

Questioning Copyrights in Standards

by
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INTRODUCTION

Standards are essential to the operation of the Internet, the World Wide Web, and indeed, the modern information society, an integral part of the largely invisible infrastructure of the modern world that makes things work.¹ Every time people send email, for example, more than two hundred formally adopted Internet standards are implicated.² With the rise of the information economy, copyright has become a new prominent factor in the longstanding debate over intellectual property rights in standards,³ as standard-setting organizations (SSOs) increasingly claim and charge substantial fees for access to and rights to use standards such as the International Organization for Standardization (ISO) country, currency, and language codes and medical and dental procedure codes promulgated by the American Medical Association (AMA) and the American Dental Association (ADA).⁴

The high importance of claims of copyright in standards is illustrated by a “clarification” of its intellectual property policy that ISO published in July 2003. It would have required all software developers and commercial resellers of data who embedded data elements from ISO’s standard country, language, and currency codes to pay an annual fee (or a one-time fee plus regular maintenance fees) for doing so.⁵ Tim Berners-Lee, Director of the World Wide Web Consortium (W3C), wrote a letter to ISO’s President to object to this policy because of its negative impact on the evolution of the Web:

These and similar codes are widely used on the Web. In particular the language and country codes are of direct interest to W3C and the users of W3C Recommendations in the context of HTTP, HTML and XML and various other technologies. Language and country codes currently provide a single, standard way of identifying languages (and locales) throughout the Web. Multilingual Web sites and Web pages, as well as

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¹ See, e.g., Marcus Maher, *An Analysis of Internet Standardization*, 3 Va. J. L. & Tech. 5 (1998); GEOFFREY C. BOWKER & SUSAN LEIGH STARR, *SORTING THINGS OUT: CLASSIFICATION AND ITS CONSEQUENCES* 9 (1999).

² *Id.* at 7.

³ Compliance with standards has often implicated patent rights, and many thorny questions have arisen as to patent rights in standards. See, e.g., Hovencamp and Lemley articles in this symposium.

⁴ The AMA and ADA codes are discussed *infra* notes 9-15 and 37-45 and accompanying texts.

⁵ Robin Cover, *Standards Organizations Express Concern About Royalty Fees for ISO Codes*, Cover Pages, available at <http://www.coverpages.org/ni2003-09-20.html>. ISO standard 3166, for example, represents Afghanistan as AF, Albania as AL, Australia as AU, and Austria as AT within this code. ISO standard 639-2 represents the modern German language as deu, modern Greek as gre, Hawaiian as haw, and Italian as ita within this code.

internationalization and localization features, would be particularly affected.

Any charges for the use of these standards are going to lead to fragmentation, delay in deployment, and in effect a lack of standardization. In particular, those users who depend upon multi-lingual or non-English language services will suffer.

...

Given that this policy would have profound impact not only on ISO, but also on industry and users of the Web at large, we urge ISO to further consider this policy and its broader implications and consequences, and to reassure the community as quickly as possible that there will be no charges for the use of these standards.

The ISO policy would also have devastating consequences for open source developers.⁶ After several other organizations published statements of concern about the policy,⁷ ISO tabled it—for now. But ISO did not commit itself to continuing to make these codes available without charge for software, Internet, and web applications, and it continues to charge substantial fees for downloads of the standards and for reproductions of the full standards.⁸

This article will consider whether standards such as these, especially those whose use is mandated by government rules, should be eligible for copyright protection as a matter of U.S. copyright law. Part I reviews lawsuits that challenged copyrights in numbering systems devised to enable efficient communication. It argues that two decisions upholding copyrights in AMA and ADA codes were incorrectly decided in light of other caselaw, the statutory exclusion of systems from copyright, and various policy considerations. Part II presents caselaw and policy considerations that have persuaded courts to exclude standards from the scope of copyright protection under the scenes a faire and merger of idea and expression doctrines. Part II suggests that government mandates to use certain standards should affect the ability to claim copyright in standards. Part III considers whether SSOs need copyright incentives to develop and maintain industry standards they promulgate and whether arguments based on incentives should prevail over other considerations. It identifies competition and other public policy concerns that call into question allowing SSOs to own standards, particularly those whose use is required by law.

