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Why Copyright Law Excludes Systems and Processes from the Scope of Its Protection

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Section 102 is one of the few elegant and concise provisions of the Copyright Act of 1976 (1976 Act).¹ Section 102(a) sets forth the subject matter eligible for copyright protection. “Copyright protection subsists,” it says, “in original works of authorship fixed in any tangible medium of expression”² Nicely complementing this provision is its statutory cousin, § 102(b), which provides: “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.”³ Once a work qualifies for copyright protection under § 102(a), § 102(b) informs its author and the rest of the world about certain aspects of the work that are not within the scope of copyright protection.

Surprisingly few cases and very little commentary have probed the meaning of § 102(b), and in particular, of the eight words of exclusion it contains.⁴ Most often, courts and commentators have characterized § 102(b)

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1. Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541 (codified as amended in scattered sections of 17 U.S.C.). The inelegance of the 1976 Act, especially as amended, is discussed in JESSICA LITMAN, *DIGITAL COPYRIGHT* (2000).

2. 17 U.S.C. § 102(a) (2000). Section 102(a) is discussed in Part II.

3. 17 U.S.C. § 102(b). Previous copyright statutes had no counterpart to this provision. The case law origins of the § 102(b) exclusions are discussed in Part I and the legislative history of § 102(b) in Part II.

4. Case law interpreting § 102(b) is discussed in Parts IV and V. The software copyright literature has sometimes explored the implications of § 102(b) for nonliteral elements of programs, such as structure and organization. *E.g.*, Steven R. Englund, Note, *Idea, Process, or Protected Expression?: Determining the Scope of Copyright Protection of the Structure of Computer Programs*, 88 MICH. L. REV. 866 (1990). Much of this literature has asserted that the strictures of § 102(b) mean that programs should enjoy only a thin scope of protection from copyright, although the articles rarely analyze the specific words of exclusion. *See, e.g.*, Paul Goldstein, *Infringement of Copyright in Computer Programs*, 47 U. PITT. L. REV. 1119, 1125 (1986) [hereinafter Goldstein, *Infringement*] (describing software as receiving “very thin” copyright protection); Dennis S. Karjala, *Copyright, Computer Software, and the New Protectionism*, 28 JURIMETRICS J. 33, 54 (1987) (observing that although computer programs are “the fruit of intellectual labor,” copyright law does not necessarily protect them); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2351 (1994) (noting that program behavior is not generally protected by copyright law); Lloyd L. Weinreb, *Copyright for Functional*

as a codification of the so-called idea/expression dichotomy, that is, the long-standing copyright principle that this law protects authors against illicit appropriations of expressive aspects of their works, although not of the ideas the works contain.⁵ This Article will call this the “idea/expression distinction.”⁶ Others have described § 102(b) as a codification of the Supreme Court’s 1880 decision in *Baker v. Selden*,⁷ which held that systems or methods of bookkeeping were beyond the scope of copyright protection in a book describing or explaining the system, and of *Baker*’s progeny.

Treatise author Paul Goldstein has suggested that both “idea” and “expression” should be understood as metaphors for aspects of protected works that either are, or are not, within the scope of copyright protection.⁸ That is, idea is a metaphor for that which is unprotectable by copyright law, including but not limited to abstract ideas, and expression is a metaphor for that which is within the scope of copyright protection, even when the exact words of a text, notes of a musical score, or lines of a drawing have not been

Expression, 111 HARV. L. REV. 1149, 1250 (1998) (“Anything less than literal copying [of a program] . . . should not constitute infringement . . .”). Some commentators have been skeptical of the “thin” protection doctrine, although without close analysis of § 102(b). See, e.g., Jane C. Ginsburg, *Four Reasons and a Paradox: The Manifest Superiority of Copyright over Sui Generis Protection of Computer Software*, 94 COLUM. L. REV. 2559, 2561 (1994) (criticizing “thin scope” decisions); William F. Patry, *Copyright and Computer Programs: It’s All in the Definition*, 14 CARDOZO ARTS & ENT. L.J. 1, 6–7 (1996) (same).

Beyond the software copyright commentary, § 102(b) has been given little attention, even by authors of major treatises. See 1 PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT § 2.3 (2006) [hereinafter GOLDSTEIN ON COPYRIGHT]; 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §§ 2.03, 2.18 (2006) [hereinafter NIMMER ON COPYRIGHT]. Also not much discussed is whether the exclusions in § 102(b) should be understood as illustrative or exhaustive. Compare Robert L. Bocchino, Jr., Note, *Computers, Copyright and Functionality: The First Circuit’s Decision in Lotus Development Corp. v. Borland International, Inc.*, 9 HARV. J.L. & TECH. 467, 477 (1996) (suggesting that the eight words are illustrative rather than exhaustive and that “courts probably should not attach too much significance to the specific meanings of the individual words”), with Patry, *supra*, at 36–37 (suggesting that the eight listed words are exhaustive).

5. See, e.g., GOLDSTEIN ON COPYRIGHT, *supra* note 4, § 2.3; NIMMER ON COPYRIGHT, *supra* note 4, §§ 2.03, 2.18. Patry believes that § 102(b) is unnecessary because the originality requirement can adequately deal with scope of protection issues. Patry, *supra* note 4, at 35–36.

6. The word “dichotomy” denotes the division of phenomena into two distinct and mutually exclusive groups or the splitting of things into two groups, while the term “distinction” denotes the quality or state of distinguishing differences. WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED 626, 659 (2002). In copyright cases, lawyers and judges do not so much conceive of ideas and expressions as inherently distinct and mutually exclusive; rather, they try to distinguish between ideas and expressions.

7. 101 U.S. 99 (1880). *Baker* is discussed at length in subpart I(B). Among the sources endorsing § 102(b) as a codification of *Baker* are Brief Amicus Curiae of Copyright Law Professors in Support of Respondent, *Lotus Dev. Corp. v. Borland Int’l, Inc.*, 516 U.S. 233 (1996) (No. 94-2003), 1995 WL 728563 at *4 [hereinafter *Borland Amicus Brief*] and Goldstein, *Infringement*, *supra* note 4, at 1124. See also Pamela Samuelson, *The Story of Baker v. Selden: Sharpening the Distinction Between Authorship and Invention*, in INTELLECTUAL PROPERTY STORIES 159, 180 (Jane C. Ginsburg & Rochelle Cooper Dreyfuss eds., 2006) [hereinafter Samuelson, *Baker Story*].

8. 1 GOLDSTEIN ON COPYRIGHT, *supra* note 4, § 2.3.1.

appropriated.⁹ While this metaphorical approach has some appeal, it has two disadvantages: first, the metaphor of idea may be too powerful, causing it to be construed too narrowly, as Professor Melville Nimmer, the now-deceased author of a widely cited treatise on copyright law, has done;¹⁰ and second, it distracts readers from paying attention to the other seven words of exclusion in § 102(b) and to policy reasons that support excluding more than just abstract ideas from copyright protection. This Article argues that all eight words of exclusion were put in the statute for a sound reason and that those who read the other seven words out of the statute are mistaken. To be more consistent with § 102(b), courts would be well advised to speak of the “protectable/unprotectable distinction” in copyright law.¹¹

Part I begins by demonstrating that the Supreme Court’s decision in *Baker* did not, as has often been asserted, originate the distinction between ideas and their expressions. *Baker*’s principal holding was that complex intellectual creations in the useful arts, such as bookkeeping systems and methods of operation, are beyond the scope of copyright protection in any work describing or otherwise depicting them. *Baker*’s progeny understood, applied, and extended this holding, as well as offered rationales for limiting the scope of copyright in this way. *Baker* and its progeny constitute the principal case law foundations for the system, method, and process exclusions embedded in § 102(b).

Part II explores the legislative history that led to the inclusion of § 102(b) in the copyright revision bills and ultimately in the 1976 Act. Several witnesses spoke strongly of the need for a statutory delimitation on the scope of copyright if Congress adopted the broad new subject matter provision, now codified as § 102(a), especially insofar as it would extend copyright protection to computer programs. Congress intended for § 102(b) to codify the principal holdings of *Baker* and its progeny to limit the scope of copyright protection in functional writings, such as programs.

Part III shows that during the copyright revision process, courts and commentators continued to interpret *Baker* in a manner consistent with the traditional understanding. Professor Nimmer relied upon a strained reading of the Supreme Court’s 1954 decision in *Mazer v. Stein*¹² as a basis for a radical reinterpretation of *Baker* and its progeny as though *Baker* only excluded abstract ideas from the scope of copyright protection. This

9. See, e.g., *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (“It is of course essential to any protection of literary property . . . that the right cannot be limited literally to the text, else a plagiarist would escape by immaterial variations.”).

10. See *infra* notes 210–12 and accompanying text.

11. Some have embraced an alternative approach by creating multiple distinctions such as the “fact/expression” distinction or the “process/expression” distinction. See, e.g., EDWARD SAMUELS, *THE ILLUSTRATED STORY OF COPYRIGHT* 187–88 (2000) (discussing the fact/expression distinction); Englund, *supra* note 4, at 876–77 (describing the process/expression dichotomy).

12. 347 U.S. 201 (1954).

interpretation of *Mazer* and of *Baker* is demonstrably unsound and should no longer be accorded any deference.

Part IV shows that although Congress expressly added § 102(b) to the statute to ensure that the scope of copyright protection in computer programs would be appropriately delimited, some courts were initially led astray by, among other things, Nimmer's misinterpretation of *Baker* and thereby construed the scope of copyright protection for programs more broadly than Congress had intended. Part IV shows that over time, courts in software copyright cases rediscovered the larger significance of *Baker* and § 102(b) as a basis for strict limits on the scope of copyright protection for computer programs. Thin copyright protection for programs is especially appropriate given the availability of patent protection for program innovations.

Part V points out that § 102(b) has significance for all types of works, not just for computer programs. Although some courts have managed to reach sound results by stretching other doctrines, such as lack of originality, scenes a faire, or merger of idea and expression, reliance on § 102(b) would have produced more coherent, and less strained, analyses. Moreover, incorrect interpretations of § 102(b) have sometimes led to overprotection of certain works.

I. Case Law Origins of § 102(b)

The legislative history of the Copyright Act of 1976 states that § 102(b) was intended to codify the well-established common law limitations on the scope of copyright.¹³ This Part will discuss the copyright case law foundations for the exclusions in § 102(b) to which the legislative history refers.

A. *The Unprotectability of Ideas and Concepts Predated Baker*

Ideas and concepts have a long pedigree as unprotectable elements of copyrighted works. Although the Supreme Court's 1880 decision in *Baker v. Selden*¹⁴ is often cited for the proposition that copyright law protects expression, not ideas, and is sometimes even identified as the origin of this distinction,¹⁵ a historian might question this conception of *Baker* for at least four reasons.¹⁶

13. See *infra* Part II.

14. 101 U.S. 99 (1880).

15. E.g., *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1234 (3d Cir. 1986) (crediting *Baker* as the first enunciator of the idea/expression distinction); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1252 (3d Cir. 1983) (describing *Baker* as a "benchmark in the law of copyright"); see also *infra* Part III (exploring competing interpretations of *Baker*). Among the commentators who have similarly credited *Baker* as the origin of this distinction is John Cady, *Copyrighting Computer Programs: Distinguishing Expression from Ideas*, 22 TEMP. ENVTL. L. & TECH. J. 15, 18 (2003).

16. Samuelson, *Baker Story*, *supra* note 7, at 181–92 (discussing eight major doctrines of copyright law that have flowed from *Baker*, four of which have been codified in the 1976 Act or

First, commentary and case law predating *Baker* had already recognized that copyright law did not protect ideas or concepts, but only authorial expression of them. Eaton Drone's treatise on copyright law, for example, which was published the year before *Baker*, opined that "there can be no property in thoughts, conceptions, ideas, [and] sentiments" nor any "exclusive property in a general subject or in the method of treating it; nor in the mere plan of a work; nor in common materials, or the manner or purposes for which they are used."¹⁷ Literary property can only lie, according to Drone, "in the intellectual creation which is embodied in . . . language."¹⁸ *Pike v. Nicholas*,¹⁹ a well-known 1870 English case, typifies the early case law recognizing this distinction. *Pike* involved two contestants for a prize for the best essay on the origins of the English nation. Both Pike and Nicholas adopted the same theories, made similar speculations, and reached the same conclusions. When one sued the other for copyright infringement, the court rejected the claim, saying that copyright law provided "no monopoly in the main theory of the Plaintiff, or in the theories and speculations by which he has supported it."²⁰ There was no infringement because Pike was unable to

federal regulations). In a recent article, Oren Bracha shows that the copyright distinction between ideas and expressions predates *Baker*, but he argues that *Baker* established a "new" and more modern distinction between these concepts. See Oren Bracha, *The Ideology of Authorship Revisited* 98–101 (Jan. 2007) (unpublished manuscript, on file with author). While I accept that *Baker* is the genesis of a more modern formulation of what is known as the idea/expression distinction, the principal significance of *Baker* is its ruling that systems and other useful arts depicted in copyrighted works are beyond this law's scope of protection.

17. EATON S. DRONE, *A TREATISE ON THE LAW OF PROPERTY IN INTELLECTUAL PRODUCTIONS* 98, 205 (1879); see also BENJAMIN KAPLAN, *AN UNHURRIED VIEW OF COPYRIGHT* 32 (1967) (noting that by the mid-nineteenth century "'idea[s]' [had] long [been] supposed to be outside copyright protection"); J.H. Reichman, *Computer Programs as Applied Scientific Know-How: Implications of Copyright Protection for Commercialized University Research*, 42 VAND. L. REV. 639, 693 n.288 (1989) ("[T]he idea-expression doctrine dates back to the earliest origins of both domestic and foreign copyright law . . ."). In the mid-nineteenth century, the case law often considered whether the similarities in the plaintiffs' and defendants' works were attributable to common subjects, common sources, or common themes. See DRONE, *supra*, at 416.

18. DRONE, *supra* note 17, at 98; see also *Perris v. Hexamer*, 99 U.S. 674, 676 (1879) (ruling that a mapmaker has "no more an exclusive right to use the form of the characters they employ to express their ideas upon the face of the map, than they have to use the form of type they select to print the key").

19. (1869) 5 Ch. App. 251.

20. *Id.* at 268. Other early cases reached similar conclusions. See, e.g., *Jefferys v. Boosey*, (1854) 4 H.L.C. 815, 867, 10 Eng. Rep. 681, 702 (H.L.) (appeal taken from Eng.) (Erle, J.) ("The subject of property is the order of words in the author's composition . . . [not] the ideas expressed by those words . . ."); *Kenrick & Co. v. Lawrence & Co.*, (1890) 25 Q.B. 99, 104–05 (holding that copyright in a drawing to show illiterate voters how to cast a vote was not infringed by a similar drawing because copyright did not protect the idea in this drawing and that infringement would thus occur only if there was literal reproduction of the drawing); *Sayre v. Moore*, (1785) 1 East 361, 362, 102 Eng. Rep. 139, 140 (K.B.) (noting that copyright "guards against the piracy of the words . . . ; but it does not prohibit writing on the same subject" and that the question is whether the defendant's work is a "servile imitation").

show that “there were substantial passages either actually copied, or copied with mere colourable alteration.”²¹

Second, the Supreme Court’s decision in *Baker* used the word “ideas” only twice, and in neither context was the Court saying that copyright did not protect abstract ideas. The first was when the Court observed that copyright should not protect the illustration of a useful art in a copyrighted work insofar as the illustration was “the mere language employed by the author to convey his ideas more clearly.”²² The Court also spoke of the plausibility of Selden’s claim as arising “from a confusion of ideas produced by the peculiar nature of the art described” in his books, for “[i]n describing the art, the illustrations and diagrams employed happen to correspond more closely than usual with the actual work performed by the operator who uses the art.”²³ In both contexts, the Court was trying to convey that useful arts embodied in copyrighted works are not within its scope of protection, not that abstract ideas and concepts were unprotectable.²⁴

Third, an even closer textual analysis of *Baker* confirms that the main message the Court was trying to convey was that bookkeeping systems and other useful arts were beyond the scope of copyright protection in any text that might explain them or any drawing that might illustrate them. This is evident from the frequency with which the Court used the words “system” (twenty-two uses), “method” (eight uses), and “art” that in context meant “useful art” (thirty-two uses) to identify innovations that copyright law did not protect, although patent law might,²⁵ and used “explain/explanation” (fourteen uses), “describe/description” (twelve uses), and “illustrate/illustration” (twenty-two uses) to indicate what copyright law did protect.²⁶

21. *Pike*, 5 Ch. App. at 268.

22. *Baker v. Selden*, 101 U.S. 99, 103 (1880). That is, if the illustration was an integral part of the useful art it was supposedly illustrating, the idea (in this case, a useful art) would, in today’s parlance, be considered to be merged with any expression it might contain.

23. *Id.* at 104.

24. The Court also did not use the word “expression.” The only time it used the word “express” was in saying that all authors have the right to express the truths of science or methods of an art. *Id.* at 100; see also *infra* note 79 and accompanying text (discussing the Court’s intention regarding the expression of truth and methods).

25. *Baker* contains three references to discoveries and two references to plans as unprotectable elements in copyrighted works. In context, “discoveries” referred to useful arts. See *infra* note 202 and accompanying text (discussing the inclusion of discovery in § 102(b)).

26. The Court used the words “illustrate” and “illustration” most often because it perceived the forms in Selden’s book as illustrative of the bookkeeping system described in his book. The Court was trying to convey that the system was unprotectable regardless of whether it was explained in a text or illustrated in a drawing. *Baker*, 101 U.S. at 103. The Court said:

The fact that the art described in [Selden’s] book by illustrations of lines and figures which are reproduced in practice in the application of the art, makes no difference. . . . Had [Selden] used words of description instead of diagrams (which merely stand in the place of words), there could not be the slightest doubt that others, applying the art to practical use, might lawfully draw the lines and diagrams which were in the author’s mind, and which he thus described by words in his book.

Fourth, in the first eighty years after *Baker*, case law rarely cited it for the proposition that copyright law did not protect ideas or concepts.²⁷ During this period, *Baker* was most frequently cited for the proposition that blank forms,²⁸ methods of doing business,²⁹ systems embodied in copyrighted works,³⁰ and useful arts depicted in copyrighted pamphlets or drawings were beyond the scope of copyright protection.³¹

While the next Part will consider why *Baker* excluded systems, methods, and other useful arts from the scope of copyright, it is worth briefly considering why copyright does not protect abstract ideas or concepts. One reason lies in the social desirability of allowing free reuse of fundamental building blocks of knowledge, such as abstract ideas and concepts.³² Professor Goldstein states that “[t]he reason for withholding copyright protection from creative building blocks lies in the very object of copyright law: to stimulate the production of the most abundant possible array of literary, musical and artistic expression.”³³ This accords with Justice Brandeis’s observation that “[a]n author’s theories, suggestions, and speculations,” as well as the “knowledge, truths, ideas, or emotions which the composition expresses”³⁴ were legally unprotectable as fundamental building blocks of new knowledge.³⁵

Id.

27. A rare case in which *Baker* was so cited was *Simms v. Stanton*, 75 F. 6, 10 (C.C.N.D. Cal. 1896). *Simms* sued *Stanton* for infringement because of similarities between her book on physiognomy and his: “A copyright gives no exclusive property in the ideas of an author. These are public property, and any one may use them as such.” *Id.* Following this, the court cited *Baker*. *Id.*; see also *Nutt v. Nat’l Inst. for the Improvement of Memory*, 31 F.2d 236, 238 (2d Cir. 1929) (citing *Baker* for the idea/expression distinction). The citation rate for *Baker* as an idea/expression case rose after *Nimmer* argued that *Mazer v. Stein*, 347 U.S. 201 (1954), repudiated *Baker*. See *infra* notes 236–42 and accompanying text for a discussion of *Mazer* and *Nimmer*’s interpretation of *Baker* in light of *Mazer*.

28. See, e.g., *Brown Instrument Co. v. Warner*, 161 F.2d 910, 911 (D.C. Cir. 1947) (upholding denial of copyright in charts used to record data); *Taylor Instrument Co. v. Fawley-Brost Co.*, 139 F.2d 98, 99–103 (7th Cir. 1943) (invalidating copyright in charts used to record data).

29. See, e.g., *Gaye v. Gillis*, 167 F. Supp. 416, 418 (D. Mass. 1958) (holding that the defendant was free to adopt a method of doing business from a copyrighted work).

30. The case law relying on *Baker* as to the unprotectability of systems will be discussed in the next subsection. For a discussion of other propositions for which *Baker* has been cited, see Samuelson, *Baker Story*, *supra* note 7, at 181–92.

31. See, e.g., *Fulmer v. United States*, 103 F. Supp. 1021, 1022 (Ct. Cl. 1952) (holding that the copyright in a drawing did not protect a parachute design); *Muller v. Triborough Bridge Auth.*, 43 F. Supp. 298, 299–300 (S.D.N.Y. 1942) (holding that copyright in a drawing did not extend protection to a bridge design).

32. 1 GOLDSTEIN ON COPYRIGHT, *supra* note 4, § 2.3.1.1.

33. *Id.*

34. *Int’l News Serv. v. Associated Press*, 248 U.S. 215, 254–55 (1918) (Brandeis, J., dissenting).

35. See also *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991) (distinguishing between creation and discovery in finding facts unprotectable); Jessica Litman, *After Feist*, 17 U. DAYTON L. REV. 607, 609–13 (1992) (emphasizing the building-block rationale for excluding facts from the scope of copyright).

A complementary, if more modern, rationale for freeing ideas and concepts from copyright's scope is that this principle enables copyright law to be compatible with the First Amendment.³⁶ Freeing abstract ideas and concepts from copyright's constraints advances freedom of speech and expression interests of subsequent authors and of users of protected works.³⁷ Drawing upon cases endorsing this principle, some scholars have argued that ideas and concepts are among the aspects of copyrighted works that belong in a constitutionally protected public domain.³⁸ Indeed, both copyright and patent laws exclude abstract ideas, concepts, and principles from the scopes of their protections.³⁹

While it is certainly consistent with *Baker* to say that abstract ideas and concepts are not within the scope of copyright protection, *Baker* contributed neither exclusion to § 102(b).

B. Baker Contributed the System and Other Useful Art Exclusions to § 102(b)

To comprehend why *Baker* should be understood to have contributed the system and other useful art exclusions to § 102(b), one must first know more about the case than the Court's decision reveals. Charles Selden was the chief accountant to the treasurer of Hamilton County, Ohio, when he authored a book in 1859 entitled *Selden's Condensed Ledger, or Bookkeeping Simplified*.⁴⁰ The book consisted of a short preface and approximately

36. See, e.g., *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 556–57 (1985) (discussing the role of copyright in balancing between the free communication of facts and protecting an author's expression).

