

# Why Copyright Law Excludes Systems and Processes From Its Scope of Protection

by

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## Introduction

Section 102 is one of the few elegant and concise provisions of the Copyright Act of 1976 ('76 Act).<sup>1</sup> Section 102(a) sets forth the subject matter eligible for copyright protection. "Copyright subsists," it says, "in original works of authorship fixed in any tangible medium of expression...."<sup>2</sup> Nicely complementing this provision is its statutory cousin, section 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."<sup>3</sup> 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.<sup>4</sup> Most often, courts

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<sup>1</sup> Pub. L. No. 94-553, 90 Stat. 2541 (1976), now codified at 17 U.S.C. sec. 101 et seq. The inelegance of the '76 Act, especially as amended is discussed in JESSICA LITMAN, *DIGITAL COPYRIGHT* (2000).

<sup>2</sup> 17 U.S.C. sec. 102(a). Section 102(a) is discussed in Part II.

<sup>3</sup> 17 U.S.C. sec. 102(b). Previous copyright statutes had no counterpart to this provision. The caselaw origins of the 102(b) exclusions are discussed in Part I and the legislative history of 102(b) in Part II.

<sup>4</sup> Caselaw interpreting 102(b) is discussed in Parts IV and V. The software copyright literature has sometimes explored the implications of 102(b) for non-literal elements of programs, such as structure and organization. See, e.g., Stephen R. Englund, Note, *Idea, Process or Protected Expression? Determining*

and commentators have characterized 102(b) as a codification of the so-called “idea/expression dichotomy,” that is, the longstanding copyright principle that this law protects authors against illicit appropriations of expressive aspects of their works, although not of the ideas the works contain.<sup>5</sup> (This article will call this the “idea/expression distinction.”<sup>6</sup>) Others have described 102(b) as a codification of the Supreme Court’s 1880 decision in *Baker v. Selden*,<sup>7</sup> 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.

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*the Scope of Copyright Protection for the Structure of Computer Programs*, 88 Mich. L. Rev. 866 (1990). Much of this literature has asserted that the strictures of 102(b) means 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 (1985); Dennis S. Karjala, *Copyright, Computer Software, and the New Protectionism*, 28 Jurimetrics J. 33 (1987); Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 Colum. L. Rev. 2308, 2351 (1994); Lloyd L. Weinreb, *Copyright for Functional Expression*, 111 Harv. L. Rev. 1149, 1250 (1998). Some commentators have been skeptical of the “thin” protection doctrine, although without close analysis of 102(b) either. 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)(critical of “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)(critical of “thin scope” decisions).

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* sec. 2.3 (2002); 1 MELVILLE B. NIMMER & DAVID NIMMER, *NIMMER ON COPYRIGHT* secs. 2.03, 2.18 (2006) (cited hereafter as “Nimmer”). Also not much discussed is whether the exclusions in 102(b) should be understood as illustrative or exhaustive. Cf. Patry, *supra*, 36-37 (suggesting eight words are exhaustive); Robert L. Bocchino, Jr., Note: *Computers, Copyright and Functionality: The First Circuit’s Decision in Lotus Dev. Corp. v. Borland Int’l, Inc.*, 9 Harv. J. L. & Tech. 467, 467 (1996)(suggesting eight words are illustrative rather than exhaustive, but also suggesting the eight words should not be given “too much significance”).<sup>5</sup> See, e.g., Goldstein, *supra* note 4, at 2.3; Nimmer, *supra* note 4, at 2.03, 2.18. Patry believes that 102(b) is unnecessary because the originality requirement can adequately deal with scope of protection issues. See Patry, *supra* note xx, at 36-37.

<sup>6</sup> 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. See WEBSTER’S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE, COLLEGE EDITION 406, 425 (1963). 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.

<sup>7</sup> 101 U.S. 99 (1880). *Baker* is discussed at length in Part I-B. Among the sources endorsing 102(b) as a codification of *Baker* are Goldstein, *supra* note 4, at 1124; *Brief Amicus Curiae of Copyright Law Professors in Lotus Development Corp. v. Borland Int’l, Inc.* (Brief to U.S. Supreme Court), 3 J. Intell. Prop. L. 103, 116 (1995) (section 102(b) codified *Baker*) (hereafter “Borland Amicus Brief”). See also Pamela Samuelson, *Baker v. Selden: Sharpening the Distinction Between Authorship and Invention in INTELLECTUAL PROPERTY STORIES* (Jane C. Ginsburg and Rochelle Cooper Dreyfuss, eds. 2006) (cited hereafter as “Baker Story”) at 180.

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.<sup>8</sup> That is, “idea” is a metaphor for that which is unprotectable by copyright law besides abstract ideas, and “expression” is a metaphor for that which is within the scope of copyright protection beyond the exact words of a text, notes of a musical score, or lines of a drawing.<sup>9</sup> While this metaphorical approach has some appeal, it has two disadvantages: first, that the metaphor of “idea” may be construed too narrowly, as Professor Melville Nimmer, the now deceased author of a widely cited treatise on copyright law, has done,<sup>10</sup> and second, that it distracts readers from paying attention to the other seven words of exclusion 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 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. An alternative that has been embraced by some is to create multiple distinctions such as the “fact/expression” distinction or the “process/expression” distinction.<sup>11</sup>

Part I begins by demonstrating that the Supreme Court’s decision in *Baker* did not, as has often been asserted, originate the idea/expression distinction. *Baker*’s principal holding was that complex intellectual creations in the useful arts, such as

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<sup>8</sup> Goldstein, *supra* note xx, at 2.3.1.

<sup>9</sup> See e.g., *Nichols v. Universal Pictures Corp.*, 45 F.3d 119, xx (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 variation.”)

<sup>10</sup> See *infra* notes xx and accompanying texts.

<sup>11</sup> See, e.g., EDWARD SAMUELS, *THE ILLUSTRATED STORY OF COPYRIGHT 187-88*(2000) (discussing fact/expression distinction), available at <http://www.edwardsamuels.com/illustratedstory/isc8.htm>; Englund, *supra* note xx, at 868 (discussing the process/expression distinction).

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 offering rationales for limiting the scope of copyright in this way. *Baker* and its progeny constitute the principal caselaw foundations for the exclusions embedded in 102(b).

Part II explores the legislative history that led to inclusion of 102(b) in the copyright revision bills and ultimately in the '76 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*<sup>12</sup> 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 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 Nimmer's misinterpretation of *Baker* and construed the scope of copyright protection for programs

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<sup>12</sup> 347 U.S. 201 (1954).

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.<sup>13</sup> This Part will discuss the copyright caselaw 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* is often cited for the proposition that copyright law protects expression,

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<sup>13</sup> See *infra* notes xx and accompanying text.

not ideas, and is sometimes even identified as the origin of this distinction,<sup>14</sup> an historian might question this conception of *Baker* for at least four reasons.<sup>15</sup>

First, commentary and caselaw 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."<sup>16</sup> Literary property can only lie, it opined, "in the intellectual creation which is embodied in [] language."<sup>17</sup> *Pike v. Nicholas*, a well-known 1870 English case, typifies the caselaw 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

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<sup>14</sup> 101 U.S. 99 (1879). See, e.g., *Whelan Associates, Inc. v. Jaslow Dental Labs Corp.*, 797 F.2d 1222, 1234-35 (3d Cir. 1983) (crediting *Baker* as the first enunciator of the idea/expression distinction); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1253 (3d Cir. 1983), and other cases discussed infra in Part IV. Among the commentators who have similarly credited *Baker* as the origin of this distinction are John Cady, *Copyrighting Computer Programs: Distinguishing Expression From Ideas*, 22 *Temple Env'tl. L. & Tech. L.J.* 15, 18 (2003).

<sup>15</sup> *Baker Story*, supra note xx, at 181-92 (discussing eight major doctrines of copyright law that have flowed from *Baker*, four of which have been codified in the '76 Act or federal regulations).

<sup>16</sup> See EATON S. DRONE, *A TREATISE ON THE LAW OF PROPERTY IN INTELLECTUAL PRODUCTIONS* 98 (1879) (citing cases). See also BENJAMIN KAPLAN, *AN UNHURRIED VIEW OF COPYRIGHT* 31-32 (1967) (by the mid-19<sup>th</sup> century "'idea[s] [had] long [been] supposed to be outside copyright protection"); J.H. Reichman, *Computer Programs as Applied Scientific Knowhow: Implications of Copyright Protection for Commercialized University Research*, 42 *Vand. L. Rev.* 639, 693 n. 288 (1989) ("the idea/expression distinction dates back to the earliest origins of both domestic and foreign copyright law"). In the mid-19<sup>th</sup> century, the caselaw often considered whether the similarities in the plaintiffs' and defendants' works were attributable to common subjects, common sources, and/or common themes. See Drone, supra, at 416.

<sup>17</sup> Drone, supra note xx, at 205. See also *Perris v. Hexamer*, 99 U.S. 674 (1879) (ruling that a map maker did not infringe another map maker's copyright when it used substantially the same symbol system for a similar map of a different city, saying that the complainants had "no more an exclusive right to use [these symbols] 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.")

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.”<sup>18</sup> There was no infringement because Pike was unable to show that “there were substantial passages either actually copied, or copied with merely colorable alteration.”<sup>19</sup>

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 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.”<sup>20</sup> 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.”<sup>21</sup> In both contexts, the Court was trying to convey

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<sup>18</sup> 5 Ch. App. 251 (1870). See also *Sayre v. Moore*, 1 East 361, 362, 102 Eng. Rep. 139, 140 (KB 1785) (copyright “guards against the piracy of the words...; but it does not prohibit writing on the same subject” so the question is whether the defendant’s work is “a servile imitation”); *Jeffreys v. Boosey*, 4 H.L.C. 815, 10 Eng. Rep. 681 (1854) (Erle, J.: “the subject of property is the order of words in the author’s composition...no[t] the ideas expressed by those words”); *Kendrick & Co. v. Lawrence & Co.*, 25 Q.B. 99 (1890)(copyright in drawing to show illiterate voters how to cast a vote was not infringed by similar drawing for sale to voting officials; copyright did not protect the idea in this drawing; infringement would occur only if there was literal reproduction of the drawing).

<sup>19</sup> *Pike v. Nicholas*, 5 Ch. App. at xx.

<sup>20</sup> *Baker*, 101 U.S. at 103. 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.

<sup>21</sup> *Id.* at 104.

that useful arts embodied in copyrighted works are not within its scope of protection, not that abstract ideas and concepts were unprotectable.<sup>22</sup>

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” (22 uses), “method” (8 uses), and “art” (which in context meant “useful art,” 32 uses) to identify innovations that copyright law did not protect, although patent law might,<sup>23</sup> and “explain/explanation” (14 uses), “describe/description” (12 uses), and “illustrate/illustration” (22 uses) to indicate what copyright law did protect.<sup>24</sup>

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.<sup>25</sup> During this period, *Baker* was most frequently cited for the proposition that blank forms,<sup>26</sup> methods of doing

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<sup>22</sup> 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 102. See *supra* note xx and accompanying text for the full text of this quotation.

<sup>23</sup> *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 *supra* note xx and accompanying text regarding the inclusion of discovery in 102(b).

<sup>24</sup> 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 or illustrated.

<sup>25</sup> 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 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.”) Following this, the court cited *Baker*. See also *Nutt v. National Institute for the Improvement of Memory*, 31 F.2d 326 236, 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 xx and accompanying text for a discussion of *Mazer* and *Nimmer*’s interpretation of *Baker* in light of *Mazer*.

<sup>26</sup> See, e.g., *Brown Instrument Co. v. Warner*, 161 F.2d 910 (D.C. Cir. 1947)(upholding denial of register charts used to record data); *Taylor Instrument Co. v. Fawley-Brost Co.*, 139 F.2d 98 (7<sup>th</sup> Cir. 1943)(no copyright in charts used to record data).

business,<sup>27</sup> systems embodied in copyrighted works,<sup>28</sup> and useful arts depicted in copyrighted pamphlets or drawings were beyond the scope of copyright protection.<sup>29</sup>

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 should 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.<sup>30</sup> Professor Goldstein states that “[t]he reason for withholding copyright 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.”<sup>31</sup> Justice Brandeis once famously observed that “[a]n author’s theories, suggestions, and speculations,” as well the “knowledge, truths, ideas, or emotions which the composition expresses”<sup>32</sup> were legally unprotectable as fundamental building blocks of new knowledge.<sup>33</sup>

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.<sup>34</sup> Freeing abstract ideas and concepts from

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<sup>27</sup> See, e.g., *Gaye v. Cillis*, 167 F. 416, 418 (D. Mass. 1958)(copyright defendant was free to adopt same method of doing business).

<sup>28</sup> The caselaw 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 *Baker Story*, supra note xx.

<sup>29</sup> See, e.g., *Muller v. Triborough Bridge Authority*, 43 F. Supp. 298 (S.D.N.Y. 1942)(copyright in drawing did not extend protection to bridge approach); *Fulmer v. United States*, 103 F. Supp. 1021 (Ct. Cl. 1952) (copyright in drawing did not protect parachute design).