⁶ Kendall Grant Clark, *ISO to Require Royalties?*, XML.com, available at <http://www.xml.com/lpt/a/2003/09/24/deviant.html>.

⁷ Cover, *supra* note 5. The Unicode Technical Committee, the International Committee for Information Technology Standards, and the Internet Architecture Board were among the other objectors. *Id.*

⁸ *Id.* at 4. ISO does not charge for reproduction of two digit ISO codes in academic work and for internal use within firms. For example, “(a) a hospital may require a patient to enter a country code and a language code when registering for admittance; (b) a company may program a drop-down menu on its website as part of a registration or ordering page for proper identification of its worldwide visitors; (c) a company or an individual may use country codes as part of a mailing address; (d) a bank may use the currency codes in its system for identifying funds in various locations.” *Id.*

I. STANDARDS MAY BE UNPROTECTABLE SYSTEMS UNDER SEC. 102(b)

Copyright protection has sometimes been claimed in coding systems. They typically use numbers, abbreviations, or other symbols to represent certain data elements in accordance with rules or organizing principles. Sometimes such systems have been collectively drafted to serve as industry standards, although some systems drafted by one person or firm have become, or their drafters intended them to become, de facto standards in the market. This Part argues that two appellate court decisions upholding copyrights in number-coding systems were wrongly decided in light of subsequent caselaw, the statutory exclusion of systems from copyright protection under 17 U.S.C. sec. 102(b), longstanding precedents interpreting this exclusion, and copyright policies.

A. Caselaw Upholding Copyright in Numbering Systems

The AMA has developed and refined a coding system for standard terminology for medical procedures over several decades, which it publishes in print form and online as the “Current Procedural Terminology” (CPT).⁹ The stated purpose of the CPT is “to provide a uniform language that accurately describes medical, surgical, and diagnostic services, and thereby serve as an effective means for reliable nationwide communication among physicians, and other healthcare providers, patients, and third parties.”¹⁰ CPT is widely used in “report[ing] medical procedures and services under public and private health insurance programs...and for administrative management purposes such as claims processing and developing guidelines for medical care review.”¹¹ In the 1980’s, the federal government’s Health Care Financing Administration (HCFA) mandated use of the CPT when reporting services for Medicare and Medicaid reimbursement.¹² The CPT has thus become a standard in two senses: the AMA promulgated it to be a standard coding system for physicians and other health professionals and services, and it has been mandated as a standard for doing a certain kind of business with the U.S. government.

The CPT classifies more than six thousand procedures into one of six groups: evaluation, anesthesiology, surgery, radiology, pathology and medicine.¹³ “Within each section, procedures are arranged to enable the user to locate the code number readily.”¹⁴ For example, within the surgery category, the CPT arranges subsections by body part. Within each body part subcategory is an organized list of different kinds of procedures pertinent to that body part. The CPT sets forth a standard name for each medical

⁹ American Medical Association, *Current Procedural Terminology 2004 Standard Edition (2003)* (“CPT”). The online version of CPT is access-controlled.

¹⁰ American Medical Association, *CPT Process—How a Code Becomes a Code* at 1, available at <http://www.ama-assn.org/ama/pub/category/print/3882.html>.

¹¹ *Id.*

¹² *Id.* See 42 C.F.R. sec. 433.112(b)(2). HCFA incorporated the CPT into its Common Procedure Coding System. See 48 Fed. Reg. 16750, 16753 (1983); 50 Fed. Reg. 40895, 40897 (1985).

¹³ *Practice Mgmt Info. Corp. v. American Medical Ass’n*, 121 F.3d 516, 517 (9th Cir. 1997), cert. denied, 1998 U.S. LEXIS 4285.

