

COPYRIGHT AND COMPUTER PROGRAMS: A FAILED EXPERIMENT AND A SOLUTION TO A DILEMMA

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INTRODUCTION

Efforts to ensure that investment is protected can lead to distortions in the law if the nature of the protection granted is inappropriate to the body of law in which protection is placed. Sometimes there is no appropriate existing body of law, and in such a circumstance *sui generis* protection is the best solution. This happened in 1984, when Congress extended protection to the layout design of semiconductor chips. Resisting efforts by the Senate to shoehorn chip protection into the Copyright Act, the House insisted, and the Senate ultimately acceded to, *sui generis* legislation.

The organic copyright act was not so fortunate in the case of computer programs. Using dubious analogies to literary works, the decision was made early on in the revision process that led to the 1976 Act to simply declare computer programs to be a form of literary work. A definition of computer programs, added in 1980, makes the ill-fit express: “[A] set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”¹ The requirement that the work “bring about a certain result” is unparalleled in copyright law and inconsistent with basic principles embodied in §102(b) against protecting methods of operation and processes. Given these inherent contradictions, it is not surprising that courts have struggled without a great deal of success to reconcile the irreconcilable. We shall first review how the fateful decision was made.

COPYRIGHT OFFICE PRACTICES UNDER THE 1909 ACT

While ordinarily “books” contain compositions of words, they may also consist of tables of data. It was against this background that the Copyright Office decided, on May 19, 1964, to register computer programs as “books” under its rule of doubt.² The Office’s decision was

1. 17 U.S.C. § 101 (1980).

2. Cary, *Copyright Registration and Computer Programs*, 11 BULL. COPYRIGHT SOC’Y 362 (1964); COPYRIGHT OFFICE CIRCULAR NO. 61 (1964), reproduced in 11 BULL. COPYRIGHT SOC’Y 361 (1964).

the result of an application submitted on November 30, 1961, by North American Aviation, Inc., for a computer program (SCOPAC-PROG.63) embodied in magnetic tape. Subsequently, on April 20, 1964, a very brief computer program created by a student at Columbia University Law School was published in the *Columbia Law Review Notes*. Registration for this program was made in May 1964. Registration for the North American Aviation program was made in June 1964.³

While the Copyright Office had doubts about whether computer programs could be considered the "writings of an author" under the Constitution, and whether a machine-readable version of a program qualified as a "copy" under the 1909 Act,⁴ based on the "rule of doubt" – an Office-created policy that resolves doubtful cases in favor of the applicant – the Office announced it would consider registration of a computer program as a "book" if:

(1) The elements of assembling, selecting, arranging, editing, and literary expression that went into the compilation of the computer program [were] sufficient to constitute original authorship.

(2) The program [was] published with the required copyright notice; that is, "copies" (i.e., reproductions of the program in a form perceptible to the human eye) bearing the notice [were] distributed or made available to the public.⁵

(3) The copies deposited for registration consist of or include reproductions in a language intelligible to human beings. If the only publication was in a form that could not be perceived visually or read, something more (*e.g.*, a print-out of the entire program) would also have to be deposited.⁶

The Copyright Office defined a computer program as "either a set of operating instructions for a computer or a compilation of reference information to be drawn upon by the computer in solving problems." Registration was

3. Cary, *supra* note 2, at 363 (1964).

4. COPYRIGHT OFFICE CIRCULAR NO. 61 (1964), reproduced in 11 BULL. COPYRIGHT SOC'Y 361 (1964).

5. See *Supplementary Practice No. 35: Position of the Copyright Notice on Computer Programs of Domestic Origin First Published in the Form of Machine Readable Tape or Machine Punched Cards*, COMPENDIUM I OF COPYRIGHT OFFICE PRACTICES at S-125 (1973 ed.).

6. COPYRIGHT OFFICE CIRCULAR NO. 61 (1964), reproduced in 11 BULL. COPYRIGHT SOC'Y 361 (1964).

believed appropriate since “substantial elements of gathering, choosing, rejecting, editing, and arranging material” were involved in the creation of programs.⁷

The limitation of protection to published programs (dictated by Section 10 of the 1909 Act), the state of development in the computer industry (essentially large mainframe computers), and the fear of disclosing trade secrets by deposit with the Copyright Office limited the number of programs registered. From May 1964 to January 1, 1978 (the general effective date of the 1976 Copyright Act), approximately 2,000 programs were registered.⁸ The Copyright Office’s practices were never challenged in court, and only a few decisions can be read as inferentially touching on the copyrightability of computer programs under the 1909 Act.⁹

THE 1976 COPYRIGHT ACT

The 1976 Copyright Act did not separately list computer programs as a category of unprotected work. The Judiciary Committee reports that accompany the Act explain the reason for this lack of statutory reference:

The history of copyright law has been one of gradual expansion in the types of works accorded protection. . . . [S]cientific discoveries and technological developments have made possible new forms of creative expression that never existed before. In some of these cases the new expressive forms—electronic music, filmstrips, and com-

7. *Id.*

8. FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 15 (1979). Since passage of the 1976 Act and the Copyright Office’s institution of deposit practices preserving confidential information, the number of computer programs registered has increased dramatically. In the first two years under the 1976 Act, almost as many machine-readable works (a category that includes electronic data bases) were registered as had been registered in the period 1964-1978.