<sup>30</sup> See, e.g., Goldstein, sec. 2.3.1.1.

<sup>31</sup> *Id.*

<sup>32</sup> *International News Service v. Associated Press*, 248 U.S. 215, 254-55 (1918). Brandeis also considered facts, information, know-how, data, and news to be equally unprotectable.

<sup>33</sup> See, e.g., *Feist Pub. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991). See Jessica Litman, *After Feist*, 17 U. Dayton L. Rev. 607 (1992)(emphasizing the building-block rationale for excluding facts from the scope of copyright).

<sup>34</sup> See, e.g., *Harper & Row Pub. v. Nation Ent.*, 471 U.S. 539, 556-57 (1985).

copyright's constraints advances freedom of speech and expression interests of subsequent authors and of users of protected works.<sup>35</sup> Drawing upon cases endorsing this principle, some scholars have argued that ideas and concepts are among the aspects of copyrighted works which belong in a constitutionally protected public domain.<sup>36</sup> Indeed, both copyright and patent laws exclude abstract ideas, concepts, and principles from the scopes of their protections.<sup>37</sup>

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 that *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."<sup>38</sup> The book consisted of a short preface

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<sup>35</sup> 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.

<sup>36</sup> 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.

<sup>37</sup> See, e.g., *LeRoy v. Tatum*, 55 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"); *O'Reilly v. Morse*, 56 U.S. 62, 113 (1854)(abstract ideas not patentable); *Gottschalk v. Benson*, 409 U.S. 63, 71 (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.").

<sup>38</sup> *Baker*, 101 U.S. at 100. 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.

and approximately 20 pages of forms that illustrated, through sample entries, how to use this “peculiar” system for keeping books of accounts.<sup>39</sup> 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.<sup>40</sup> 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.

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government accounts. Baker Story, *supra* note xx, at 169, n. 77. Other details about Selden and his books in this and succeeding paragraphs are drawn from the Baker Story, *id.* at 159-80.

<sup>39</sup> One of Selden’s books is available in the rare book section of the Library of Congress. It is about 25 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.

<sup>40</sup> The contested Baker and Selden forms can be found *id.* at 170-71.

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."<sup>41</sup> 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."<sup>42</sup> By May 1865, Selden had entered into a contract with Hamilton County under which he would be paid \$800 a year for ten years for granting the County rights to use his system; Selden also believed he was about to sell a version of his system to the U.S. Treasury.<sup>43</sup> Anticipating a large volume of additional sales, he ordered a substantial number of copies to be printed. Unfortunately, the Treasury deal fell through, and his books did not sell as well as he hoped. 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.<sup>44</sup>

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.<sup>45</sup> The article mentioned that more than forty Ohio counties and a number of private businesses were Baker's customers. Because of these similarities and because Selden had at one time instructed Baker in the use of his

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<sup>41</sup> Id. at 160, quoting from the Supreme Court Record in *Baker v. Selden* (hereafter "Record") at 21.

<sup>42</sup> Baker Story, supra note xx, at 160-61, quoting Record, supra note xx, at 21.

<sup>43</sup> Baker Story, supra note xx, at 159-60.

<sup>44</sup> Id. at 162.

<sup>45</sup> Id.

system,<sup>46</sup> Selden's widow sued Baker for infringing the copyrights not only in Selden's books, but also in his novel bookkeeping system.<sup>47</sup> 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.<sup>48</sup> After reviewing the evidence, the trial court ruled in Selden's favor and permanently enjoined sales of Baker's books,<sup>49</sup> even though Baker's witnesses had testified to significant differences in the forms and claimed Baker's had key advantages over Selden's.<sup>50</sup>

In ruling for Selden, the trial court cited no precedents, although it may have been influenced by *Drury v. Ewing*, a copyright case from the same district some years earlier.<sup>51</sup> *Drury* characterized the plaintiff as "the authoress and inventress" of a copyrighted chart setting forth her method for taking measurements for making garments.<sup>52</sup> 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."<sup>53</sup> The court rejected Ewing's improvement defense because dressmakers testified that Ewing's chart produced the same result as Drury's.<sup>54</sup> Mrs.

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<sup>46</sup> Id. at 164-65, 172.

<sup>47</sup> 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 the Baker Story, 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.

<sup>48</sup> The evidence reviewed by the lower court in the *Baker* case is summarized, id. at 163-72.

<sup>49</sup> 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.

<sup>50</sup> Id. at 164. Baker's witnesses testified that his system was easier to learn, easier to use, and faster in error detection. Id.

<sup>51</sup> 7 F. Cas. 1113 (C.C.S.D. Ohio 1862). In *Drury*, Ewing was charged with violating a copyright injunction previously issued against him. In the earlier proceeding, Ewing denied infringing, but had not challenged the copyrightability of Drury's charts. This made the court skeptical about the belated challenge to Drury's copyright. 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.

<sup>52</sup> 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.

<sup>53</sup> Id. at 1114, 1117.

<sup>54</sup> Id. at 1117.

Drury's copyright, the court opined, gave her the exclusive right to control uses of her copyrighted chart as well as publication of it.<sup>55</sup>

Before the Supreme Court, Selden's lawyers seem to have relied on *Drury*,<sup>56</sup> as well as upon the recently published Drone treatise that praised *Drury*.<sup>57</sup> 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]."<sup>58</sup> 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 "will be held to pay."<sup>59</sup>

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.<sup>60</sup>

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

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<sup>55</sup> Id. at 1113.

<sup>56</sup> *Baker*, 101 U.S. at 107.

<sup>57</sup> See Record, Argument for Appellee, at 5-9; Drone, *supra* note xx, at 406.

<sup>58</sup> See Baker Story, *supra* note xx, at 168 (quoting from the Supreme Court Record).

<sup>59</sup> 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.

<sup>60</sup> *Baker*, 101 U.S. at 101.

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, 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.<sup>61</sup>

Copyrights in “ornamental designs or pictorial illustrations addressed to the taste” did not raise similar concerns for “their form is of their essence” and “their object [was] the production of pleasure in their contemplation.”<sup>62</sup>

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, which are embodied in wood, metal, or stone.<sup>63</sup> But “the principle is the same in all. The description of a useful art in a book, though entitled to the benefit of copyright, lays no foundation for an exclusive claim to the art itself.”<sup>64</sup> 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.<sup>65</sup>

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.”<sup>66</sup>

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<sup>61</sup> Id. at 102.

<sup>62</sup> Id. at 103. One might call this the “ornamentality/utility” distinction for pictorial and sculptural works to completion the “explanation/use” distinction that Baker endorses for texts. Id. at 105.

<sup>63</sup> Id. at 104.

<sup>64</sup> Id. at 105.

<sup>65</sup> 101 U.S. 99, 102 (1880). *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 (1879)(use of substantially the same system of coloring and symbols for maps not copyright infringement).

<sup>66</sup> 101 U.S. at 102.

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.<sup>67</sup> "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."<sup>68</sup> 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."<sup>69</sup>

This was pertinent in *Baker* because Selden had sought, but apparently not obtained, a patent for the bookkeeping system.<sup>70</sup> 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.<sup>71</sup> *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.<sup>72</sup>

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<sup>67</sup> Id.

<sup>68</sup> Id.

<sup>69</sup> Goldstein, *supra* note xx, at 1130. See also Ralph S. Brown, *Eligibility for Copyright Protection: A Search for Principled Standards*, 70 Minn. L. Rev. 579, 600-04 (1985).

<sup>70</sup> See *Baker Story*, *supra* note xx, 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 Record, Appellant's Supplemental Brief, *supra* note xx, at 2-3. There were, however, late 19<sup>th</sup> century patent classifications into which bookkeeping systems arguably fit (e.g., 283/64.1 for accounting books, 283.66.1 for accounting forms, and 434 for record keeping). There were, moreover, 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*, 3 F. Cas. 338 (C.C.S.D.N.Y. 1880), *rev'd*, 124 U.S. 601 (1888) (patent on coupon book held unpatentable on obviousness grounds). See also *U.S. Credit Sys. Co. v. American Credit Indemnity Co.*, 53 F. 818 (C.C.S.D.N.Y. 1893)(striking down patent for method of insuring against bad debts).

<sup>71</sup> *Baker Story*, *supra* note xx, at 172-79.

<sup>72</sup> Id. at 177-78, 192-93.

*Baker* also endorsed limitations on copyright for systems and other useful arts by invoking the freedom of expression interests of subsequent authors: “Where truths of a science or methods of an art are common property of the whole world, an author has the right to express the one, or explain and use the other in his own way.”<sup>73</sup> 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 in 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 that teaches them.”<sup>74</sup> It 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.”<sup>75</sup> 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 that

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<sup>73</sup> *Baker*, 101 U.S. 100-01.

<sup>74</sup> *Id.* at 104.

<sup>75</sup> *Id.* For a modern recognition of this aspect of *Baker*’s legacy, see *Feist Pub. Inc. v. Rural Telephone Service Co.*, 499 U.S. 340, 350 (1991)(citing *Baker* for user freedoms to “copy at will” facts embodied in copyrighted works).

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.<sup>76</sup>

This statement is why *Baker* is often described as a seminal case establishing what is 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.”<sup>77</sup>

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.<sup>78</sup> 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

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<sup>76</sup> Id. 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 might seem expressive can become unprotectable if they are “necessary incidents” to the idea they express. See Baker Story, supra note xx, at 189-90 concerning the origins of the merger doctrine.

<sup>77</sup> See, e.g., *Whelan*, 797 F.2d at 1234-35 (*Baker* cited as establishing the merger doctrine). It was not until the mid-20<sup>th</sup> century that the proto-merger caselaw began to emerge and not until 1983, that the merger doctrine, as such, was borne. See Baker Story, supra note xx, 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 xx, at 693-94, n. 288.

<sup>78</sup> Subsequent caselaw recognized this implication. See, e.g., *Brown Instrument Co. v. Warner*, 161 F.2d 910, 911 (D.C. Cir. 1947).

higher fees to use a Selden-like system or refrain from using a more efficient system to keep their accounts and balance their books.<sup>79</sup>

*Baker* states that methods and discoveries, as well as systems, to be beyond copyright's scope of protection.<sup>80</sup> Although *Baker* did not directly say that principles were unprotectable, it spoke of "truths of science" and "mathematical science" as unprotectable, which amounts to the same thing.<sup>81</sup> Nor did *Baker* refer to "processes" or "procedures" as 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 which provided that "any person, having discovered or invented any new and useful *art*, machine, manufacture, or composition of matter" was eligible to apply for a patent.<sup>82</sup> "Art," was used interchangeably with "process" in patent cases in the 19<sup>th</sup> century.<sup>83</sup> Thus, the process exclusion of 102(b) also has its origins in *Baker*.<sup>84</sup>

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<sup>79</sup> See *Baker Story*, supra note xx, at 167-68. Selden's widow threatened to sue as infringers 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 C and 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.

<sup>80</sup> See *Baker*, 101 U.S. at 101-03 (methods and discoveries are unprotected by copyright law, although they, like systems, might be eligible for patent protection).

<sup>81</sup> *Baker*, 101 U.S. at 100-01.

<sup>82</sup> See GEORGE TICKNOR CURTIS, A TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS 562 (1867) (setting forth sec. 6 of the Patent Act of 1836) (emphasis added).

<sup>83</sup> The interchangeability of "art" and "process" in patent law in the latter part of the 19<sup>th</sup> century can be seen in, among other cases, *Cochrane v. Deener*, 94 U.S. 780, 787-88 (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.")

*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.<sup>85</sup> 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."<sup>86</sup> Or, as *Baker* put it, "the principle is the same in all."<sup>87</sup>

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).<sup>88</sup> 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

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Process and procedure also overlap in meaning with the "method" which the Court in *Baker* used repeatedly. See *infra* note xx. *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.

<sup>84</sup> Procedure is a close synonym of process.

<sup>85</sup> 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.

<sup>86</sup> 17 U.S.C. sec. 102(b).

<sup>87</sup> *Baker*, 101 U.S. at 105.

<sup>88</sup> 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. sec. 101 (defining "useful article" as "an article having an intrinsic utilitarian function that is not merely to portray an appearance of the article or to convey information"). See also 17 U.S.C. sec. 113 (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 *Baker* Story, *supra* note xx, at 180-92 (discussing eight major doctrines of copyright law that derive from *Baker*).

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* caselaw and has resonance under the '76 Act as well.

### C. Post-*Baker* Caselaw on Systems, Methods, and Processes

Between 1880 and the enactment of the '76 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 Co. v. Fawley-Brost Co.*<sup>89</sup> and *Brown Instrument Co. v. Warner.*<sup>90</sup> 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.<sup>91</sup> Taylor charged Fawley-Brost with infringing eighteen of these copyrights by making and selling charts that were virtually identical to Taylor's charts and hence compatible with

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<sup>89</sup> 139 F.2d 98 (7<sup>th</sup> Cir. 1943). See also *Amberg File & Index Co.* 78 F. 479 (C.C. N.D. Ill. 1896) (rejecting claim of copyright in an indexing system, citing *Baker*, 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." *Id.* at 480. Amberg could perhaps have obtained a patent for this system, but copyright protection was not available. *Id.*

<sup>90</sup> 161 F.2d 910 (D.C. Cir. 1947)

<sup>91</sup> 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 machines.<sup>92</sup> The Seventh Circuit invoked *Baker* and an old English case, *Davis v. Comitti*,<sup>93</sup> in denying Taylor's claim. 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*.