¹⁴ *PMIC*, 121 F.3d at 517.

procedure and assigns a unique five-digit number to each procedure. Removing an implant from an elbow joint, for example, is designated by the number 24160.¹⁵

Practice Management Information Corp. (PMIC) decided to publish the CPT in one of its medical practice books. After the AMA threatened legal action against this publication,¹⁶ PMIC sought a declaratory judgment that the AMA code had become uncopyrightable after HCFA mandated its use, or alternatively, that the AMA misused its copyright by an exclusive license that forbade the agency to use “any other system of procedure nomenclature...for reporting physicians’ services.”¹⁷ A trial judge issued a preliminary injunction against PMIC’s publication of the AMA code.¹⁸ The Ninth Circuit Court of Appeals affirmed in part and reversed in part.

PMIC’s invalidity argument rested mainly on Supreme Court caselaw about the uncopyrightability of judicial opinions and statutes. In *Banks v. Manchester*,¹⁹ for example, the Supreme Court decided that judicial opinions could not be copyrighted. The Ninth Circuit distinguished *Banks* as involving government employees who didn’t need copyright incentives to write judicial opinions.²⁰ AMA, by contrast, was a private entity that claimed copyright incentives were important to it.²¹ *Banks* also rejected copyright claims in judicial opinions on due process grounds (that is, on a theory that people should have unfettered access to the law). There was, however, “no evidence that anyone wishing to use the [AMA] code has any difficulty getting access to it” and AMA has “no incentive to limit or forego publication” of the code.²² PMIC was “not a potential user denied access to the [code] but a putative copier wishing to share in the AMA’s statutory monopoly.”²³ The court was wary of “terminat[ing]” AMA’s copyright based on the risk that the AMA would restrict access to CPT when other remedies, such as mandatory licensing at a reasonable royalty, were available to contend with misuse.²⁴

The court expressed concern that “invalidating [AMA’s] copyright on the ground that the CPT entered the public domain when HCFA required its use would expose the copyrights on a wide variety of privately authored model codes and reference works to

¹⁵ CPT, supra note 9, at 73. The 20000 series within the CPT is for surgical procedures. Surgical procedures, in turn, are organized by parts of human bodies. Surgery on upper arms and elbows, for example, are numbered between 23930 and 24320. Introduction or removal of items from upper arms and elbows are coded between 24160 and 24220. Sometimes procedures are designated by numbers that are close together (e.g., removing an item from the radial head of an upper arm is 24164, 4 numbers away from removing an item from an elbow joint, while other numbers are farther away, e.g., 24200 is the next procedure for removal of foreign bodies from upper arm or elbow area).

¹⁶ Had the AMA not threatened suit, PMIC would have lacked standing to bring a declaratory judgment action. That the AMA did not sue may be some evidence that it was nervous about the legal status of its copyright claim in the CPT as a federally mandated numbering system.

¹⁷ *PMIC*, 121 F.3d at 517 (quoting the contract between the AMA and HCFA).

¹⁸ *Id.*

¹⁹ 128 U.S. 244 (1888).

²⁰ *PMIC*, 121 F.3d at 518.

²¹ *Id.*

²² *Id.* at 519.

²³ *Id.* The court also perceived PMIC’s lawsuit as a vengeful response to AMA’s unwillingness to give it a volume discount. *Id.* at 518.

²⁴ *Id.* at 519.

invalidity.”²⁵ Because the Supreme Court had never considered whether private actors could enforce copyrights in rules they had drafted after government adoption, and two other courts had, in its view, “declined to enjoin enforcement of private copyrights in these circumstances,”²⁶ the Ninth Circuit ruled against PMIC’s challenge to the AMA’s copyright.