37. Not all ideas are fundamental building blocks of knowledge. The idea of going for a walk in the woods or throwing out old clothing is not protectable by copyright law even if one writes it down and even if it in no way affects ongoing knowledge creation. Other rationales for not protecting ideas, concepts, and principles might include: difficulties in drawing boundaries around the abstractions that could be owned and not owned; avoidance of unnecessary litigation in view of the likelihood of independent creation of ideas (quite likely) as compared with independent creation of expression (generally unlikely to very unlikely); and the collective and collaborative nature of many ideas, concepts, and principles.

38. See, e.g., Pamela Samuelson, *Enriching Discourse on Public Domains*, 55 DUKE L.J. 783, 792–94, 805–08 (2006) (reviewing the scholarship on the constitutional public domain). In this view, Congress could not extend copyright protection to such things as ideas and concepts, even if it wanted to.

39. See, e.g., *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”); *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112–13 (1854) (explaining that abstract ideas, such as using steam or electromagnetism as a motive force, are not patentable); *Le Roy v. Tatum*, 55 U.S. (14 How.) 156, 175 (1853) (“A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”).

40. *Baker v. Selden*, 101 U.S. 99, 100 (1880). Selden copyrighted at least six books, but they were, so far as can be discerned from the Supreme Court record, minor variations on one another. One, for example, was tailored to the requirements of Ohio law, while another was tailored to Indiana law and at least one was prepared for U.S. government accounts. Samuelson, *Baker Story*,

twenty pages of forms that illustrated, through sample entries, how to use this “peculiar” system for keeping books of accounts.⁴¹ Selden sought to displace the then-prevailing system of keeping books under which clerks recorded information about a particular transaction (say, a disbursement from a fund for constructing a bridge) in a journal for that specific account (a different journal being necessary for each type of account) and then in a ledger that sequentially logged all transactions with cross-references to appropriate journals. Preparing a balance of one’s accounts was an onerous task under this system because information pertinent to them was distributed across multiple books. Considerable work was necessary to synthesize the information and assess its correctness. Preparing balances was consequently done infrequently, making detection of errors or fraud slow and difficult.

Selden figured out a way to condense journal and ledger entries so that the pertinent information for each time period could be viewed on one or two adjoining pages.⁴² Depending on the user’s needs, transactions of a day, a week, or a month could be recorded on Selden’s condensed forms. Clerks could use successive pages for recording account information for each successive time period. Condensing journal and ledger entries into one book made it easier to discern the state of accounts and detect errors or fraud; it also reduced the number of account books and simplified clerical tasks.

Selden’s sense of the magnitude of his achievement is evident from the preface to the book: “To greatly simplify the accounts of extensive establishments doing credit business, and embracing an almost infinite variety of transactions, would be a masterly achievement, worthy to be classed among the greatest benefactions of the age.”⁴³ Hoping to financially benefit from his contribution, Selden announced in the preface of his book that he had “applied for a patent right to cover the forms of the publication, and prevent their indiscriminate use by the public.”⁴⁴ By May 1865, Selden had entered into contracts with Hamilton County under which he would be paid a total of \$6,600 for granting the County rights to use his system over a twelve-year period; Selden also believed he was about to sell a version of his system to the U.S. Treasury.⁴⁵ Anticipating a large volume of additional

supra note 7, at 169 n.77. Other details about Selden and his books in this and succeeding paragraphs are drawn from *id.* at 159–80.

41. One of Selden’s books is available in the rare book section of the Library of Congress. It is about twenty-five pages long, all but three of which are forms. If one omits the words of the title page, the forms, and the copyright notice, the whole of Selden’s text is 650 words long, and most of these tout the merits of his system rather than explaining how to use it. *Id.* at 169 & n.77. The Supreme Court characterized Selden’s system as “peculiar,” *Baker*, 101 U.S. at 100, although in context, the Court appears to have meant that Selden had developed a “particular” system, rather than an odd or quirky one.

42. The contested Baker and Selden forms can be found in Samuelson, *Baker Story*, *supra* note 7, at 170–71.

43. *Id.* at 160 (citing Transcript of Record at 21, *Baker*, 101 U.S. 99 (No. 95)).

44. *Id.* at 160–61 (citing Transcript of Record at 21, *Baker*, 101 U.S. 99 (No. 95)).

45. *Id.* at 159 (citing Transcript of Record at 111, *Baker*, 101 U.S. 99 (No. 95)).

sales, he ordered a substantial number of copies to be printed.⁴⁶ Unfortunately, the Treasury deal fell through, and his books did not sell as well as he hoped.⁴⁷ In July 1871, after a period of ill health, Selden died, leaving his widow Elizabeth with many thousands of dollars of debt and apparently only the copyrights in his books as assets with which to pay off his creditors and provide financial support for her and their young daughter.⁴⁸

Six weeks after Selden's death, a local paper published an article extolling the virtues of W.C.M. Baker's bookkeeping system, virtues that sounded very much like the virtues of the Selden system.⁴⁹ The article mentioned that more than forty Ohio counties and a number of private businesses were Baker's customers.⁵⁰ Because of these similarities and because Selden purportedly had at one time instructed Baker in the use of his system,⁵¹ Selden's widow sued Baker for infringing the copyrights not only in Selden's books, but also in his novel bookkeeping system.⁵² When deposed, Selden's witnesses testified that "the principle" was the same in the Baker and Selden bookkeeping systems and that the competing forms achieved the same results.⁵³ After reviewing the evidence, the trial court ruled in Selden's favor and permanently enjoined sales of Baker's books,⁵⁴ even though Baker's witnesses had testified to significant differences in the forms and claimed Baker's had key advantages over Selden's.⁵⁵

In ruling for Selden, the trial court cited no precedents, although it may have been influenced by *Drury v. Ewing*,⁵⁶ a copyright case from the same district some years earlier.⁵⁷ *Drury* characterized the plaintiff as "the authoress and proprietress" of a copyrighted chart setting forth her method for

46. *Id.* at 161 (citing Transcript of Record at 89–90, *Baker*, 101 U.S. 99 (No. 95)).

47. *Id.*

48. *Id.* at 162.

49. *Id.*

50. *Id.* at 162 (citing Transcript of Record at 12–14, *Baker*, 101 U.S. 99 (No. 95)).

51. *Id.* at 164–65, 172.

52. The complaint characterized Selden as the inventor and author of Selden's condensed bookkeeping system, as well as the inventor and author of six books on this system. *Id.* at 163. In Samuelson, *Baker Story*, *supra* note 7, I argue that the main message the Court was trying to convey in *Baker* was to sharpen the distinction between copyright and patent and the respective subject matters they could protect.

53. *See id.* at 163–72 (summarizing the evidence reviewed by the lower court in *Baker*).

54. *Id.* at 165–66 (quoting from the trial court's ruling). The Supreme Court record does not include a transcript of any oral argument at the trial court level or copies of any lower court briefs.

55. *Id.* at 164. Baker's witnesses testified that his system was easier to learn, easier to use, and faster in error detection. *Id.*

56. 7 F. Cas. 1113 (C.C.S.D. Ohio 1862) (No. 4,095).

57. In *Drury*, Ewing was charged with violating a copyright injunction previously issued against him. *Id.* at 1113. In the earlier proceeding, Ewing denied infringing, but had not challenged the copyrightability of Drury's charts. *Id.* at 1114. This made the court skeptical about the belated challenge to Drury's copyright. *Id.* Ewing also tried to argue that his new chart was very different from Drury's, but the court did not agree for reasons discussed in this paragraph.

taking measurements for making garments.⁵⁸ The court thought Ewing had infringed Drury's copyright because his chart used "the same principle" as her chart and it contained "the essential parts of Mrs. Drury's system."⁵⁹ The court rejected Ewing's improvement defense because dressmakers testified that Ewing's chart produced the same result as Drury's.⁶⁰ Mrs. Drury's copyright, the court opined, gave her the exclusive right to control uses of her copyrighted chart as well as publication of it.⁶¹

Before the Supreme Court, Selden's lawyers seem to have relied on *Drury*,⁶² as well as upon the recently published Drone treatise that praised *Drury*.⁶³ Mrs. Selden's intent to control all uses of the Selden system, as well as derivatives such as Baker's, is evident from a circular she published after the trial court victory that informed "all county auditors and treasurers who are using or have at any time used the books of said Baker or procured their use" that they "are infringers of the Selden copyrights and personally liable to [her]."⁶⁴ She was willing to settle "her just claims of past infringement" with any county that would pay her for rights to use the Selden system; counties not so disposed "[would] be held to pay."⁶⁵

In ruling on Baker's appeal, the Supreme Court conceded that "Baker makes and uses account-books arranged on substantially the same system," but said that "the proof fails to show that he has violated the copyright of Selden's book, regarding the latter merely as an explanatory work; or that he has infringed Selden's right in any way, unless the latter became entitled to an exclusive right in the system."⁶⁶

The Court explained why bookkeeping systems depicted in copyrighted works should not be within the scope of copyright protection by giving a set of examples of complex and detailed intellectual innovations embodied in copyrighted works that the Court believed everyone would agree should not be protected by copyright law:

A treatise on the composition and use of medicines, be they old or new; on the construction and use of ploughs, or watches, or churns; or on the mixture and application of colors for painting or dyeing; or on the mode of drawing lines to produce the effect of perspective[]—

58. *Id.* at 1114. Drury's dress patterns were characterized as "charts" because that was the best fit among the statutory subject matters then eligible for copyright protection. *Id.* at 1116.

59. *Id.* at 1114, 1117.

60. *Id.* at 1117.

61. *Id.* at 1113. Notice how similar *Drury*'s copyright analysis was to a present-day patent infringement analysis.

62. *Baker v. Selden*, 101 U.S. 99, 107 (1880).

63. See Samuelson, *Baker Story*, *supra* note 7, at 167–68 (citing Transcript of Record at 7, 79–80, *Baker*, 101 U.S. 99 (No. 95)); see also DRONE, *supra* note 17, at 406.

64. Samuelson, *Baker Story*, *supra* note 7, at 168 (quoting Transcript of Record at 80, *Baker*, 101 U.S. 99 (No. 95)).

65. *Id.* In today's dollars, Mrs. Selden was claiming damages of \$250,000 a year from Baker and his customers. *Id.* at 172 n.84.

66. *Baker*, 101 U.S. at 101.

would be the subject of copyright; but no one would contend that the copyright of the treatise would give the exclusive right to the art or manufacture described therein.⁶⁷

Copyrights in “ornamental designs, or pictorial illustrations addressed to the taste” did not raise similar concerns for “their form is their essence” and “their object [was] the production of pleasure in their contemplation.”⁶⁸

Selden’s claim of copyright in the bookkeeping system may initially have seemed plausible because it was embodied in a book rather than, as with most useful arts, embodied in wood, metal, or stone.⁶⁹ But the Court said: “the principle is the same in all. The description of the art in a book, though entitled to the benefit of copyright, lays no foundation for an exclusive claim to the art itself.”⁷⁰ Applying this principle in *Baker*, the Court ruled that Selden’s copyright did not give him exclusive rights in the bookkeeping system, but only to his explanation of his bookkeeping system.⁷¹

But why are systems and other useful arts unprotected by copyright law? The principal explanation given in *Baker* for excluding systems and other useful arts described or otherwise depicted in copyrighted works from the scope of copyright was that “[t]hat is the province of letters-patent, not of copyright.”⁷² To get a patent, an inventor must apply to the Patent Office and subject one’s claimed invention to examination by that Office; only if appropriate procedures have been followed and substantive standards met will a patent issue.⁷³ The Court reasoned: “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 a fraud upon the public.”⁷⁴ As Professor Goldstein has observed, “the presence of patent law’s rigorous standards cautions courts . . . not to allow copyright, with its notably lax standards, to protect functional elements of copyrighted works.”⁷⁵

67. *Id.* at 102.

68. *Id.* at 103–04. One might call this the “ornamentality/utility” distinction for pictorial and sculptural works to complement the “explanation/use” distinction that *Baker* endorses for texts. *Id.* at 105.

69. *Id.* at 104.

70. *Id.* at 105.

71. *Id.* at 102. *Baker* was not the first Supreme Court decision to rule that “systems” were unprotectable by copyright law. See *Perris v. Hexamer*, 99 U.S. 674, 675–76 (1879) (holding that the use of substantially the same system of coloring and symbols for maps was not copyright infringement).

72. *Baker*, 101 U.S. at 102.

73. *Id.*

74. *Id.*

75. Goldstein, *Infringement*, *supra* note 4, at 1130; see also Ralph S. Brown, *Eligibility for Copyright Protection: A Search for Principled Standards*, 70 MINN. L. REV. 579, 600–04 (1985) (discussing the boundaries between copyright law and patent law).

This was pertinent in *Baker* because Selden had sought, but apparently not obtained, a patent for the bookkeeping system.⁷⁶ The Court perceived Selden as trying to misuse the copyright in his book to get patent-like protection for the system he had been unable to patent.⁷⁷ *Baker* sought to sharpen the distinction between patents and copyrights to ensure that courts would be more careful in future assessments of copyright claims for functional writings.⁷⁸

Baker also endorsed limitations on copyright for systems and other useful arts by invoking the freedom of expression interests of subsequent authors: “Where the truths of a science or the methods of an art are the common property of the whole world, any author has the right to express the one, or explain and use the other, in his own way.”⁷⁹ These truths and methods are in the public domain and available for free reuse as long as they are not patented.

Yet, *Baker* was concerned not just with freedoms for follow-on authors, but also with freedoms for readers and users of copyrighted works, especially in the freedom to extract and employ the useful know-how from such works, such as how to keep books more efficiently. *Baker* observes, for example, that “the teachings of science and the rules and methods of useful art have their final end in application and use; and this application and use are what the public derive from the publication of a book which teaches them.”⁸⁰ The Court goes on to say that “[t]he 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.”⁸¹ The public domain status of this knowledge benefits users as well as subsequent authors.

To ensure that authorial and user freedoms would prevail insofar as systems or useful arts intermingled with the texts or pictures illustrating them, the Court in *Baker* announced:

76. Samuelson, *Baker Story*, *supra* note 7, at 174–75. One possibility is that the Patent Office considered Selden’s bookkeeping system to be unpatentable on subject matter grounds because of its embodiment in a book. *Baker*’s supplemental brief to the Supreme Court hints at this by saying that if a subject matter fell outside the bounds of patent or copyright protection, it was for Congress to act to protect such innovations, not for courts to stretch existing laws. *See id.* at 175 (citing Transcript of Record at 2–3, *Baker*, 101 U.S. 99 (No. 95) (Appellant’s Supplemental Brief)). Some relatively contemporaneous patents and patent cases involved similar innovations, although they did not meet with much favor in the courts. *See, e.g.*, *Munson v. New York*, 124 U.S. 601, 604–05 (1888) (holding a patent on a coupon book invalid on obviousness grounds); *see also* *U.S. Credit Sys. Co. v. Am. Credit Indem. Co.*, 53 F. 818, 818–19 (C.C.S.D.N.Y. 1893) (striking down a patent for a method of insuring against bad debts).

77. Samuelson, *Baker Story*, *supra* note 7, at 177–79.

78. *Id.* at 177–78, 192–93.

79. *Baker*, 101 U.S. at 100–01.

80. *Id.* at 104.

81. *Id.* at 103. For a modern recognition of this aspect of *Baker*’s legacy, *see Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340, 350 (1991).

Where the [useful] art [a work] 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 . . . for the purpose of practical application.⁸²

This statement is why *Baker* is often described as a seminal case establishing what is now widely known as the “merger” doctrine, under which courts will refuse to extend protection to what might otherwise seem to be an expression if the ideas or useful arts depicted in the work are capable of only one or a very small number of expressions, such that ideas or useful arts and their expressions are inextricably interconnected, or in modern parlance, are “merged.”⁸³

Implicit in *Baker* is a recognition that excluding systems, methods, and useful arts from the scope of copyright’s protection not only promotes the ongoing progress of science (that is, knowledge creation and dissemination), but also promotes ongoing innovation and competition in the marketplace.⁸⁴ Had Selden’s copyright claim succeeded, Baker and his fellow bookkeepers would have been precluded from engaging in the kind of incremental innovation characteristic of practical fields such as bookkeeping. Upholding Selden’s copyright claim would also have forced Baker’s customers to pay substantially higher fees to use a Selden-like system or refrain from using a more efficient system to keep their accounts and balance their books.⁸⁵

Baker states that methods and discoveries, as well as systems, are beyond copyright’s scope of protection.⁸⁶ Although *Baker* did not directly say that principles were unprotectable, it spoke of “truths of a science” and

82. *Baker*, 101 U.S. at 103. This passage has sometimes been credited as the origin of the idea/expression merger doctrine. Although that doctrine actually emerged many decades later, the merger principle is nascent in *Baker* in that it acknowledges that some aspects of copyrighted works that might seem expressive can become unprotectable if they are “necessary incidents” to the idea they express. See Samuelson, *Baker Story*, *supra* note 7, at 189–90 for discussion concerning the origins of the merger doctrine.

83. See, e.g., *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1234–35 (3d Cir. 1986) (citing *Baker* as establishing the merger doctrine). It was not until the mid-twentieth century that the protomerger case law began to emerge and not until 1983 that the merger doctrine, as such, was born. See Samuelson, *Baker Story*, *supra* note 7, at 189–90. An alternative interpretation of the Court’s statement is that it endorses a fair use privilege for a broader scope of borrowing from works that embody scientific or technical content. See Reichman, *supra* note 17, at 693–94 n.288.

84. Subsequent case law recognized this implication. See, e.g., *Brown Instrument Co. v. Warner*, 161 F.2d 910, 911 (D.C. Cir. 1947) (“Both law and policy forbid monopolizing a machine except within the comparatively narrow limits of the patent system.”).

85. See Samuelson, *Baker Story*, *supra* note 7, at 167–68. Selden’s widow threatened to sue as infringers the Ohio counties that were Baker’s customers, for she believed the copyright in Selden’s books gave her exclusive rights in the system. *Id.* Subparts I(C) and I(D) will show that subsequent cases following *Baker* were concerned with ongoing knowledge creation and competition and innovation policies as among the reasons to limit the scope of copyright protection in writings.

86. *Baker*, 101 U.S. at 101–03 (explaining that methods and discoveries are unprotected by copyright law, although they, like systems, might be eligible for patent protection).

“mathematical science” as unprotectable, which amounts to the same thing.⁸⁷ *Baker* did not directly say that “processes” or “procedures” were unprotectable by copyright. Yet, the Court used the term “art” thirty-two times to signify that which copyright did not protect. This usage should be understood in light of the patent statute then in force that provided that “any person or persons, having discovered or invented any new and useful *art*, machine, manufacture, or composition of matter” were eligible to apply for a patent.⁸⁸ “Art” was used interchangeably with “process” in patent cases in the nineteenth century.⁸⁹ Thus, the process exclusion of § 102(b) also has its origins in *Baker*, as does procedure because it is a close synonym of process.⁹⁰

Baker established that copyright protection does not extend to complex and detailed useful innovations, such as new bookkeeping systems and methods of operation, even when they are embodied in copyrighted works.⁹¹ This principle applies, moreover, regardless of whether the copyrighted work is a text describing these innovations or a drawing depicting them. As § 102(b) plainly says, systems, methods of operation, processes, and the like are beyond copyright’s protection “regardless of the form in which [they are] described, explained, illustrated, or embodied in such work.”⁹² Or, as *Baker* put it, “the principle is the same in all.”⁹³

87. *Id.* at 100–01.

88. GEORGE TICKNOR CURTIS, A TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS 562 (3d ed. rev. and enlarged 1867) (setting forth § 6 of the Patent Act of 1837) (emphasis added).

89. The interchangeability of “art” and “process” in patent law in the latter part of the nineteenth century can be seen in, among other cases, *Cochrane v. Deener*, 94 U.S. 780 (1877), which was also authored by Justice Bradley who wrote the *Baker* decision:

That a process may be patentable, irrespective of the particular form of the instrumentalities used, cannot be disputed. If one of the steps of a process be that a certain substance is to be reduced to a powder, it may not be at all material what instrument or machinery is used to effect that object, whether a hammer, a pestle and mortar, or a mill. Either may be pointed out; but if the patent is not confined to that particular tool or machine, the use of the others would be an infringement, the general process being the same. A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art.

Id. at 787–88. Process and procedure also overlap in meaning with the “method” which the Court in *Baker* used repeatedly. See *infra* note 204. *Baker* gave examples of processes and procedures that were unprotectable “arts”: the composition and use of medicines, the mixture and application of colors for painting or dying, and modes of drawing lines to create the effect of depth perspective. *Baker*, 101 U.S. at 102.

90. See *infra* note 204.

91. The Court’s unwillingness to allow these more complex innovations to be brought within the scope of copyright protection suggests that it would reject claims of copyright in abstract ideas and concepts as well.

92. 17 U.S.C. § 102(b) (2000).

93. *Baker*, 101 U.S. at 105.

While *Baker* is principally known for its powerful statements about what copyright does not protect, it is grounded in a positive conception of that which copyright does and should protect, namely, original works of authorship that convey information by explaining or describing it, and works that display or depict an aesthetic or ornamental appearance (e.g., works of fine art).⁹⁴ It is the language that an author uses to explain, describe, or express whatever ideas or useful arts she may have discovered or created that copyright protects, along with the artistic way in which an author draws or illustrates those ideas or useful arts that copyright protects. This positive conception of the appropriate realm for copyright illuminated the post-*Baker* case law and has resonance under the 1976 Act as well.

C. *Post-Baker Case Law on Systems, Methods, and Processes*

Between 1880 and the enactment of the 1976 Act, dozens of cases followed *Baker*, extended its analysis to a wide variety of subject matters beyond bookkeeping methods and systems, and offered additional insights about why such things as systems, methods, processes, and procedures should be excluded from the scope of copyright. These principles were what Congress intended to codify in § 102(b).

