYRIGHT*, *supra* note 6, at § 13.03[F][3]. However, one can view this scenario as a choice dictated by logic and efficiency, which *Nimmer* would place in the merger analysis. *Id.* § 13.03[F][2]. To reach the ultimate question of whether to eliminate this expression from the list, the actual classification is unimportant.

283. Several technical reasons support the view that a muted background is probably unprotectable expression, assuming a designer intends to find a background color that contrasts with the white background color typically used for application windows. First, choice is limited because few colors exist that are present in all applications. There are sixteen system colors in Windows 2.03. Of these colors, few are light enough to serve as background colors that will not interfere with a user's

protectable, the item "overlapping windows in front of a muted background" is also unprotectable.

Finally, items that are part of the public domain are excluded from the protectable expression list. In this case, none of the ten elements fall into this category.²⁸⁴

After the elements have been filtered through these doctrines, a list of protectable expression emerges. The trier of fact must then decide whether the infringing work is substantially similar to this list of protected expression.

VI. CONCLUSION

Divergent case law in the Ninth Circuit has provided an opportunity to reconsider previous assumptions about how courts should analyze works for substantial similarity. Contrary to the original *Krofft* test, recent cases have recognized that the court should compare expression between the works, using expert testimony, before submitting the substantial similarity question to the trier of fact. This technique increases the court's role in analyzing substantial similarity, permitting more summary judgments. Also, when copyright protection is limited by the functional or factual nature of the work, recent cases have confined the *Krofft* audience or lay observer test to the analysis of protectable expression. In this manner, the court can prevent the trier of fact from finding surface similarity where no real similarity exists or from failing to recognize similarity where the similarity is obscured, such as between works of different media. Finally, some recent cases allow expert testimony to help the trier of fact separate protected expression from the similarities.

Although *Brown Bag Software* ruled that the court must analyze objective expression in the extrinsic test, recent Ninth Circuit case law has not completely clarified how courts should incorporate these changes into the substantial similarity analy-

ability to read text, such as the text under icons. Second, to create additional light colors, a designer mutes the available colors by coloring a pattern of pixels (dots) on the screen instead of coloring every dot as with a fully saturated color. A designer can create a limited number of muted colors because certain patterns and colors will cause distortion of overlaid text. Third, a designer must be aware of the psychological effects and connotations of certain colors. For example, a pink background is not typically acceptable in a business environment because of inherent biases. For all these reasons, designers typically use some shade of gray as a background color where it is to be contrasted with white and overlaid with text.

284. Items that are unoriginal are also excluded from the analysis, but that analysis is very case specific and is not addressed here.

sis of user interfaces.²⁸⁵ Because user interfaces are highly functional works, courts should apply the principles that have been developed for other functional works. To apply these new principles to user interfaces, courts should develop a new substantial similarity test specifically for software subject matter or a more general substantial similarity test for software subject matter.

Any new test that applies to user interfaces should do the following: (1) promote standardization and compatibility; (2) foster competition; (3) account for the dual functional and aesthetic role; (4) enable fine differentiation where limited protection is available; (5) provide useful guidelines to developers and designers; (6) enable consistent application of principles; and (7) enable fair resolutions.

Thus, this Comment illustrates that a substantial similarity test invoking traditional copyright principles can be successfully applied to user interfaces, despite the complexities involved in understanding high technology and the mixed functional and aesthetic nature of user interface expression. Specifically, the successive filtering method promotes the goals necessary for a substantial similarity test purporting to work well for user interfaces. Finally, the practicability of the successive filtering method was demonstrated by applying its principles to aspects of the *Apple Computer v. Microsoft Corp.* lawsuit.

285. *Brown Bag Software v. Symantec Corp.*, 960 F.2d 1465, 1474-75 (9th Cir. 1992).