Yet the Ninth Circuit lifted the preliminary injunction because it agreed with PMIC that AMA had misused its copyright by entering into an exclusive licensing deal with HCFA.²⁷ This misuse limited AMA’s right to enforce the right until the misuse had been “purged.”²⁸

On appeal, PMIC belatedly argued that the AMA code had become uncopyrightable because the HCFA mandate had caused the CPT to become an unprotectable “idea” under section 102(b) of U.S. copyright law, the merger doctrine, and *Sega Ent. Ltd. v. Accolade, Inc.*²⁹ The court’s articulation of PMIC’s 102(b)/merger theory is too cryptic to be decoded, but the court distinguished *Sega* as having involved an effort to suppress creativity:

[T]he AMA’s copyright does not stifle independent creative expression in the medical coding industry. It does not prevent PMIC or the AMA’s competitors from developing comparative or better coding systems and lobbying the federal government and private actors to adopt them. It simply prevents wholesale copying of an existing system.³⁰

²⁵ Id. Other SSOs and drafters of systematic codes filed amicus briefs arguing that their copyrights would be jeopardized by an invalidity ruling in *PMIC*. Id., n. 6. The court also quoted from the Nimmer treatise which disapproved of invalidating copyrights in privately drafted standards. 1 MELVILLE NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT sec. 5.06[C].

²⁶ The two cases were *CCC Information Services, Inc. v. Maclean Hunter Market Reports, Inc.*, 44 F.3d 61 (2d Cir. 1994) and *Building Officials & Code Admin. v. Code Technology, Inc.*, 628 F.2d 730 (1st Cir. 1980). CCC was database developer who copied used car prices from Maclean’s “redbook” that some states relied upon in setting damages in tort cases or insurance claims. The Second Circuit was “not prepared to hold that a state’s reference to a copyrighted work as a legal standard for valuation results in the loss of copyright.” *CCC*, 44 F.3d at 74. *BOCA* involved a privately drafted building code adopted by Massachusetts and digitized by the defendant in its commercial product. The First Circuit lifted a preliminary injunction against CTI’s appropriation of the code because it doubted the validity of *BOCA*’s copyright after enactment of the code as law.

Because *BOCA* questioned the validity of copyright in an enacted standard, the Ninth Circuit should not have cited it as supportive. The ruling in *PMIC* is further undermined by *Veeck v. Southern Building Code Congress Int’l, Inc.*, 293 F.3d 791 (5th Cir. 2002), discussed *infra* notes 143-51 and accompanying text, which invalidated copyright in privately drafted codes after its enactment into law.

²⁷ *PMIC*, 121 F.3d at 520-21.

²⁸ Id. at 521. AMA may have sought to purge the misuse by removing the exclusivity clause from its contract with HCFA. As a practical matter, however, misuse of this sort cannot be readily purged by a change in contract provisions because of sunk-cost investments made by physicians and others in using the AMA standard to comply with HCFA regulations.

²⁹ Id. at 520, n. 8.

³⁰ Id. This statement ignores that the very point of developing a standard coding system such as the CPT is to gain the benefits of uniformity. See *infra* notes 98-101 and accompanying text.

PMIC apparently did not make the more straightforward argument that the CPT was an unprotectable coding system under section 102(b) which provides:

In no case does copyright protection...extend to any idea, procedure, process, system, method of operation, principle, concept or discovery, regardless of the form in which it is...embodied in such work.³¹

This is curious given that the AMA and the Ninth Circuit repeatedly referred to the CPT as a “system.”³²

Section 102(b) played a more prominent role in a sister case to *PMIC* that arose after Delta Dental published a book containing standard dental procedure nomenclature and associated numbers from the Code of Dental Procedures and Nomenclatures (Code) developed by the ADA. ADA sued Delta for copyright infringement and sought an injunction to stop Delta from publishing ADA’s Code and money damages for past infringements.