9. *Data Cash Sys. Inc. v. JS&A Group*, 628 F.2d 1038, 1041-42 (7th Cir. 1980) (computer chess program; work held to be in the public domain for failure to affix required notice); *Synercom Tech., Inc. v. Univ. Computing Co.*, 462 F. Supp. 1003 (N.D. Tex. 1979) (input formats); *Telex Corp. v. Int’l Bus. Machs. Corp.*, 367 F. Supp. 258 (N.D. Okla. 1973), *rev’d in part* (on antitrust issue), *aff’d in part* (on counterclaim), 510 F.2d 894 (10th Cir. 1975) (computer program manuals). See also *Harcourt, Brace & World, Inc. v. Graphic Controls Corp.*, 329 F. Supp. 517 (S.D.N.Y. 1971) (Copyright Office practice noted in nonprogram case); *Sun Studs, Inc. v. ATA Equip. Co.*, 710 F. Supp. 1297 (D. Or. 1987) (claim in computer program created before January 1, 1978 dismissed).

puter programs, for example—could be regarded as an extension of copyrightable subject matter Congress had already intended to protect, and were thus considered copyrightable from the outset without the need of new legislation.¹⁰

Computer programs are thus regarded as one form of “literary works,” and the definition of “literary work” in Section 101 of the Act was obviously drafted with computer programs in mind:

“Literary works” are works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.¹¹

The only decision under the unamended 1976 Act followed this legislative statement, finding computer programs, as a class, protectible as “literary works.”¹² Although computer programs are utilitarian works in the colloquial sense of being functional, they are not “useful articles” within the meaning of the Copyright Act, *see* 17 U.S.C. §101 (1978) (definition of “useful article”), since they convey information and are not pictorial, graphic, or sculptural works.¹³ Nevertheless, it is precisely the functional nature of computer programs that has caused the greatest difficulties in determining the scope of protection for and infringement of computer programs.

10. H.R. REP. NO. 94-1476, at 51 (1976); S. REP. NO. 94-473, at 50 (1975).

11. 17 U.S.C. § 101 (1978). *See* H.R. REP. NO. 94-1476, at 54 (1976) (“The term ‘literary works’ . . . includes computer data bases, and computer programs to the extent that they incorporate authorship in the programmer’s expression of original ideas, as distinguished from the ideas themselves”); S. REP. NO. 94-473, at 52 (1975) (literary works may be embodied in computer punch cards). *But see* DRAFT SECOND SUPPLEMENTARY REPORT OF THE REGISTER OF COPYRIGHTS ON THE GENERAL REVISION OF U.S. COPYRIGHT LAW, ch. I, at 4 (1975) (definition “seems limited when it comes to computer programs”).

12. *Tandy Corp. v. Personal Micro Computers*, 524 F. Supp. 171, 173 (N.D. Cal. 1981). *But cf.* *Data Cash Sys., Inc. v. JS & A Group, Inc.*, 480 F. Supp. 1063, 1066 n.4 (N.D. Ill. 1979) (dictum), *aff’d on other grounds*, 628 F.2d 1038 (7th Cir. 1980).

13. *Compare* *E.F. Johnson Co. v. Uniden Corp.*, 623 F. Supp. 1485, 1498 (D. Minn. 1985), *with* *Lotus Dev. Corp. v. Paperback Software Int’l*, 740 F. Supp. 37, 52-53 (D. Mass. 1990), *rev’d*, 49 F.3d 807 (1st Cir. 1995), *aff’d by an equally divided Court*, 516 U.S. 233 (1996) and *W & Whelan Assocs. v. Jaslow Dental Labs.*, 797 F.2d 1222, 1236 (3d Cir. 1986). Both *Lotus* and *Whelan* erroneously used the term “utilitarian work” in its colloquial sense.

THE 1980 SOFTWARE AMENDMENTS

In 1980, amendments concerning software were included in H.R. 6934, a patent revision bill. Brief testimony on the copyright parts of the bill was given before the House Subcommittee on Courts, Civil Liberties and the Administration of Justice on April 15, 1980,¹⁴ and on May 8, 1980.¹⁵ On December 12, 1980, President Carter signed the bill into law.¹⁶ The legislation contained the following definition of “computer program”:

A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.¹⁷

This definition is remarkable in at least two respects: first, protection is granted to a *set* of statements or instructions, thereby focusing protection on the relationship of the parts of the program to each other; and, second, no computer program is protectible unless it may be used (directly or indirectly) to bring about a “certain result” in a computer. While the first element of this definition resonated with the existing definitions of “compilation” and “audiovisual work,” both of which were drafted with an eye toward protection for the assemblage of elements, the functional requirement was, and remains, unprecedented and moreover at least potentially in conflict with Section 102(b), which *inter alia*, prohibits protection for methods of operation and processes.

Decisions after the 1980 amendments have uniformly upheld copyright in computer programs *as a class*, regardless of their form (source or object code), their purpose (application program or operating system), or fixation (paper or computer chip). With these issues out of the way, the courts turned to the more difficult question of the scope of copyright. This question involves not whether a computer program as a whole is copyrightable, but rather whether an admittedly copyrightable computer program has been infringed by the unauthorized appropriation in the late 1980s, early 1990s, of portions of the program. Two particular issues were the focus of attention recently: (1)

14. *Industrial Innovation and Patent and Copyright Law Amendments: Hearings on H.R. 6033 et al. Before the Subcomm. on Courts, Civil Liberties and the Administration of Justice of the House Judiciary Comm.*, 96th Cong., at 42-46 (1980).

15. *Id.* at 635-36, 683-86, 698-701.

16. Act of December 12, 1980, Pub. L. No. 96-517, § 10(b), 94 Stat. 3015, 3028 (1980). See also H.R. REP. NO. 96-1307, at 23-24 (1980); H.R. REP. NO. 96-1307, Pt. 2, at 19 (1980).

17. 17 U.S.C. § 101 (1980).

protection for the nonliteral elements of a program, sometimes known as the program's "structure, sequence, and organization," and (2) protection for interfaces – *e.g.*, those parts of the program that the user sees or that communicate internally between different parts of the computer or between the hardware and a computer program.

STRUCTURE, SEQUENCE, AND ORGANIZATION

While the language of the statutory definition of "computer program" as a "set of statements or instructions" could be read as limiting protection to the literal code of computer programs, there is no more reason to limit a computer program's protection to the literal "statements or instructions" than to limit a motion picture's protection to the literal "series of related images" that identify the nature of the motion picture, or a novel to the literal, original language in which it was written. Any limitation of protection to the literal code of a computer program is also negated by the grant of the right to prepare derivative works in Section 106(2). A "derivative work" is defined as encompassing, in relevant part, "any . . . form in which a work may be recast, transformed, or adapted," including translations.¹⁸ Thus, an original computer program enjoys the same rights – and therefore scope of protection – as all other works, limited only by its originality.