The court in *Taylor* perceived Congress to have provided "two separate and distinct fields of protection, the copyright and the patent,"<sup>94</sup> and to have placed writings of authors in the former and inventive useful arts in the latter. "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."<sup>95</sup> The court quoted extensively from *Baker* for policy rationales for maintaining the patent/copyright domain distinction.<sup>96</sup> The court took into account that many patents had issued for temperature recording machines and charts for use in connection with them.<sup>97</sup> But its examination of Taylor's recording devices and charts left "no room for doubt that the latter is a mechanical element of the instrument of which it is an integral part."<sup>98</sup>

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

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<sup>92</sup> The software compatibility caselaw, discussed *infra* notes xx and accompanying text, relied upon *Baker*, but did not cite to *Taylor*, although the compatibility component of *Taylor* make it a useful precedent.

<sup>93</sup> 52 L. T. Rep. (Chan. Div.) 539, 540 (1885)(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").

<sup>94</sup> *Taylor*, 139 F.2d at 99.

<sup>95</sup> *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 "in their *respective* writings and discoveries." U.S. Constitution, Art. I, sec. 8, cl. 8. (emphasis added).

<sup>96</sup> *Taylor*, 139 F.2d at 99-100 (quoting extensively from *Baker*).

<sup>97</sup> *Id.* at 100-01.

<sup>98</sup> *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.")

itself.”<sup>99</sup> 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.<sup>100</sup> This resonates with the competition policy principle implicit in *Baker*.

*Griggs v. Perrin*<sup>101</sup> and *Brief English Systems, Inc. v. Owens*<sup>102</sup> 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.<sup>103</sup> 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 “[t]he only question...is whether 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.”<sup>104</sup> Invoking *Baker*, the court answered no to this question.

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

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<sup>99</sup> *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.”)

<sup>100</sup> *Taylor*, 139 F.2d at 101. See also *Brown*, 161 F.2d at 911 (“to copyright the charts would in effect continue appellants’ monopoly of its machines beyond the time authorized by the patent law.”)

<sup>101</sup> 49 F. 15 (C.C. N.D.N.Y. 1892).

<sup>102</sup> 48 F.2d 555 (2d Cir. 1931).

<sup>103</sup> 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-20<sup>th</sup> century). But see *supra* note xx concerning patents on information innovations in the 19<sup>th</sup> century.

<sup>104</sup> *Griggs*, 49 F. at 15 (emphasis added).

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.”<sup>105</sup> 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.”<sup>106</sup> *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*<sup>107</sup> and *Guthrie v. Curlett*.<sup>108</sup> *Burnell* developed a method for assessing the creditworthiness of citizens in a region by representing “[t]he 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 ascertain their credit, their financial standing, their promptness in the payment of their debts and such other information of that character.”<sup>109</sup> *Burnell* sold copies of the compiled information to local merchants. After *Chown* began selling similar books, albeit about citizens from different towns, *Burnell* sued him for copyright infringement. 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.”<sup>110</sup> *Chown* had merely “appropriated [*Burnell*’s] scheme, device,

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<sup>105</sup> *Brief English Systems*, 48 F.2d at 556.

<sup>106</sup> *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, not by copyright.” *Id.*

<sup>107</sup> 69 F. 993 (C.C. N.D. Ohio 1895).

<sup>108</sup> 36 F.2d 694 (2d Cir. 1929).

<sup>109</sup> *Burnell*, 69 F. at 994.

<sup>110</sup> *Id.* at 997.

conception and idea for gathering and imparting this particular information.”<sup>111</sup>

This was, however, beyond the scope of 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 complex documents filed with governmental entities. Guthrie used ruled columns and symbols to represent particular categories of information pertinent to freight tariffs. Guthrie sued Curlett for copyright infringement because the latter sold competing indexes featuring the same arrangement. The court ruled that Guthrie “has no monopoly upon [freight tariff] information or the purveying of [this] information by a broad general method.”<sup>112</sup> Limiting the scope of Guthrie’s copyright facilitated user comprehension and avoided needless variation in depicting freight tariff information.<sup>113</sup>

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<sup>111</sup> *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, *Perris v. Hexamer*, 99 U.S. 674 (1879), which is discussed infra note xx. On its facts, *Burnell* was more like *Perris* than like *Baker*.

<sup>112</sup> *Guthrie*, 36 F.2d at 696. Guthrie cited *Baker* in support of this ruling. *Id.* Guthrie’s first lawsuit against Curlett was based on a patent he’d obtained for his method of consolidating freight tariff information. See *Guthrie v. Curlett*, 10 F.2d 725 (2d Cir. 1926)(striking down Guthrie’s patent). The subsequent copyright decision made no mention of Guthrie’s patent, nor of the court’s previous ruling on the patent claim. 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 *Baker Story*, supra note xx, at 172-79.

<sup>113</sup> 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, etc.; and yet we think it has never been supposed that a simple copyright in 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 purposes of his delineations.

*Id.* at 676. Maps would be far more difficult to read if every map-maker 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’ plan and symbol

Systems for improving the efficiency of governmental or business operations have similarly been deemed beyond the scope of copyright protection in post-*Baker* cases.<sup>114</sup> *Aldrich v. Remington Rand, Inc.*,<sup>115</sup> for instance, involved a copyrighted manual describing a system for the efficient collection, assessment and equalization of taxes and containing forms to implement the system. *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. 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 piracy."<sup>116</sup> *Aldrich*, like *Baker*, denied copyright 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.<sup>117</sup>

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systems for maps designed to facilitate fire insurance assessments as "useful contrivances for the dispatch of business." *Id.* at 675. See also *Crume v. Pacific Mutual Life Ins. Co.*, 140 F.2d 182, 184-85 (7<sup>th</sup> Cir. 1944)("To hold that an idea, plan, method or art described in a copyright[ed work] is open to the public but can be used only by the employment of different words or phrases that 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. Weinreb, *supra* note xx, at 1197-98.

<sup>114</sup> See also *Crume v. Pacific Mutual Life Ins. Co.*, 140 F.2d 182 (7<sup>th</sup> Cir. 1944)(rejecting claim for copyright protection for a plan or method to reorganize insolvent life insurance companies); *Gaye v. Cillis*, 167 F. Supp. 416 (D. Mass. 1958) (no copyright in business method).

<sup>115</sup> 52 F. Supp. 732 (N.D. Tex. 1942)

<sup>116</sup> *Aldrich*, 52 F. Supp. at 734. The court also invoked *Baker*'s patent/copyright distinction in support of its ruling, *id.* at 733-34, and noted that the 1909 Act 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 736.

<sup>117</sup> See *infra* notes xx and accompanying text for a discussion of how efficiency affects the scope of copyright protection in the software caselaw.

Plans or systems designed to improve social welfare were also beyond the scope of copyright protection, as in *Long v. Jordan*.<sup>118</sup> Long was the author of a pamphlet about a system of old age pensions who sued Jordan for infringement after he, as California Secretary of State, published copies of a proposed initiative to amend the California Constitution to adopt Long’s system. 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.<sup>119</sup> “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 the plan and purpose.”<sup>120</sup>

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.”<sup>121</sup> 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.”<sup>122</sup> However, “a plan or system advanced for government adoption cannot be copyrighted so as to prevent

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<sup>118</sup> 29 F. Supp. 287 (N.D. Cal. 1939).

<sup>119</sup> *Id.* at 288.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.* at 289. *Long* prefigures the contentious debate over copyright in privately drafted legislation that was litigated in *Veeck v. Southern Building Code & Congress. Inc.*, 293 F.3d 791 (5<sup>th</sup> Cir. 2000) (denying copyright claim in privately drafted code enacted as law). I discuss *Veeck* and several recent copyright system cases in Pamela Samuelson, *Questioning Copyright In Standards*, 48 B.C. L. Rev. (forthcoming 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).

<sup>122</sup> *Long*, 29 F. Supp. at 289.

the publication of that plan or system...in the form of a proposed law incident to its submission to the vote of the electorate.”<sup>123</sup> This conclusion was a “logical extension of well defined principles” that the court traced back to *Baker*.<sup>124</sup>

The cases discussed above do not come close to exhausting the post-*Baker* caselaw on the unprotectability of systems and methods described or illustrated in copyrighted works,<sup>125</sup> 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.<sup>126</sup>

#### D. Games, Rules and Plays

Caselaw predating the ’76 Act also recognized that other things besides ideas, systems, and methods are beyond the scope of protection copyright provides to original works of authorship.<sup>127</sup> These cases too reflect *Baker*’s

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<sup>123</sup> Id.

<sup>124</sup> Id.

<sup>125</sup> See, e.g., *Burk v. Johnson*, 146 F. 209 (8<sup>th</sup> Cir. 1906)(burial scheme unprotected by copyright); *Jackson v. C.G. Conn Ltd.*, 9 U.S.P.Q. (BNA) 225 (W.D. Okla. 1931)(system for teaching cornet playing); *Dunham v. General Mills*, 116 F. Supp. 152 (D. Mass. 1953)(method for masks printed on cereal boxes); *Seltzer v. Sunbrock*, 22 F. Supp. 621 (S.D. Cal. 1938). See also *S.S. White Dental Co. v. Sibley*, 38 F. 751 (E.D. Pa. 1889)(denying copyright claim in plan for advertising artificial teeth); *Ehret v. Pierce*, 10 F. 553 (E.D.N.Y. 1880)(denying claim of copyright protection for method of advertising paints).

<sup>126</sup> See infra note xx 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.

<sup>127</sup> See also *Affiliated Ent. v. Gantz*, 86 F.2d 597 (10<sup>th</sup> Cir. 1936)(rejecting copyright claim in system or plan for giving away prized by lot or chance in places of entertainment open to the public upon payment of an admission fee); *Seltzer v. Sunbrock*, 22 F. Supp. 621 (S.D. Cal. 1938)(rejecting claim of copyright in roller derby game described in copyrighted works); *Lewis v. Kroger Co.*, 109 F. Supp. 484 (S.D. W.Va.

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.<sup>128</sup> Some of these cases invoke *Baker*; some do not.<sup>129</sup> They collectively support the contention that the list of exclusions in 102(b) should be understood to be illustrative,<sup>130</sup> rather than exhaustive.<sup>131</sup>

In dismissing a claim of infringement, the court in *Whist Club v. Foster*,<sup>132</sup> for example, observed that “[i]n the conventional laws or rules of a game...there can be no literary property susceptible of copyright.”<sup>133</sup> *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.<sup>134</sup> Hence, he had not infringed. Relying on *Whist*, the Second Circuit in *Chamberlain v. Uris Sales Corp.*<sup>135</sup> affirmed dismissal of a lawsuit alleging infringement of Chamberlain’s copyright in the rules and layout of the game

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1952) (dismissing copyright claim in contest); *Richards v. Columbia Broadcasting System, Inc.*, 161 F. Supp. 516 (D. D.C. 1958) (no copyright in quiz show format); *Briggs v. New Hampshire Trotting & Breeding Ass’n*, 191 F. Supp. 234 (D. N.H. 1960) (rejecting claim of copyright in betting system for horse racing and associated method for processing IBM cards); *Universal Athletic Sales Co. v. Salkeld*, 511 F.2d 904 (3d Cir. 1975)(no infringement of copyright in exercise charts).

<sup>128</sup> 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., *Veeck v. Southern Building Code & Congress Inc.*, 293 F.3d 791 (5<sup>th</sup> Cir. 2000) (copyright does not protect laws); *Feist Pub. v. Rural Telephone Service Co.*, 399 U.S. 340 (1991)(copyright does not protect facts).

<sup>129</sup> Cf. *Russell v. Northeastern Pub. Co.*, 7 F. Supp. 571, 572 (D. Mass. 1934) (citing *Baker* in support of its ruling); *Whist Club v. Foster*, 42 F.2d 782 (S.D.N.Y. 1929) (no citation to *Baker*).

<sup>130</sup> See also Testimony of Barbara Ringer, Register of Copyrights, Hearings on H.R. 2223 Before the Subcomm. On Courts, Civil Liberties, and the Administration of Justice of the House Comm. On the Judiciary, 94<sup>th</sup> Cong., 1<sup>st</sup> Sess. 1823 (1975)(games not copyrightable).

<sup>131</sup> The post-76 Act caselaw also supports the illustrative-not-exhaustive interpretation of 102(b). See, e.g., *Allen v. Academic Games League of Am.*, 89 F.3d 614 (9<sup>th</sup> Cir. 1996) (no infringement for rival games using same tournament rules); *Landsberg v. Scrabble Crossword Game Players, Inc.*, 736 F.2d 485 (9<sup>th</sup> Cir. 1984) (guidebook on scrabble strategy not infringed by similar book featuring same strategies); *Jeffrey v. Cannon Films, Inc.*, 3 U.S.P.Q.2d (BNA) 1373 (C.D. Cal. 1989)(no copyright in rules for arm wrestling).