The patent/copyright domain distinction played an important role in a number of *Baker*'s progeny, including *Taylor Instrument Cos. v. Fawley-Brost Co.*⁹⁵ and *Brown Instrument Co. v. Warner*.⁹⁶ Both involved claims of copyright in charts designed to serve as components of temperature recording technology systems. Taylor had obtained several hundred copyrights in charts of various dimensions designed for use in connection with its machines.⁹⁷ Taylor charged Fawley-Brost with infringing eighteen of these copyrights by making and selling charts that were virtually identical to

94. The 1976 Act embodies this conception of copyright as well, as reflected in the useful article limitation on the copyrightability of pictorial, graphic, and sculptural works. See 17 U.S.C. § 101 (2000 & Supp. IV 2004) (defining "useful article" as "an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information"); see also 17 U.S.C. § 113 (2000) (establishing that copyright in a drawing does not extend to useful article depicted therein). These exclusions, like many other familiar copyright doctrines, can be traced to the Supreme Court's decision in *Baker*. See Samuelson, *Baker Story*, *supra* note 7, at 180–92 (discussing eight major doctrines of copyright law that derive from *Baker*).

95. 139 F.2d 98 (7th Cir. 1943).

96. 161 F.2d 910 (D.C. Cir. 1947); see also *Amberg File & Index Co. v. Shea, Smith & Co.*, 78 F. 479, 480 (C.C.N.D. Ill. 1896) (rejecting claim of copyright in an indexing system because Amberg's work "does not have the purpose or function of conveying information," but is rather "a mechanism or device for the storage of letters so that they can be preserved and conveniently found afterwards"). Amberg could perhaps have obtained a patent for this system, but copyright protection was not available. *Id.*

97. Each time that Taylor redesigned its machines, it also redesigned the charts to conform to the new dimensions of the machines. *Taylor*, 139 F.2d at 101.

Taylor's charts and hence compatible with Taylor's machines.⁹⁸ The Seventh Circuit invoked *Baker* and an old English case, *Davis v. Comitti*,⁹⁹ in denying Taylor's claim.¹⁰⁰ Soon thereafter, the Register of Copyrights denied Brown's application to register copyrights in similar charts, and the D.C. Circuit affirmed this rejection relying on *Baker* and *Taylor*.¹⁰¹

The court in *Taylor* perceived Congress to have provided "two separate and distinct fields of protection, the copyright and the patent," and to have placed writings of authors in the former and inventive useful arts in the latter.¹⁰² The court said: "While it may be difficult to determine in which field protection must be sought, it is plain . . . that it must be in one or the other; it cannot be found in both."¹⁰³ The court quoted extensively from *Baker* as to policy rationales for maintaining the patent/copyright domain distinction.¹⁰⁴ The court took into account that many patents had issued for temperature recording machines and charts for use in connection with them.¹⁰⁵ But its examination of Taylor's recording devices and charts left "no room for doubt but that the latter is a mechanical element of the instrument of which it is an integral part."¹⁰⁶

The court in *Taylor* went on to observe that "the chart neither teaches nor explains the use of the art. It is an essential element of the machine; it is the art itself."¹⁰⁷ Upholding Taylor's claim would "produce [an] intolerable situation" because Taylor could "extend indefinitely the fifty-six years of protection afforded by the copyright laws" by changing the configuration of its machines and thwart competition by firms such as Fawley-Brost.¹⁰⁸ This resonates with the competition policy principle implicit in *Baker*.

98. *Id.* at 99. The software compatibility case law, discussed *infra* notes 264–79 and accompanying text, relied upon *Baker*, but did not cite to *Taylor*, although the compatibility component of *Taylor* makes it a useful precedent.

99. (1885) 52 L.T. 539, 540 (Ch.) (rejecting claim of copyright in the face of a barometer because it was not a "literary work" or otherwise a proper subject matter for copyright protection; the court characterized the domains of patent and copyright as "distinct").

100. *Taylor*, 139 F.2d at 99–101.

101. *Brown*, 161 F.2d at 910–11.

102. *Taylor*, 139 F.2d at 99.

103. *Id.* There is some constitutional basis for the exclusive domain theory embedded in the U.S. Constitution insofar as it grants Congress power to grant exclusive rights to authors and inventors "to their *respective* Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8 (emphasis added).

104. *Taylor*, 139 F.2d at 99–100 (quoting extensively from *Baker*).

105. *Id.* at 100–01.

106. *Id.* at 100; *see also Brown*, 161 F.2d at 910 ("The 83 charts in suit function as working mechanical elements of and essential parts of recording machines manufactured by plaintiff.").

107. *Taylor*, 139 F.2d at 100; *see also Brown*, 161 F.2d at 910–11 ("Plaintiff has failed to establish that its charts are 'writings of an author' or 'drawings' within the meaning of the Constitution and the copyright statute, or that said charts convey or are capable of conveying the thought of an author.").

108. *Taylor*, 139 F.2d at 101; *see also Brown*, 161 F.2d at 911 ("[T]o copyright the charts would in effect continue appellant's monopoly of its machines beyond the time authorized by the patent law.").

*Griggs v. Perrin*¹⁰⁹ and *Brief English Systems, Inc. v. Owen*¹¹⁰ differ from *Taylor* in that they involved purely information innovations (i.e., claiming copyright in stenography and shorthand systems), which at the time may not have been patentable subject matter.¹¹¹ Yet, neither court had difficulty in concluding that the systems in question were beyond the scope of copyright in the books in which the systems were embodied. In *Griggs*, for instance, the court observed that:

The only question . . . is whether or not the copyright of a book describing a new art or system of stenography protects the system, . . . *apart from the language by which the system is explained*, so that another who illustrates the same system in a different book, employing totally different language, can be treated as an infringer.¹¹²

Invoking *Baker*, the court answered no to this question.¹¹³

In *Brief English Systems*, the Second Circuit similarly observed that “[t]here is no literary merit in a mere system of condensing written words into less than the number of letters usually used to spell them out. Copyrightable material is found, if at all, in the explanation of how to do it.”¹¹⁴ Citing *Baker* and *Griggs*, the court went on to say that “the plaintiff’s shorthand system, as such, is open to use by whoever will take the trouble to learn and use it.”¹¹⁵ *Griggs* and *Brief English Systems* endorse the authorial freedom-of-expression and freedom-to-reuse-know-how principles expressed in *Baker*.

Useful methods of organizing information were also held unprotectable in two other post-*Baker* cases, *Burnell v. Chown*¹¹⁶ and *Guthrie v. Curlett*.¹¹⁷ Burnell developed a method for assessing the creditworthiness of citizens in a region by representing:

The standing and credit of these citizens . . . by letters and numbers, in a manner which served as a key, and from which business men within the same territory, dealing with such citizens, might at a glance

109. 49 F. 15 (C.C.N.D.N.Y. 1892).

110. 48 F.2d 555 (2d Cir. 1931).

111. See, e.g., Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 EMORY L.J. 1025, 1032–48 (1990) (discussing the “mental process” and “printed matter” limitations on patent subject matter in the early to mid-twentieth century). But see *supra* note 76 concerning patents on information innovations in the nineteenth century.

112. *Griggs*, 49 F. at 15 (emphasis added).

113. *Id.* at 15–16.

114. *Brief English Sys.*, 48 F.2d at 556.

115. *Id.* The court observed that “the way to obtain the exclusive property right to an art, as distinguished from a description of the art, is by letters patent and not by copyright.” *Id.*

116. 69 F. 993 (C.C.N.D. Ohio 1895).

117. 36 F.2d 694 (2d Cir. 1929).

ascertain their credit, their financial standing, their promptness in the payment of their debts, and such other information of that character.¹¹⁸

Burnell sold copies of the compiled information to local subscribers.¹¹⁹ After Chown began selling similar books, albeit about citizens from different towns, Burnell sued him for copyright infringement.¹²⁰ The court rejected the claim because Chown's books did not "concern the same persons, [were] not to be used by the same persons, and [concerned] a people living in a territory entirely different from that covered by the plaintiff's publication."¹²¹ Chown had merely "appropriated [Burnell's] scheme, device, conception and idea for gathering and imparting this particular information."¹²² This was, however, beyond the scope of the copyright in Burnell's book.

Guthrie devised a useful method for consolidating freight tariff information to overcome the grave difficulties in comprehending information about freight prices because the information had to be extracted from a large number of documents filed with governmental entities.¹²³ Guthrie used ruled columns and symbols to represent particular categories of information pertinent to freight tariffs.¹²⁴ Guthrie sued Curlett for copyright infringement because the latter sold competing indexes featuring the same arrangement.¹²⁵ The court ruled that Guthrie "has no monopoly upon [freight tariff] information, or the purveying of [this] information by a broad general method."¹²⁶ Limiting the scope of Guthrie's copyright facilitated user

118. *Burnell*, 69 F. at 994.

119. *Id.*

120. *Id.* at 993.

121. *Id.* at 997.

122. *Id.* *Burnell* did not cite to or rely upon *Baker*, but it did cite and rely upon an earlier Supreme Court case denying copyright protection for a map-symbol system. *Id.* at 996 (citing *Perris v. Hexamer*, 99 U.S. 674 (1879)). *Perris* is discussed *infra* note 127. On its facts, *Burnell* was more like *Perris* than like *Baker*. *Burnell* and *Perris* involved facts and data compiled in a similar general format as the plaintiffs' works, although neither defendant had directly copied the contents of the plaintiffs' works. *Burnell*, 69 F. at 995–96; *Perris*, 99 U.S. at 675–76. In contrast, *Baker* involved copying elements of a bookkeeping system from the plaintiff's copyrighted work. *Baker*, 101 U.S. at 100–03.

123. *Guthrie v. Curlett*, 36 F.2d 694, 696 (2d Cir. 1929).

124. *Id.*

125. *Id.* at 695.

126. *Id.* at 696. Guthrie cited *Baker* in support of this ruling. *Id.* Guthrie's first lawsuit against Curlett was based on a patent he had obtained for his method of consolidating freight tariff information. *Guthrie v. Curlett*, 10 F.2d 725, 725–27 (2d Cir. 1926) ("[A]s a question of fact we consider [Guthrie's] patent as disclosing merely advice as to how to make an index, and the means (if any) disclosed for doing it as not patentably novel."). The subsequent copyright analysis made no mention of Guthrie's patent, nor of the court's previous ruling on the patent claim (though it is mentioned in the statement of facts, *Guthrie*, 36 F.2d at 695). Yet, the Second Circuit may have been affected by the existence of the patent, just as the Supreme Court was by Selden's patent application in *Baker*. See Samuelson, *Baker Story*, *supra* note 7, at 172–79.

comprehension and avoided needless variation in depicting freight tariff information.¹²⁷

Systems for improving the efficiency of governmental or business operations were similarly deemed beyond the scope of copyright protection in post-*Baker* cases.¹²⁸ *Aldrich v. Remington Rand, Inc.*,¹²⁹ for instance, involved a copyrighted manual describing a system for the efficient collection, assessment, and equalization of taxes that contained forms to implement the system.¹³⁰ Aldrich sued the city of Fort Worth, Texas, and Remington Rand for copyright infringement because the latter supplied the city with forms derived from Aldrich's manual.¹³¹ Relying on *Baker*, the court ruled that all members of the public "can use the forms as plaintiff makes them, or modify them, change, improve them, or make them worse, without committing any piracy."¹³² *Aldrich*, like *Baker*, denied copyright

127. See also *Perris v. Hexamer*, 99 U.S. 674 (1879). In rejecting Perris' claim that Hexamer infringed copyrights in his maps of certain wards of New York City when Hexamer prepared maps arranged on substantially the same plan, but of a different city, using a substantially similar symbol system, the Court observed:

Scarcely any map is published on which certain arbitrary signs, explained by a key printed at some convenient place for reference, are not used to designate objects of special interest, such as rivers, railroads, boundaries, cities, towns, &c.; and yet we think it has never been supposed that a simple copyright of the map gave the publisher an exclusive right to the use upon other maps of the particular signs and key which he saw fit to adopt for the purposes of his delineations.

Id. at 676. Maps would be far more difficult to read if every mapmaker was forced by copyright law to use different symbol systems to depict common elements such as railroads and rivers. *Perris* suggests that courts should not interpret copyright law to require developers of fact-intensive works, such as maps, to engage in needless and socially harmful differentiation, for the Court spoke of Perris's plan and symbol systems for maps designed to facilitate fire insurance assessments as "useful contrivances for the despatch of business." *Id.* at 675; see also *Crume v. Pac. Mut. Life Ins. Co.*, 140 F.2d 182, 184-85 (7th Cir. 1944) ("To hold that an idea, plan, method or art described in a copyright[ed work] is open to the public but that it can be used only by the employment of different words and phrases which mean the same thing, borders on the preposterous. It is to exalt the accomplishment of a result by indirect means which could not be done directly. It places a premium upon evasion . . ."). Professor Weinreb has observed that a logical implication of *Baker* would deny copyright protection to methodical or systematically organized data compilations. See Weinreb, *supra* note 4, at 1187-88 ("So too, on the authority of *Baker v. Selden*, methods and systems were excluded, although the writings that described them were not. Sometimes, explaining its conclusion, a court resorted to the rubric of idea and expression; but that added nothing to the basic conclusion that a system as such is not subject matter of copyright." (footnote omitted)).

128. See *Crume*, 140 F.2d at 182-84 (rejecting a claim for copyright protection for a plan or method to reorganize insolvent life insurance companies); *Gaye v. Gillis*, 167 F. Supp. 416, 417-18 (D. Mass. 1958) (rejecting a claim that copyright protection of a book of blank coupons for debt collection services proscribed a competing debt collection service from issuing similar coupons).

129. 52 F. Supp. 732 (N.D. Tex. 1942).

130. *Id.* at 733.

131. *Id.*

132. *Id.* at 734. The court also invoked *Baker's* patent/copyright distinction in support of its ruling, *id.*, and noted that the regulations promulgated by the Office of Copyright defined the term "book" as not including "'forms for use in commercial, legal, or financial transactions, which are wholly or partly blank and whose value lies in their usefulness.'" *Id.* at 735 (quoting 37 C.F.R. § 201.4(b)(1) (1939)).

protection to efficient systems for organizing and processing information. Efficiency is a kind of functionality (e.g., making processing faster, cheaper, or otherwise more effective) that copyright does not and should not protect, no matter how creative the efficient design may be.¹³³

Plans or systems designed to improve social welfare have also been held to be beyond the scope of copyright protection, as in *Long v. Jordan*.¹³⁴ Long, author of a pamphlet about a pension system, sued Jordan, the California Secretary of State, for infringement because Jordan authorized publication of copies of a proposed initiative to amend the California Constitution to adopt Long's system.¹³⁵ The court ruled that there was no infringement because there was no "identity of language, phraseology, or literary style, arrangement or form" between Long's pamphlet and the proposed initiative.¹³⁶ The court continued: "The most that might be said is that there is a similarity in plan and purpose and in the method of operation advanced to effectuate that plan and purpose."¹³⁷

Yet, even had some of the language in the California initiative been the same as in Long's pamphlet, the court thought this would not infringe insofar as the language would have been reproduced "solely for the purpose of effectuating the plan through legislation," and "not for explanatory purposes."¹³⁸ The court took into account that Long had expressed an intent to dedicate the system "to a more prosperous, independent, progressive and abundant life for all people" and "pray[ed] for its early adoption, and accomplishment."¹³⁹ However, "a plan or system advanced for government adoption cannot be copyrighted so as to prevent the publication of that plan or system . . . in the form of a proposed law incident to its submission to the vote of the electorate."¹⁴⁰ This conclusion was a "logical extension of well defined principles" that the court traced back to *Baker*.¹⁴¹

The cases discussed above do not come close to exhausting the post-*Baker* case law on the unprotectability of systems and methods described or

133. For a discussion of how efficiency affects the scope of copyright protection in the software case law, see *infra* note 322 and accompanying text.

134. 29 F. Supp. 287 (N.D. Cal. 1939).

135. *Id.*

136. *Id.* at 288.

137. *Id.*

138. *Id.* at 289. *Long* prefigures the contentious debate over copyright in privately drafted legislation that was litigated in *Veeck v. Southern Building Code Congress International, Inc.*, 293 F.3d 791 (5th Cir. 2000), which denied a copyright claim in privately drafted code enacted as law. I discuss *Veeck* and several recent copyright system cases in Pamela Samuelson, *Questioning Copyrights in Standards*, 48 B.C. L. REV. 193 (2007). An excellent article on claims of copyright in privately drafted government rules is Lawrence A. Cunningham, *Private Standards in Public Law: Lawmaking and the Case of Accounting*, 104 MICH. L. REV. 291 (2005).

139. *Long*, 29 F. Supp. at 289.

140. *Id.*

141. *Id.*

illustrated in copyrighted works,¹⁴² but they suffice to show that *Baker* provided a firm grounding for limiting the scope of copyright in a wide array of cases involving works very different from Selden's *Condensed Ledger*. The cases share *Baker*'s positive conception of copyright as appropriately protecting the language in which authors describe, explain, or otherwise express their intellectual contributions to knowledge, as well as *Baker*'s positive conception as to the proper limits of copyright protection, which excludes systems, methods, or other useful arts depicted in the authors' works.¹⁴³

D. Games, Rules, and Plays

Case law predating the 1976 Act recognized that some things besides ideas, systems, and methods are beyond the scope of protection copyright provides to original works of authorship.¹⁴⁴ These cases also reflect *Baker*'s positive conception of what copyright does and does not protect. One cluster of cases holds that games, rules, and tactics cannot be protected by copyright law.¹⁴⁵ Some of these cases invoke *Baker*; some do not.¹⁴⁶ It is somewhat unclear whether these cases should be understood as having been subsumed into the exclusions set forth in § 102(b), or whether the exclusion of games, rules, and tactics lies outside of the § 102(b) exclusions such that § 102(b)

142. See, e.g., *Burk v. Johnson*, 146 F. 209 (8th Cir. 1906) (holding that a burial scheme was unprotected by copyright); *Dunham v. Gen. Mills, Inc.*, 116 F. Supp. 152, 153 (D. Mass. 1953) (denying copyright protection for the "feature" of printing cutout masks on cereal boxes); *Seltzer v. Sunbrock*, 22 F. Supp. 621 (S.D. Cal. 1938) (denying copyright protection to elements of a roller skating race depicted in a writing); *Jackson v. C. G. Conn, Ltd.*, 9 U.S.P.Q. (BNA) 225 (W.D. Okla. 1931) (denying protection to a system for teaching cornet playing); see also *S.S. White Dental Co. v. Sibley*, 38 F. 751 (E.D. Pa. 1889) (denying a copyright claim in a plan for advertising artificial teeth); *Ehret v. Pierce*, 10 F. 553 (E.D.N.Y. 1880) (denying a claim of copyright protection for a method of advertising paints).

143. For a compilation of cases decided during the copyright revision process that recognized *Baker* as requiring the exclusion of systems and methods from the scope of copyright, see *infra* note 219.

144. See, e.g., *Universal Athletic Sales Co. v. Salkeld*, 511 F.2d 904 (3d Cir. 1975) (holding that the defendant's exercise chart did not infringe the plaintiff's copyright because of differences in expression in the two exercise charts); *Affiliated Enters. v. Gantz*, 86 F.2d 597 (10th Cir. 1936) (rejecting a copyright claim in a plan for giving away cash prizes by lot in public entertainment venues upon payment of an admission fee); *Briggs v. N.H. Trotting & Breeding Ass'n*, 191 F. Supp. 234 (D.N.H. 1960) (rejecting a copyright claim in a betting system for horse racing that included a special method for processing betting cards with IBM machines); *Richards v. Columbia Broad. Sys., Inc.*, 161 F. Supp. 516 (D.D.C. 1958) (finding no copyright in a quiz show format); *Lewis v. Kroger Co.*, 109 F. Supp. 484 (S.D. W. Va. 1952) (dismissing a copyright claim in a contest); *Seltzer v. Sunbrock*, 22 F. Supp. 621 (S.D. Cal. 1938) (rejecting a claim of copyright in a roller derby game described in copyrighted works).

145. Two other well-established categories of exclusion from the scope of copyright are the unprotectability of laws and of facts and data. See, e.g., *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991) (holding that copyright does not protect facts); *Veeck v. S. Bldg. Code Cong. Int'l, Inc.*, 293 F.3d 791 (5th Cir. 2002) (holding that copyright does not protect laws). These exclusions do not readily fit within the § 102(b) framework.

146. Compare *Russell v. Ne. Publ'g Co.*, 7 F. Supp. 571, 572 (D. Mass. 1934) (citing *Baker* in support of its ruling), with *Whist Club v. Foster*, 42 F.2d 782 (S.D.N.Y. 1929) (not citing to *Baker*).

should be understood as illustrative or exhaustive as to aspects of protected works that copyright excludes from the scope of its protection,¹⁴⁷ rather than of exclusionary elements.¹⁴⁸

The cases on games and rules are quite spare in analysis. In dismissing a claim of infringement, the court in *Whist Club v. Foster*, for example, observed that “[i]n the conventional laws or rules of a game . . . there can be no literary property susceptible of copyright.”¹⁴⁹ Foster had not copied “the literary composition of the plaintiff’s publication, but, in language quite distinctly his own, ha[d] restated the same set of conventional precepts” of the game.¹⁵⁰ Hence, he had not infringed. Relying on *Whist*, the Second Circuit in *Chamberlain v. Uris Sales Corp.*¹⁵¹ affirmed dismissal of a lawsuit alleging infringement of Chamberlain’s copyright in the rules and layout of the game “Acey-Ducy,” a variant on backgammon.¹⁵² Uris had not copied Chamberlain’s literary composition, so there was no infringement.¹⁵³

Game strategy and plays have similarly been ruled beyond the scope of copyright protection. Russell wrote a book, *Rapid Contract Bridge*, that included a special problem ascribing certain cards to each of four hypothetical players of a bridge game.¹⁵⁴ Readers were encouraged to send Russell a letter to get the correct solution to the problem and to ask for other problems.¹⁵⁵ When the *Boston Daily Record* published the problem, and a week later published its solution, Russell sued the publisher for copyright infringement.¹⁵⁶ The court ruled that Russell had “no exclusive rights in the particular distribution of the fifty-two cards, in the problem of play or the principles of

147. See *Copyright Law Revision: Hearing on H.R. 2223 Before the Subcomm. on Courts, Civil Liberties and the Admin. of Justice of the H. Comm. on the Judiciary*, 94th Cong. 1823 (1975) (statement of Barbara Ringer, Register of Copyrights, Library of Congress) (asserting that games are uncopyrightable without saying whether their exclusion falls within § 102(b)).