The proper inquiry is to identify expression in the particular computer program at issue. Such determinations must be ad hoc, taking into account the level of creativity embodied in the work. Grand rules are no more helpful for analysis of computer programs than they have been for other forms of authorship, yet the novelty of the subject matter led some courts to write extraordinarily and unnecessarily long opinions enunciating such rules. A better approach, at least initially, is to start with the statute.

THE PROPER APPROACH TO DETERMINING COPYRIGHTABILITY OF COMPUTER PROGRAMS: LOOK TO THE STATUTE

As the Supreme Court has held, "[i]n cases of statutory construction, we begin with the words of the statute,"¹⁹ which includes not only

18. 17 U.S.C. §§ 101 (definition of "derivative work"), 106(3) (1978). The first derivative right granted was the translation right provided in 1865, in response to a decision holding that an unauthorized German translation of Harriet Beecher Stowe's *Uncle Tom's Cabin* was not a "copy" since it did not reproduce the literal words of the original.

19. *Diamond v. Diehr*, 450 U.S. 175, 182 (1981).

the language but also the structure of the statute. The pertinent language is found in section 102(a)'s extension of protection to "original works of authorship" and in the section 101 definition of "computer program."²⁰ The pertinent structure of the Copyright Act is the interrelationship between these two sections. Section 102(a) is the source of all protection under the Act. Incorporating the constitutional requirement of originality, the section limits protection to those works that are independently created and possess "at least some minimal degree of creativity."²¹ Section 102(a) does not inform us, however, how this threshold requirement of originality can be met for any particular class of works. The answer to that question is provided by the section 101 subject matter definitions,²² including the definition of "computer program."

The approach to be suggested here – to regard the section 101 subject matter definitions as embodying Congress's expression of how originality can be satisfied – originates with Judge (now Justice) Ruth Bader Ginsburg's opinion in *Atari Games Corp. v. Oman*,²³ and with Justice O'Connor's opinion for the Court in *Feist Publications, Inc. v. Rural Telephone Service Co.*²⁴ Before this approach is spelled out, though, it is first necessary to review *Lotus*, the historical treatment of computer programs as literary works, since that treatment is in part responsible for the false paths the courts have taken in their attempt to determine the copyrightability of computer programs.

STEP ONE: "ORIGINAL WORKS OF AUTHORSHIP"

The copyrightability of computer programs must, of course, be determined by the statute Congress has given us. In that statute, Congress has told us first that copyright extends to "original works of authorship."²⁵ This term was deliberately left undefined, with Congress stating a desire that the courts continue to apply the standard they

20. 17 U.S.C. § 101.

21. *Feist Publ'n, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991).

22. In the case of musical works, dramatic works, pantomimes and choreographic works, Congress did not provide a definition of the subject matter, believing these works had fairly settled meanings. H.R. REP. NO. 94-1476, at 53; S. REP. NO. 94-473, at 52. The fact that Congress took the trouble to provide definitions for the remaining five categories of works because their meanings were unsettled should heighten the attention courts pay to those definitions.

23. 888 F.2d 878, 881-82 (1989).

24. 499 U.S. 340 (1991).

25. 17 U.S.C. § 102(a).

already had developed.²⁶ In *Feist*, the Supreme Court authoritatively delineated that standard, holding that “original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity . . . [a] creative spark”²⁷ The creative spark need not create a shock, but it must at least be perceptible to the touch.

The originality standard is an objective one that does not permit the courts to use their own judgment of the aesthetic merit of the work, nor to cut back on or deny protection because the work serves a commercial purpose. In place of such subjective evaluations, the only issue is whether the requirement of originality as construed by the *Feist* Court has been met. In part, the disarray in the lower courts over computer programs is the result of some judges’ antagonism to Congress’ decision to protect computer programs under the copyright law. These judges view computer programs’ functional and commercial attributes as worthy of protection, if at all, under the more rigorous requirements of the patent laws. Availability of protection under patent law is not, however, a bar to protection under the Copyright Act, as Congress made clear in that act.²⁸

STEP TWO: THE STATUTORY SUBJECT MATTER DEFINITIONS

While originality is an objective concept, it is also an abstract one. For although it informs us what the requisite general level of creativity is, it does not give us practical guidance about how that level can be reached in particular cases. The answer to how originality can be satisfied in particular cases is found instead in the definitions of subject matter Congress provided in section 101 of the Act. As *Feist*²⁹ and *Atari Games Corp.*³⁰ recognized, these definitions express Congress’ judg-

26. See H.R. REP. NO. 94-1476 at 51; S. REP. NO. 94-473, at 50.

27. *Feist*, 499 U.S. at 345.

28. See 17 U.S.C. § 301(d) (“Nothing in this title annuls or limits any rights or remedies under any other Federal statute.”); see also *U.S. Patent and Trademark Office & U.S. Copyright Office, Patent-Copyright Laws Overlap Study* x (1991) (prepared for the House Subcommittee on Intellectual Property and the Administration of Justice, and concluding that “there appears to be minimal overlap between the subject matter of copyrights and utility patents because the statutes make clear that the areas of protected matter in each case are markedly different”).

29. *Feist*, 499 U.S. at 354-61.

30. *Atari Games Corp.*, 888 F.2d at 881.

ment about how, for the defined subject matter, the constitutional standard of originality can be satisfied.

A brief review of the definition of “compilation” as construed in *Feist* and the definition of “audiovisual work” as construed in *Atari Games Corp.* will demonstrate the methodology.