<sup>132</sup> 42 F.2d 782 (S.D.N.Y. 1929).

<sup>133</sup> *Id.* at 782.

<sup>134</sup> *Id.*

<sup>135</sup> 150 F.2d 512 (2d Cir. 1945). See also *Affiliated Hospital Products, Inc. v. Merdel Game Mfg. Co.*, 513 F.2d 1183, 1188-89 (2d Cir. 1975) (rules and game are in the public domain).

“Acy-Ducy,” a variant on backgammon. Uris had not copied Chamberlain’s literary composition, so there was no infringement.<sup>136</sup>

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. Readers were encouraged to send Russell a letter to get the correct solution to the problem and to ask for other problems. When the Boston Daily Record published the problem, and a week later published its solution, Russell sued the publisher for copyright infringement.<sup>137</sup> The court ruled that Russell had “no exclusive right in the particular distribution of the fifty-two cards, in the problem of play or the principles of contract bridge applicable to its solution.”<sup>138</sup> 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.

#### E. Summary

The post-*Baker* caselaw 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. Methods of consolidating freight tariff information and for judging the credit-worthiness of residents of local communities were similarly excluded from copyright protection. Although the game caselaw did not invoke the system, method, or process exclusions

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<sup>136</sup> Id.

<sup>137</sup> Russell v. Northeastern Pub. Co., 7 F. Supp. 571 (D. Mass. 1934)

<sup>138</sup> Id. at 572.

from copyright, this cluster of cases is consistent with these exclusions.<sup>139</sup> There was thus ample precedential support for exclusion of systems, methods, and other unprotectable elements in the caselaw leading up to the '76 Act.

## II. 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.<sup>140</sup> This bill was the product of nearly a decade of preparatory work.<sup>141</sup> One of the novel features of the 1964 bill was its statement of copyrightable subject matter. “Copyright subsists,” it said, “in original works of authorship fixed in a

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<sup>139</sup> 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 (patent for six card stud poker). Some courts invoke other copyright doctrines, such merger of idea and expression, scenes a faire, lack of originality, and lack of fixation, as reasons not to protect games. See, e.g., *Morrissey v. Proctor & Gamble Co.*, 379 F.2d 675, 679-80 (1<sup>st</sup> Cir. 1967)(no copyright protection for sweepstakes contest because of small number of ways to express idea); *Data East USA, Inc. v. Epyx, Inc.*, 862 F.2d 204, 207-08 (9<sup>th</sup> Cir. 1988)(scenes a faire limited scope of copyright in karate videogame).

<sup>140</sup> 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 Report of the Register of Copyrights on the General Revision of U.S. Copyright Law (1961). He then convened a series of meetings with interested parties to discuss the report and how to codify the revisions. See THE KAMINSTEIN LEGISLATIVE HISTORY PROJECT: A COMPENDIUM AND ANALYTICAL INDEX OF MATERIALS LEADING TO THE COPYRIGHT ACT OF 1976 (Alan Latman & James F. Lightstone, eds. 1981), vol. I (hereinafter “Kaminstein History”) at xxxi-xxxii. 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, 88<sup>th</sup> Cong., 2d Sess. (1964) and S. 3008, 88<sup>th</sup> Cong., 2d Sess. (1964).

<sup>141</sup> The first six years of the copyright statutory revision process (i.e., from 1955-1961) were largely spent on commissioning studies on various revision-related issues. See Copyright Law Revision Studies, 86<sup>th</sup> Cong., 2d Sess. (1960)(Senate Judiciary Comm. Print). The studies can be found in 5 George S. Grossman, Omnibus Copyright Revision Legislative History: Copyright Law Revision Studies 1960 (2001) (hereafter “Grossman”). 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, Copyright Law Revision Study No. 3: The Meaning of “Writings” in the Copyright Clause of the Constitution (Nov. 1956) (hereafter “Writings”). This study was republished as Stephen Lichtenstein, et al., *The Meaning of “Writings” in the Copyright Clause of the Constitution*, 31 N.Y.U. L. Rev. 1263 (1956). *Writings* considered whether Congress had the constitutional power to extend copyright protection to original designs for articles of manufacture, such as candlesticks, teapots, and lampbases, in response to a question raised by Justice Douglas in *Mazer v. Stein*, 347 U.S. 201, 219-21 (1953) (Douglas, J., joined by Black, J.). The study concluded it could: “From a review of the actions of the colonial legislatures, the Constitutional Convention 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 insofar as the ‘form’ of the object is concerned.” See *Writings*, supra, at 108. By construing Congress’ 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.

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 device.”<sup>142</sup>

Kaminstein thought this was a more elegant and flexible provision than its predecessors.<sup>143</sup> The 1909 Act, for example, had listed a sizeable number of specific categories of protected works, along with exclusive rights associated with each.<sup>144</sup> As the list of protected works grew ever longer, the melded subject matter/exclusive rights provision had 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,<sup>145</sup> and if not, Congress had to legislate to extend protection to them.<sup>146</sup> Under the revised subject matter provision, this would no longer be necessary.<sup>147</sup>

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<sup>142</sup> See, e.g., *id.*, sec. 1. See Kaminstein History, *supra* note xx, at 27. This provision is now codified as 17 U.S.C. sec. 102(a). 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 Kaminstein History, *supra* note xx, at 27.

<sup>143</sup> See, e.g., Report to Accompany H.R. 2512, 90<sup>th</sup> Cong., 1<sup>st</sup> Sess. (1967) at 13-14 (explaining the rationale for the general subject matter provision). 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. Penn. L. Rev. 856 (1978).

<sup>144</sup> See 17 U.S.C. secs. 1, 5 (now superseded) (sec. 1 listed exclusive rights and categories of works to which they pertained; sec. 5 listed 14 categories of copyrighted works)

<sup>145</sup> *Wood v. Abbott*, 30 F. Cas. 424 (C.C. S.D.N.Y. 1866)(construing photographs as within the statutory category of “prints or engravings”)

<sup>146</sup> See, e.g., NATIONAL COMMISSION ON NEW TECHNOLOGICAL WORKS FINAL REPORT 11-14 (1979) (hereafter “CONTU Report”).

<sup>147</sup> But see *infra* notes xx and accompanying text (Congressional report identified 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).

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 Co., who testified at a December 1964 Congressional hearing on the copyright revision bill.<sup>148</sup> Mayers observed that the bill's expansive subject matter provision seemed to extend copyright protection to computer programs.<sup>149</sup> 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 in programs.<sup>150</sup> Copyright should be "specifically delimited in light of the special characteristics and problems of this art."<sup>151</sup> He further noted that computer processes "duplicat[e] or enhanc[e] 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.<sup>152</sup>

Register Kaminstein was, however, skeptical about copyright protection for computer programs. In January 1965, the Office published Circular 31D which raised serious

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<sup>148</sup> See Testimony of H.R. Mayers, General Patent Counsel, General Electric Co., Hearings Before the House Comm. On the Judiciary, 89<sup>th</sup> Cong., 1<sup>st</sup> Sess., Copyright Law Revision, Part 5: 1964 Revision Bill with Discussions and Comments, H.R. Doc. No. 51-374 (1965) (hereafter "Mayers Testimony" and "65 Hearings"), reproduced in 5 Grossman, *supra* note xx, at 269-78. Mayers' most immediate concern was about the copyright implications of adapting scientific and technical articles for private use (e.g., making abstracts, digests or summaries of them) which he thought should be exempt from infringement. See Mayers Testimony, *supra* note xx, at 271-72, 276-78.

<sup>149</sup> *Id.* at 272, 276.

<sup>150</sup> *Id.* at 272, 276.

<sup>151</sup> *Id.* at 272.

<sup>152</sup> Mayers was also concerned about computer uses of copyrighted works. "Storage of any copyright work in a computer or manipulation of such works within such computer should not constitute copyright infringement of such work. Copyright infringement should be determined by the form and the use 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 of computers implicated the exclusive reproduction right. See INTELLECTUAL PROPERTY AND THE NATIONAL INFORMATION INFRASTRUCTURE: REPORT OF THE WORKING GROUP ON INTELLECTUAL PROPERTY RIGHTS (Sept. 1995) at 64-67. Professor Jessica Litman, among others, criticized this interpretation as tantamount to construing the '76 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 get international agreement on such an expansive interpretation of the reproduction right, see Pamela Samuelson, *The U.S. Digital Agenda at WIPO*, *Va. J. Int'l L.* (1997).

doubts about whether computer programs were eligible for copyright protection.<sup>153</sup>

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). 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,<sup>154</sup> 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.”<sup>155</sup> The Copyright Office seemed content to leave all of the difficult computer use questions to be resolved in the courts.<sup>156</sup>

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<sup>153</sup> 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.” *Id.* 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.* For a discussion of the functionality of programs as a basis for questioning the appropriateness of copyright protection, see CONTU Report, *supra* note xx, at 27-37 (Hersey dissent); Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Machine-Executable Forms of Computer Programs*, 1984 Duke L.J. 663, 727-53 (hereafter “CONTU Revisited”).

<sup>154</sup> See Register of Copyrights, 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 (1965), reprinted in 5 Grossman, *supra* note xx, at 19. Kaminstein expressed doubt that “mere use of a work by a 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 be. *Id.* at 18.

<sup>155</sup> *Id.*

<sup>156</sup> 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.

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, head of the Electronics Industry Association (EIA), disputed the notion that inputting or storing a copyrighted work in a computer would infringe its copyright.<sup>157</sup> 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.<sup>158</sup> 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.<sup>159</sup>

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. Footnote 1 gave several examples of things that Congress did not intend to protect under the revised copyright bill,<sup>160</sup> 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

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<sup>157</sup> Letter of Graham W. McGowan, reprinted in Hearings before Subcomm. No. 3 of the House Comm. on the Judiciary on H.R. 4347, 89<sup>th</sup> Cong., 2d Sess. 1898-99 (1966).

<sup>158</sup> *Id.* at 1898.

<sup>159</sup> *Id.* McGowan did not use the term "reverse engineering," but rather spoke of the objectives 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 xx and accompanying text.

<sup>160</sup> See ROBERT KASTENMEIER, REPORT TO ACCOMPANY H.R. 4347, REPORT NO. 2237, 89TH CONG., 2d Sess. at 44 n.1 (October 12, 1966), reprinted in 11 Grossman, *supra* note xx; ROBERT KASTENMEIER, REPORT TO ACCOMPANY H.R. 4347, REPORT NO. 2237 90th Cong., 1<sup>st</sup> Sess., at 15 n.1 (March 8, 1967), reprinted in 11 Grossman, *supra* note xx. Footnote 1 was identical in both reports.

information, considered apart from its compilation or expression.”<sup>161</sup> Congress would have to take future action if copyright protection was to be available for such works.<sup>162</sup>

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.<sup>163</sup> McGowan believed that “the public has the right to use the technical ideas contained in the copyrighted work.”<sup>164</sup> He urged the Senators to clarify that such things as “ideas, methods, systems, and mathematical principles” would be beyond the scope of copyright protection in programs.<sup>165</sup>

Professor Arthur Miller, testifying before the same Senate subcommittee, echoed the Register’s doubts about the copyrightability of computer programs. 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 have traditionally been covered by our copyright laws.”<sup>166</sup> Miller worried that courts might construe copyright

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<sup>161</sup> Id.

<sup>162</sup> Id.

<sup>163</sup> Statement of Graham W. McGowan, at Hearing on S. 597 before the Subcomm. on Patents, Trademarks, and Copyrights of the S. Comm. On the Judiciary, 90<sup>th</sup> Cong., 1<sup>st</sup> Sess. 969 (1967) (“McGowan Statement” and “67 Senate Hearing”)

<sup>164</sup> McGowan Statement, supra note xx, at 969.

<sup>165</sup> Id. Like Mayers, McGowan wanted assurance that abstracting scientific works would be exempt from infringement. Id. at 970-71.

<sup>166</sup> Testimony of Arthur R. Miller, 67 Senate Hearing, supra note xx, 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 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 non-literal aspects of programs such as logic and structure. See infra notes xx and accompanying text. Several years later, while working as counsel in Lotus Development Corp. v. Borland Int’l, 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. 1977

protection for programs as “extend[ing] to or embody[ing] the process, scheme, or plan that the program uses to achieve a functional goal” and this would confer “patent-like protection under the guise of copyright.”<sup>167</sup> Miller regarded computer programming as “by and large, a derivative art based on fairly well established and commonly used mathematical and logical principles.”<sup>168</sup> He also questioned whether copyright incentives were really needed to induce the creation of programs.<sup>169</sup>

Yet Miller recognized that Congress might choose to grant copyright protection to programs. If so, Miller advised Congress to make clear that this protection would extend “solely to the duplication and replication of the program” and not to “the art, process, or scheme that is fixed in the program.”<sup>170</sup> Only patent law could protect “systems, schemes, and processes.”<sup>171</sup> 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...”<sup>172</sup> 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

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(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.