148. The post-1976 Act case law seems to support the illustrative-not-exhaustive interpretation of § 102(b). See, e.g., *Allen v. Academic Games League of Am.*, 89 F.3d 614, 617–18 (9th Cir. 1996) (finding no infringement for rival games using the same tournament rules); *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F.2d 485 (9th Cir. 1984) (holding that a guidebook on scrabble strategy was not infringed by a similar book featuring the same strategies); *Jeffrey v. Cannon Films Inc.*, 3 U.S.P.Q.2d (BNA) 1373 (C.D. Cal. 1987) (holding that no copyright existed in rules for arm wrestling). Some of these cases invoke § 102(b), but do not parse the words of exclusion to identify into which § 102(b) category the unprotectable rules or games should be understood to fall.

149. 42 F.2d at 782.

150. *Id.*

151. 150 F.2d 512 (2d Cir. 1945).

152. *Id.*; see also *Affiliated Hosp. Prod., Inc. v. Merdel Game Mfg. Co.*, 513 F.2d 1183, 1188–89 (2d Cir. 1975) (holding that Affiliated did not have a copyright in the rules of a game because “Affiliated’s copyright only protects Affiliated’s arrangement of the rules and the manner of their presentation” and “Merdel did not copy Affiliated’s rules verbatim, and indeed its changes enhanced the clarity of the rules”).

153. *Chamberlain*, 150 F.2d at 513.

154. *Russell v. Ne. Publ’g Co.*, 7 F. Supp. 571 (D. Mass. 1934).

155. *Id.*

156. *Id.*

contract bridge applicable to its solution.”¹⁵⁷ Since the Boston paper did not use any of the language from Russell’s work, but only the problem and its independently derived solution, it did not infringe his copyright.¹⁵⁸

E. Summary

The post-*Baker* case law is richest in its exclusion of systems and methods from the scope of copyright protection. Indexing, shorthand, stenography, tax collection, and pension plan systems were all held to be unprotectable systems under *Baker*, as were blank forms that implemented or were constituent elements of unprotected systems.¹⁵⁹ Methods of consolidating freight tariff information and for judging the credit worthiness of residents of local communities were similarly excluded from copyright protection.¹⁶⁰ Although the game case law did not invoke the system, method, or process exclusions from copyright, this cluster of cases is consistent with these exclusions.¹⁶¹ There was thus ample precedential support for exclusion of systems, methods, and other unprotectable elements in the case law leading up to the 1976 Act.

II. Section 102(b) Codified the Limiting Principles of *Baker* and Its Progeny

Abraham Kaminstein, then Register of Copyrights, delivered a copyright revision bill to Congress in 1964.¹⁶² This bill was the product of

157. *Id.* at 572.

158. *Id.*

159. *See supra* subpart I(C).

160. *See supra* subpart I(C).

161. *See supra* subpart I(D). None of these cases offered any explanation as to why copyright did not protect games or game rules. Some cited *Baker*, suggesting that they considered games to be systems within that decision’s strictures. The patentability of games may also have some bearing on why courts have regarded them as uncopyrightable. *See, e.g.*, U.S. Patent No. 7,055,822 (filed Dec. 10, 2004) (patenting a variation on six-card stud poker under the trademark “2 Jokers Wild 6 Card Thrill”). Some courts invoke other copyright doctrines, such as merger of idea and expression, scenes a faire, lack of originality, and lack of fixation, as reasons not to protect games. *See, e.g.*, *Data E. USA, Inc. v. Epyx, Inc.*, 862 F.2d 204, 207–08 (9th Cir. 1988) (finding that scenes a faire limited scope of copyright in a karate video game); *Morrissey v. Proctor & Gamble Co.*, 379 F.2d 675, 678–79 (1st Cir. 1967) (denying copyright protection for a sweepstakes contest because of the limited number of ways to express the idea).

162. After reflecting on the commissioned studies and discussing them with interested parties, Register Kaminstein issued a report in 1961 proposing revisions to U.S. copyright law. *See* COPYRIGHT OFFICE, SIXTY-FOURTH ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS FOR THE FISCAL YEAR ENDING JUNE 30, 1961 (1962). He then convened a series of meetings with interested parties to discuss the report and how to codify the revisions. *See* 1 THE KAMINSTEIN LEGISLATIVE HISTORY PROJECT: A COMPENDIUM AND ANALYTICAL INDEX OF MATERIALS LEADING TO THE COPYRIGHT ACT OF 1976, at xxxi–xxxii (Alan Latman & James F. Lightstone eds., 1981) [hereinafter KAMINSTEIN HISTORY]. These deliberations informed the draft revision bill that the Copyright Office submitted to Congress in 1964 for legislative consideration. It was introduced into Congress as H.R. 11947, 88th Cong. (1964) and S. 3008, 88th Cong. (1964).

nearly a decade of preparatory work.¹⁶³ One of the novel features of the 1964 bill was its statement of copyrightable subject matter. “Copyright protection subsists,” it said, “in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or a device.”¹⁶⁴

Kaminstein thought this was a more elegant and flexible provision than its predecessors.¹⁶⁵ The Copyright Act of 1909 (1909 Act), for example, had listed a sizeable number of specific categories of protected works, along with exclusive rights associated with each.¹⁶⁶ As the list of protected works grew ever longer, the melded subject-matter/exclusive-rights provision had

163. The first six years of the copyright statutory revision process (i.e., from 1955 to 1961) were largely spent on commissioning studies on various revision-related issues. See, e.g., S. COMM. ON THE JUDICIARY, 86TH CONG., COPYRIGHT LAW REVISION: STUDIES PREPARED FOR THE SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE S. COMM. ON THE JUDICIARY, STUDIES 1–4 (Comm. Print 1960) [hereinafter COPYRIGHT LAW REVISION STUDIES NOS. 1–4]. The studies can be found in 1 & 2 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY (George S. Grossman ed., 1976) [hereinafter OMNIBUS LEGISLATIVE HISTORY]. Professor Walter Derenberg of New York University Law School submitted one such study to the Office in 1956. See STAFF MEMBERS OF THE NEW YORK UNIVERSITY LAW REVIEW UNDER THE GUIDANCE OF WALTER J. DERENBERG, STUDY NO. 3: THE MEANING OF “WRITINGS” IN THE COPYRIGHT CLAUSE OF THE CONSTITUTION (1956) [hereinafter WRITINGS], reprinted in COPYRIGHT LAW REVISION STUDIES NOS. 1–4, *supra*, at 61, and in 1 OMNIBUS LEGISLATIVE HISTORY, *supra*, at 61. This study was originally published as Stephen Lichtenstein et al., Note, *Study of the Term “Writings” in the Copyright Clause of the Constitution*, 31 N.Y.U. L. REV. 1263 (1956). This study considered whether Congress had the constitutional power to extend copyright protection to original designs for articles of manufacture, such as candlesticks, teapots, and lamp bases. It addressed a question raised by Justice Douglas in *Mazer v. Stein*, 347 U.S. 201, 219–21 (1954) (Douglas, J., concurring). The study concluded it could:

From a review of the actions of the colonial legislatures, the Constitutional Convention, Congress, and the courts, it seems clear that the words “writings” and “authors” will no longer limit the subject matter which can be copyrighted, at least in so far as the “form” of the object is concerned.

WRITINGS, *supra*, at 108. By construing Congress’s power very broadly, Derenberg’s study laid the conceptual groundwork for an extension of copyright protection to original designs for articles of manufacture, to sound recordings, and to computer programs, although the copyrightability of computer programs had not yet surfaced as an issue when this report was prepared.

164. 1 KAMINSTEIN HISTORY, *supra* note 162, at 27. This provision is now codified as 17 U.S.C. § 102(a) (2000). The seven categories listed in the original bill are substantially identical to the law as enacted in 1976, except for the addition of “or other audiovisual works” to the motion picture category and some minor rewording. See 1 KAMINSTEIN HISTORY, *supra* note 162, at 27.

165. See, e.g., H.R. REP. NO. 90-83, at 13–14 (1967) (explaining the rationale for the general subject matter provision), reprinted in 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 13–14. More significant was the revision’s extension of federal protection for works of authorship from the moment of first fixation, which displaced state common law copyrights for unpublished works. See generally Robert A. Gorman, *An Overview of the Copyright Act of 1976*, 126 U. PA. L. REV. 856, 865–66 (1978) (noting that by virtue of the 1976 Act, “[f]rom the moment that the author’s pen imprints words on foolscap,” the work is covered by federal copyright, not state common law copyright).

166. See 17 U.S.C. §§ 1, 5 (1952) (current version at 17 U.S.C. §§ 1, 5 (2000)) (listing exclusive rights and categories of works to which they pertained in § 1; and fourteen categories of copyrighted works in § 5).

become cumbersome. Kaminstein also hoped that the new provision would be more adaptable than previous specific subject matter rules. Advances in technology had often brought about new categories of works (e.g., photography and motion pictures) that Congress had not contemplated when enacting copyright rules. When someone copied such a work, courts had to decide whether the new category of work fit within an existing subject matter category,¹⁶⁷ and if not, Congress had to legislate to extend protection to them.¹⁶⁸ Under the revised subject matter provision, this would no longer be necessary.¹⁶⁹

The first person to identify the need for a limiting provision akin to § 102(b) was H.R. Mayers, then General Patent Counsel of General Electric Company, who testified at a December 1964 congressional hearing on the Copyright Revision Bill.¹⁷⁰ Mayers observed that the Bill's expansive subject matter provision seemed to extend copyright protection to computer programs.¹⁷¹ Although Mayers supported such protection, he expressed concern that the "analytical concepts embodied in [programs]" and the "logic and mathematics" on which programs relied should be outside the scope of copyright protection.¹⁷² Copyright should be "specifically delimited in light of the special character and problems of this art."¹⁷³ He further noted that computer processes "duplicat[e] or enhanc[e] many human thought processes, such as reading, analyzing, searching, etc." and expressed his belief that computerizing these processes should be outside copyright's domain, as they would be if performed in human brains.¹⁷⁴

167. *E.g.*, *Wood v. Abbott*, 30 F. Cas. 424, 425 (C.C.S.D.N.Y. 1866) (No. 17,938) (construing photographs as within the statutory category of "prints or engravings").

168. *See, e.g.*, NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT 11-14 (1979) [hereinafter CONTU, FINAL REPORT] (proposing statutory changes to extend protection to computer programs).

169. *But see infra* notes 210-12 and accompanying text (discussing a Congressional report identifying some information innovations that arguably satisfied the originality and fixation requirements of the subject matter provision, which Congress did not at that time intend to protect).

170. *See* STAFF OF H. COMM. ON THE JUDICIARY, 89TH CONG., COPYRIGHT LAW REVISION, PART 5: 1964 REVISION BILL WITH DISCUSSION AND COMMENTS 269-80 (Comm. Print 1965) [hereinafter 1964 REVISION BILL] (statement of H.R. Mayers, General Patent Counsel, General Electric Company) (expressing concern about the copyright implications of adapting scientific and technical articles for private use (e.g., making abstracts, digests, or summaries), which he thought should be exempt from infringement), *reprinted in* 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 269-80.

171. *Id.* at 276, *reprinted in* 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 276.

172. *Id.* at 272, 276, *reprinted in* 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 272, 276.

173. *Id.* at 271, *reprinted in* 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 271.

174. *Id.* at 276, *reprinted in* 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 276. Mayers was also concerned about computer uses of copyrighted works. "Storage of any copyrighted work in a computer or manipulations of such works within such computer should not constitute a copyright infringement of such work. Copyright infringement should be determined by the form and the use that is made of such work at the output of the computer." *Id.* Thirty years later, Clinton Administration officials asserted that all temporary copies of copyrighted works in the random access memory (RAM) of computers implicated the exclusive reproduction right. *See*

Register Kaminstein was, however, skeptical about copyright protection for computer programs. In January 1965, the Office published Circular 31D, which raised serious doubts about whether computer programs were eligible for copyright protection.¹⁷⁵ Despite these doubts, the Office decided to accept registration of source code forms of computer programs under the so-called rule of doubt (that is, the Office doubted that computer programs really qualified for copyright protection, but it was willing to issue certificates of registration to program authors who were prepared to argue in court that the registered programs were, in fact, copyrightable).¹⁷⁶ Kaminstein was also unsure what to do about computer-use issues, such as whether inputting, manipulating, or storing copyrighted works in a computer were copyright-significant acts. In May 1965, the Office issued a report mentioning, but not attempting to resolve, various computer-use issues,¹⁷⁷ saying that “it would be a mistake, in trying to deal with such a new and evolving field as that of computer technology to include an explicit provision [on computer uses] that could later turn out to be too broad or too narrow.”¹⁷⁸ The Copyright Office

INFORMATION INFRASTRUCTURE TASK FORCE, INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: THE REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS 64–67 (1995). Professor Jessica Litman, among others, criticized this interpretation as tantamount to construing the 1976 Act as giving copyright owners the right to control reading of copyrighted works without permission. See Jessica Litman, *The Exclusive Right to Read*, 13 CARDOZO ARTS & ENT. L.J. 29 (1994). For a discussion of efforts to reach international agreement on such an expansive interpretation of the reproduction right, see Pamela Samuelson, *The U.S. Digital Agenda at WIPO*, 37 VA. J. INT’L L. 369, 382–92 (1997).

175. See COPYRIGHT OFFICE CIRCULAR 31D (Jan. 1965), reprinted in Duncan M. Davidson, *Protecting Computer Software: A Comprehensive Analysis*, 1983 ARIZ. ST. L.J. 611, 652 n.72 (“The registrability of computer programs involves two basic questions: (1) whether the program is . . . a ‘writing of an author’ and thus copyrightable, and (2) whether a reproduction of the program in a form actually used to operate or to be ‘read’ by a machine is a ‘copy’ and can be accepted for copyright registration.”). Both were “doubtful questions,” but the Register decided to accept programs for registration as long as the program was published with proper copyright notices and the full source code was deposited with the Office. *Id.*, reprinted in Davidson, *supra*, at 652 n.72. For a discussion of the functionality of programs as a basis for questioning the appropriateness of copyright protection, see CONTU, FINAL REPORT, *supra* note 168, at 27–37 (Comm’r Hersey, dissenting) and Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663, 727–53 (1984) [hereinafter Samuelson, *CONTU Revisited*].

176. See COPYRIGHT OFFICE CIRCULAR 31D, *supra* note 175 (allowing registration of computer programs), reprinted in Davidson, *supra* note 175, at 652 n.72.

177. See H. COMM. ON THE JUDICIARY, 89TH CONG., COPYRIGHT LAW REVISION, PART 6: SUPPLEMENTARY REPORT OF THE REGISTER OF COPYRIGHTS ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW: 1965 REVISION BILL 18–19 (Comm. Print 1965), reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 18–19. Kaminstein expressed doubt that “mere use of a work by the computer as a reference source in solving problems or compiling data” would infringe, but unlike Mayers, he seemed to think that unauthorized storage of copyrighted works in computers might. *Id.* at 19, reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 19.

178. *Id.* at 18, reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 18.

seemed content to leave all of the difficult computer-use questions to be resolved in the courts.¹⁷⁹

The electronics industry was displeased at the prospect of having to litigate over every copyright issue that computers might raise. In a May 1965 letter addressed to the House Judiciary Committee, Graham McGowan, general counsel of the Electronics Industry Association (EIA), disputed the notion that inputting or storing a copyrighted work in a computer would infringe its copyright.¹⁸⁰ He also raised a new computer-related issue: whether it should be lawful to reverse engineer machine-readable forms of computer programs to discern the underlying ideas and mathematical formulae embedded therein.¹⁸¹ McGowan thought the answer should be yes. To ensure public access to those ideas and formulae, he proposed that Congress pass a statutory exception to allow reverse engineering of lawfully acquired programs.¹⁸²

The concerns expressed by Mayers and McGowan seem to have resonated with Robert Kastenmeier, leader of the copyright revision efforts in the House of Representatives. In October 1966 and then again in March 1967, Kastenmeier's committee issued a report to accompany updated copyright revision bills.¹⁸³ Footnote 1 of each report gave several examples of things that Congress did not intend to protect under the revised copyright bill,¹⁸⁴ including typography, blank forms, unfixed performances, interior decoration, and "ideas, plans, methods, systems, mathematical principles," along with "formats and synopses of television series and the like; color schemes; news and factual information considered apart from its compilation

179. It is commendable that Kaminstein did not leap to the conclusion that all computer uses of copyrighted works were copyright-significant acts, but it is surprising that the Copyright Office had so little to offer as guidance on these confusing issues.

180. Letter from Graham W. McGowan, General Counsel, Electronics Industry Association, to Edwin E. Willis, Subcommittee No. 3, House Committee on the Judiciary (May 8, 1965), *reprinted in Copyright Law Revision: Hearings Before Subcomm. No. 3 of the H. Comm. on the Judiciary*, 89th Cong. app. at 1898-99 (1966) [hereinafter *1965 House Hearings*], and in 7 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 1898-99.

181. *Id.*

182. *Id.* McGowan did not use the term "reverse engineering," but rather spoke of the objective of copyright not being achievable unless one who lawfully obtains a program can reduce it to intelligible form. *Id.* I adopted the modern expression for this concept to facilitate reader comprehension. The eventual reaction of the courts to reverse engineering is discussed *infra* notes 343-46 and accompanying text.

183. H.R. REP. NO. 90-83 (1967), *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163; H.R. REP. NO. 89-2237 (1966), *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163.

184. *Compare* H.R. REP. NO. 89-2237, at 44 n.1 (1966) (listing works unprotected under the revised copyright bill), *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 44 n.1, *with* H.R. REP. NO. 90-83, at 15 n.1 (1967) (same), *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 15 n.1. Footnote 1 is identical in both reports.

or expression.”¹⁸⁵ Congress would have to take future action if copyright protection was to be available for such works.¹⁸⁶

Summoned to testify before the Senate on the 1967 Copyright Revision Bill, EIA Director McGowan criticized the Kastenmeier report for not distinguishing between those things that Congress did not presently intend to protect through copyright law, such as typography and unfixed performances, and those that it should never protect, such as ideas and methods.¹⁸⁷ McGowan believed that “the public has the right to use the technical ideas contained in a copyrighted work.”¹⁸⁸ He urged the Senators to clarify that such things as “ideas, plans, methods, systems, and mathematical principles” would be beyond the scope of copyright protection in programs.¹⁸⁹

Professor Arthur Miller, testifying before the same Senate subcommittee, echoed the Register’s doubts about the copyrightability of computer programs.¹⁹⁰ Programs were, Miller said, “functional item[s]” that were quite distinct in character from “books or plays or motion pictures or poetry—the forms of expression that traditionally have been covered by our copyright legislation.”¹⁹¹ Miller worried that courts might construe copyright protection for programs as “extend[ing] to or embody[ing] the process,

185. H.R. REP. NO. 90-83, at 15 n.1, *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 15 n.1; H.R. REP. NO. 89-2237, at 44 n.1, *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 44 n.1.

186. H.R. REP. NO. 90-83, at 15 n.1, *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 15 n.1; H.R. REP. NO. 89-2237, at 44 n.1, *reprinted in* 11 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 44 n.1.

187. *Copyright Law Revision: Hearings on S. 597 Before the Subcomm. on Patents, Trademarks, and Copyrights of the S. Comm. on the Judiciary*, 90th Cong. 969–74 (1967) [hereinafter *1967 Senate Hearings*] (statement of Graham W. McGowan, General Counsel, Electronics Industry Association), *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 969–74.

188. *Id.* at 970, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 970.

189. *Id.* Like Mayers, McGowan wanted assurance that abstracting scientific works would be exempt from infringement. *Id.* at 970–71, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 970–71.

190. *Id.* at 192–97 (testimony of Arthur R. Miller), *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 192–97.

191. *Id.* at 196–97, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 196–97. The quoted material in the text represents the first of four positions that Miller has taken on copyright and computer program issues in the course of his long career. By the time he served as chair of the National Commission on New Technological Uses of Copyrighted Works (CONTU) subcommittee responsible for recommending what Congress should do about copyright for computer programs, he favored copyrighting programs. Several years after Congress acted upon CONTU’s recommendations, Miller filed a declaration saying that CONTU had rejected copyright protection for nonliteral aspects of programs such as logic and structure. *See infra* notes 212–13 and accompanying text. Several years later, while working as counsel in *Lotus Development Corp. v. Borland International Inc.*, 49 F.3d 807 (1st Cir. 1995), Miller wrote a law review article broadly endorsing copyright protection for program structure. *See* Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977 (1993). This article did not disclose his prior inconsistent positions about computer program copyright issues nor that he was acting as counsel to the plaintiff at the time the article was written and published.

scheme, or plan that the program uses to achieve a functional goal” and this would confer “patent like protection under the guise of copyright.”¹⁹² Miller regarded computer programming as “by and large, a derivative art based on fairly well established and commonly used mathematical and logical principles.”¹⁹³ He also questioned whether copyright incentives were really needed to induce the creation of programs.¹⁹⁴

Yet Miller recognized that Congress might choose to extend copyright protection to programs.¹⁹⁵ If so, Miller advised Congress to make clear that this protection would extend “solely to duplication or replication of the program” and not to “the art, process or scheme that is fixed in the program.”¹⁹⁶ Only patent law could protect “systems, schemes, and processes.”¹⁹⁷ When legislators asked him to craft specific language to implement this recommendation, he proposed this proviso: “*Provided, however, [t]hat nothing in this title shall be construed to give the owner of copyright the exclusive right to any idea, process, plan, or scheme embodied or described in the copyrighted work . . .*”¹⁹⁸ Miller’s proviso and his rationales for codifying such limiting principles derive from *Baker* and its progeny.

Miller’s recommendation for a *Baker*-like statutory limitation on the scope of copyright protection bore fruit in 1969 when Senator McClellan introduced a new copyright revision bill, S. 543.¹⁹⁹ That bill redesignated the subject matter provision as § 102(a), which was now complemented by a new § 102(b): “In no case does copyright protection for an original work of authorship extend to any idea, plan, procedure, process, system, method of operation, concept, principle or discovery, regardless of the form in which it is . . . embodied in such work.”²⁰⁰ Subsequent House and Senate bills

192. 1967 Senate Hearings, *supra* note 187, at 197 (statement of Arthur R. Miller), *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 197. To allow programmers to use copyright to protect efficient program innovations without meeting patent procedural or substantive standards would be wrong. *Id.*

193. *Id.* at 197, 199, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 197, 199.

194. *Id.* at 198–99, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 198–99.

195. *Id.* at 197, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 197.