A “compilation” is defined as:

[A] work formed by the collection and assembling of pre-existing materials or of data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship.³¹

The *Feist* Court construed the definition’s tripartite structure (as indicated by the emphases) as indicating how originality could be satisfied. All three elements must be present: (1) there must be a collection of data, (2) from which the compiler selects, coordinates, or arranges certain data (3) in an original way. As the Court recognized,

the key to the statutory definition is the second requirement. It instructs courts that . . . they should focus on the manner in which the collected facts have been selected, coordinated, and arranged. . . . The statute dictates that the principal focus should be on whether the selection, coordination, and arrangement are sufficiently original to merit protection.³²

“Audiovisual works” are defined as: works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices³³

Atari Games Corp. involved the simple audiovisual electronic game “Breakout,” in which no individual frame was protectible. The Copyright Office refused registration, ignoring the work’s original sequence of images. In reversing a district judge who had affirmed the Copyright Office’s decision, Judge (now Justice) Ruth Bader Ginsburg instructed the Copyright Office to focus on “the audiovisual work as a whole, *i.e.*, the total sequence of the images displayed as the game is played.”³⁴ When the Office again refused registration, Judge Ginsburg criticized the Office for analyzing only the individual screens “rather

31. *Feist*, 499 U.S. at 356 (alteration in original) (quoting 17 U.S.C. § 101).

32. *Id.* at 358.

33. 17 U.S.C. § 101 (definition of “audiovisual work”).

34. *Atari Games Corp.*, 888 F.2d at 883.

than the flow of the game as a whole.”³⁵ She also cited the Supreme Court’s intervening *Feist* opinion and found that *Feist*’s focus on the definition of “compilation” provided an analogous methodology for analyzing originality in audiovisual works. Both compilations and audiovisual works, she wrote, “involve a choice and ordering of elements that, in themselves, may not qualify for protection; the author’s selection and arrangement, however, may ‘entail [the] minimal degree of creativity’ needed to bring the work within the protection of the copyright laws.”³⁶

The definition of “computer program” bears a striking resemblance to that of “audiovisual work” as construed by Judge Ginsburg in *Atari Games Corp.*:

Computer Program:

A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.³⁷

Audiovisual Works:

“Audiovisual works” are works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices³⁸

Both definitions direct attention to the whole rather than to the individual components.³⁹ Indeed, when one returns to the key second part of the definition of the “compilation” – the compiler’s selection, coordination, or arrangement – it is evident that the operative provisions of the definitions of “computer program,” “compilation,” and “audiovisual work” are quite similar. The term “set” in the definition of “computer program” equates with the term “series” in “audiovisual

35. *Atari Games Corp. v. Oman*, 979 F.2d 242, 245 (1992) (reviewing Copyright Office’s decision on remand).

36. *Id.* (quoting *Feist*, 499 U.S. at 348).

37. 17 U.S.C. § 101 (definition of “computer program”) (emphasis supplied). Although it is popularly believed that this definition originated with the National Commission on New Technological Uses of Copyrighted Works (“CONTU”), research for this article reveals that it originated with testimony submitted by the Information Industry Association before the House copyright subcommittee on May 15, 1975. See *Copyright Law Revision: Hearing on H.R. 2223 Before the Subcomm. on Courts, Civil Liberties, and the Administration of Justice of the House Comm. on the Judiciary*, 94th Cong. 333 (1975). It was not until a year later, at a May 7, 1976 meeting of the Commission, that the identical language was presented to the Commission. See *Transcript of CONTU Meeting Number 6*, NTIS PB-254-765, at 122 (Dept. Commerce, May 1976).

38. 17 U.S.C. § 101 (definition of “audiovisual work”) (emphasis supplied).

39. This does not mean original components cannot be protected, only that the absence of protectible components does not disqualify protection for the sequence.

work,” and with “select[ion and] . . . arrangement” in “compilation.”⁴⁰ All three definitions involve a collection of material where the building blocks may not be protectible; with compilations, the building blocks are data or other preexisting material; with audiovisual works, the building blocks are the individual frames; with computer programs, the building blocks are the individual statements or instructions. In all three definitions, though, originality may be found in the mere sequencing of the building blocks: the selection, coordination, or arrangement of data; the series of the images; and the set of statements or instructions.

Thus, following *Feist* and *Atari Games Corp.*, so long as there is a “minimal degree of creativity” in the “choice and ordering” of the computer program’s set of statements or instructions, the set as a whole is entitled to protection, even though any unoriginal component parts are not. This approach also fits well with section 102(b). The original aspects of a computer program are protected according to section 102(a) and the section 101 definition, while unoriginal components are excluded by section 102(b). Since the existence of Section 102(b) has caused endless troubles in computer program cases, we shall now examine its application to them.

COMPUTER PROGRAMS AND THE IDEA-EXPRESSION DICHOTOMY

Courts were faced with the argument that only the idea and not the expression of a work had been copied long before passage of the 1976 Copyright Act and long before computers were in existence. After deciding copyright cases for almost fifty years, Judge Hand, in one of his final opinions, came to the conclusion that no general rule can be formulated for determining what is idea and what is expression, writing in *Peter Pan Fabrics, Inc. v. Martin Weiner Corp.*,⁴¹ “[o]bviously, no principle can be stated as to when an imitator has gone beyond copying the ‘idea,’ and has borrowed its ‘expression.’”⁴² This difficulty should make courts particularly wary of announcing rules to be applied to classes of subject matter, including computer programs, since broad formulations are likely to be incapable of taking into account the wide varieties of creativity found in different types of authorship.

Judge Hand’s statement in *Peter Pan Fabrics* stands in contrast to his more detailed review of the issue in *Nichols v. Universal Pictures*

40. 17 U.S.C. § 101.

41. 274 F.2d 487 (2d Cir. 1960).

42. *Id.* at 489. Chief Judge Newman noted the same difficulty in trade dress cases. See *Jeffrey Milstein, Inc. v. Greger, Lawlor, Roth, Inc.*, 58 F.3d 27, 32 (2d Cir. 1995).