<sup>167</sup> Miller Statement, supra note xx, at 197, 199. To allow programmers to use copyright to protect efficient program innovations without meeting patent procedural or substantive standards would be wrong. Id.

<sup>168</sup> Id. at 197, 199.

<sup>169</sup> Id. at 198-99.

<sup>170</sup> Id. at 197.

<sup>171</sup> Id. Miller asserted that “patent protection appears to be the appropriate vehicle” for protecting programs. Id. at 199.

<sup>172</sup> 67 Senate Hearing, supra note xx, at 1059. Miller worked on this proviso with Prof. Benjamin Kaplan and EDUCOM official, W. Morton Brown after EDUCOM had been criticized for not offering a concrete proposal in an earlier appearance. Id. at 1058-62.

copyright revision bill, S. 543.<sup>173</sup> That bill redesignated the subject matter provision as section 102(a) which was now complemented by a new section 102(b): “In no case does copyright protection for original works of authorship extend to any idea, plan, procedure, process, system, method of operation, concept, principle or discovery, regardless of how it is...embodied in such work.”<sup>174</sup> Subsequent House and Senate bills incorporated this language with only one minor change,<sup>175</sup> and section 102(b) was codified seven years later in the ’76 Act.

The legislative history does not reveal why these specific words of exclusion were chosen for section 102(b), although all but two had been explicitly mentioned during the legislative debate.<sup>176</sup> Three of 102(b)’s exclusions—ideas, concepts, and principles—pertain to high level abstractions,<sup>177</sup> while the other five—procedures, processes,

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<sup>173</sup> S. 543, 91<sup>st</sup> Cong., 1<sup>st</sup> Sess. (Committee Print) (1969).

<sup>174</sup> See Kaminstein, *supra* note xx, at 42.

<sup>175</sup> 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. See Patry, *supra* note xx, at 35.

<sup>176</sup> Although “procedure” was not specifically mentioned in the legislative history, its meaning substantially overlaps with logic, methods and processes that were so mentioned. See *infra* note xx. “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 EDUCOM Statement, 1967 Hearings, at 571. Algorithms are effective procedures for carrying out a given computing task. See, e.g., Alfred Z. Spector, *Software, Interfaces, and Implementations*, 30 *Jurim. 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 xx. This usage is consistent with Article I, sec. 8, cl. 8 of 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). See also Linda J. Demaine & Aaron X. Fellmuth, *Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent*, 55 *Stan. L. Rev.* 303 (2002) (discussing the constitutional meaning of “discovery”). The Nimmer treatise assumes that discoveries excluded from copyright for lack of originality; a discoverer is, in other words, not a creator. See Nimmer, *supra* note xx, at 2.03[E]. The latter interpretation of discovery led the Supreme Court astray in *Feist*. See *supra* note xx and accompanying text.

<sup>177</sup> Ideas, concepts, and principles overlap significantly in their meanings. See, e.g., OXFORD ENGLISH DICTIONARY (2d Ed. 1989) (hereafter “OED”). The OED indicates that “idea” has meant “mental image, conception, notion” since the late 16<sup>th</sup> century. See 7 OED at 613-14. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4<sup>th</sup> Ed. 2000) (hereafter “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

systems, methods of operation, and discoveries—refer to more complex, detailed, and functional information innovations,<sup>178</sup> such as those long held unprotectable in *Baker* and its progeny.<sup>179</sup> 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 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

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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 tent 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 at 499.

<sup>178</sup> Both “process” and “procedure” derive from the word “proceed.” 12 OED 543, 545-46. The first OED definition of “procedure” is “[t]he fact or manner of proceeding with any action, or in any circumstances 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 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 well-defined and regular plan; a mode of procedure in any activity, business, etc.” 9 OED at 690-91. See also id. for 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.” Id. 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 at 1105. Its synonyms are “system, routine, manner, mode, fashion, 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 at 496. It further defines “system” as “[t]he correlated principles, idea, or statement 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 xx.

<sup>179</sup> *Baker* was invoked as a source of limiting principles of copyright protection in the EDUCOM written testimony. See 1967 Hearing, supra note xx, at 573, n. 9. See also infra notes xx and accompanying text.

computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law.<sup>180</sup>

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.”<sup>181</sup> “Idea,” as used in this context, should be understood as shorthand for the eight terms of exclusion set forth in 102(b).

### III. 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.<sup>182</sup> The treatise asserted that *Baker* should be understood as a case about distinction between abstract ideas and protectable expression, and nothing more.<sup>183</sup> 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.<sup>184</sup> He referred to *Baker* once in a letter

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<sup>180</sup> See, e.g., H. Rep. 94-1476, 94<sup>th</sup> Cong., 2d Sess. 57, reprinted at 1976 U.S. Code Cong. & Admin. News, 5659, 5670.

<sup>181</sup> *Id.*

<sup>182</sup> 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. See Statement of Melville B. Nimmer, 1965 Hearings, supra note xx, 7 Grossman, supra note xx, at 1809 (hereafter “Nimmer Statement”).

<sup>183</sup> Nimmer’s interpretation of *Baker* is discussed infra notes xx and accompanying text.

<sup>184</sup> In 1964, Nimmer participated in a discussion sponsored by the Copyright Office about the copyright revision draft bill. See U.S. Copyright Office, Copyright Law Revision, Part 3, Preliminary Draft for Revised U.S. Copyright Law and Discussions & Comments on the Draft (1964) in 3 Grossman, supra note xx, at 44-57 and 395-404. Nimmer was critical of the draft bill’s open-ended subject matter provision, arguing that a commission be established with authority to add new categories of works to copyright. *Id.* at 395-97. He proposed a number of other changes to other provisions in the draft bill. *Id.* at 397-405. In

requesting that Congress clarify whether construction of a building from copyrighted architectural drawings was infringement.<sup>185</sup> Nothing in the legislative history suggests that Nimmer had any influence over the text of, or Congressional intentions as to, 102(b).<sup>186</sup>

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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 co-extensive with the constitutional meaning of “writings” in Article I, sec. 8, cl. 8, and suggesting several additional changes. See Letter of Melville B. Nimmer, dated Nov. 3, 1964 (hereafter “Nimmer Letter”), in Copyright Law Revision, Part 5, 1964 Revision Bill with Discussion and Comments, Sept. 2, 1965, reproduced in 5 Grossman, *supra* note xx, at 313-19. See also Nimmer Statement, *supra* note xx at 1809-13 (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 co-extensive with Congress’ constitutional power as to “writings” of authors).

<sup>185</sup> See Nimmer Letter, *supra* note xx, 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. 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 Pub. L. No. 101-650, sec. 706, 104 Stat. 5133 (1980).

<sup>186</sup> Professor Reichman has asserted that Congress at least partly codified Nimmer’s interpretation of *Baker*, but does not provide support for this proposition. See Reichman, 42 Vand. L. Rev. at 693-94, n. 288. In a recent email exchange, Reichman explained that he regarded Congress’ enactment of CONTU’s program-related recommendations as a partial Congressional endorsement of Nimmer’s view. 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*. Second, Congress held no hearings about CONTU’s recommendations and prepared no legislative reports on the CONTU report. Although Congress added a statutory definition of computer programs to the statute and amended sec. 117, neither change affected 102(b), so there is no basis for believing that Congress had any different intention as to 102(b) in 1980 than in 1976. Third, the CONTU Report is deeply 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., CONTU Revisited, *supra* note xx, at 699-707; Weinreb, *supra* note xx, at 1167 (1998) (CONTU Report was “hopelessly confused and in important respects simply misconceived”); *id.* at 1167-68 (explaining the confusion and misconceptions). Moreover, CONTU members and staff lacked consensus on scope of protection issues, as became evident from the conflicting declarations three of them submitted in litigation in the mid-1980’s. Prof. Nimmer unsurprisingly viewed the CONTU Report as an endorsement of his interpretation of *Baker* and 102(b). See Anthony L. Clapes, Patrick Lynch, and Mark R. Steinberg, *Silicon Epics and Binary Bards: Determining the Proper Scope of Copyright Protection for Computer Programs*, 94 UCLA L. Rev. 1493 (1987), the Appendix to which reproduces the Declaration of Melville B. Nimmer (hereafter “Nimmer Declaration”) at 1585-94. In the same litigation, Prof. 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, in *Evergreen Consulting, Inc. v. NCR Comten, Inc.*, U.S. Dist. Ct. C.D. Cal., No. CV 82-5946 KN, Jan. 3, 1985 (“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, in *Evergreen Consulting, Inc. v. NCR Comten, Inc.*, U.S. Dist. Ct. C.D. Cal., No. CV 82-5946 KN, May 20, 1985 (on file with the author). Levine’s declaration is quoted in Englund, *supra* note xx, at n. 110 (“CONTU did not want to extend copyright protection for computer programs to such things as

A more senior copyright scholar who did have some influence on what became section 102(b) was Professor Benjamin Kaplan of Harvard Law School who 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 and processes.<sup>187</sup> 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*.<sup>188</sup> 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 about bookkeeping systems,” which held that “the copyright in a work describing a practical art did not extend to the ‘performance’ or exercise of the art, which remained free to all.”<sup>189</sup> Kaplan believed, moreover, that “the privilege [in *Baker*] extends to exact copies.”<sup>190</sup> Business schemes and methods were, in Kaplan’s view, also “within

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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 scope of protection issues.

<sup>187</sup> Miller’s testimony is discussed supra notes xx and accompanying text. See also EDUCOM Statement, 67 Hearings, supra note xx, at 570-78. See also Statement of W. Morton Brown, Jr. for EDUCOM, 67 Hearings, at 565 (attesting to Kaplan’s involvement in the preparation of the EDUCOM statement).

<sup>188</sup> Id. at 571-73; *Baker* was cited, id. at 573, n. 9.

<sup>189</sup> Kaplan, supra note xx, at 63. See also HORACE G. BALL, THE LAW OF COPYRIGHT AND LITERARY PROPERTY 125-28 (1944)(discussing *Baker* and its progeny as precedents for the unprotectability of systems of business, plans of instruction, or 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)

<sup>190</sup> Kaplan, supra note xx, at 64. Kaplan thought this followed from the Court’s statement that “blank account books are not the subject of copyright.” *Baker*, 101 U.S. at 107. See also ALAN LATMAN, THE COPYRIGHT LAW 31-32 (5th ed. 1979) (*Baker* “held that the bookkeeping system was uncopyrightable

the *Baker* rule.”<sup>191</sup> *Baker*’s progeny showed that “what is an art or a system within the reach of the *Baker* case is usually tolerably clear.”<sup>192</sup>

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 a precedent on the unprotectability of systems and methods in copyrighted works during the copyright revision process.<sup>193</sup>

Not until *after* Congress had already adopted the ’76 Act did the Nimmer treatise’s interpretation of *Baker* began 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* as a precedent for the idea/expression distinction.<sup>194</sup> Such citations would otherwise be surprising, given that *Mazer* did not rule on this

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and/or that using the system does not infringe”). See also Ball, *supra* note xx, at 274-78 (*Baker* allows copying of technical and scientific content in copyrighted works).

<sup>191</sup> Kaplan, *supra* note xx, at 63.

<sup>192</sup> *Id.*

<sup>193</sup> See, e.g., *Continental Casualty Co. v. Beardsley*, 151 F. Supp. 28, 31-33 (S.D.N.Y. 1957) (*Baker* cited as precedent for rejecting copyright claim in blanket indemnity protection plan); *Gaye v. Cillis*, 167 F. Supp. 416, 418 (D. Mass. 1958) (*Baker* cited for unprotectability of system of doing business); *Briggs v. New Hampshire Trotting & Breeding Ass’n*, 191 F. Supp. 234 (D. N.H. 1960) (*Baker* cited in denying copyright claim in horse track betting system); *The 88 Cents Store, Inc. v. Martinez*, 227 Ore. 147, 166 (1961) (*Baker* cited for right to use others’ business methods); *Morrissey v. Proctor & Gamble Co.*, 379 F.2d 675, (1<sup>st</sup> Cir. 1967) (*Baker* cited for unprotectability of sweepstakes contest); *Magnus Organ Corp. v. Magnus*, 269 F. Supp. 981 (D. N.J. 1967) (*Baker* cited as precluding copyright in method of playing electric cord organs); *Freedman v. Grolier Ent., Inc.*, 179 U.S.P.Q. (BNA) 476 (S.D.N.Y. 1973) (*Baker* cited in case denying copyright in notation system for playing cards); *Herman Frankel Org. v. Tegman*, 367 F. Supp. 1973 (E.D. Mich. 1973) (*Baker* cited as denying copyright in bookkeeping system); *Kuddle Toy, Inc. v. Pussycat-Toy Co.*, 183 U.S.P.Q. (BNA) 642 (E.D.N.Y. 1974) (citing *Baker* for unprotectability of method or system of bookkeeping); *L. Batlin & Son, Inc. v. Snyder*, 1975 U.S. App. LEXIS 122223 (2d Cir. 1975) (citing *Baker* for its discussion of differences between patent and copyright subject matters). See also *Scholtz Homes, Inc. v. Maddox*, 379 F.2d 84, 86 (6<sup>th</sup> Cir. 1967) (affirming dismissal of copyright claim alleging infringement based on construction of house of same design as copyrighted plans, citing *Baker*). After enactment of the ’76 Act, further such rulings are evident. See, e.g., *Januz Mktg. Comms v. Doubleday & Co.*, 569 F. Supp. 76, 78-79 (S.D.N.Y. 1982) (extensively quoting from *Baker* as a system exclusion case in denying copyright in time log system); *Kepner-Tregoe, Inc. v. Carabio*, 203 U.S.P.Q. (BNA) 124 (E.D. Mich. 1979) (citing *Baker* as precluding copyright in methods of instruction); *McAlpine v. AAMCO Automatic Transmissions, Inc.*, 461 F. Supp. 1232, 1254-57 (E.D. Mich. 1978) (citing *Baker* as grounds for denying protection to merchandising system). The software cases that draw upon the traditional understanding of *Baker* are discussed *infra* Part IV-B.