196. *Id.*

197. *Id.* at 199, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 199. Miller asserted that “patent protection appears to be the appropriate vehicle” for protecting programs. *Id.*

198. *Id.* at 1059 (statement of W. Brown Morton, Jr., Interuniversity Communications Council (EDUCOM)), *reprinted in* 10 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 1059. Miller worked on this proviso with Professor Benjamin Kaplan and EDUCOM official, W. Morton Brown, Jr., after EDUCOM had been criticized for not offering a concrete proposal in an earlier appearance. *Id.*

199. S. 543, 91st Cong. (1969).

200. 1 KAMINSTEIN HISTORY, *supra* note 162, at 42 (emphasis omitted).

incorporated this language with only one minor change,²⁰¹ and § 102(b) was codified seven years later in the 1976 Act.

The legislative history does not reveal why these specific words of exclusion were chosen for § 102(b), although all but two had been explicitly mentioned during the legislative debate.²⁰² Three of § 102(b)'s exclusions—ideas, concepts, and principles—pertain to high-level abstractions,²⁰³ while the other five—procedures, processes, systems, methods of operation, and discoveries—refer to more complex, detailed, and functional information innovations,²⁰⁴ such as those long held unprotectable in *Baker* and its

201. The word “plan” was omitted from the final version of the bill out of concern that it would be misinterpreted as excluding architectural plans from copyright protection. Patry, *supra* note 4, at 35.

202. Although “procedure” was not specifically mentioned in the legislative history, its meaning substantially overlaps with logic, methods, and processes that were so mentioned. See *supra* notes 190–98 and accompanying text. “Procedure” was probably added to § 102(b) out of concern that without it, courts might not realize that they should exclude algorithms from the scope of program copyrights. EDUCOM had identified algorithms as among the structural elements of programs that copyright should not protect. See *1967 Senate Hearings*, *supra* note 187, at 571 (statement approved by the Board of Trustees and the Task Force on Legal and Related Matters of EDUCOM), reprinted in 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 571. Algorithms are effective procedures for carrying out a given computing task. Alfred Z. Spector, *Software, Interface, and Implementation*, 30 JURIMETRICS J. 79, 80 (1989).

Less obvious is why § 102(b) excludes “discover[ies]” from copyright protection. Discoveries in the useful arts are among the innovations that *Baker* said should be excluded from copyright protection. See *supra* note 86 and accompanying text. This usage is consistent with Article I, Section Eight, Clause Eight of the U.S. Constitution, which speaks of “discoveries” as illustrative of the inventions in the useful arts that Congress has the power to protect, as by patents. Mary Beth Peters, Register of Copyrights, informed me on January 6, 2007, that she believes that Congress meant to exclude patentable discoveries in § 102(b). Interview with Mary Beth Peters, Register of Copyrights, U.S. Copyright Office, in Washington, D.C. (Jan. 6, 2007). See also Linda J. Demaine & Aaron Xavier Fellmeth, *Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent*, 55 STAN. L. REV. 303, 367–68 (2002) (discussing the constitutional meaning of “discovery”). The Nimmer treatise assumes that discoveries are excluded from copyright for lack of originality; a discoverer is, in other words, not a creator. See 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.03[E].

203. Ideas, concepts, and principles overlap significantly in their meanings. THE OXFORD ENGLISH DICTIONARY (2d ed. 1989) [hereinafter OED] indicates that “idea” has meant “[m]ental image, conception, notion” since the late sixteenth century. See 7 OED, *supra*, at 613–14. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000) [hereinafter AHD] defines “idea” as including “principle” and identifies “concept” as a synonym for “idea.” *Id.* at 870. The AHD defines “concept” as “[a] general idea derived or inferred from specific instances or occurrences,” and as “[s]omething formed in the mind; a thought or notion.” *Id.* at 381. Idea, scheme, or plan are synonyms of concept. *Id.* The OED defines “principle” in a generalized sense as “[a] fundamental source from which something proceeds; a primary element, force, or law which produces or determines particular results” as well as “[a] fundamental truth or proposition on which many others depend; . . . a general statement or tenet forming the (or a) ground of, or held to be essential to, a system of thought or belief; a fundamental assumption forming the basis of a chain of reasoning.” 12 OED, *supra*, at 499.

204. Both “process” and “procedure” derive from the word “proceed.” 12 OED, *supra* note 203, at 543, 545–46. The first OED definition of “procedure” is “[t]he fact or manner of proceeding with any action, or in any circumstance or situation; a system of proceeding; proceeding, in reference to its mode or method.” *Id.* at 543. The OED defines “process” as “[a] continuous and regular action or succession of actions, taking place or carried on in a definite manner, and leading

progeny.²⁰⁵ Unlike the abstract idea, concept, and principle exclusions, the process, system, and other useful art exclusions are beyond copyright's scope because they are more appropriately protected, if at all, by the patent system.

The House and Senate Reports offered this explanation for the inclusion of § 102(b) in the statute:

Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather than merely to the "writing" expressing his ideas. Section 102(b) is intended, among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law.²⁰⁶

By codifying well-established common law limitations on the scope of copyright law in § 102(b), Congress intended neither to enlarge nor to contract the scope of copyright protection, but rather "to restate, in the context of the new single Federal system of copyright, that the basic dichotomy between expression and idea remains unchanged."²⁰⁷ "Idea," as used in this context, should be understood as shorthand for the eight terms of exclusion set forth in § 102(b).

to the accomplishment of some result; a continuous operation or series of operations," and as "a course or method of operation" and indeed, "[a] particular method of operation in any manufacture." *Id.* at 546. The OED defines "method" as "[a] procedure for attaining an object," and as "[a] way of doing anything, [especially] according to a defined and regular plan; a mode of procedure in any activity, business, etc." 9 OED, *supra* note 203, at 690; *see also id.* at 690–91 (defining the scientific and philosophical meanings of "method" as an "[o]rderly arrangement of ideas and topics in thinking or writing; orderliness and sequence of thought or expression" and as "[a] system; scheme of classification"). The AHD is more explicit in tying methods, procedures, and systems. It defines method as "[a] means or manner of proceeding, especially a regular and systematic way of accomplishing something . . . [t]he procedure and techniques characteristic of a particular field or discipline of knowledge." AHD, *supra* note 203, at 1105. Its synonyms are "system, routine, manner, mode, fashion, [and] way," which "refer to the plans or procedures followed to accomplish a task or attain a goal." *Id.* The first definition of "system" in the OED is "[a] set or assemblage of things connected, associated, or interdependent, so as to form a complex unity; a whole composed of parts in orderly arrangement according to some scheme or plan; rarely applied to a simple or small assemblage of things." 17 OED, *supra* note 203, at 496. It further defines "system" as "[t]he set of correlated principles, ideas, or statements belonging to some department of knowledge or belief; a department of knowledge or belief considered as an organized whole; a connected and regularly arranged scheme of the whole of some subject; a comprehensive body of doctrines, conclusions, speculations, or theses." *Id.* at 497. The meaning of "discovery" is discussed *supra* note 202.

205. *Baker* was invoked as a source of limiting principles of copyright protection in the EDUCOM written testimony. *See 1967 Senate Hearings, supra* note 187, at 573 n.9, *reprinted in* 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 573 n.9.

206. *See, e.g.,* H.R. REP. No. 94-1476, at 57 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5670.

207. *Id.*

III. Section 102(b) Did Not Codify Nimmer's Interpretation of *Baker*

Melville B. Nimmer became a professor at UCLA Law School in 1962 and published in 1963 the first edition of his now-famous treatise on copyright law.²⁰⁸ The treatise asserted that *Baker* should be understood as a case about the distinction between abstract ideas and protectable expression, and nothing more.²⁰⁹ Although Nimmer participated in deliberations about the copyright revision bills in 1964 and 1965, none of his statements discussed, or even mentioned, the idea/expression distinction or the copyright implications of computer uses or computer programs.²¹⁰ He referred to *Baker* once in a letter requesting that Congress clarify whether construction of a building from copyrighted architectural drawings was infringement.²¹¹

208. MELVILLE B. NIMMER, NIMMER ON COPYRIGHT (1963). Prior to becoming a professor at UCLA, Nimmer had been a lawyer with Paramount Pictures and thereafter represented motion picture producers, writers, and others connected with the motion picture and television industries. He was also general counsel to the Writers Guild of America for five years. 1965 *House Hearings*, *supra* note 180, at 1809, reprinted in 7 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 1809 (statement of Melville B. Nimmer, Professor of Law, School of Law, University of California, Los Angeles). *Baker* and its progeny may not have resonated with Nimmer because his experience with entertainment industry copyright issues had not sensitized him to the policy considerations articulated and implicit in *Baker*.

209. Nimmer's interpretation of *Baker* is discussed *infra* notes 210–12 and accompanying text.

210. In 1964, Nimmer participated in a discussion sponsored by the Copyright Office about the copyright revision draft bill. H. COMM. ON THE JUDICIARY, 88TH CONG., COPYRIGHT LAW REVISION, PART 3: PRELIMINARY DRAFT FOR REVISED U.S. COPYRIGHT LAW AND DISCUSSIONS AND COMMENTS ON THE DRAFT 37–41 (1964), reprinted in 3 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 37–41. Nimmer was critical of the draft bill's open-ended subject matter provision, arguing that a commission should be established with authority to add new categories of works to copyright. *Id.* at 395–97, reprinted in 3 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 395–97. He proposed a number of other changes to other provisions in the draft bill. *Id.* at 397–404, reprinted in 3 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 397–404. In November 1964, Nimmer sent a letter with comments on the copyright revision bill asking the drafters to clarify whether the subject matter provision of the draft bill was coextensive with the constitutional meaning of “writings” in Article I, Section Eight, Clause Eight, and suggesting several additional changes. H. COMM. ON THE JUDICIARY, 89TH CONG., COPYRIGHT LAW REVISION, PART 5: 1964 REVISION BILL WITH DISCUSSIONS AND COMMENTS 313–19 (Comm. Print 1965), reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 313–19; see also 1965 *House Hearings*, *supra* note 180, at 1809–15 (statement of Melville B. Nimmer, Professor of Law, School of Law, University of California, Los Angeles) (discussing whether educational photocopying of texts should be fair use, whether the new bill should eliminate copyright term renewals, and whether the subject matter provision of the bill was coextensive with Congress's constitutional power as to writings of authors), reprinted in 7 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 1809–15.

211. H. COMM. ON THE JUDICIARY, 89TH CONG., COPYRIGHT LAW REVISION, PART 5: 1964 REVISION BILL WITH DISCUSSIONS AND COMMENTS 316–17 (Comm. Print 1965), reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 316–17. The Nimmer letter recognized that *Baker* probably precluded treating structures as infringing copies of copyrighted drawings under the 1909 Act, but went on to question whether “the full scope of *Baker v. Selden* is any longer applicable even under the existing law.” *Id.* at 317, reprinted in 4 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 317. Contrary to Nimmer's wishes, the 1976 Act did not treat structures as infringements of drawings. It was not until 1991 that architectural structures became protectable by U.S. copyright law. See Judicial Improvements Act of 1990, Pub. L. No. 101-650, § 706, 104 Stat. 5133, 5134 (codified as amended at 17 U.S.C. § 101 (2000 & Supp. IV 2004)).

Nothing in the legislative history suggests that Nimmer had any influence over the text of, or Congressional intentions as to, § 102(b).²¹²

A more senior copyright scholar who did have some influence on what became § 102(b) was Professor Benjamin Kaplan of Harvard Law School. Kaplan worked with Professor Miller on the EDUCOM testimony presented at the 1967 Senate hearing at which Miller challenged the copyrightability of computer programs and recommended that if programs were copyrighted, there should be statutory limitations on the scope of this protection to ensure that copyright would not provide patent-like protection to program methods

212. Professor Reichman has asserted that Congress at least partly codified Nimmer's interpretation of *Baker*, without explaining why he thought so. See Reichman, *supra* note 17, at 693–95 n.288. In a recent email exchange, Reichman explained that he regarded Congress's enactment of CONTU's program-related recommendations as a partial Congressional endorsement of Nimmer's view. E-mail from Jerome H. Reichman, Professor of Law, Duke University School of Law, to Pamela Samuelson, Professor of Law, Boalt Hall School of Law, University of California, Berkeley (Dec. 20, 2006, 10:30:52 EST) (on file with author). I believe this is erroneous for several reasons. First, § 102(b) was added to the revision bills well before CONTU was constituted. The legislative history detailed in Part II shows that Congress codified the traditional understanding of *Baker* without regard to CONTU's deliberations. Second, Congress held no hearings about CONTU's recommendations and prepared no legislative reports on the CONTU Report. Because it did not consider at all what the CONTU Report had to say about the scope of copyright protection for computer programs, Congress could have had no intent with respect to scope issues. Although Congress followed CONTU's recommendations by adding a definition of computer programs to the statute and amending § 117, neither change affected § 102(b), so there is no basis for believing that members of Congress had any different intention as to § 102(b) in 1980 than in 1976. Third, the CONTU Report is highly ambiguous and remarkably shallow on scope of protection issues, as well as misleading and erroneous in its understanding of computer programs and the implications of copyright protection for them. See, e.g., Samuelson, *CONTU Revisited*, *supra* note 175, at 699–707 (observing that the CONTU Commissioners lacked expertise about computer programs and had inaccurate conceptions about programs); Weinreb, *supra* note 4, at 1167–68 (stating that the CONTU Report was “hopelessly confused and in important respects simply misconceived” and explaining the confusion and misconceptions). The CONTU Report was so deeply ambiguous that members of the Commission and its staff had radically different conceptions of what CONTU thought about scope of protection issues, as became evident from the conflicting declarations three of them submitted in litigation in the mid-1980s. Professor Nimmer viewed the CONTU Report as an endorsement of his interpretation of *Baker* and § 102(b). See Declaration of Melville B. Nimmer (Nov. 15, 1984) [hereinafter Nimmer Declaration], reprinted in Anthony L. Clapes, Patrick Lynch & Mark R. Steinberg, *Silicon Epics and Binary Bards: Determining the Proper Scope of Copyright Protection for Computer Programs*, 34 UCLA L. REV. 1493 app. at 1585 (1987) [hereinafter *Silicon Epics*]. Yet, in the same litigation, CONTU Commissioner Arthur Miller declared that CONTU had intended for copyright to protect only program code and for § 102(b) to render other aspects of programs unprotectable, a position reinforced by a similar declaration from Arthur Levine, who had been the staff director of CONTU. See Declaration of Arthur R. Miller at 10, *Evergreen Consulting, Inc. v. NCR Comten, Inc.*, No. CV 82-5946 (C.D. Cal. Jan. 3, 1985) [hereinafter Miller Declaration]; Second Declaration of Arthur R. Miller (In Support of NCR Comten's Motion for Summary Judgment As to Count I (Infringement of Copyrighted Programs) of IBM's First Amended Complaint) at 4–5, *Evergreen Consulting, Inc. v. NCR Comten, Inc.*, No. CV 82-5946 (C.D. Cal. June 24, 1985) (on file with author) [hereinafter Miller Second Declaration]. Levine's declaration is quoted in Englund, *supra* note 4, at 888 n.110 (“CONTU did not want to extend copyright protection for computer programs to such things as algorithms, logic, structure, and flow of the program.”). For these reasons, the CONTU Report should not be given deference as an indication of congressional intent on the proper interpretation of § 102(b) to computer programs or other scope of protection issues.

and processes.²¹³ The EDUCOM statement to Congress, to which Kaplan contributed, made a positive reference to *Baker* and to the desirability of maintaining strict boundaries between the copyright and patent domains, as in *Baker*.²¹⁴ Kaplan expanded on his understanding of *Baker* in a book published in 1967, *An Unhurried View of Copyright*, based on a series of lectures delivered at Columbia Law School.

Kaplan's book characterized *Baker* as "the case of the bookkeeping systems," which held that "the copyright of a work describing a practical art did not extend to the 'performance' or exercise of the art, which remained free to all."²¹⁵ Kaplan believed, moreover, that "the privilege [in *Baker*] extends to exact copies."²¹⁶ Business schemes and methods were, in Kaplan's view, also "within the *Baker* rule."²¹⁷ *Baker*'s progeny showed that "what is an art or a system within the reach of the *Baker* case is usually tolerably clear."²¹⁸

Additional evidence that Congress codified Kaplan's understanding of *Baker*, not *Nimmer's*, can be found in the frequency with which *Baker* was cited as precedent on the unprotectability of systems and methods in copyrighted works during the copyright revision process.²¹⁹

213. Miller's testimony is discussed *supra* notes 190–98 and accompanying text. See also 1967 Senate Hearings, *supra* note 187, at 571 (statement of the Board of Trustees and the Task Force on Legal and Related Matters of the Interuniversity Communications Council (EDUCOM)) (urging limits on software copyright protection), reprinted in 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 571; *id.* at 565 (statement of W. Morton Brown, Jr., Interuniversity Communications Council (EDUCOM)) (attesting to Kaplan's involvement in the preparation of the EDUCOM statement), reprinted in 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 565.

214. 1967 Senate Hearings, *supra* note 187, at 571–73, 573 n.9 (citing *Baker v. Selden*, 101 U.S. 99 (1880)), reprinted in 9 OMNIBUS LEGISLATIVE HISTORY, *supra* note 163, at 571–73, 573 n.9.

215. KAPLAN, *supra* note 17, at 63; see also HORACE G. BALL, THE LAW OF COPYRIGHT AND LITERARY PROPERTY 111–12, 125–28 (1944) (discussing *Baker* and its progeny as precedents for the unprotectability of systems of business, plans of instruction, and methods of practicing an art or playing a game); ARTHUR W. WEIL, AMERICAN COPYRIGHT LAW 193–94 (1917) (citing *Baker* and its progeny as precluding copyright protection for plans, methods, and arts).

216. KAPLAN, *supra* note 17, at 64. Kaplan thought this followed from the Court's statement that "blank account books are not the subject of copyright." See *Baker*, 101 U.S. at 107; see also BALL, *supra* note 215, at 274–78 (arguing that *Baker* allows copying of technical and scientific content in copyrighted works); ALAN LATMAN, THE COPYRIGHT LAW 31–32 (5th ed. 1979) (arguing that *Baker* "held that the bookkeeping system was uncopyrightable and/or that using the system does not infringe").

217. KAPLAN, *supra* note 17, at 63.

218. *Id.*

219. See, e.g., *L. Batlin & Son, Inc. v. Snyder*, No. 75-7308, 1975 U.S. App. LEXIS 12223, at *12 (2d Cir. Oct. 24, 1975) (citing *Baker* for its discussion of differences between patent and copyright subject matters); *Morrissey v. Procter & Gamble Co.*, 379 F.2d 675, 678 (1st Cir. 1967) (citing *Baker* for the unprotectability of a sweepstakes contest); *Kuddle Toy, Inc. v. Pussycat-Toy Co.*, 183 U.S.P.Q. (BNA) 642, 659 (E.D.N.Y. 1974) (citing *Baker* as precedent for the unprotectability of a method or system of bookkeeping); *Herman Frankel Org. v. Tegman*, 367 F. Supp. 1051, 1053 (E.D. Mich. 1973) (citing *Baker* as prohibiting copyright in a bookkeeping system); *Freedman v. Grolier Enters., Inc.*, 179 U.S.P.Q. (BNA) 476, 478 (S.D.N.Y. 1973) (citing *Baker* in a case denying copyright in notation system for playing cards); *Magnus Organ Corp. v.*

Not until *after* Congress had already adopted the 1976 Act did the Nimmer treatise's interpretation of *Baker* begin to become influential. It is relatively easy to track the rise of Nimmer's influence as to *Baker* by observing the rise in citations to *Mazer v. Stein*²²⁰ as a precedent for the idea/expression distinction.²²¹ Such citations would otherwise be surprising, given that *Mazer* did not rule on this distinction; indeed, it barely even mentioned it. If *Mazer* has come to be perceived as an idea/expression case, it is because Nimmer relied heavily upon *Mazer* to support his arguments for strict limits on the application of *Baker*.²²²

To lay adequate groundwork for Part IV's discussion of certain software copyright cases that misinterpreted *Baker* and § 102(b) in a manner congruent with Nimmer's mistaken views and to revitalize *Baker*'s broader significance in cases beyond software, it is necessary to review *Mazer*, what Nimmer drew from *Mazer*, and why Nimmer's interpretation of *Mazer* vis-à-vis *Baker* is unsound.²²³

Stein registered copyrights in several statuettes, including one of a Balinese dancer, as "works of art" under the 1909 Act.²²⁴ He then mass

Magnus, 269 F. Supp. 981, 985 (D.N.J. 1967) (citing *Baker* as precluding copyright in a method of playing electric cord organs); Briggs v. N.H. Trotting & Breeding Ass'n, 191 F. Supp. 234, 236 (D.N.H. 1960) (citing *Baker* in denying a copyright claim in a horse track betting system); Gaye v. Gillis, 167 F. Supp. 416, 418 (D. Mass. 1958) (citing *Baker* as precedent for the unprotectability of a system of doing business); Cont'l Cas. Co. v. Beardsley, 151 F. Supp. 28, 31–33 (S.D.N.Y. 1957) (citing *Baker* as precedent for rejecting a copyright claim in a blanket indemnity protection plan); 88¢ Stores, Inc. v. Martinez, 361 P.2d 809, 818 (Or. 1961) (citing *Baker* as precedent for the right to use others' business methods); see also Scholz Homes, Inc. v. Maddox, 379 F.2d 84, 85–86 (6th Cir. 1967) (affirming dismissal of a copyright claim alleging infringement based on construction of a house of the same design as copyrighted plans, citing *Baker*). After enactment of the 1976 Act, further such rulings are evident. See, e.g., Januz Mktg. Commc'ns v. Doubleday & Co., 569 F. Supp. 76, 78–79 (S.D.N.Y. 1982) (quoting extensively from *Baker* as a system exclusion case in denying copyright in a time log system); Kepner-Tregoe, Inc. v. Carabio, 203 U.S.P.Q. (BNA) 124, 130 (E.D. Mich. 1979) (citing *Baker* as precluding copyright in methods of instruction); McAlpine v. AAMCO Automatic Transmissions, Inc., 461 F. Supp. 1232, 1255 (E.D. Mich. 1978) (citing *Baker* as grounds for denying protection to a merchandising system). The software cases that draw upon the traditional understanding of *Baker* are discussed *infra* subpart IV(B).

220. 347 U.S. 201 (1954).

221. As of October 23, 2006, *Mazer* had been cited 472 times in federal court cases, 177 of which also cite the Nimmer treatise and mention the idea/expression distinction.