Corp.,⁴³ in which he contemplated various “patterns of generality” or “series of abstractions” that could be used to separate idea from expression in plays.

Upon any work . . . a great number of patterns of increasing generality will fit equally well, as more and more of the incident is left out. The last may perhaps be no more than the most general statement of what the [work] is about, and at times might consist only of its title; but there is a point in this series of abstractions where they are no longer protected, since otherwise the [author] could prevent the use of his “ideas,” to which, apart from their expression, his property is never extended.⁴⁴

Nichols assumes a unified, copyrightable work of fiction. The issue in *Nichols* was not copyrightability, but rather infringement where the defendant did not copy text, but, allegedly, characters and plot – integral parts of a unified whole. By contrast, in cases such as *Lotus Development Corp.*, the issue is copying of discrete textual elements.

Although Nimmer erroneously characterized Judge Hand’s discussion in *Nichols* as an “abstractions test,”⁴⁵ and has successfully argued its adoption in a mutated form in computer program cases with disastrous consequences, as Judge Easterbrook wisely observed, the abstractions test “is not a ‘test’ at all. It is a clever way to pose the difficulties that require courts to avoid either extreme of the continuum of generality.”⁴⁶ Similarly, Judge Newman has written that “Judge Hand manifestly did not think of his observations as the enunciation of anything that might be called a ‘test.’” His disclaimer (for himself and everyone else) of the ability to ‘fix the boundary’ should have been sufficient caution that no ‘test’ capable of yielding a result was intended.⁴⁷ Apparently agreeing, Judge Keeton, citing *Peter Pan Fabrics*, declared in an early case involving Lotus’s 1-2-3 spreadsheet program, “[i]t seems the better part of wisdom, if not valor, not to press the search for a suitable bright-line test . . . where Learned Hand, even after decades of experience in judging, found none.”⁴⁸

43. 45 F.2d 119 (1930).

44. *Id.* at 121.

45. See 3 NIMMER ON COPYRIGHT § 13.03[F], at 13-132 (2002).

46. *Nash v. C.B.S., Inc.*, 899 F.2d 1537, 1540 (7th Cir. 1990); see CCC Info. Servs., Inc. v. Maclean Hunter Mkt. Reports, 44 F.3d 61, 69 n.15 (2d Cir. 1994) (following *Nash*).

47. Jon O. Newman, *New Lyrics for an Old Melody: The Idea/Expression Dichotomy in the Computer Age*, 17 CARDOZO ARTS & ENT. L.J. 691, 694 (1999).

48. *Lotus Dev. Corp.*, 740 F. Supp. at 60.

Perhaps the better part of wisdom is to acknowledge that there is no idea-expression “test” either. The statement that given material is an (unprotectible) idea or (protectible) expression is merely a statement of the conclusion reached, rather than a methodology for reaching that conclusion. Whether given material is idea or expression must be made on an ad hoc basis taking into account the amount of originality involved, as well as any possible constraints on that originality. Some of those constraints may be technological. Because much emphasis has been placed in computer cases on technical constraints and the so-called “merger doctrine” – a specialized application of the idea-expression doctrine – it will be helpful to examine that doctrine.

THE MERGER DOCTRINE AND COMPUTER PROGRAMS

The First Circuit’s decision in *Lotus Development Corp.*⁴⁹ notwithstanding, the idea-expression dichotomy should rarely preclude copyright in an entire work. This is also true of the related doctrine known

49. 49 F.3d 807 (1st Cir. 1995), *aff’d by an equally divided Court*, 516 U.S. 233 (1996). *Lotus Development Corp.* is, though, in accord with earlier First Circuit precedent. In *Morrissey v. Procter & Gamble Co.*, 379 F.2d 675, 678-79 (1st Cir. 1967), the court of appeals wrote:

When the uncopyrightable subject matter is very narrow, so that “the topic necessarily requires,” if not only one form of expression, at best only a limited number, to permit copyrighting would mean that a party or parties, by copyrighting a mere handful of forms, could exhaust all possibilities of future use of the substance. In such circumstances it does not seem accurate to say that any particular form of expression comes from the subject matter. However, it is necessary to say that the subject matter would be appropriated by permitting the copyrighting of its expression. We cannot recognize copyright as a game of chess in which the public can be checkmated.

For other examples of courts finding entire works to constitute ideas, *see* *Kern River Gas Transmission Co. v. Coastal Corp.*, 899 F.2d 1458, 1464 (5th Cir. 1990); *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.2d 738, 742 (9th Cir. 1971); *Prod. Contractors, Inc. v. WGN Cont’l Broad. Co.*, 622 F. Supp. 1500, 1503 (N.D. Ill. 1985) (“idea of a Christmas parade is a common one, relatively simple and containing no original creative authorship”); *Arthur v. ABC, Inc.*, 633 F. Supp. 146, 148 (S.D.N.Y. 1985) (sketches of five interlocking rings, in which three of the rings were modified to represent the lower case letters a, b, and c held to be uncopyrightable as containing “no more than the bare idea or concept of superimposing . . . two logos,” but sculptural work of the five rings found protectible); *see also* OPINION OF THE ATTORNEY GENERAL OF N.Y. NO. 84-F9 (1984) (on file with author), 1985-1986 COPYRIGHT L. DEC. (CCH) 25,753, at 19,379 (ideas for how to dredge the Erie Canal or build a man-made island in New York Harbor not copyrightable); *cf.* *G.D. Searle & Co. v. Philips-Miller & Assocs.*, 836 F. Supp. 520, 524 (N.D. Ill. 1993) (rejecting argument that advertising proposal was an idea). *But see* *Mason v. Montgomery Data, Inc.*, 967 F.2d 135 (5th Cir. 1992) (limiting *Kern River*). In each of these cases, the courts would have been on sounder ground finding that the work lacked the requisite originality.

as "merger."⁵⁰ The merger doctrine has been explained as follows by the Ninth Circuit:

When the "idea" and its "expression" are . . . inseparable, copying the "expression" will not be barred, since protecting the "expression" in such circumstances would confer a monopoly of the "idea" upon the copyright owner free of the conditions and limitations imposed by the patent law.⁵¹

Subsequent courts have expanded the doctrine's reach, finding it applicable when there are also a few ways of expressing a particular idea.⁵² The validity of merger as a doctrine separate from the idea-expression dichotomy is doubtful, however. If an idea and its alleged expression are truly inseparable, there can be no selectivity sufficient to satisfy the originality requirement.⁵³ If, on the other hand, an author has choices regarding the content or design of a work and imbues

50. See *Kern River*, 899 F.2d at 1463 ("The doctrine of 'merger' developed in an effort to deal with the difficulty in locating the precise boundary between idea and expression.").