<sup>194</sup> 347 U.S. 201 (1954). 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.

distinction; indeed, it barely even mentioned it. If *Mazer* has come to be perceived an idea/expression case, it is because Nimmer relied heavily upon *Mazer* to support his arguments for strict limits on the application of *Baker*.<sup>195</sup>

To lay adequate groundwork for Part IV's discussion of the baleful effects that flowed from Nimmer's misinterpretation of *Baker* in the software copyright caselaw 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-a-vis *Baker* is unsound.<sup>196</sup>

Stein registered copyrights in several statuettes, including one of a Balinese dancer, as "works of art" under the 1909 Act.<sup>197</sup> He then mass-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. After *Mazer* began making and selling very similar lamps, Stein sued him for copyright infringement. *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

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<sup>195</sup> See Nimmer on Copyright, supra note xx, at 2.18.

<sup>196</sup> I am not the first to criticize Nimmer's interpretation of *Baker*. See, e.g., Weinreb, supra note xx, 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 ("to read *Baker v. Selden* [as Nimmer does] misrepresents not only the case itself but its legal context; Nimmer's interpretation is both procrustean and anachronistic."); 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."); Reichman, supra note xx, at 693-94, n. 288 (criticizing Nimmer's interpretation of *Baker* as an idea/expression case).

<sup>197</sup> *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).

they were useful; and fourth, that original designs for lamp bases should have been protected, if at all, by design patent law.<sup>198</sup> Mazer argued that *Baker* supported the latter two propositions.<sup>199</sup>

The statutory question before the Court was whether Stein's statuettes qualified for copyright protection as "works of art" or "reproductions of works of art."<sup>200</sup> 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, "'insofar as their form but not their mechanical or utilitarian aspects are concerned.'"<sup>201</sup> Stein's lamps qualified for copyright protection under this standard.

*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."<sup>202</sup> *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 which achieved similar results where the alleged infringer made a

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<sup>198</sup> Design patents are available to protect original and nonobvious ornamental designs for articles of manufacture. See 35 U.S.C. sec. 171.

<sup>199</sup> Mazer argued that practical utility of the lamps meant they could not qualify as works of art under *Baker*. *Mazer*, 347 U.S. at 203-04, n. 3. He also argued that *Baker* required exclusivity of patent and copyright subject matter. *Id.* *Baker* said nothing, however, about design patents and copyrights, and for reasons explained infra notes xx and accompanying text, it is consistent with *Baker* for copyright law to protect the statuette as a non-utilitarian work whose object was contemplation.

<sup>200</sup> *Id.* at 202-03. See 17 U.S.C. sec. 5(g), (h) (now superseded). The 1909 Act differed from previous acts in dropping a requirement that artistic works be "works of fine art," a term that seemed more restrictive than "works of art" or "reproductions of works of art." *Mazer*, 347 U.S. at 212.

<sup>201</sup> *Id.*, quoting from 37 C.F.R., 1949, sec. 202.8. Registration of such works dated back to the 1870 and 1874 Acts. *Mazer*, 347 U.S. at 211.

<sup>202</sup> *Id.* at 217.

different arrangement of the columns and used different headings.”<sup>203</sup> To 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.”<sup>204</sup> In context, it is evident that the Court was speaking only about design patents and copyrights.<sup>205</sup>

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,” much of which contests the Court’s analysis in *Baker* and argues for limiting the range of *Baker*’s application.<sup>206</sup> The treatise interprets *Mazer* as having limited the meaning of *Baker* to the idea/expression distinction.<sup>207</sup> 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 non-infringing.<sup>208</sup> 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.”<sup>209</sup>

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<sup>203</sup> Id.

<sup>204</sup> Id.

<sup>205</sup> 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 n. 38.

<sup>206</sup> See Nimmer, supra note xx, at sec. 2.18. This subsection 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, xx (1989) (characterizing *Baker* as illogical, unpersuasive, and incoherent).

<sup>207</sup> Nimmer, supra note xx, at 2.18 [D][1].

<sup>208</sup> Id.

<sup>209</sup> Id.

The Nimmer treatise also treats *Mazer* as having rejected *Baker*'s conception of separate domains for patents and copyrights.<sup>210</sup> "There is an overlapping area wherein certain works may claim either copyright or patent protection," says the treatise.<sup>211</sup> It takes *Taylor Instrument* to task for interpreting *Baker* as forbidding copyright protection in blank forms<sup>212</sup> and for its endorsement of (utility) patent/copyright exclusivity.<sup>213</sup> 102(b) is scarcely mentioned in the Nimmer treatise, and the treatise makes almost no effort to interpret the words of exclusion in this statutory provision.<sup>214</sup> For Nimmer, 102(b) is 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 Instrument* 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.<sup>215</sup> The eligibility of the ornamental designs of Stein's statuettes-lamp-bases for design patent protection did not categorically preclude copyright in the statuettes as works of art.

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<sup>210</sup> Id. at 2.19 ("The Supreme Court has held that a work, such as a work of art, may be eligible for either copyright or patent protection.")

<sup>211</sup> Id.

<sup>212</sup> Id. at 2.18 [B][4].

<sup>213</sup> Id. at 2.19 (characterizing *Taylor* as "an older decision" contrary to *Mazer* and other caselaw). 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. at 2.18 [D][2].

<sup>214</sup> The only other word in 102(b) besides idea that the Nimmer treatise tries to interpret is the word "discovery," see id. at sec. 2.03. As shown supra note xx, the treatise is probably wrong in its understanding of this term.

<sup>215</sup> *Mazer*, 347 U.S. at 216, n. 34 (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).

*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,<sup>216</sup> for the Court recognized that Copyright Office regulations had long denied registration to works insofar as protection was sought for “their mechanical and utilitarian aspects.”<sup>217</sup> *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.<sup>218</sup> *Mazer* cited *Baker* for the proposition that copyright, unlike patent, does not give exclusive rights to useful arts.<sup>219</sup> 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*.<sup>220</sup> *Mazer*’s observation about differences between the Selden and Baker forms was a simple misreading of *Baker*,<sup>221</sup> not a radical reinterpretation of the case, its holding, and *Baker*’s progeny.<sup>222</sup>

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<sup>216</sup> *Mazer* is not the only intellectual property case in which the Court has found categorical arguments for separate and exclusive domains for IP regimes to be unpersuasive. In *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124 (2001), for example, the Court rejected JEM’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. 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. 124 (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.

<sup>217</sup> *Mazer*, 347 U.S. at 213.

<sup>218</sup> *Id.* at 212, n. 24.

<sup>219</sup> *Id.* at 217.

<sup>220</sup> 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 excluding complex intellectual designs in the useful arts (that is, not just abstract ideas) from copyright protection. In addition to *Taylor Instrument*, the Court cited *Fulmer v. United States*, 103 F. Supp. 1021 (D. 1953) (drawing of parachute not infringed by manufacture of it) and *Muller v. Triborough Bridge Authority*, 43 F. Supp. 298 (S.D.N.Y. 1942) (drawing of approach to bridge not infringed by construction of bridge). *Fulmer* and *Muller* rely upon *Baker* as a key precedent. *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.

<sup>221</sup> Kaplan, *supra* note xx, at 64.

<sup>222</sup> How did Nimmer’s interpretation of *Baker* become influential in the caselaw, given how erroneous it is? This may partly be due to the abstruseness of copyright law which makes it logical for lawyers and judges

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.<sup>223</sup> 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 artistic 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 '76 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."<sup>224</sup> They would thus qualify as original sculptural works under the '76 Act.<sup>225</sup> The Nimmer treatise is simply wrong in saying that *Mazer* repudiated *Baker*'s wider

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to look to a treatise for guidance into the caselaw. During the 1970's and 1980's, 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 caselaw through the lens of the treatise author's framework. Once courts start accepting a treatise author's interpretation, network effects set in, as decisions cite previous decisions citing Nimmer and *Baker* for the abstract idea/expression distinction. See, e.g., Ann M. Bartow, *The Hegemony of the Copyright Treatise*, 73 U. Cin. L. Rev. 1 (2004).

<sup>223</sup> *Baker*, 101 U.S. at 103.

<sup>224</sup> See 17 U.S.C. sec. 101 (definitions of "pictorial, graphic and sculptural works" and "useful article"). PGS works qualify for copyright protection as long as they don't flunk the useful article test.

<sup>225</sup> The early copyright revision bills defined "pictorial, sculptural and graphic works" seemed to extend copyright to original designs for articles of manufacture. See S. 3008, 88<sup>th</sup> Cong., 1<sup>st</sup> Sess. (1964), sec. 1 (defining 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."). See Kaminstein History, supra note xx, at 27. 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. sec. 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. See Kaminstein History, supra, 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 Law J. 1143.

meanings,<sup>226</sup> as courts over time came to realize in the software copyright caselaw.

#### IV. The Evolution of Copyright and 102(b) As Applied to Computer Programs

Because the legislative history of the '76 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 caselaw. Strangely enough, this has not been so. Subpart A discusses three cases decided between 1982 and 1992 that accepted Nimmer's reinterpretation of *Baker* as a case about the unprotectability of abstract ideas and/or the merger doctrine. By endorsing this view, these courts fell into the very trap in software copyright cases that 102(b) had been adopted to avoid. Subpart B will show that over time, courts rediscovered 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

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<sup>226</sup> The Nimmer treatise has been critical of *Baker* as to "blank forms" It argues that courts should not deny copyright protection to blank forms as long as the forms exhibited a modicum of originality. This view initially attracted some caselaw support. See *Norton Printing Co. v. Augustana Hospital*, 155 U.S.P.Q. (BNA) 133 (N.D. Ill. 1967)(denying motion to dismiss copyright claim based on copying of hospital forms and form systems, citing Nimmer); *Harcourt Brace & World, Inc. v. Graphic Controls Corp.*, 329 F. Supp. 517 (S.D.N.Y. 1971)(finding infringement of copyright in test to print answer forms for the tests, citing Nimmer). Later cases, however, have rejected this analysis. See, e.g., *Bibbero Sys., Inc. v. Colwell Sys.*, 893 F.2d 1104 (9<sup>th</sup> Cir. 1990); *John H. Harland Co. v. Clarke Checks, Inc.*, 711 F.2d 966 (11<sup>th</sup> Cir. 1983); *Januz Marketing Commns. v. Doubleday & Co.*, 569 F. Supp. 76 (S.D.N.Y. 1982). The Nimmer treatise acknowledges that the Copyright Office follows *Baker*, and not the treatise, in reviewing applications to register copyrights in forms. Nimmer, *supra* note xx, at 2.18, n. 22. Professor Karjala argues that blank forms should not be protected by copyright law as useful tools for obtaining information to effectuate non-copyrightable processes. See Dennis S. Karjala, *Distinguishing Patent and Copyright Subject Matter*, 35 Conn. L. Rev. 439, 484-85 (2003).

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 Caselaw

The first software copyright case of any significance was a lawsuit brought by Apple Computer against Franklin Computer, the maker of Apple II-compatible computers. Franklin's computers contained exact copies of Apple operating system programs.<sup>227</sup> Franklin defended the lawsuit by challenging the copyrightability of Apple Computer's operating systems programs under *Baker*, some of its progeny, and the process exclusion of 102(b).<sup>228</sup>

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,<sup>229</sup> although the Third Circuit soon reversed this ruling. 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

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<sup>227</sup> See *Apple Computer, Inc. v. Franklin Computer Corp.*, 545 F. Supp. 812 (E.D. Pa. 1982), rev'd, 714 F.2d 1240 (3d Cir. 1983). The copyrightability of computer programs prior to the 1980 amendments recommended by CONTU was considered in *Data Cash Sys., Inc. v. JS&A Group, Inc.*, 480 F. Supp. 1063, 1067 (N.D. Ill. 1979) (holding that programs were copyrightable in source code form, but not in machine-executable form), aff'd on other grounds, 628 F.2d 1038 (7<sup>th</sup> Cir. 1980).