222. See 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18.

223. I am not the first to criticize Nimmer's interpretation of *Baker*. See, e.g., Reichman, *supra* note 17, at 693 n.288 (criticizing Nimmer's interpretation of *Baker* as an idea/expression case); J.H. Reichman, *Goldstein on Copyright Law: A Realist's Approach to a Technological Age*, 43 STAN. L. REV. 943 (1991) ("Professor Nimmer arbitrarily narrowed [*Baker*] to fit the idea-expression analysis he preferred to adopt in all cases."); Weinreb, *supra* note 4, at 1175 ("There is no support for [Nimmer's] reconstruction of *Baker v. Selden* in the briefs or in the Court's opinion, which does not employ the rubric of idea and expression and relies throughout on the difference between a book and a system, that is to say, the distinct subject matters of copyright and patent."); *id.* at 1176 ("[T]o read *Baker v. Selden* [as Nimmer does] misrepresents not only the case itself but also its legal context . . .").

224. *Mazer*, 347 U.S. at 202. A photograph of one of Stein's statuettes can be found in JULIE E. COHEN ET AL., COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 213 (2d ed. 2006).

manufactured the statuettes with holes in the top and bottom so that an electrical cord could run up the middle to enable them to serve as lamp bases.²²⁵ After Mazer began making and selling very similar lamps, Stein sued him for copyright infringement.²²⁶ Mazer defended by claiming, first, that the statuettes were not “works of art” because they were mass manufactured as lamp bases; second, that Stein had committed a fraud on the Copyright Office by registering the statuettes as works of art when he had intended all along to mass manufacture them as articles of manufacture; third, that Stein’s lamps were uncopyrightable because they were useful; and fourth, that original designs for lamp bases should have been protected, if at all, by design patent law.²²⁷ Mazer argued that *Baker* supported the latter two propositions.²²⁸

The statutory question before the Court was whether Stein’s statuettes qualified for copyright protection as “[w]orks of art” or “[r]eproductions of a work of art.”²²⁹ Although works of art are not usually mass manufactured, the Court was not persuaded Stein’s statuettes should be disqualified from copyright protection just because they were mass-produced. The Court recognized and deferred to the Copyright Office’s longstanding policy and practice of accepting registration for works of artistic craftsmanship, such as the Stein statuettes, “in so far as their form but not their mechanical or utilitarian aspects are concerned.”²³⁰ Stein’s lamps qualified for copyright protection under this standard.²³¹

Mazer made a brief reference to *Baker* following its observation that “[u]nlike a patent, a copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea—not the idea itself.”²³² Mazer then characterized *Baker* as having held that “a copyrighted book on a peculiar system of bookkeeping was not infringed by a similar book using a similar plan that achieved similar results where the alleged infringer made a different arrangement of the columns and used different headings.”²³³ To

225. *Mazer*, 347 U.S. at 202.

226. *Id.* at 203.

227. Design patents are available to protect original and nonobvious ornamental designs for articles of manufacture. See 35 U.S.C. § 171 (2000).

228. Mazer argued that practical utility of the lamps meant they could not qualify as works of art under *Baker*. See *Mazer*, 347 U.S. at 203–04 n.3 (noting conflicting decisions on practical use). He also argued that *Baker* required exclusivity of patent and copyright subject matter. See *id.* *Baker* said nothing, however, about design patents and copyrights, and for reasons explained *infra* notes 246–56 and accompanying text, it is consistent with *Baker* for copyright law to protect the statuette as a nonutilitarian work whose object was contemplation.

229. *Mazer*, 347 U.S. at 202–03; see 17 U.S.C. § 5(g), (h) (1954) (current version at 17 U.S.C. § 5(g), (h) (2000)). The 1909 Act differed from previous acts in dropping a requirement that artistic works be “works of the fine arts,” a term that seemed more restrictive than “works of art” or “reproductions of a work of art.” *Mazer*, 347 U.S. at 212.

230. *Mazer*, 347 U.S. at 212 (quoting 37 C.F.R. § 202.8 (1949)). Registration of such works dated back to the 1870 and 1874 Acts. *Id.* at 211.

231. *Id.* at 213–14.

232. *Id.* at 217.

233. *Id.*

Mazer's patent/copyright exclusivity argument, the Court responded that "[n]either the Copyright Statute nor any other says that because a thing is patentable it may not be copyrighted."²³⁴ In context, it is evident that the Court was speaking only about design patents and copyrights.²³⁵

The Nimmer treatise, which has been maintained in the past two decades by Professor Nimmer's son David after his father's death in 1985, devotes a subsection to "Limitations on Copyrightability by Reason of Utilitarian Function,"²³⁶ much of which contests the Court's analysis in *Baker* and argues for limiting the range of *Baker*'s application.²³⁷ The treatise interprets *Mazer* as having limited the meaning of *Baker* to the idea/expression distinction.²³⁸ It asserts that *Baker* should not be understood as a case about the uncopyrightability of bookkeeping systems, or of forms embodying or illustrating such a system, but rather a case in which *Baker*'s forms were sufficiently different from *Selden*'s as to be noninfringing.²³⁹ Further, the treatise contends that "[b]y implication at least, *Mazer* suggests that the *Baker v. Selden* distinction between copying for use and copying for explanation was dictum that will no longer be followed."²⁴⁰

The Nimmer treatise also treats *Mazer* as having rejected *Baker*'s conception of separate domains for patents and copyrights.²⁴¹ "There is an overlapping area wherein certain works may claim either copyright or patent

234. *Id.*

235. The Court cited a law review article discussing the overlap of design patent and copyright protection in a footnote proximate to the quoted text. *Id.* at 117 n.38 (citing Richard W. Pogue, *Borderland—Where Copyright and Design Patent Meet*, 52 MICH. L. REV. 33, 58 (1953)).

236. 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18. It should be noted that Melville Nimmer, as a CONTU Commissioner, recognized that it might over time prove unwise to use copyright to protect "programs which control the heat and air-conditioning in a building, or which determine the flow of fuel in an engine, or which control traffic signals . . . because their operations do not result in copyrightable work." CONTU, FINAL REPORT, *supra* note 168, at 27. Yet, neither in § 2.18 nor elsewhere did the treatise meaningfully address the appropriateness of such limitations on copyrightability of works by reason of their utilitarian functions. The Nimmer Declaration, discussed *infra* notes 280–82 and accompanying text, demonstrates that the senior Nimmer was unwilling to recognize functionality as providing any sort of limitation on the scope of copyright protection in computer programs, although his son David has evolved the treatise in this direction in the discussion of software copyright infringement issues. See 3 NIMMER ON COPYRIGHT, *supra* note 4, § 13.03.

237. 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18[C], at 2-204.1 to -204.7 (arguing that the holding in *Baker* "in no event justifies the denial of copyrightability to any work" or objecting to the doctrine that "copying for purposes of use . . . is not an act of infringement"). This section does not discuss *Baker*'s progeny, § 102(b), or policy rationales for limiting the scope of copyright in functional writings. Also critical of *Baker* is Edward Samuels, *The Idea-Expression Dichotomy in Copyright Law*, 56 TENN. L. REV. 321, 327–30 (1989) (criticizing the holding in *Baker* and noting other commentators in accord).

238. 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18[D][1], at 2-204.7.

239. *Id.*

240. *Id.*

241. *Id.* § 2.19, at 2-211 ("The Supreme Court has held that a work, such as a work of art, may be eligible for either copyright or patent protection.").

protection,” says the treatise.²⁴² It takes *Taylor Instrument Cos. v. Fawley-Brost Co.* to task for interpreting *Baker* as forbidding copyright protection in blank forms²⁴³ and for its endorsement of (utility) patent/copyright exclusivity.²⁴⁴ Although § 102(b) is cited several times, the Nimmer treatise makes almost no effort to interpret the words of exclusion in this statutory provision.²⁴⁵ So far as careful readers can discern, the Nimmer treatise regards § 102(b) as merely a restatement of the abstract idea/expression distinction, and nothing more.

The Nimmer treatise stretches *Mazer* far beyond what the Court said and what it can reasonably be understood to have meant. *Mazer* did not, for example, criticize *Taylor* or its statements about exclusive domains for utility patent and copyright law; it simply regarded *Taylor* as inapposite to a case involving a potential overlap of copyright and design patent protection.²⁴⁶ The eligibility of the ornamental designs of Stein’s statuette lamp bases for design patent protection did not categorically preclude copyright in the statuettes as works of art.

Mazer did not open the door to copyright for all functional designs or to a complete or substantial overlap in copyright and utility patent subject matters,²⁴⁷ for the Court recognized that Copyright Office regulations had

242. *Id.*

243. 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18[B][4], at 2-204.

244. *Id.* § 2.19, at 2-211 (characterizing *Taylor* as “an older decision” that is contrary to *Mazer* and other case law). Yet, in a different subsection, the Nimmer treatise acknowledges that a copyright in blueprints of a machine for inserting pills into blister packs would not be infringed if another firm made an equivalent machine, saying that for an exclusive right of that sort, one would need a patent, so the treatise does recognize some degree of exclusivity for patent and copyright. *Id.* § 2.18[D][2], at 2-204.9 to -204.10 (“The true gravamen of the complaint, under these latter facts, lies solely within ‘the province of the letters-patent, not of copyright,’ as the court in *Baker v. Selden* aptly observed.”).

245. David Nimmer has pointed out that the treatise makes reference to the “method of operation” and “process” exclusions in a few places. See, e.g., *id.* § 2.18[J] (referring to a defendant’s contention); *id.* § 2.18 n.46 (noting that § 102(b) excludes methods of operation, but then putting this phrase in quotes and indicating that § 102(b) only partly codified this aspect of *Baker*). My point is that nowhere does the treatise give any substance to these terms of exclusion. The only other word in § 102(b) besides “idea” that the Nimmer treatise tries to interpret is the word “discovery.” See *id.* § 2.03[E], at 2-36.3 to -36.4. As indicated *supra* note 202, the treatise may be wrong in its understanding of this term.

246. *Mazer v. Stein*, 347 U.S. 201, 215 n.33 (1954) (characterizing *Taylor* as having held that the mechanical patent and copyright law were mutually exclusive, but indicating that a different answer is appropriate as to design patents and copyrights).

247. *Mazer* is not the only intellectual property case in which the Court has found categorical arguments for separate and exclusive domains for intellectual property (IP) regimes to be unpersuasive. In *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124 (2001), for example, the Court rejected J.E.M.’s argument that sexually reproducing plants were ineligible for utility patent protection because Congress had enacted a special statutory scheme to protect these kinds of innovations. *Id.* at 138–41. Yet, the Court has recognized the potential for clashes between utility patent law and other IP rights in some cases. In *Traffix Devices, Inc. v. Marketing Displays, Inc.*, 532 U.S. 23 (2001), for example, the Court rejected a trademark claim for a sign design that had previously been protected by a utility patent; the functionality of the design, as described in the patent, had disqualified the design from trademark protection. *Id.* at 29–30.

long denied registration to works insofar as protection was sought for “their mechanical or utilitarian aspects.”²⁴⁸ *Mazer* quoted from Copyright Office rules directing designers of works “of the industrial arts, utilitarian in purpose and character” to seek protection from the patent laws.²⁴⁹ *Mazer* cited *Baker* for the proposition that copyright, unlike patent, does not give exclusive rights to useful arts.²⁵⁰ Because *Mazer* mentioned *Baker* and the idea/expression distinction only in passing, it is inappropriate to read *Mazer* as having fundamentally transformed the holding in *Baker*.²⁵¹ *Mazer*’s observation about differences between the Selden and Baker forms was a simple misreading of *Baker*,²⁵² not a radical reinterpretation of the case, its holding, and the holdings of *Baker*’s progeny.²⁵³

The statuettes in *Mazer* were, moreover, not operational parts of the lamps, but rather ornamental features. *Baker* recognized that ornamental designs and works of art whose form was of their essence could qualify for copyright protection.²⁵⁴ Because Stein’s lamps did not function any better or worse for having Stein’s statuette as a base instead of a block of wood, it is consistent with *Baker* to hold that the statuettes were, indeed, copyrightable subject matter because the artistic designs they embodied were physically as well as conceptually separable from the lamps. In the words of the 1976 Act, Stein’s statuettes did not have “an intrinsic utilitarian function that [was] not merely to portray the appearance of the article or to convey information.”²⁵⁵

248. *Mazer*, 347 U.S. at 212 (quoting 37 C.F.R. § 202.8 (1949)).

249. *Id.* at 212 n.24 (quoting 37 C.F.R. § 201.4(7) (1939)).

250. *Id.* at 217.

251. Further evidence that the Court did not intend to dramatically limit the scope of *Baker* is the favorable citations in *Mazer* to several of *Baker*’s progeny that excluded complex intellectual designs in the useful arts (that is, not just abstract ideas) from copyright protection. In addition to *Taylor*, the Court cited *Fulmer v. United States*, 103 F. Supp. 1021 (Ct. Cl. 1952), which held that a copyright in a drawing of a parachute was not infringed by manufacture of it, and *Muller v. Triborough Bridge Authority*, 43 F. Supp. 298 (S.D.N.Y. 1942), which held that a drawing of an approach to a bridge was not infringed by construction of a bridge. *Fulmer* and *Muller* rely upon *Baker* as a key precedent. *Fulmer*, 103 F. Supp. at 1022; *Muller*, 43 F. Supp. at 299–300. *Mazer* cited both as examples of cases holding that copyright does not grant exclusive rights in useful arts embodied in copyrighted works. *Mazer*, 347 U.S. at 217 n.39.

252. See KAPLAN, *supra* note 17, at 64 n.80 (arguing that the Court in *Mazer* “appears to somewhat misread the facts” of *Baker*).

253. How did Nimmer’s interpretation of *Baker* become influential in the case law, given how erroneous it is? This may partly be due to the abstruseness of copyright law, which makes it logical for lawyers and judges to look to a treatise for guidance on the case law. During the 1970s and 1980s, the Nimmer treatise had almost no competition in the copyright field. Once influenced by a treatise author’s interpretation, lawyers and judges would naturally view the case law through the lens of the treatise author’s framework. Once courts started accepting a treatise author’s interpretation, network effects set in, as decisions would cite previous decisions citing Nimmer and *Baker* for the abstract idea/expression distinction.

254. *Baker*, 101 U.S. 99, 103–04 (1880).

255. 17 U.S.C. § 101 (2000). Pictorial, graphic, and sculptural (PGS) works qualify for copyright protection as long as they do not flunk the useful article test. *Id.*

They would thus qualify as original sculptural works under the 1976 Act.²⁵⁶ The Nimmer treatise is simply wrong in saying that *Mazer* repudiated *Baker*'s wider meanings,²⁵⁷ as courts over time came to realize in the software copyright case law.

IV. The Evolution of Copyright and § 102(b) as Applied to Computer Programs

Because the legislative history of the 1976 Act was so explicit about adding § 102(b) to the statute to ensure that the scope of copyright protection in computer programs would be appropriately delimited, one would have expected this provision to have had considerable salience in the computer program case law. Strangely enough, this has not been so. Subpart IV(A) discusses three cases decided between 1982 and 1992 that followed the Nimmer treatise's lead in interpreting *Baker* as a case concerned only with the unprotectability of abstract ideas, the merger doctrine, or both. By endorsing this view, these courts fell into the very trap in software copyright cases that § 102(b) had been adopted to avoid. Subpart IV(B) shows that over time, with the aid of law professor amicus briefs and David Nimmer's

256. The early copyright revision bills that defined "pictorial, sculptural and graphic works" seemed to extend copyright to original designs for articles of manufacture. 1 KAMINSTEIN HISTORY, *supra* note 162, at 27 (noting that S. 3008, 88th Cong. § 1 (1964) defined this class of works as including "two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints, and reproductions, maps, globes, charts, plans, diagrams, models, and works used in advertising or in labels for merchandise"). That provision did not yet have the "useful article" limitation on the scope of PGS works that it acquired before final passage. See 17 U.S.C. § 101 (defining "useful article" as a limitation on the scope of PGS works). Kaminstein's original draft copyright revision bill would, however, have limited protection for PGS works to those "that [were] non-utilitarian in themselves." 1 KAMINSTEIN HISTORY, *supra* note 162, at 9. For a history of proposals to protect industrial designs in U.S. copyright law, see J.H. Reichman, *Design Protection in Domestic and Foreign Copyright Law: From the Berne Revision of 1948 to the Copyright Act of 1976*, 1983 DUKE L.J. 1143 (1983).

257. The Nimmer treatise has also been critical of *Baker* as applied to "blank forms." 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.08[D][1][a]. It argues that courts should not deny copyright protection to blank forms as long as the forms exhibited a modicum of originality. *Id.* This view initially attracted some case law support. See *Harcourt, Brace & World, Inc. v. Graphic Controls Corp.*, 329 F. Supp. 517 (S.D.N.Y. 1971) (finding infringement of copyright in printing-answer forms for tests, citing Nimmer); *Norton Printing Co. v. Augustana Hosp.*, 155 U.S.P.Q. (BNA) 133 (N.D. Ill. 1967) (denying a motion to dismiss a copyright claim based on the copying of hospital forms and form systems, citing Nimmer). Later cases, however, have rejected this analysis. See, e.g., *Bibbero Sys., Inc. v. Colwell Sys., Inc.*, 893 F.2d 1104, 1107 (9th Cir. 1990) (stating that *Norton*'s approach to blank forms "should be disapproved"); *John H. Harland Co. v. Clarke Checks, Inc.*, 711 F.2d 966, 971 (11th Cir. 1983) ("It is well-established that blank forms which do not convey information or contain original pictorial expression are not copyrightable."); *Januz Mktg. Comm'n v. Doubleday & Co.*, 569 F. Supp. 76, 78 (S.D.N.Y. 1982) (holding that forms usable only for the recording of information are not copyrightable). The Nimmer treatise acknowledges that the Copyright Office follows *Baker*, and not the treatise, in reviewing applications to register copyrights in forms. 1 NIMMER ON COPYRIGHT, *supra* note 4, § 2.18, at 2-204 n.22. Professor Karjala argues that blank forms should not be protected by copyright law as useful tools for obtaining information to effectuate noncopyrightable processes. Dennis S. Karjala, *Distinguishing Patent and Copyright Subject Matter*, 35 CONN. L. REV. 439, 484-85 (2003).

evolution of the treatise after his father's death, courts rediscovered various limiting doctrines of copyright law and the wider implications of *Baker* as a seminal precedent for giving only a thin scope of copyright protection to computer programs because they embody so many functional elements. One of these cases established a now widely used test for software copyright infringement that requires courts to filter out unprotectable functional elements of programs before deciding whether defendants have infringed.

A. *From Franklin to Paperback: The Narrow Interpretation of Baker and § 102(b) in Early Computer Program Case Law*

The first software copyright case of any significance arose when Apple Computer sued Franklin Computer, the maker of Apple II-compatible computers, because Franklin's computers contained exact copies of Apple operating system programs.²⁵⁸ Franklin defended the lawsuit by challenging the copyrightability of Apple Computer's operating system programs under *Baker*, some of its progeny, and the process exclusion of § 102(b).²⁵⁹

Franklin initially persuaded the trial court that there was sufficient doubt about the validity of Apple's copyrights to justify denying Apple's motion for a preliminary injunction,²⁶⁰ although the Third Circuit soon reversed this ruling.²⁶¹ The court recognized that a literal construction of *Baker* might seem to preclude copyright for programs on account of their utility, but it agreed with Professor Nimmer that the Supreme Court's decision in *Mazer* had repudiated this aspect of *Baker*.²⁶² It regarded § 102(b) as merely a

258. See *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1243 (3d Cir. 1983) (stating that Franklin copied "Apple's operating system computer programs" so that "peripheral equipment and software developed for use with the Apple II computer could be used in conjunction" with Franklin's ACE 100). The copyrightability of computer programs prior to the 1980 amendments recommended by CONTU was considered in *Data Cash Systems, Inc. v. JS&A Group, Inc.*, 480 F. Supp. 1063, 1068-69 (N.D. Ill. 1979), *aff'd on other grounds*, 628 F.2d 1038 (7th Cir. 1980), which held that that programs were copyrightable in source code form but not in machine-executable form.

259. Franklin made five main arguments: (1) that machine-executable programs were functional processes or methods of operation under *Baker* and § 102(b), *Apple Computer Inc. v. Franklin Computer Corp.*, 545 F. Supp. 812, 816-23 (E.D. Pa. 1982), *rev'd*, 714 F.2d 1240; (2) that even if there was some original expression in the Apple programs in source code form, the expression had "merged" with the programs' functionality in object code form and had become essential parts of a machine, *id.* at 823-24; (3) that a system compatible with Apple-compatible software must of necessity share a great deal of the structure of Apple's operating system, *id.* at 815; (4) that patents had issued for some program innovations, invoking *Baker's* patent/copyright domain distinction, see *id.* at 816-17, 817 n.6; (5) that even if the Third Circuit had correctly ruled that video game programs could be copyrighted in *Williams Electronics, Inc. v. Artic International, Inc.*, 685 F.2d 870 (3d Cir. 1982), that case was distinguishable because it involved video game programs whose copyright had been registered as an audiovisual work, see *Franklin*, 545 F. Supp. at 817-19, 818 n.8. Operating system programs were different because they did not communicate with humans, and CONTU and Congress had not contemplated copyright for anything but application programs. See *id.*

260. *Franklin*, 545 F. Supp. at 825.

261. *Franklin*, 714 F.2d at 1242.

262. *Id.* at 1252.

restatement of the idea/expression distinction and *Baker* as a precedent establishing the merger doctrine.²⁶³ And as long as “other programs can be written or created that perform the same function as an Apple[] operating system program, then that program is an expression of the idea and hence copyrightable.”²⁶⁴ Because Franklin had exactly copied the Apple operating system and had made no attempt to write alternative programs to perform the same functions, Franklin had infringed.²⁶⁵ The Third Circuit’s legal conclusion was unsurprising and uncontroversial, for if Congress had decided to protect programs through copyright law, it must have meant for program code to be protected against exact copying by competitors such as Franklin.

Less clear in the mid-1980s to the mid-1990s, and far more controversial, was whether the “structure, sequence, and organization” (SSO) and the “look and feel” of computer programs were within the scope of program copyrights.²⁶⁶ In 1986, the Third Circuit Court of Appeals arguably endorsed both theories of “nonliteral” copyright infringement for programs in *Whelan Associates, Inc. v. Jaslow Dental Laboratory, Inc.*²⁶⁷ *Whelan* was initially influential in software SSO and look-and-feel cases,²⁶⁸ although it was substantially discredited over time.²⁶⁹

Rand Jaslow was an entrepreneurial dental laboratory professional who realized that computers could usefully automate common bookkeeping and administrative functions of dental laboratories.²⁷⁰ Jaslow initially tried to

263. *Id.* at 1252–53.