51. *Kalpakian*, 446 F.2d at 742 (holding that a jeweled bee pin was a noncopyrightable idea). Cf. *Herbert Rosenthal Jewelry Corp. v. Honora Jewelry Co.*, 509 F.2d 64 (2d Cir. 1974) (no infringement of jeweled turtle pins); *But cf. Herbert Rosenthal Jewelry Corp. v. Grossbardt*, 436 F.2d 315 (2d Cir. 1970) (same work from Kalpakian found to be infringed by verbatim copy); *Herbert Rosenthal Jewelry Corp. v. Zale Corp.*, 323 F. Supp. 1234 (S.D.N.Y. 1971) (jeweled bee and turtle pins protectible).

52. See *Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 838 (10th Cir. 1993); *M. Kramer Mfg. Co. v. Andrews*, 783 F.2d 421, 436 (1986); *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1236 n.30 (1986); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1253 (1983) ("If the same idea can be expressed in a plurality of totally different manners, a plurality of copyrights may result" Merger occurs when "there are no or few other ways of expressing a particular idea.") (quoting *Dymow v. Bolton*, 11 F.2d 690, 691 (2d Cir. 1926)). In *Paperback*, the court stated:

If . . . the expression of an idea has elements that go beyond all functional elements of the idea itself, and beyond the obvious, and if there are numerous other ways of expressing the non-copyrightable idea, then those elements of expression, if original and substantial, are copyrightable.

740 F. Supp. at 59.

This statement is awash with confusion between the copyright and patent laws (requiring that the expression be "beyond the obvious"), *id.*, and seemingly requires that a higher standard for copyright protection be met than that set forth by the Supreme Court in *Feist*.

53. See *Synercom Tech., Inc. v. Univ. Computing Co.*, 462 F. Supp. 1003, 1012 (N.D. Tex. 1978) ("One can argue that inseparability of idea and expression is here an antinomy. The argument asks if the idea and the usage are not separable, what is the expression?").

the work with more than a minimal amount of expression,⁵⁴ the court should not focus on copyrightability, but instead on the scope of protection. Thus, the better approach, that of the District of Columbia⁵⁵ and Second Circuit,⁵⁶ is that merger is relevant at the infringement stage as a limiting principle on the scope rather than on the existence of protection. When used at the infringement stage, merger can be applied sensitively to the facts before the court, permitting the court to ensure that the proper balance between protection and competition is preserved.⁵⁷ A work with minimal originality (a “thin” copyright in *Feist’s* lexicon)⁵⁸ may be protected only against verbatim or near verbatim copying – nevertheless important protection – while the creation of original works that genuinely build on the earlier, “thin” copyrighted work will not be impeded. Thus used, merger and other doctrines such as the fair use privilege, can be important, almost surgical tools to strike the appropriate balance in individual cases.

By contrast, when merger is used at the copyrightability stage, if too much protection is granted in one case, it will be difficult for later courts (at least in the same circuit) to cut back on the protection for a given work; even though in a later case the facts may warrant permitting a subsequent programmer greater leeway in copying. Conversely, when merger is used to deny protection altogether, later courts lose their ability to prevent verbatim copying by freeloaders. Unfortunately, in computer program cases some courts have elevated merger to be the principal criterion by which copyrightability is to be determined, rather than focusing on the statutory scheme Congress provided. Oddly, this elevation is also the result of a misinterpretation of a nineteenth century case, *Baker v. Selden*⁵⁹, decided ninety-six years before section 102(b) became part of the Copyright Act.

54. The mere fact that there are choices does not automatically mean that the choice made possesses originality.

55. *E.g.*, *Atari Games Corp.*, 888 F.2d at 884-86 (*scenes a faire*).

56. *E.g.*, *Kregos v. The Associated Press & Sports Features Syndicate, Inc.*, 937 F.2d 700, 705 (2d Cir. 1991); *Cont'l Casualty Co. v. Beardsley*, 253 F.2d 702, 706 (2d Cir. 1958), *cert. denied*, 358 U.S. 816 (1958).

57. As Chief Judge Newman noted:

Determining when the idea and its expression have merged is a task requiring considerable care: if the merger doctrine is applied too readily, arguably available alternative forms of expression will be precluded; if applied too sparingly, protection will be accorded to ideas.

Kregos, 937 F.2d at 705.

58. *See Feist*, 499 U.S. at 349.

59. 101 U.S. 99 (1880).

BAKER V. SELDEN AND COMPUTER PROGRAMS

The origin of the idea-expression dichotomy is frequently traced to the Supreme Court's 1880 decision in *Baker v. Selden*.⁶⁰ It is questionable whether the origin is correctly ascribed: the opinion never refers to ideas and was decided on the ground of lack of originality. Plaintiff Selden had developed a system of double-entry bookkeeping, which he described through explanatory text and forms and published in a book for which he received a copyright registration. Defendant Baker wrote a book employing a similar system of bookkeeping, but, critically, used substantially different forms. While certain columns were identical in both parties' works, the defendant claimed these columns did not originate with the plaintiff and were, moreover, required by state law.⁶¹ Even though there was no appropriation of either the explanatory text or the forms, Selden claimed that the copyright in his book gave him the exclusive right to use the double-entry system of bookkeeping despite the lack of substantial similarity between the parties' forms.⁶² The Supreme Court rejected Selden's claim of ownership of rights in his system, writing, "the mere copyright of Selden's book did not confer upon him the exclusive right to make and use account-books, ruled and arranged as designated by him and described and illustrated in said book."⁶³ The Court's reasoning is revealed in an earlier passage:

To give to the author of the book an exclusive property in the art described therein, when no examination of its novelty has ever been officially made, would be a surprise and

60. *Id.*

61. Compare Brief for Appellant at 10-13, *Baker v. Selden*, 101 U.S. 99 (1880), with Brief for Appellee at 9, *Baker v. Selden*, 101 U.S. 99 (1880).