<sup>228</sup> Franklin made five main arguments: (1) that machine-executable programs were functional processes or methods of operation under *Baker* and section 102(b), id. at 816-23; (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, id. at 823-25, and like the charts in *Taylor*, Apple's programs had become essential parts of a machine; (3) that copying the Apple programs was necessary in order for Franklin's computer to be compatible with Apple's computers, id.; (4) that patents had issued for some program innovations, invoking *Baker*'s patent/copyright domain distinction, id. at 816-17; (5) that even if the Third Circuit had correctly ruled that videogame programs could be copyrighted in *Williams Electronics, Inc. v. Artic Int'l, Inc.*, 685 F.2d 870 (1982), that case was distinguishable because it involved videogame programs whose copyright had been registered as an audiovisual work. Operating system programs were different because they did not communicate with humans, and CONTU and Congress hadn't contemplated copyright for anything but application programs.

<sup>229</sup> *Franklin*, 545 F. Supp. at 812, 818.

Nimmer that the Supreme Court's decision in *Mazer* had repudiated this aspect of *Baker*.<sup>230</sup> It regarded 102(b) as merely a restatement of the idea/expression distinction and *Baker* as a precedent establishing the merger doctrine.<sup>231</sup> And as long as "other programs can be written or created which perform the same function as Apple's operating system program, that program is an expression of the idea and hence copyrightable."<sup>232</sup> Because Franklin had exactly copied the Apple operating system and had made no attempt to write alternative programs to perform the same functions,<sup>233</sup> Franklin had infringed. 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-1980's to the mid-1990's, and far more controversial, was whether the "structure, sequence, and organization" (SSO) and/or the "look and feel" of computer programs were within the scope of program copyrights.<sup>234</sup> In 1986, the Third Circuit Court of Appeals arguably endorsed both theories of "non-literal" copyright infringement for programs in *Whelan Associates, Inc. v.*

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<sup>230</sup> *Franklin*, 714 F.2d at 1252.

<sup>231</sup> *Id.* at 1252-53.

<sup>232</sup> *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.*

<sup>233</sup> *Id.* at 1245 (Franklin's programs were "virtually identical" to Apple programs; Franklin's engineers never attempted to write alternative 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 (9<sup>th</sup> Cir. 1984) (also rejecting challenge to validity of Apple operating system programs).

<sup>234</sup> 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." *Franklin*, 545 F. Supp.2d 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 caselaw, see *infra* note xx.

Jaslow Dental Lab., Inc.<sup>235</sup> *Whelan* was initially influential in software SSO and look and feel cases,<sup>236</sup> although it was substantially discredited over time.<sup>237</sup>

Rand Jaslow was an entrepreneurial dental laboratory professional who realized that computers could usefully automate common bookkeeping and administrative functions of dental laboratories.<sup>238</sup> Jaslow initially tried to 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. Whelan knew nothing about dental labs, so Jaslow worked closely with her to teach her the detailed aspects of dental lab business processes. Whelan initially developed the Dentalab program for IBM Series I computers. For a time, she and Jaslow collaborated in the sale of Dentalab, but thereafter they had a falling out.

When the IBM PC became a hit in the marketplace, Jaslow recognized the market potential for a program similar to Dentalab for the PC. With help from another programmer, Jaslow developed Dentcomm for the IBM PC using a different programming language and algorithms. Whelan then sued him for copyright infringement, claiming that Jaslow copied the overall “SSO” of Dentalab. 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

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<sup>235</sup> 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.

<sup>236</sup> Among the cases that followed *Whelan* were *Johnson Controls, Inc. v. Phoenix Control Systems, Inc.*, 886 F.2d 1173, 1175 (9<sup>th</sup> Cir. 1989); *Broderbund Software, Inc. v. Unison World, Inc.* 648 F. Supp. 1127, 1133 (N.D. Cal. 1986); *Telemarketing Resources*, 12 U.S.P.Q.2d (BNA) 1991 (N.D. Cal. 1989); *Pearl Systems, Inc. v. Competition Electronics*, 8 U.S.P.Q.2d (BNA) 1520 (S.D. Fla. 1988).

<sup>237</sup> See *infra* notes xx and accompanying text.

<sup>238</sup> The facts underlying the *Whelan* case are discussed in *Whelan Associates, Inc. v. Jaslow Dental Lab., Inc.*, 609 F. Supp. 1307, 1308-16 (E.D. Pa. 1985) and *Whelan*, 797 F.2d 1225-27.

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.<sup>239</sup>

*Whelan* was far from the only case in the mid-1980's in which the SSO issue was brewing.<sup>240</sup> IBM Corp. was a plaintiff in a similar case. To bolster its claim that program SSO was copyright-protected, it filed a declaration of Professor Nimmer, who had been vice-chair of CONTU, and therefore privy to its deliberations on software copyright issues.<sup>241</sup> Nimmer declared that CONTU "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."<sup>242</sup> 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."<sup>243</sup>

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<sup>239</sup> See *id.* at 1227-28.

<sup>240</sup> The early caselaw on SSO and non-literal infringement issues was decidedly mixed. See, e.g., *Synercom Technology, Inc. v. University Computing Co.*, 462 F. Supp. 1003 (N.D. Tex. 1978)(organization and structure of input formats held to be ideas); *Q-Co. Indus. Inc. v. Hoffman*, 625 F. Supp. 608 (S.D.N.Y. 1985)(rejecting claim of SSO similarities); cf. *SAS Inst., Inc. v. S & H Computer Sys., Inc.* 605 F. Supp. 816 (M.D. Tenn. 1985)(protecting program structure, but also finding literal infringement); *E.F. Johnson v. Uniden Corp. of Am.*, 623 F. Supp. 1485 (D. Minn. 1985)(rejecting compatibility defense for copying of structural similarities).

<sup>241</sup> Nimmer Declaration, *supra* note xx, at 1585, parag. 1-4. Prof. Nimmer died soon after executing this Declaration. *Silicon Epics* 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. Prof. Nimmer's endorsement the protectability of program SSO, a position then espoused by IBM lawyers. Prof. Nimmer's death meant he was no longer be available to file declarations or write law review articles, or change his mind after learning more about computer programming.

<sup>242</sup> *Id.* at 1592, parag. 28.

<sup>243</sup> *Id.* at 1589, parag. 17.

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.<sup>244</sup> Miller recounted his role in the legislative history of the '76 Act and as chair of the CONTU subcommittee that addressed computer program copyrights. 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.<sup>245</sup> Only through patent protection could program innovations such as logic and structure be legally protected against copying.<sup>246</sup>

Given the conflicting declarations of 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 Dentcomm infringed Whelan's copyright because "its structure and overall organization" was substantially similar to Dentalab, and

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<sup>244</sup> See Miller Declaration, supra note xx; Miller Second Declaration, supra note xx.

<sup>245</sup> Miller Declaration, supra note xx, at 2-3 (relating CONTU experience), 10 (CONTU intended design and logic to be unprotected by copyright); Miller Second Declaration, supra note xx, at 1-5 (logic and flow not protected by copyright).

<sup>246</sup> Id. 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 discussed in England, supra note xx.

because the programs had a similar look and feel when operating, from which the court (erroneously) inferred copying of internal program structure.<sup>247</sup>

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.<sup>248</sup>

The Third Circuit concluded that program SSO was within the scope of copyright protection. It observed that programs were "literary works" for purposes of copyright law. 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,"<sup>249</sup> citing cases involving movie plots, fantasy characters, greeting card styles, and dramatic plays. 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 literal elements of the program."<sup>250</sup>

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 a program," and not to "ideas, program logic, algorithms,

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<sup>247</sup> *Whelan Assoc., Inc. v. Jaslow Dental Lab*, 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, 47 U. Pitt. L. Rev. at 1126. Yet, it fueled what came to be known as the "look and feel" software copyright lawsuits. See, e.g., Pamela Samuelson, *The Ups and Downs of Look and Feel*, 36 Comm. ACM 29 (April 1993).

<sup>248</sup> *Whelan*, 797 F.2d at 1244.

<sup>249</sup> *Id.* at 1234.

<sup>250</sup> *Id.*

systems, methods, or layouts,”<sup>251</sup> but the court questioned whether the Circular “deserve[d] deference on a matter so complex as this one.”<sup>252</sup> It adhered to its earlier conception of 102(b) in *Franklin* that it was merely a restatement of the abstract idea/expression distinction<sup>253</sup> and *Baker* was a case about the “merger of idea and expression.”<sup>254</sup>

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.”<sup>255</sup> Because the idea of an efficient program for managing dental lab functions “could be accomplished in a number of different ways, the structure of the Dentalab program is part of the program’s expression, not its idea.”<sup>256</sup> 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.<sup>257</sup>

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,

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<sup>251</sup> Copyright Office Circular R61 (May 1983), quoted in *Whelan*, 797 F.2d 1242, n. 38.

<sup>252</sup> *Id.*

<sup>253</sup> *Id.* See *supra* note xx and accompanying text for the Third Circuit’s earlier view of 102(b) in *Franklin*.

<sup>254</sup> *Id.* at 1235.

<sup>255</sup> *Id.* at 1236.

<sup>256</sup> *Id.*, n. 28.

<sup>257</sup> *Id.* at 1237

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.<sup>258</sup>

Judge Robert Keeton, however, agreed with *Whelan* that copyright protected program SSO in the closely watched “look and feel” case of *Lotus Development Corp. v. Paperback Software Int’l.*<sup>259</sup> Lotus had charged Paperback with infringement because its competing spreadsheet program copied the structure of the “menu command system” of Lotus 1-2-3.<sup>260</sup>

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). The command terms of 1-2-3 were constituent elements of this system, for users could construct macro programs with them to carry out frequently performed sequences of functions, thereby saving the trouble of retyping the same sequence every time it was used. 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.<sup>261</sup>

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

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<sup>258</sup> See, e.g., LaST Frontier Conference Report, 30 *Jurim. J.* 15, 20 (1989); Englund, *supra* note xx, at 866-67; Goldstein, *supra* note xx, at 1125-26; David Nimmer, Richard L. Bernacchi, & Gary N. Frischling, *A Structured Approach to Analyzing the Substantial Similarity of Computer Software in Copyright Infringement Cases*, 20 *Ariz. St. L.J.* 625, 629-30 (1988). Efficiency issues are discussed *supra* notes xx and *infra* notes xx and accompanying texts.

<sup>259</sup> 740 F. Supp. 37 (D. Mass. 1990).

<sup>260</sup> *Id.* at 66.

<sup>261</sup> 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[.]” *Paperback*, 740 F. Supp. at 72. But see, e.g., Elizabeth Lowry, *Comment: Copyright Protection for Computer Languages: Creative Incentive or Technological Threat?*, 39 *Emory L.J.* 1293 (1990) (arguing that computer languages are uncopyrightable).

spreadsheets created in 1-2-3 to VP-Planner without a loss of functionality for any macros in the spreadsheet” and so that firms did not need to retrain users.<sup>262</sup>

Judge Keeton concurred in *Whelan*’s conclusion that *Baker* and 102(b) should be understood as distinguishing between unprotectability of abstract ideas and the protectability of expressions.<sup>263</sup> 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.<sup>264</sup> 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’] 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.”<sup>265</sup> 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.<sup>266</sup>

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<sup>262</sup> Id. at 77.

<sup>263</sup> Id. at 60-68.

<sup>264</sup> Id. at 66

<sup>265</sup> Id. at 78.

<sup>266</sup> Id. at 90-91. 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*, 45 F.2d 119, 121 (2d Cir. 1930), discussed in *Paperback*, 740 F. Supp. at 64-67. The *Paperback* test for infringement called, first, for a patterns of abstractions analysis, then for assessing whether idea and expression had merged, and third, for an assessment of whether copied elements not essential to every expression of the program’s idea was a substantial part of the plaintiff’s work. See id. at 63, 67-68.

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."<sup>267</sup> Judge Keeton's opinion embraced the logic of Nimmer's interpretation of *Baker* and 102(b). Indeed, the Nimmer Declaration was among the sources which Judge Keeton referenced in his lengthy exposition of copyright as applied to computer programs.<sup>268</sup>

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

*Computer Associates Int'l v. Altai, Inc.* was the first appellate decision to challenge *Whelan* and *Paperback*'s interpretation of *Baker* and 102(b).<sup>269</sup> *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.<sup>270</sup> CA claimed that the parameter list was among the structural elements of its program that copyright law protected, relying upon *Whelan*. *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.<sup>271</sup>

The Second Circuit accepted that some non-literal elements of programs could be protected by copyright law,<sup>272</sup> but criticized *Whelan* for being grounded in an outdated

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<sup>267</sup> Id. at 79.

<sup>268</sup> Id. at 45.

<sup>269</sup> 982 F.2d 693 (2d Cir. 1992).

<sup>270</sup> Id. at 697-98.

<sup>271</sup> CA drew upon dicta from *Franklin* in support of this argument. See supra note xx.

<sup>272</sup> *Altai*, 982 F.2d at 702-03.

understanding of computer science and for having adopted an overbroad test for copyright infringement for programs.<sup>273</sup> 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*.”<sup>274</sup> Under *Baker*, such works enjoy only a thin scope of protection from copyright to ensure that the functional aspects of the works are not protected.<sup>275</sup> *Altai* endorsed what it called “the abstraction-filtration-comparison” test for judging infringement in software copyright cases.