The trial judge ruled against the copyrightability of the ADA code,³³ saying it did not qualify for copyright protection because it comprehensively cataloged a field of knowledge, rather than creatively selecting information about it.³⁴ Although the code’s arrangement of data was creative, the arrangement was systematic and highly useful, and hence, unprotectable under section 102(b).³⁵ The code was, moreover, the collaborative work product of a committee, not an expression of the judgment of an author, and Delta had participated in the drafting of the ADA standard, which further supported its right to reuse the ADA code.³⁶

Judge Frank Easterbrook, writing for the Seventh Circuit Court of Appeals, disagreed. In his view, ADA’s “taxonomy” of dental procedures was creative enough to qualify for copyright protection. “Creativity marks the expression even after the fundamental scheme has been devised.”³⁷ Because there are many different ways to organize types of dental procedures—“by complexity, or by the tools necessary to perform them, or by the anesthesia employed, or in any of a dozen different ways”—the way chosen by ADA was a creative expression not dictated by functional considerations.³⁸ The usefulness of a taxonomy did not disqualify it from protection, in Judge Easterbrook’s view, because only pictorial, sculptural and graphic works were disqualified from copyright on account of their utility.³⁹ The trial court’s reasoning would imperil copyrights in many other works, such as standards promulgated by the

³¹ 17 U.S.C. sec. 102(b).

³² *PMIC*, 121 F.3d at 518, 520 n. 8. The Ninth Circuit referenced coding systems thirteen times in *PMIC*.

³³ *American Dental Ass’n v. Delta Dental Plans Ass’n*, 39 U.S.P.Q.2d (BNA) 1715 (N.D. Ill. 1996), rev’d, 126 F.3d 977 (7th Cir. 1997).

³⁴ *ADA*, 39 U.S.P.Q.2d at 1721.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *ADA*, 126 F.3d at 979.

³⁸ *Id.*

³⁹ *Id.* at 980.

Financial Accounting Standards Board (FASB),⁴⁰ the West key numbering system, the uniform system of citation for legal materials,⁴¹ and even computer software.⁴²

The ADA opinion went into considerable detail about the perceived creativity of the ADA's numbering system.⁴³ ADA assigned 5 digit numbers to procedures, when it could have made them 4 or 6 digits long, and ADA decided the first number should be a zero in order to leave room for future expansion of the code as more procedures were developed or discovered.⁴⁴ The second and third numbers represented a particular grouping of procedures, and the remaining two digits identified the specific procedure associated with that number. "A catalog that initially assigns 04266, 04267, and 04268 to three procedures will over time depart substantially from one that assigns 42660, 42670, and 42680 to the same three procedures."⁴⁵ Judge Easterbrook was so taken with the creativity of the ADA code that he opined that the name of each procedure and the number assigned to it were themselves original works of authorship entitled to copyright protection.⁴⁶

To Delta's argument that section 102(b) rendered ADA's system unprotectable, Judge Easterbrook flippantly responded:

But what could it mean to call the Code a "system"? This taxonomy does not come with instructions for use, as if the Code were a recipe for a new dish.... The Code is a taxonomy that can be put to many uses. These uses may or may not be or include systems; the code is not.⁴⁷

Judge Easterbrook seemed to think that section 102(b) made unprotectable only those systems presenting a danger of monopolization of a widely used practice such as bookkeeping, as in *Baker v. Selden*.⁴⁸ Easterbrook perceived no danger that ADA would

⁴⁰ The copyrightability of FASB standards is questioned in Lawrence Cunningham, *Private Standards in Public Law: Copyright, Lawmaking and the Case of Accounting*, 104 Mich. L. Rev. 308, 323-28 (2005).

⁴¹ Cornell's Legal Information Institute has reimplemented this system and posted it on the web. See <http://www.law.cornell.edu/citation/>.

⁴² ADA, 126 F.3d at 978. See *infra* note 102 for an explanation of why computer software copyrights are valid, even if ADA's coding system is not.

⁴³ *Id.* Easterbrook used the term "numbering system" to describe the ADA code. *Id.* at 977. Others have done the same. See Karen Matherlee, *From Diagnosis to Payment: The Dynamics of Coding Systems for Hospital, Physician, and Other Health Services*, National Health Policy Forum Background Paper, Jan. 25, 2002, at 8. Recall that the Ninth Circuit repeatedly described the AMA code as a coding system. See *supra* note 32.