264. *Id.* at 1253. The court regarded Franklin’s compatibility argument as having “no pertinence to either the idea/expression dichotomy or merger.” *Id.* Compatibility was, in the Third Circuit’s view, “a commercial and competitive objective which does not enter into the somewhat metaphysical issue of whether particular ideas and expressions have merged.” *Id.*

265. *Id.* at 1245 (“Franklin did not dispute that it copied the Apple programs.”); see also *Apple Computer, Inc. v. Formula Int’l, Inc.*, 562 F. Supp. 775 (C.D. Cal. 1983), *aff’d*, 725 F.2d 521 (9th Cir. 1984) (holding that computer programs are copyrightable and that Apple was entitled to a preliminary injunction enjoining defendant from distributing or selling copies of computer programs).

266. There apparently was a nascent SSO issue in the *Franklin* case, for the trial judge reported that “Apple contends in this suit that Franklin has ‘stolen’ the logic and structure of their [operating] system.” 545 F. Supp. at 815. Franklin argued that “of necessity [its software must] share a great deal of the essential structure of Apple.” *Id.* For citations to the early SSO case law, see *infra* note 279.

267. 797 F.2d 1222, 1224–25 (3d Cir. 1986). The Third Circuit was more explicit about its endorsement of SSO protection than about look and feel. Yet, it relied on testimony about Jaslow’s program performing almost identically to Whelan’s, *id.* at 1228, 1247; it quoted from a source saying that designing the look and feel of a program involves more creativity than coding, *id.* at 1231; and it cited and quoted from decisions endorsing a “total concept and feel” test for copyright infringement, *id.* at 1234.

268. Several cases followed the *Whelan* decision. *E.g.*, *Johnson Controls, Inc. v. Phoenix Control Sys., Inc.*, 886 F.2d 1173, 1175 (9th Cir. 1989); *Telemarketing Res. v. Symantec Corp.*, 12 U.S.P.Q.2d (BNA) 1991, 1993 (N.D. Cal. 1989); *Pearl Sys., Inc. v. Competition Elecs.*, 8 U.S.P.Q.2d (BNA) 1520, 1524–25 (S.D. Fla. 1988); *Broderbund Software, Inc. v. Unison World, Inc.*, 648 F. Supp. 1127, 1133 (N.D. Cal. 1986).

269. See *infra* note 317 and accompanying text.

270. *Whelan*, 797 F.2d at 1225.

write such a program on his own but lacked sufficient expertise to do so. He hired Elaine Whelan to work with him to develop such a program.²⁷¹ Whelan knew nothing about dental labs, so Jaslow worked closely with her to teach her the detailed aspects of dental lab business processes.²⁷² Whelan initially developed the Dentalab program for IBM Series I computers.²⁷³ For a time, she and Jaslow collaborated in the sale of Dentalab, but thereafter they had a falling out.²⁷⁴

When the IBM PC became a hit in the marketplace, Jaslow recognized the market potential for a program similar to Dentalab for the PC.²⁷⁵ With help from another programmer, Jaslow developed Dentcomm for the IBM PC using a different programming language and algorithms.²⁷⁶ Whelan then sued him for copyright infringement, claiming that Jaslow copied the overall SSO of Dentalab.²⁷⁷ Jaslow defended this lawsuit, first, by claiming to be the sole or at least a joint author of the Dentalab program, second, by accusing Whelan of misappropriating trade secrets of his dental lab, and third, by asserting that the copyright in Dentalab did not extend to program structure but only to the code.²⁷⁸

Whelan was far from the only case in the mid-1980s in which the SSO issue was brewing.²⁷⁹ In a similar case, IBM Corp. bolstered its claim that program SSO was copyright protected by filing a declaration of Professor Nimmer, who had been vice chair of CONTU and therefore privy to its deliberations on software copyright issues.²⁸⁰ Nimmer declared that CONTU:

271. *Id.*

272. *Id.* at 1225–26.

273. *Id.* at 1226.

274. *Id.* at 1226–27.

275. *See id.* at 1226 (speculating that Jaslow and Whelan both had interest in reaching the general market).

276. *Id.*

277. *Id.* at 1227.

278. *Id.* at 1227–28.

279. The early case law on SSO and nonliteral infringement issues was decidedly mixed. *See, e.g.,* Q-Co. Indus. Inc. v. Hoffman, 625 F. Supp. 608, 615 (S.D.N.Y. 1985) (rejecting a claim of SSO similarities); Synercom Tech., Inc. v. Univ. Computing Co., 462 F. Supp. 1003, 1111–14 (N.D. Tex. 1978) (holding that organization and structure of input formats are ideas); *cf.* SAS Inst., Inc. v. S & H Computer Sys., Inc., 605 F. Supp. 816, 828–31 (M.D. Tenn. 1985) (protecting program structure, but also finding literal infringement); E.F. Johnson, Co. v. Uniden Corp. of Am., 623 F. Supp. 1485 (D. Minn. 1985) (rejecting the compatibility defense for copying of structural similarities).

280. Nimmer Declaration, *supra* note 212, app. at 1585–86. Professor Nimmer died soon after executing this declaration. *Silicon Epics*, *supra* note 212, was published in an issue of the *UCLA Law Review* dedicated to Nimmer's legacy. Its authors were the lawyers who represented IBM in the matter in which the declaration was filed. Appending the Nimmer Declaration to *Silicon Epics* was a clever way to get into the law review literature Professor Nimmer's endorsement of the protectability of program SSO, a position then espoused by IBM lawyers. Professor Nimmer's death meant he would no longer be available to file declarations or write law review articles, or change his mind after learning more about computer programming. It is worth noting that Professor Nimmer did not revise his treatise to incorporate these views about the protectability of program SSO.

had no views and made no recommendations which would negate the availability of copyright protection for the detailed design, structure and flow of a program under the copyright principles that make copyright protection available, in appropriate circumstances, for the structure and flow of a novel, a play or a motion picture.²⁸¹

For him, the only question was whether structural similarities between programs pertained to “very generalized abstractions” or detailed design elements “which are sufficiently concrete to constitute an expression of . . . the structure of their development, coordination and interplay.”²⁸²

Nothing in Nimmer’s declaration acknowledged that the functionality of programs had any bearing on the scope of copyright, that *Baker* and its progeny required strict limits on the scope of copyright in functional writings, or that § 102(b) excluded at least some structural elements of programs, such as processes and methods of operation, from copyright’s scope.

To counter the Nimmer Declaration, the defendants in the *IBM* case proffered two declarations of Professor Arthur Miller.²⁸³ Miller recounted his role in the legislative history of the 1976 Act and as chair of the CONTU subcommittee that addressed computer program copyrights.²⁸⁴ Miller stated that Congress and CONTU had intended that copyright protection for programs should not extend to such things as program logic, structure, or flow, but only to the literal text of programs.²⁸⁵ Only through patent protection could program innovations such as logic and structure be legally protected against copying.²⁸⁶

Given the conflicting declarations of these two prominent ex-CONTU Commissioners, one might have expected the *IBM* case to set an important precedent on legal protection for SSO. But that case settled and *Whelan* emerged as the first major case to consider copyright protection for SSO.

In 1985, the trial court ruled that Elaine Whelan was the sole author of the Dentalab program, that she had not misappropriated Jaslow’s trade secrets, and that Dentcomm infringed Whelan’s copyright because its structure and overall organization was substantially similar to Dentalab, and because the programs had a similar look and feel when operating, from

281. *Id.* app. at 1592.

282. *Id.* app. at 1589.

283. See Miller Declaration, *supra* note 212; Miller Second Declaration, *supra* note 212.

284. See Miller Declaration, *supra* note 212, at 2–3 (relating CONTU experience).

285. *Id.* at 10 (arguing that CONTU intended design and logic to be unprotected by copyright); Miller Second Declaration, *supra* note 212, at 1–5 (arguing that logic and flow are not protected by copyright).

286. Miller Second Declaration, *supra* note 212, at 6–13. Miller regarded this as a logical application of *Baker*. *Id.* at 7, 9, 11. Also supporting Miller’s views was a declaration by Arthur Levine, who had served as Executive Director of CONTU. The Levine Declaration is mentioned in Englund, *supra* note 4, at 888–89 n.110.

which the court (erroneously) inferred copying of internal program structure.²⁸⁷

The Third Circuit cautioned that judges should be careful about inferring copying of program internal structure based on similarities in how two programs operated, given that independently written programs could perform the same functions without having the same internal structure, but it affirmed the lower court's finding of infringement and generally agreed with its reasoning.²⁸⁸

The Third Circuit concluded that program SSO was within the scope of copyright protection.²⁸⁹ It observed that programs were "literary works" for purposes of copyright law.²⁹⁰ It then pointed out that "[t]he copyrights of other literary works can be infringed even when there is no substantial similarity between the works' literal elements," citing cases involving movie plots, fantasy characters, greeting card styles, and dramatic plays.²⁹¹ Finally, "[b]y analogy to other literary works, it would thus appear that the copyrights of computer programs can be infringed even absent copying of the literal elements of the program."²⁹²

To bolster his defense, Jaslow pointed to a Copyright Office Circular stating that copyright protection in programs "extends [only] to the literary or textual expression contained in the computer program," and not to "ideas, program logic, algorithms, systems, methods, concepts or layouts,"²⁹³ but the court questioned whether the Circular "deserve[d] deference on a matter so complex as this one."²⁹⁴ It adhered to its earlier conception of § 102(b) in *Franklin* that it was merely a restatement of the abstract idea/expression

287. *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 609 F. Supp. 1307, 1321–23 (E.D. Pa. 1985). The trial court asserted that Whelan's copyright extended to "the manner in which the program operates, controls and regulates the computer in receiving, assembling, calculating, retaining, correlating, and producing useful information." *Id.* at 1320. This aspect of the lower court's decision was criticized by copyright scholars. See, e.g., Goldstein, *Infringement*, *supra* note 4, at 1126 ("[T]he court construed the copyright concept of 'idea' too literally and failed to recognize that, in the copyright lexicon, 'idea' is no more than a metaphor for elements generally belonging in the public domain."). Yet, it fueled what came to be known as the look-and-feel software copyright lawsuits. See Pamela Samuelson, *The Ups and Downs of Look and Feel*, COMM. OF THE ACM, Apr. 1993, at 29 (reviewing several look-and-feel lawsuits regarding user interface design).

288. *Whelan Assocs., Inc. v. Jaslow Dental Lab., Inc.*, 797 F.2d 1222, 1244 (3d Cir. 1986).

289. *Id.* at 1248.

290. *Id.* at 1234.

291. *Id.*

292. *Id.*

293. *Id.* at 1242 n.38 (quoting COPYRIGHT OFFICE CIRCULAR R61 (May 1983)).

294. *Id.*

distinction²⁹⁵ and *Baker* was a case about the merger of idea and expression.²⁹⁶

After concluding that the overall structure of a program was copyright protectable, the Third Circuit set forth a test for distinguishing ideas and expressions in programs that it perceived to be consistent with § 102(b) and *Baker* under which “the purpose or function of a utilitarian work would be the work’s idea, and everything that is not necessary to that purpose or function would be part of the expression of that idea.”²⁹⁷ Because the idea of an efficient program for managing dental lab functions “could be accomplished in a number of different ways with a number of different structures, the structure of the Dentalab program is part of the program’s expression, not its idea.”²⁹⁸ The court also invoked economic arguments for protecting program structure: without copyright protection for more than program code, there would be too little incentive to invest in program development.²⁹⁹

The *Whelan* “test” for software copyright infringement was widely criticized as providing overbroad protection to computer programs, for it conceived of programs as having only one abstract idea each, no matter how complex the program was, it expressly endorsed protecting the overall structure of a program, not just protection of highly detailed structure near the code level, and it suggested that efficient structural elements of programs were protectable by copyright law.³⁰⁰

Judge Robert Keeton, however, followed *Whelan* in the closely watched look-and-feel case of *Lotus Development Corp. v. Paperback Software International*.³⁰¹ Lotus had charged Paperback with infringement because its competing spreadsheet program copied the structure of the “menu command system” of Lotus 1-2-3.³⁰²

295. *Id.* at 1237. See *supra* note 263 and accompanying text for the Third Circuit’s earlier view of § 102(b) in *Apple Computer, Inc. v. Franklin Computer Co.*, 714 F.2d 1240, 1252–53 (3d Cir. 1983).

296. *Whelan*, 797 F.2d at 1235–36.

297. *Id.* at 1236 (emphasis omitted).

298. *Id.* at 1236 n.28.

299. *Id.* at 1237.

300. See, e.g., Donald S. Chisum et al., *Last Frontier Conference Report on Copyright Protection of Computer Software*, 30 JURIMETRICS J. 15, 20 (1989) (criticizing the *Whelan* “test” for restricting “competition more broadly than would be the case even in regard to traditional works of art and literature”); Goldstein, *Infringement*, *supra* note 4, at 1125–26 (arguing that the *Whelan* “test” “reveal[s] a disturbing willingness to give the copyright monopoly a wider scope than it deserves when applied to functional works”); 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, 629–30 (1988) (“Creative development in the software industry may well be stifled by overly broad copyright protection afforded to programs that represent the basic building blocks of a particular field.”); Englund, *supra* note 4, at 881–82 (positing that the *Whelan* “test” might “make it impossible for others to program a computer efficiently to perform the same function or employ the same process”). Efficiency issues are discussed *supra* notes 128–33 and accompanying text and *infra* note 322 and accompanying text.

301. 740 F. Supp. 37 (D. Mass. 1990).

302. *Id.* at 63, 67.

Paperback did not dispute that some program SSO could be protected by copyright law, but argued that a menu command "system" was unprotectable by copyright law under § 102(b).³⁰³ The command terms of 1-2-3 were constituent elements of this system, for consumers could use them to construct macro programs to carry out frequently performed sequences of functions, thereby saving the trouble of retyping the same sequence every time it was used.³⁰⁴ Macros constructed in 1-2-3 could not be executed in an alternative spreadsheet program unless the other program's menu of commands was in exactly the same order as in 1-2-3.³⁰⁵ Paperback argued that copying the menu structure of Lotus 1-2-3 was necessary to achieve compatibility with the Lotus program so that "users [could] transfer spreadsheets created in 1-2-3 to VP-Planner without loss of functionality for any macros in the spreadsheet" and so that firms did not need to retrain users.³⁰⁶

Judge Keeton concurred in *Whelan's* conclusion that *Baker* and § 102(b) should be understood as distinguishing between the unprotectability of abstract ideas and the protectability of expressions.³⁰⁷ He recognized that "the general idea of an electronic spreadsheet" was not protectable by copyright; certain aspects of spreadsheets, such as "the basic spreadsheet display that resembles a rotated 'L'" were, moreover, indispensable parts of spreadsheet programs.³⁰⁸ But like the Third Circuit in *Whelan*, Judge Keeton regarded the existence of alternative arrangements as a key factor in judging whether program SSO was copyright-protectable expression: "[Lotus's] particular expression of a menu structure is not essential to the electronic spreadsheet idea, nor does it merge with the somewhat less abstract idea of a menu structure for an electronic spreadsheet," for such an idea "could be expressed in a great many if not literally unlimited number of ways."³⁰⁹ Because the menu structure was original, an expression rather than an idea, and a substantial part of the Lotus program, Judge Keeton ruled that Paperback's copying constituted infringement.³¹⁰

303. *Id.* at 54-55.

304. *Id.* at 64.

305. Paperback argued that the Lotus menu command structure was a constituent part of the Lotus macrocommand language and pointed to commentary casting doubt on copyright in languages under § 102(b). *Id.* at 72. Judge Keeton disparaged Paperback's "language" argument as a "word game." *Id.* But see, e.g., Elizabeth G. Lowry, Comment, *Copyright Protection for Computer Languages: Creative Incentive or Technological Threat?*, 39 EMORY L.J. 1293 (1990) (arguing that computer languages are uncopyrightable).

306. *Paperback*, 740 F. Supp. at 69.

307. *Id.* at 60-68.

308. *Id.* at 66.

309. *Id.* at 67.

310. *Id.* at 67-68. Judge Keeton adapted the *Whelan* test for software copyright infringement by elaborating on Judge Learned Hand's "patterns of abstraction" methodology for judging whether structural similarities among literary works were at higher or lower levels of abstraction. See *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (discussed in *Paperback*, 740 F. Supp. at 60-62). The *Paperback* test for infringement called for, first, a pattern of abstractions analysis, then, assessing whether idea and expression had merged, and finally, a judgment as to

To Paperback's argument that it had to copy the Lotus command hierarchy because it had become a standard, causing ideas and expressions to merge, Judge Keeton responded that "defendants have flipped copyright on its head. Copyright protection would be perverse if it only protected mundane increments while leaving unprotected as part of the public domain those advancements that are more strikingly innovative."³¹¹ Judge Keeton's opinion embraced and extended the logic of Nimmer's interpretation of *Baker* and § 102(b). Indeed, the Nimmer Declaration was among the many sources that Judge Keeton referenced in his lengthy exposition of copyright as applied to computer programs.³¹²

B. From Altai to Borland: The Resurrection of Baker and § 102(b)

*Computer Associates International, Inc. v. Altai, Inc.*³¹³ was the first appellate decision to challenge *Whelan* and *Paperback*'s interpretation of *Baker* and § 102(b). *Altai* involved a claim of copyright in a particular kind of program SSO, namely, the parameters for enabling programs or program modules to exchange information, which constituted its interfaces.³¹⁴ Relying upon *Whelan*, Computer Associates (CA) claimed that the parameter list was among the structural elements of its program that copyright law protected. *Altai*'s desire to make its program compatible with CA's program was, CA claimed, a commercial objective that had no relevance to the copyright analysis.³¹⁵

The Second Circuit accepted that some nonliteral elements of programs could be protected by copyright law,³¹⁶ but criticized *Whelan* for being grounded in an outdated understanding of computer science and for having adopted an overbroad test for copyright infringement for programs.³¹⁷ The proper "starting point" for cases involving "utilitarian works," such as books on accounting systems and computer programs, was "the seminal case of *Baker v. Selden*."³¹⁸ Under *Baker*, such works enjoy only a thin scope of

whether copied elements that were not essential to every expression of the program's idea made up of a substantial part of the plaintiff's work. See *id.* at 63, 67–68.

311. *Paperback*, 740 F. Supp. at 79.

312. *Id.* at 45.

313. 982 F.2d 693 (2d Cir. 1992).

314. *Id.* at 697–98.

315. CA drew upon dicta from *Franklin* in support of this argument. See *supra* notes 258–66 and accompanying text.

316. *Altai*, 982 F.2d at 702–03.

317. *Id.* at 705–06.

318. *Id.* at 704. *Altai*'s lawyers appended to its appellate brief a copy of a brief amicus curiae of eleven intellectual property professors, which I had written and submitted for Judge Keeton's consideration in the *Lotus v. Borland* case. Brief Amicus Curiae of Copyright Law Professors at 5–8, *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37 (D. Mass. 1990) (No. 90-11662-K) (on file with author). The brief emphasized that *Baker* should be understood as holding that systems, methods of operation, and other functional content embodied in copyrighted works, and

protection from copyright to ensure that the functional aspects of the works are not protected.³¹⁹ *Altai* endorsed what it called “the abstraction-filtration-comparison” test for judging infringement in software copyright cases.³²⁰

This test had three steps. Step 1 called for courts to construct a hierarchy of abstractions for the plaintiff’s program, from the most abstract to the most detailed.³²¹ Step 2 called for a careful assessment of nonliteral elements of the program to consider whether they (a) might be constrained by external factors, such as the hardware or software with which the program had to interoperate, (b) were dictated by efficiency considerations, or (c) embodied standard programming techniques or public domain elements.³²² Nonliteral elements of these sorts had to be filtered out before the infringement analysis began. Step 3 directed courts to compare the “golden nuggets” of expression remaining in the plaintiff’s program after filtration with the nonliteral elements in the defendant’s program.³²³ Based on this comparison, courts should decide whether there was substantial similarity in protected expression that the defendant had copied from the plaintiff.³²⁴ Applying this test, the Second Circuit ruled that *Altai* did not infringe because the parameter list was an external constraint on programmer choices.³²⁵

Altai quickly displaced *Whelan* as the standard case on the proper scope of copyright protection for computer programs.³²⁶ Interestingly enough, the *Altai* test derives from a test proposed by Professor Nimmer’s son David.³²⁷

not just abstract ideas, were beyond the scope of copyright protection; it criticized the *Whelan* and *Paperback* decisions for their unduly narrow interpretations of *Baker* and § 102(b). *Id.*

319. *Altai*, 982 F.2d at 712.

320. *Id.* at 706–07.

321. *Id.* at 707–10.

322. The Second Circuit observed that “[i]n the context of computer program design, the concept of efficiency is akin to deriving the most concise logical proof or formulating the most succinct mathematical computation.” *Id.* at 708. This is why the court repudiated *Whelan*’s embrace of copyright for efficient SSO. For a further discussion of why copyright should not protect efficient program SSO, see, for example, Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045, 1082–88 (1989). Menell proposed that plaintiffs should have to prove not only substantial similarity in program structures, but also that this structure “was inefficient or otherwise did not reflect good programming practice at the time the defendant produced its program.” *Id.* at 1086. Defendants could defend by claiming that they chose the same or a similar structure for efficiency reasons. *Id.* at 1087. Software developers who want legal protection for efficient program SSO should apply for patent protection. *Id.* at 1088. But see Nimmer et al., *supra* note 300, at 641 (recognizing that efficiency considerations may narrow programmer choices under the merger doctrine); Patry, *supra* note 4, at 54 (questioning the conclusion that efficient designs should be excluded from copyright protection).

323. *Altai*, 982 F.2d at 710.

324. *Id.* at 706–12.

325. *Id.* at 714–15.

326. See, e.g., *Borland* Amicus Brief, *supra* note 7, at 121–24 (discussing the influence of *Altai*).

327. See Nimmer et al., *supra* note 300, at 640–49. Although this article did not call its proposed test an “abstraction-filtration-comparison” test, the key elements of what became known as the *Altai* test were embodied in the article. *Id.* at 636–51. These elements were subsequently incorporated into the Nimmer treatise. See 3 NIMMER ON COPYRIGHT, *supra* note 4, § 13.03[F].