62. See Brief for Appellee at 6-7, *Baker v. Selden*, 101 U.S. 99 (1880). The appellee argued:

[r]uled lines and headings in the abstract may be open to the common use of all in bookkeeping – but when they are so arranged as to bespeak by classification and condensation a new method of keeping accounts, they, too, are protected, because they then become something more than mere ruled lines and headings in the abstract, and convey useful knowledge in the concrete The appellee claims that these copyrights extend to and embrace a system of bookkeeping – a combination of lines as arranged as to suggest an improved method of classifying and condensing mercantile accounts. The lines are the symbols to convey the idea of the method or plan.

Id. (emphasis supplied).

63. *Baker*, 101 U.S. at 107; see also *Perris v. Hexamer*, 99 U.S. 674, 676 (1878).

a fraud upon the public. That is the province of letters-patent, not of copyright.⁶⁴

In short, Selden was attempting to gain patent protection for his system through a copyright in a book, an effort the Court rightly rejected. Then, in dictum that has become (in)famous as the “use versus explanation” dichotomy, the Court added:

The very object of publishing a book on science or the useful arts is to communicate to the world the useful knowledge which it contains. But this object would be frustrated if the knowledge could not be used without incurring the guilt of piracy of the book. And where the art it teaches cannot be used without employing the methods and diagrams used to illustrate the book, or such as are similar to them, such methods and diagrams are to be considered as necessary incidents to the art, and given therewith to the public; not given for the purpose of publication in other works explanatory of the art, but for the purpose of practical application.⁶⁵

64. *Baker*, 101 U.S. at 102. Claims for patent protection by others did not, however, fare any better. See *Munson v. Mayor of New York*, 124 U.S. 601, 601 (1888) (finding invalid a patent for “new and useful improvements in preserving, filing and canceling bonds, coupons, certificates of stock, etc.,” consisting of blank books). Other cases denying copyright in systems or plans include *Crume v. Pac. Mut. Life Ins. Co.*, 140 F.2d 182 (7th Cir. 1944); *Taylor Instrument Cos. v. Fawley-Brost Co.*, 139 F.2d 98 (7th Cir. 1943); *Brief English Sys., Inc. v. Owen*, 48 F.2d 555 (2d Cir. 1931); *Stone & McCarrick, Inc. v. Dugan Piano Co.*, 220 F. 837 (5th Cir. 1915) (manual on how to create advertisements did not prohibit piano company from using illustrations contained therein to create an advertisement); *Amberg File & Index Co. v. Shea Smith & Co.*, 82 F. 314 (7th Cir. 1897) (index books held noncopyrightable); *Drugtax, Inc. v. Sys. Programming Corp.*, 147 U.S.P.Q. (BNA) 313, 315 (M.D. Pa. 1965) (While defendant copied “in considerable detail” plaintiff’s idea, plan, and method for enabling pharmacists to supply their customers with information on the deductibility of their drugs, the court held that “this . . . is not the test in determining infringement of a copyright.”); *Gaye v. Gillis*, 167 F. Supp. 416 (D. Mass. 1958) (coupon book); *Aldrich v. Remington Rand, Inc.*, 52 F. Supp. 732 (N.D. Tex. 1942); *Burk v. Relief & Burial Assoc.*, 3 Haw. 388 (D. Haw. 1909); *Burnell v. Chown*, 69 F. 993 (C.C.N.D. Ohio 1895) (credit ratings); *Griggs v. Perrin*, 49 F. 15 (C.C. N.D.N.Y. 1892). An interesting (but nevertheless unsuccessful) attempt to circumvent the lack of copyright in systems was made in *Seltzer v. Sunbrock*, 22 F. Supp. 621, 627 (S.D. Cal. 1938), in which the court rejected plaintiff’s claim that a description in its pamphlet of a system for conducting roller skating races was a “dramatic composition.” See *Seltzer v. Corem*, 26 F. Supp. 892 (N.D. Ind. 1939).

65. *Baker*, 101 U.S. at 103.

This statement is dictum for two reasons: first, under the facts of *Baker*, the defendant Baker's work was not substantially similar to plaintiff Selden's; Baker could use the knowledge contained in Selden's book "without incurring the guilt of piracy" and did so without copying Selden's forms. In other words, Baker did practice the art contained in Selden's book without using Selden's "methods and diagrams." The centerpiece of the suit was Selden's claim that he owned a copyright in the bookkeeping system notwithstanding the lack of substantial similarity in the forms – the illustrated "methods and diagrams."⁶⁶ If there had been substantial similarity between the parties' forms, the case would have been a run-of-the-mill infringement suit.

The second and perhaps more important reason the "use versus explanation" statement is dictum is that the Court decided the case on an entirely different ground. The holding as announced by the Court was: "blank account-books are not the subject of copyright."⁶⁷ The Court's conclusion was thus that Selden's forms lacked originality, not that they contained expression which was merged with his bookkeeping system, as the lower courts' computer program opinions mistakenly assert.⁶⁸ Instead, there was no original expression to begin with. The holding announced by the Court – that there is no originality in blank forms – spawned a rich history of cases and Copyright Office regulations involving such forms, the upshot of which is a conclusion that the *Baker v. Selden* "blank form rule" is nothing more than an application of the originality requirement. Those forms that possess the requisite "modicum of creativity" have been protected.⁶⁹

66. The Supreme Court appears to have subsequently interpreted *Baker v. Selden* as standing for nothing more than a case where there was no substantial similarity and the claim was in the system notwithstanding the lack of similarity. See *Mazer v. Stein*, 347 U.S. 201, 217 (1954) ("In *Baker v. Selden*, the Court held that a copyrighted book on a peculiar system of bookkeeping was not infringed by a similar book using a similar plan which achieved similar results where the alleged infringer made a different arrangement of the columns and used different headings." (citation omitted)).