This test has 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. Step 2 called for a careful assessment of non-literal 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,<sup>276</sup> or (c) embodied standard programming techniques or public domain elements. Non-literal 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 non-literal

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<sup>273</sup> Id. at 705-06.

<sup>274</sup> Id. at 704.

<sup>275</sup> Id. at 712.

<sup>276</sup> 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.” *Altai*, 982 F.2d 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, e.g., Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 Stan. L. Rev. 1045, 1083-88 (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 Patry, *supra* note xx, at 54 (questioning the conclusion that efficient designs should be excluded from copyright protection); Nimmer et al, *supra* note xx, at 641 (recognizing that efficiency considerations may narrow programmer choices under the merger doctrine).

elements in the defendant's program. Based on this comparison, courts should decide whether there was substantial similarity in protected expression that the defendant had copied from the plaintiff.<sup>277</sup> Applied this test, the Second Circuit ruled that *Altai* did not infringe because the parameter list was an external constraint on programmer choices.<sup>278</sup>

*Altai* quickly displaced *Whelan* as the standard case on the proper scope of copyright protection for computer programs.<sup>279</sup> Interestingly enough, the *Altai* test derives from a test proposed by Professor Nimmer's son David.<sup>280</sup> Although the Nimmer-fils test for software copyright infringement is more compatible with the limiting principles of 102(b) and with *Baker* and its progeny than the Nimmer-pere test, it still does not call for courts to inquire about the meaning of the procedure, process, system, and method of operation limitations 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 "process, procedure, system, method of operation" limitations of 102(b) was the First Circuit Court of Appeals in *Lotus Dev. Corp. v. Borland Int'l*.<sup>281</sup> Lotus sued Borland after it developed a spreadsheet program called Quattro Pro (QP) to compete with Lotus 1-2-3. 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

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<sup>277</sup> Id. at 707-11.

<sup>278</sup> *Altai*, 982 F.2d at 714-15.

<sup>279</sup> See, e.g., Borland Amicus Brief, supra note xx, at 121-24 (discussing influence of *Altai*).

<sup>280</sup> See Nimmer, et al., supra note xx, at 640-49. Although this article did not call its proposed test an "abstraction-filtration-comparison" test, the key elements of what became "the *Altai* test" were embodied in the article. Id. at 636-51. The Second Circuit did not, however, cite to the article in its *Altai* opinion.

<sup>281</sup> 49 F.3d 807 (1<sup>st</sup> Cir. 1995).

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 them to reuse in QP the macros they had constructed in 1-2-3. 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. The First Circuit, invoking 102(b) and *Baker*, decided that Lotus' command hierarchy was an unprotectable method of operating a computer to perform spreadsheet functions.<sup>282</sup>

The First Circuit's discussion of 102(b) as applied to the Lotus command structure was not particularly well-developed or compelling.<sup>283</sup> A more persuasive analysis could have been 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."<sup>284</sup> 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.<sup>285</sup> Recognizing the macro system and its constituent parts as unprotectable by copyright law would have

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<sup>282</sup> *Borland*, 49 F.3d 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.* 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.

<sup>283</sup> See, e.g., Bocchino, *supra* note xx, at 467; Mark A. Lemley, *Convergence in the Law of Software Copyright*, 10 High Tech. L.J. 1, 21-22 (1995)(critical of the reasoning in *Borland*, although persuaded by the result); Patry, *supra* note xx, at 4-7; Weinreb, *supra* note xx, at 1207 ("The short way with the statute that the court of appeals took in *Borland* is too short to be satisfactory.")

<sup>284</sup> *Paperback*, 740 F. Supp. at 65.

<sup>285</sup> 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. Prob. 311 (1992)(arguing that the menu structure was a constituent element of the Lotus macro system that was ineligible for copyright protection under *Baker* and 102(b)).

enabled the First Circuit to draw more usefully upon *Altai* as support for Borland's compatibility defense and upon *Baker* and its progeny.

Lotus petitioned the Supreme Court for a writ of certiorari to review of 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' clear intent to extend copyright protection to programs.<sup>286</sup> Section 102(b) was merely a "a legislative embodiment of the idea/expression dichotomy."<sup>287</sup> Since the Lotus menu structure was "not dictated by functional considerations," Lotus argued that Judge Keeton had correctly held it to be protectable expression.<sup>288</sup> Lotus relied upon the Nimmer Declaration in the bygone *IBM* case as authority in support of its interpretation of the scope of software copyright protection.<sup>289</sup>

Although the Court granted Lotus' petition, it deadlocked on the issue presented, affirming the First Circuit ruling without setting a precedent.<sup>290</sup> Since then, courts have adhered to the *Altai* approach,<sup>291</sup> sometimes adapting its test to filter out unprotectable procedures, processes, systems, and methods of operation.<sup>292</sup> 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

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<sup>286</sup> See Lotus' Reply in Support of Petition For Writ of Certiorari to U.S. Supreme Court, July 5, 1995, at 7, available at <http://www-swiss.ai.mit.edu/6805/articles/int-prop/lotus/lotus-cert-reply.htm>.

<sup>287</sup> Id. (quoting from Borland's brief).

<sup>288</sup> Id.

<sup>289</sup> Id. at 6, 10, n.1.

<sup>290</sup> *Lotus Dev. Corp. v. Borland Int'l*, 516 U.S. 233 (1996). Justice Stevens recused himself. The other members of the Court divided 4-4.

<sup>291</sup> As of October 23, 2006, *Altai* has been followed in 49 subsequent cases.

<sup>292</sup> See, e.g., *Gates Rubber Co. v. Bando Chemical Indus., Ltd.*, 9 F.3d 823 (10<sup>th</sup> Cir. 1993)(filtering out similarities in algorithms as precluded by sec. 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 xx, at 27.

elements of programs, such as program SSO, they needed to apply for patents, as indeed they have.<sup>293</sup> “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 filtering analysis.”<sup>294</sup> 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.<sup>295</sup>

### 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

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<sup>293</sup> See, e.g., Josh Lerner & Feng Zhu, *What is the Impact of Software Patent Shifts? Evidence from Lotus v. Borland*, NBER Working Paper 11168 (March 2005); Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 Tex. L. Rev. 961 (2005). While I agree with Lerner & 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.

<sup>294</sup> Lemley, *supra* note xx, at 27. See also Dennis S. Karjala, *The Relative Roles of Patent and Copyright in the Protection of Computer Programs*, 17 John Marshall J. Comp. & Info. L. 41, 66-69 (1998) (because of the largely functional nature of program SSO, it should be eligible for patent, not copyright, protection).

<sup>295</sup> 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. 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 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.

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 '76 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 because they accepted 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 caselaw and beyond.

Outside of the software caselaw, 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 non-fictional texts), courts continue to cite *Baker* for the distinction between abstract ideas and expressions.<sup>296</sup> Yet, 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

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<sup>296</sup> See, e.g., *Gibson v. CBS, Inc.*, 491 F. Supp. 583 (S.D.N.Y. 1980)(alleging television show infringed copyright in lecture); *Miller v. CBS, Inc.*, 1980 U.S. Dist. LEXIS (C.D. Cal. 1980)(alleging television show infringed copyright in book).

operation” limitations of 102(b) apply. The erroneously narrow interpretation of *Baker* and 102(b) has, however, had distorting effects in some cases, such as those involving methods of organizing information,<sup>297</sup> parts numbering systems,<sup>298</sup> and coding systems.<sup>299</sup> Complex 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).<sup>300</sup> As the Court in *Baker* said

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<sup>297</sup> See, e.g., *Kregos v. Associated Press*, 937 F.2d 700 (2d Cir. 1991) which upheld a claim of copyright in a blank form for predicting the outcome of baseball games based on nine categories of information about prior games and player performance data. 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. The Second Circuit rejected these defenses, citing to Nimmer and characterizing *Baker* as invalidating copyrights only for “hard” methods, not “soft” ones like Kregos’ that merely suggested outcomes of games. The court cited no case in support of its assertion that “soft” methods qualify for copyright protection. *Kregos* is inconsistent with *Baker* and its progeny, including the game cases discussed supra Part II-D.

<sup>298</sup> See *Toro Co. v. R&R Products 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 Distrib. v. Whatever It Takes Transmission and Parts, Inc.*, 402 F.3d 700 (6<sup>th</sup> Cir. 1997)(rejecting claim of copyright in part numbering system); *Southco, Inc. v. Kanebridge Corp.*, 390 F.3d 276 (3d Cir. 2004)(rejecting claim in part numbering system).

<sup>299</sup> *Practice Mgmt. Info. Corp. v. American Medical Ass’n*, 121 F.3d 516 (9<sup>th</sup> Cir. 1997); *American Dental Ass’n v. Delta Dental Plan*, 126 F.3d 977 (7<sup>th</sup> Cir. 1997). Elsewhere I have questioned the holdings in *PMIC* and *ADA* upholding claims of copyrights in coding systems for standardized names and numbers of medical or dental procedures as contrary to *Baker*, a proper understanding of 102(b), and the *ATC* and *Southco* decisions. See Samuelson, *Questioning Copyright*, supra note xx, at xx.

<sup>300</sup> 17 U.S.C. sec. 113(b). 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 it was one of several alternative ways to express part numbers. See, e.g., *ATC*, 402 F.3d at 707. 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 (rejecting copyright claims in parts numbering system for transmission parts, invoking 102(b)); *Southco*, 390 F.3d at 277-79 (rejecting claims of copyright in parts numbering system for hardware, invoking 102(b)). 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 part numbering systems promotes robust competition in the market for machine parts. See also Karjala, supra note xx, at 515 (copyright for part numbering systems would inhibit competition).

long ago, the principle is the same in all.<sup>301</sup> 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 works.”<sup>302</sup>

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.<sup>303</sup> But this decision may only have encouraged subsequent part number system developers to become more creative in assigning numbers to parts in order to strengthen their copyright claims.<sup>304</sup> Faced with creative part numbering schemes, two recent decisions have denied copyright claims in them by invoking 102(b).

Some courts have employed the scenes a faire or merger doctrines in order to limit the scope of copyright in cases involving complex functional designs in copyrighted works. In *Mitel, Inc. v. Iqtel, Inc.*,<sup>305</sup> 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 merger grounds.<sup>306</sup> This was the right result, as a matter of copyright law, but technological command codes have nothing whatever to do with the standard features of literary genres that gave rise to the scenes a

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<sup>301</sup> *Baker*, 101 U.S. at 105.

<sup>302</sup> 17 U.S.C. sec. 102(b).

<sup>303</sup> See *Toro*, 787 F.2d at 1212-13.

<sup>304</sup> Although the Third Circuit eventually ruled against copyright for more creative assignment of part numbers in *Southco*, 390 F. 3d at , the court was deeply split over what seems to be a straightforward application of 102(b) because of the influence of Nimmer’s misinterpretation of *Baker*.

<sup>305</sup> See, e.g., *Mitel, Inc. v. Iqtel, Inc.*, 124 F.3d 1366 (10<sup>th</sup> 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 1372-73.

<sup>306</sup> *Id.* at 1374-75.

faire doctrine. 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.”<sup>307</sup> 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 progeny of Baker 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 Yoga Unity v. Chodhury*,<sup>308</sup> which denied a defense motion for summary judgment that a sequence of yoga poses was beyond the scope of copyright protection.<sup>309</sup> The originality requirement, the abstract idea/expression distinction, and the scenes a faire and merger doctrines did not give the judge a sufficient toolkit 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.<sup>310</sup> Many firms are developing XML schemas, for

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<sup>307</sup> Id. at 1273.

<sup>308</sup> 2005 U.S. Dist. LEXIS 10440 (N.D. Cal. 2005) (denying defendant’s motion for summary judgment).

<sup>309</sup> See, e.g., Katherine Macham, *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)(functionality of the Bikram yoga sequences should have excluded them from copyright).

<sup>310</sup> See, e.g., ROBERT J. GLUSHKO & TIM MCGRATH, *DOCUMENT ENGINEERING: ANALYZING AND DESIGNING DOCUMENTS FOR BUSINESS INFORMATICS AND WEB SERVICES* (2005).

example, to encode document exchange protocols.<sup>311</sup> XML schemas require a modicum of creativity to develop and are generally fixed in a tangible medium, but they are systematic designs for document interfaces which, under *Altai*, would seem to be excluded from copyright protection.<sup>312</sup> Some firms, moreover, are patenting XML schemas.<sup>313</sup> 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.

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<sup>311</sup> See, e.g., Cover Pages, XML Schemas, available at <http://xml.coverpages.org/schemas.html>.

<sup>312</sup> See, e.g., Douglas E. Phillips, *XML Schemas and Computer Language Copyrights: Filling in the Blanks in Blank Esperanto*, 9 J. Intell. Prop. L. 63 (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 (2001) (arguing in favor of copyright protection for XML schemas, relying on the narrow interpretation of *Baker* and 102(b)).

<sup>313</sup> See, e.g., Microsoft Corp., Office 2003 XML Reference Schema Patent License, available at <http://www.microsoft.com/mscorp/ip/format/xmlpatentlicense.asp>.