Although the *Nimmer-fils* test for software copyright infringement is more compatible with the limiting principles of § 102(b) and with *Baker* and its progeny³²⁸ than the *Nimmer-pere* analysis exemplified by his declaration for IBM, it still does not call for courts to inquire about the meaning of the procedure, process, system, and method of operation limitations of § 102(b), as applied to computer programs or to filter out these elements in the second stage of the *Altai* test for infringement—although Congress expressly intended these elements to be excluded from the scope of program copyrights as well.

The most notable post-*Altai* software copyright decision to have applied the *Baker*-inspired procedure, process, system, and method of operation limitations of § 102(b) was the First Circuit Court of Appeals in *Lotus Development Corp. v. Borland International, Inc.*³²⁹ Lotus sued Borland after it developed a spreadsheet program called Quattro Pro (QP) to compete with Lotus 1-2-3.³³⁰ Unlike Paperback, Borland did not simply “clone” Lotus 1-2-3. QP had a native user interface with a menu command structure different from 1-2-3, but to attract those experienced with 1-2-3 to try QP, Borland, like Paperback, copied the 1-2-3 menu command structure for an emulation mode that enabled reuse in QP of macros constructed in 1-2-3.³³¹ Borland argued that the Lotus menu command structure was an unprotectable functional system or method under *Baker* and § 102(b) because the hierarchy was indispensable to users’ ability to construct compatible macros for commonly used sequences of operations.³³² The First Circuit, invoking § 102(b) and *Baker*, decided that Lotus’s command hierarchy was an unprotectable method of operating a computer to perform spreadsheet functions.³³³

The First Circuit’s discussion of § 102(b) as applied to the Lotus command structure was not particularly well developed or compelling.³³⁴ A

The Second Circuit relied upon this section of the treatise as support for adopting this new test for infringement in its *Altai* opinion. *Altai*, 982 F.2d at 707.

328. Nimmer et al., *supra* note 300, at 626; 3 NIMMER ON COPYRIGHT, *supra* note 4, § 13.03[F]. The treatise, for example, recognizes that program designs may be constrained by external factors such as the need to interoperate with preexisting programs or hardware. *Id.* This is consistent with the holding of *Taylor*, discussed *supra* notes 95–108 and accompanying text.

329. 49 F.3d 807 (1st Cir. 1995).

330. *See id.* at 810 (explaining that by developing Quattro, Borland wanted “to develop a spreadsheet program far superior to existing programs, including Lotus 1-2-3”).

331. *Id.*

332. *Id.* at 812–14.

333. *Id.* at 815–17. The main policy concern raised by the First Circuit in *Borland* was with the investments users had made in macros developed with the Lotus macro system. *Id.* at 818. Users of a program should not have to rewrite the macros they had constructed in 1-2-3 when they use another program. Extending copyright protection to macro systems would impede not only user reuse of their own macros but their ability to exchange macros and spreadsheets with their macros with others.

334. *See, e.g.,* Mark A. Lemley, *Convergence in the Law of Software Copyright?*, 10 HIGH TECH. L.J. 1, 21–22 (1995) (criticizing the reasoning in *Borland*, although persuaded by the result); Patry, *supra* note 4, at 4–8 (criticizing the First Circuit’s reasoning in *Borland*); Weinreb, *supra*

more persuasive analysis could have built on Judge Keeton's observation in *Paperback* that "the exact hierarchy [of 1-2-3]—or structure, sequence, and organization—of the menu system is a fundamental part of the functionality of the macros."³³⁵ If the menu command structure is an integral part of the functionality of a macro system, it should be beyond the scope of copyright protection in the program that embodies it.³³⁶ Recognizing the macro system and its constituent parts as unprotectable by copyright law would have enabled the First Circuit to draw more usefully upon *Altai* as support for Borland's compatibility defense and upon *Baker* and its progeny. The First Circuit could usefully have invoked several policies articulated in *Baker*, including freedom for subsequent authors (e.g., Borland) to build on top of preexisting functional works, freedom of users to employ the practical art that a first author devised (e.g., the macro functionality), interests in promoting ongoing innovation (given that Borland's product was an award-winning advance in the spreadsheet software market), and interests of competition (for Lotus then held a monopoly position in the spreadsheet software market in substantial part because of users' investment in macros, a monopoly it had a good chance to maintain as long as other spreadsheet developers could not offer an emulation mode enabling reuse of already constructed macros).

Lotus petitioned the Supreme Court for a writ of certiorari to review the *Borland* ruling, arguing, among other things, that courts should not take the words of § 102(b), such as "system" and "method of operation," literally because literalism would logically preclude copyright protection for programs, notwithstanding Congress's clear intent to extend copyright protection to programs.³³⁷ Section 102(b) was merely "the legislative embodiment of the idea/expression dichotomy."³³⁸ Since the Lotus menu structure was "not dictated by functionality," Lotus argued that Judge Keeton had correctly held it to be protectable expression.³³⁹ Lotus relied upon the

note 4, at 1207 ("The short way with the statute that the court of appeals took in *Borland* is too short to be satisfactory."); Bocchino, *supra* note 4, at 467 ("[The First Circuit] failed to provide a coherent theoretical justification for its result.").

335. *Lotus Dev. Corp. v. Paperback Software Int'l*, 740 F. Supp. 37, 65 (D. Mass. 1990).

336. See, e.g., Pamela Samuelson, *Computer Programs, User Interfaces, and Section 102(b) of the Copyright Act of 1976: A Critique of Lotus v. Paperback*, 55 LAW & CONTEMP. PROBS., Spring 1992, at 311, 332–37 (arguing that the menu structure in *Paperback* was a constituent element of the Lotus macro system that was ineligible for copyright protection under *Baker* and § 102(b)); see also *The Nature of Copyright Analysis for Computer Programs: Copyright Law Professors' Brief Amicus Curiae in Lotus v. Borland*, 16 HASTINGS COMM. & ENT. L.J. 657 (1994) (reprinting a brief to the First Circuit that emphasizes that *Baker* and § 102(b) requires exclusion of systems from copyright protection).

337. Petitioner's Reply in Support of Petition for a Writ of Certiorari, *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 516 U.S. 233 (1996) (No. 94-2003), 1995 WL 17108009, at *4–5 [hereinafter *Lotus's Reply*].

338. *Id.* at *4 (citing Brief in Opposition to Petition, *Lotus*, 516 U.S. 233 (No. 94-2003), 1995 WL 17108008, at *18) (emphasis omitted).

339. *Id.* at *6 (emphasis omitted).

Nimmer Declaration in the bygone *IBM* case as authority in support of its interpretation of the scope of software copyright protection.³⁴⁰

Although the Court granted Lotus's petition, it deadlocked on the issue presented, affirming the First Circuit ruling without setting a precedent.³⁴¹ Since then, courts have adhered to the *Altai* approach,³⁴² sometimes adapting its test to filter out unprotectable procedures, processes, systems, and methods of operation.³⁴³ The emergence of *Altai* as the standard framework for analyzing software copyright claims caused many software developers to recognize that if they wanted legal protection for functional design elements of programs, such as program SSO, they needed to apply for patents, as indeed they have.³⁴⁴ "The availability of the patent option," as Professor Lemley has noted, "affects virtually all cases involving non-literal infringement. . . . [T]he existence of software patents should make courts less willing to extend the coverage of copyright law to ideas and functional elements of programs, and more willing to engage in a strict filtration analysis."³⁴⁵ As the Court in *Baker* warned more than a century and a quarter ago, courts should be careful to ensure that copyright protection for functional writings is not used to get patent-like protection for technical innovations that might qualify for, but have not met, patent standards.³⁴⁶

340. *Id.* at *1.

341. *Lotus*, 516 U.S. 233. Justice Stevens recused himself. The other members of the Court divided 4-4.

342. As of October 23, 2006, *Altai* has been followed in forty-nine subsequent cases.

343. See, e.g., *Gates Rubber Co. v. Bando Chem. Indus., Ltd.*, 9 F.3d 823, 836 (10th Cir. 1993) (filtering out similarities in algorithms as precluded by § 102(b)). Professor Lemley has argued that *Borland* should be understood to have added another element to the *Altai* filtration step, namely, the filtering out of methods and systems. Lemley, *supra* note 334, at 27.

344. See, e.g., Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 TEXAS L. REV. 961, 972 (2005) ("[M]any of the leading firms now have large numbers of patents."); Josh Lerner & Feng Zhu, *What is the Impact of Software Patent Shifts?: Evidence from Lotus v. Borland 10* (Nat'l Bureau of Econ. Research, Working Paper No. 11168, 2005), available at <http://www.nber.org/papers/w11168> (presenting data on software patents). While I agree with Lerner and Zhu that software patenting rose substantially after *Borland*, the shift toward patents is probably not attributable to *Borland*. *Altai* was the more significant decision. *Borland* was the last stand for a *Whelan*-like broad protection for program SSO. After *Lotus* was unable to persuade the Court to overrule the First Circuit, it became clear that thin protection for programs was likely to remain the rule, as indeed it has.

345. Lemley, *supra* note 334, at 27; see also Dennis S. Karjala, *The Relative Roles of Patent and Copyright in the Protection of Computer Programs*, 17 JOHN MARSHALL J. COMPUTER & INFO. L. 41, 66-69 (1998) (arguing that because of the largely functional nature of program SSO, it should be eligible for patent, not copyright, protection).

346. The danger that copyright for programs might be misused to get patent-like protection was recognized in *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1527-28 (9th Cir. 1992). *Sega* considered whether reverse engineering of program code for purposes such as getting access to functional design elements, such as interfaces, was fair use. *Id.* at 1514. The court observed that "[i]f disassembly of copyrighted object code is *per se* an unfair use, the owner of the copyright gains a *de facto* monopoly over the functional aspects of his work—aspects that were expressly denied copyright protection by Congress," citing § 102(b). *Id.* at 1526. The court went on to say that "to enjoy a lawful monopoly over the idea or functional principle underlying a work, the creator of the work must satisfy the more stringent standards imposed by the patent laws." *Id.* The Ninth

V. Conclusion

Copyright does and should protect the language that authors use to explain, describe, or otherwise express themselves in original works of authorship. Yet, limiting the scope of copyright protection, as *Baker*, its progeny, and § 102(b) require, promotes authorship and the ongoing creation and dissemination of knowledge by ensuring that all are free to reuse abstractions, such as ideas, concepts, and principles, as well as more complex and detailed intellectual innovations, such as useful systems and methods, that are unpatented and embodied in copyrighted works. Section 102 codifies the positive vision in *Baker* as to both what copyright protects, in § 102(a), and what it does not protect, in § 102(b).

This Article has shown that the Nimmer treatise interpretation of *Baker* and § 102(b) as restatements of the distinction between abstract ideas and expressions is not only erroneous on its face, but inconsistent with the legislative history of the 1976 Act. The Nimmer treatise should no longer be given deference in any case calling for an interpretation of *Baker* or § 102(b). Courts in the early round of software copyright cases mistakenly gave overbroad protection to computer programs in part because they followed Nimmer's interpretation of *Baker* and § 102(b). Fortunately, subsequent decisions rediscovered the wisdom of *Baker*'s limitations on the scope of copyright and set the stage for a wider role for § 102(b) in the software copyright case law and beyond.

Outside of the software case law, the broader implications of *Baker* and § 102(b) have not yet been fully recognized. In true literary work cases (that is, cases about novels, plays, and nonfictional texts), courts continue to cite *Baker* for the distinction between abstract ideas and expressions.³⁴⁷ This has not had harmful effects because such works generally do not contain functional elements as to which *Baker* and the procedure, process, system, and method of operation limitations of § 102(b) apply. Nimmer's erroneously narrow interpretation of *Baker* and § 102(b) has, however, had distorting effects in some cases, such as those involving methods of organizing information,³⁴⁸ parts numbering systems,³⁴⁹ and coding systems.³⁵⁰ Complex

Circuit agreed with *Altai* that functional works such as computer programs and those describing bookkeeping systems were entitled, as *Baker* had long ago held, to only thin protection from copyright law. *Id.* at 1524.

347. See, e.g., *Gibson v. CBS, Inc.*, 491 F. Supp. 583, 584 (S.D.N.Y. 1980) (alleging that a television show infringed the copyright in a lecture); *Miller v. CBS, Inc.*, 209 U.S.P.Q. (BNA) 502, 507 (C.D. Cal. 1980) (alleging that a television show infringed the copyright in a book).

348. See, e.g., *Kregos v. Associated Press*, 937 F.2d 700, 706 (2d Cir. 1991) (upholding a claim of copyright in a blank form for predicting the outcome of baseball games consisting of nine categories of information about prior games and player performance). The AP argued that the Kregos form was an unprotectable blank form under *Baker*, that the form implemented a method or system of predicting outcomes, and that the form's expression and idea had merged. *Id.* at 706, 708. The Second Circuit rejected these defenses, citing to Nimmer and characterizing *Baker* as invalidating copyrights only for "hard" methods, not "soft" ones like Kregos's that merely suggested outcomes of games. *Id.* at 708, 709. The court cited no case in support of its assertion

information innovations of these sorts are as beyond the scope of copyright protection under § 102(b) as functional designs depicted in drawings of machines or bridges are under § 113(b).³⁵¹ As the Court in *Baker* said long ago, the principle is the same in all.³⁵² Copyright protection does not extend to systems, processes, or other useful arts in copyrighted works “regardless of the form in which [they are] described, explained, illustrated, or embodied in such work[s].”³⁵³

that soft methods qualify for copyright protection. *Kregos* is inconsistent with *Baker* and its progeny, including the game cases discussed *supra* subpart I(D).

349. See *Toro Co. v. R & R Prods. Co.*, 787 F.2d 1208, 1212 (8th Cir. 1986) (“All that the idea/expression dichotomy embodied in § 102(b) means in the parts numbering system context is that appellant could not copyright the idea of using numbers to designate replacement parts. Section 102(b) does not answer the question of whether appellant’s particular expression of that idea is copyrightable.”). The Eighth Circuit ultimately affirmed a lower court ruling in *R & R*’s favor after finding *Toro*’s parts numbering system to lack originality because numbers were assigned randomly. *Id.* at 1213. It should have rejected *Toro*’s claim on § 102(b) grounds. See *ATC Distribution Group, Inc. v. Whatever It Takes Transmission & Parts, Inc.*, 402 F.3d 700, 707 (6th Cir. 2005) (rejecting the claim of a copyright in a part numbering system); *Southco, Inc. v. Kanebridge Corp.*, 390 F.3d 276, 282 (3d Cir. 2004) (same).

350. *Am. Dental Ass’n v. Delta Dental Plan*, 126 F.3d 977, 980–81 (7th Cir. 1997); *Practice Mgmt. Info. Corp. v. Am. Med. Ass’n*, 121 F.3d 516, 518–19 (9th Cir. 1997). Elsewhere I have questioned the holdings in *Practical Management* and *American Dental* upholding claims of copyrights in coding systems for standardized names and numbers of medical or dental procedures, arguing that they are contrary to *Baker*, a proper understanding of § 102(b), and the *ATC* and *Southco* decisions. See Samuelson, *supra* note 138, at 213–15.

351. Cf. 17 U.S.C. § 113(b) (2000) (“This title does not afford, to the owner of copyright in a work that portrays a useful article as such, any greater or lesser rights with respect to the making, distribution, or display of the useful article so portrayed than those afforded to such works under the law . . .”). The significance of the competing interpretations of *Baker* and § 102(b) beyond the software cases is easily illustrated. Under Nimmer’s interpretation of *Baker* and § 102(b), parts numbering systems are protectable expression as long as the numbering scheme was original—in the sense that it owed its origin to the person claiming to be its author and reflected a modicum of creativity—and was one of several alternative ways to express part numbers. See, e.g., *ATC*, 402 F.3d at 707–08 (applying this originality test to a parts numbering system for transmission parts and then requiring more than one way to express the idea, in order to prevent the expression of the idea from being as uncopyrightable as the idea itself under the merger doctrine). Under the interpretation of *Baker* and § 102(b) offered in this Article, parts numbering systems are unprotectable by copyright law because they exemplify the systems excluded from protection under § 102(b). See, e.g., *id.* at 707–10 (invoking § 102(b) in rejecting copyright claims in a parts numbering system); *Southco*, 390 F.3d at 281–85 (invoking § 102(b) in rejecting copyright claims in a parts numbering system for hardware). From a copyright policy standpoint, this is a sound result because these manufacturers are not competitors in the sale of catalogs, but rather in the sale of machine parts. Competitors who utilize the same numbering system are likely doing so to inform consumers about the availability of alternative sources of supply for machine parts. Denying copyright protection for parts numbering systems promotes robust competition in the market for machine parts. See Karjala, *supra* note 4, at 43 (pointing out that, where the form and design of one of the interlocking parts of modern technology are only partially determined by function, protection of a particular form and design would give a long-term semimonopoly to the first manufacturer to gain widespread public acceptance, because of the inconvenience of noninterchangeability).

352. See *Baker v. Selden*, 101 U.S. 99, 105 (1880) (finding that copyright protection does not extend to useful arts described in copyrighted works).

353. 17 U.S.C. § 102(b).

It is encouraging that some courts that take a narrow view of *Baker* and § 102(b) have nonetheless reached sound results by other doctrinal means. The Eighth Circuit, for instance, rejected a copyright claim in a parts numbering system because the numbers were randomly assigned to particular parts and therefore lacked originality.³⁵⁴ But this decision may only have encouraged subsequent part numbering system developers to become more creative in assigning numbers to parts in order to strengthen their copyright claims.³⁵⁵ Faced with creative part numbering schemes, two recent decisions have denied copyright claims in them by invoking § 102(b).³⁵⁶

Some courts have employed the scenes a faire or merger doctrines in order to limit the scope of copyright protection in cases involving complex functional designs in copyrighted works. In *Mitel, Inc. v. Iqtel, Inc.*,³⁵⁷ for example, the Tenth Circuit decided that Mitel's command codes for its technology to enhance the utility of telephone systems were unprotectable by copyright law on scenes a faire and lack of originality grounds.³⁵⁸ This was the right result, as a matter of copyright law, but technological command codes have nothing whatsoever to do with the standard features of literary genres that gave rise to the scenes a faire doctrine, and they exhibited a modicum of creativity. Nor was the merger doctrine a logical way to reach this result given that this doctrine limits the scope of copyright when there is no other way to express an idea. Iqtel not only could have, but indeed did, develop its own call controller commands, but concluded that "it could compete with Mitel only if its IQ200+ controller were compatible with Mitel's controller."³⁵⁹ While it is better to stretch the scenes a faire and merger doctrines to exclude from copyright a systematic collection of information selected and arranged to achieve functional ends, a far simpler and more straightforward way to get to the same result is to say that systematic assemblages of information such as specifications of interfaces necessary to achieve interoperability are unprotectable under § 102(b) and *Baker's* progeny, such as *Taylor*.

Without a richer conception of what § 102(b) excludes from copyright protection and why such exclusions are sound, there is a serious risk that courts will construe the scope of copyright too broadly, as in *Open Source*

354. *Toro*, 787 F.2d at 12–13.

355. Although the Third Circuit eventually ruled against copyright for a more creative assignment of part numbers in *Southco*, 390 F.3d at 282–85, the court was deeply split over what seems to be a straightforward application of § 102(b) seemingly because of the influence of Nimmer's misinterpretation of *Baker*.

356. *ATC*, 402 F.3d at 707; *Southco*, 390 F.3d at 282.

357. 124 F.3d 1366 (10th Cir. 1997). The Tenth Circuit rejected the trial court's *Borland*-inspired ruling that the command set constituted an unprotectable method of operating a computer program. *Id.* at 1371–72.

358. *Id.* at 1373–76.

359. *Id.* at 1369.

Yoga Unity v. Choudhury,³⁶⁰ which denied a defense motion for summary judgment that a sequence of yoga poses was beyond the scope of copyright protection.³⁶¹ The originality requirement, the abstract idea/expression distinction, and the scenes a faire and merger doctrines did not give the judge a sufficient tool kit for excluding a functional sequence of yoga poses from the scope of copyright. The need for a broader conception of § 102(b) is particularly important given that engineering techniques are increasingly being used to design and implement documents and document exchanges.³⁶² Many firms are developing XML schemas, for example, to encode document exchange protocols.³⁶³ XML schemas require a modicum of creativity to develop and are generally fixed in a tangible medium, but they are also systematic designs for document interfaces, which under *Altai* would seem to be excluded from copyright protection.³⁶⁴ Some firms, moreover, are patenting XML schemas.³⁶⁵ While no litigation has yet erupted about intellectual property rights in XML schemas, they exemplify the kinds of complex and detailed information innovations that courts may have to decide fall within the bounds of copyright or outside of it.

Developing a more robust tool kit for limiting the scope of copyright protection that includes § 102(b) is important for many reasons, including preserving the public domain, promoting the ongoing creation and dissemination of knowledge, stimulating competition and innovation in the marketplace, and maintaining a proper balance between the rights of authors and the rights of the public in intellectual property law.

360. 74 U.S.P.Q.2d (BNA) 1434 (N.D. Cal. 2005).

361. Compare *id.* at 1436–38 (denying plaintiff’s motion for summary judgment), with Katherine Machan, *Bending Over Backwards for Copyright Protection: Bikram Yoga and the Quest for Federal Copyright Protection of an Asana Sequence*, 12 UCLA ENT. L. REV. 29, 53–54 (2004) (explaining that the functionality of Bikram yoga sequences should exclude them from copyright protection).

362. See generally, ROBERT J. GLUSHKO & TIM MCGRATH, DOCUMENT ENGINEERING: ANALYZING AND DESIGNING DOCUMENTS FOR BUSINESS INFORMATICS & WEB SERVICES 32–37 (2005) (introducing the concept of document engineering and explaining how it is being used to design document models and use them for exchanges).

363. E.g., Cover Pages, XML Schemas, <http://xml.coverpages.org/schemas.html> (last modified Nov. 30, 2006).

364. See, e.g., Douglas E. Phillips, *XML Schemas and Computer Language Copyright: Filling in the Blanks in Blank Esperanto*, 9 J. INTELL. PROP. L. 63, 76–78, 83, 105–07 (2001) (arguing against copyright protection for XML schemas, in part because of the systematic nature of their designs). But see Trotter Hardy, *The Copyrightability of New Works of Authorship: “XML Schemas” as an Example*, 38 HOUS. L. REV. 855, 911–18 (2001) (arguing in favor of copyright protection for XML schemas, relying on the narrow interpretation of *Baker* and § 102(b)).

365. See, e.g., Microsoft Corp., XML Paper Specification Patent License (Feb. 17, 2006), available at <http://www.microsoft.com/whdc/xps/xpspatentlic.mspx>.