67. *Baker*, 101 U.S. at 107.

68. See *Computer Assoc. Int'l, Inc. v. Altai, Inc.*, 982 F.2d 693, 704-05 (2d Cir. 1992); *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 49 F.3d 807, 817 (1st Cir. 1995). The facts in *Baker v. Selden* – Baker's ability to illustrate Selden's system using nonsubstantially similar forms – demonstrate that there was no merger.

69. *Id.* at 332; see *Kregos*, 937 F.2d at 708-09 (2d Cir. 1991). Application of the "blank form" originality "rule" to computer works has been inconsistent. The first case to do so, *Synercom Tech., Inc. v. Univ. Computing Co.*, 462 F. Supp. 1003 (N.D. Texas 1978), arose under the 1909 Copyright Act and involved complex facts. Data was contained in copyrighted manuals. This data was then manually written down on "input format" cards, which had the appearance of an 80-column punched card. Once the data was transferred to the input format cards, the data was given to operators who created punch cards containing the data in a form executable by a computer. Each

Baker v. Selden, when understood according to its facts and the holding announced by the Court, stands for the unremarkable conclusion that Selden's forms lacked the requisite originality. Since the forms were unprotected and Selden had not received a patent, he had no right to control their use. Accordingly, deification of *Baker v. Selden* in late twentieth century computer program cases is unjustified.

Whatever the merits of *Baker's* dictum on use,⁷⁰ we now are construing a statute, a statute that extends protection to computer programs that "bring about a certain result." One can sympathize with the

input format was individually registered with the Copyright Office. Defendant did not copy the computer program code, but it did copy information from the manuals, and plaintiff alleged it also copied the input formats. Then-District Judge Higginbotham found the input formats conveyed information, but that the information was merged with the "idea" of the work. The continuing precedential value of *Syndercom* is open to question, however, since in a recent case involving the same parties and many of the same input formats (but in a reverse posture as parties), the Fifth Circuit upheld a claim of copyrightability and infringement in the formats as a compilation. See *Eg'g Dynamics, Inc. v. Structural Software, Inc.*, 26 F.3d 1335 (5th Cir. 1994). In the process, the Fifth Circuit pointedly disavowed the argument that it had endorsed *Synercom* in its opinion in *Plains Cotton Coop. Ass'n v. Goodpasture Computer Serv., Inc.*, 807 F.2d 1256 (5th Cir. 1987). See *Eng'g Dynamics, Inc.*, 26 F.d at 1341-42.

Other cases have confronted the blank form rule in connection with computer program elements. See, e.g., *Whelan Assocs., Inc.*, 797 F.2d at 1242-43 (protection for file structures); *Apple Computer, Inc. v. Microsoft Corp.*, 799 F. Supp. 1006, 1040 (N.D. Cal. 1992) (gray background for computer terminal display found to be an "unprotectible blank form"), *aff'd*, 35 F.3d 1435 (9th Cir. 1994), *cert. denied*, 115 S. Ct. 1176 (1995); *CMAX/Cleveland, Inc. v. UCR, Inc.*, 804 F. Supp. 337, 355 (M.D. Ga. 1992) (file structures found not to be blank forms); *Digital Communications Assoc., Inc. v. Softklone Distrib. Corp.*, 659 F. Supp. 449, 460-62 (N.D. Ga. 1987) (finding status screen display was not a blank form).

70. Cf. *Digital Communications Assocs.*, 659 F. Supp. at 449, which involved a "status screen" display. A status screen display contains an arrangement of command terms under various headings. Defendant argued that because the entire status screen was "used" as part of the operation of the computer program, protection was prohibited by *Baker v. Selden*. The court rejected the argument, writing:

The defendants read into *Baker v. Seldin* [sic] a distinction between works to "be used" and works to "explain." As noted in *Mazer v. Stein*, "nothing in the copyright statute [supports] the argument that the intended use or use in industry of an article eligible for copyright bars or invalidates its registration. We do not read such a limitation into the copyright law." A work can be used and can explain; that part of the work which explains, if not necessary to the idea of the work, is copyrightable.

Id. at 459 (quoting *Mazer*, 347 U.S. at 218) (citations omitted).

Unfortunately, Judge O'Kelley didn't go far enough; there is also no bar to protecting a work in the form in which it is being used so long as it contains expression. Indeed, under Judge O'Kelley's view, no operating system program could be protected because an operating system is only "used"; it does not interact with the consumer.

difficulties that statute causes, but the statute is, no doubt, here to stay. Efforts to avoid granting protection for ideas, methods of operation, or processes are understandable, but when those efforts involve distortion of basic copyright principles, damage to other subject matter, far afield from computer programs, is inevitable. The approach suggested here – construe the statutory definition of “computer program” – seeks both to give meaning to the language Congress chose and to avoid such undesirable collateral damage.

Judge Newman cautioned against that result in his plea to use a different vocabulary for computer programs than for literary works: “Words convey concepts, and if we use identical phrases from one context to resolve issues in another, we risk failing to notice that the relevant concepts are and ought to be somewhat different.”⁷¹ While the concept of protecting computer programs under copyright is strained at best, using the statutory words Congress employed and the vocabulary of computer science can at least alleviate some of the ill-fit.

71. Jon O. Newman, *New Lyrics for an Old Melody: The Idea/Expression Dichotomy in the Computer Age*, 17 *CARDOZO ARTS & ENT. L.J.* 691, 695 (1999).