⁴⁴ ADA, 126 F.3d at 979.

⁴⁵ *Id.*

⁴⁶ "[W]e think that even the short description [i.e., the name of the procedure] and the number are original works of authorship." *Id.* Justin Hughes has criticized ADA for treating names of dental procedures and associated numbers as "micro-works" of authorship in contravention of the long-standing copyright policy of not allowing copyright protection for titles, short phrases and the like. See Justin Hughes, *Size Matters (Or Should) In Copyright Law*, 74 Fordham L. Rev. 575, 595-96 (2005).

⁴⁷ ADA, 126 F.3d at 980-81.

⁴⁸ 101 U.S. 99 (1880). Judge Easterbrook thought that "[p]rotecting variations on the [Selden] forms could have permitted the author of an influential accounting treatise to monopolize the practice of double-entry bookkeeping." ADA, 126 F.3d at 981. Selden was not, in fact, the author of an "influential accounting"

monopolize dental practice. Under section 102(b), dentists were free to use ADA codes in their forms, and even Delta was free “to disseminate forms inviting dentists to use the ADA’s code when submitting bills to insurers. But it does not permit Delta to copy the code itself or make and distribute a derivative work based on the Code.”⁴⁹

B. Caselaw Rejecting Copyright Claims in Numbering Systems

Southco manufactures products such as latches, handles, and rivets. After its competitor Kanebridge reproduced in its catalog product names and numbers from Southco’s copyrighted catalog, Southco sue Kanebridge for copyright infringement.⁵⁰ Kanebridge’s principal defense was that Southco’s numbering system was uncopyrightable under sec. 102(b). Southco asserted that its names and numbers were original enough to be copyrightable because they were the product of skilled judgment, and since there were many different ways to design numbering systems for such a catalog, there was no “merger” of idea and expression to disqualify the work from copyright.⁵¹

A retired Southco engineer who designed the Southco numbering system explained the creativity in the numbering system, pointing out that “each particular digit or group of digits signifies a relevant characteristic of the product.”⁵² The first two digits represented the product type (e.g., 47 = captive screws), while other digits “indicate characteristics such as thread size (‘632’), composition of the screw (aluminium), and finish of the knob (‘knurled’).”⁵³

Writing for the Third Circuit Court of Appeals, Judge Samuel Alito (now a Justice of the U.S. Supreme Court) held that Southco’s numbering system—that is, the pairing of product names with numbers representing the products—was unprotectable under section 102(b).⁵⁴ It accepted that Southco “had to identify the relevant characteristics of the

treatise (Baker was) and protecting Selden’s system by copyright would not have affected use of double-entry bookkeeping, an innovation that dates back to the 12th century. See Pamela Samuelson, *Baker v. Selden: Sharpening the Distinction Between Authorship and Invention* in *IP STORIES* (Jane C. Ginsburg & Rochelle Cooper Dreyfuss, eds. 2005)

⁴⁹ *ADA*, 126 F.3d at 981. Professor Justin Hughes has observed that the *ADA* decision “may follow our intuitions on unfair competition and seems to give the *ADA* an *INS*-like quasi-property right against competitors, but not against individuals. Yet, the distinction makes a hash out of section 106 rights; it would be more sensible to say that an individual’s form-filling never produces a work substantially similar to the *ADA* code as a whole.” Hughes, *supra* note 46, at 597. Judge Easterbrook, however, considered each number to be an original work of authorship, see *supra* note 46 and accompanying text. Under this view, entry of each number in a form, whether by a dentist or by Delta, would arguably be infringement unless saved by fair use. Judge Easterbrook thus makes a hash of sec. 102(b), as well as of sec. 106.

⁵⁰ *Southco, Inc. v. Kanebridge Corp.*, 390 F.3d 276, 277-79 (3d Cir. 2004) (*Southco III*).

⁵¹ Judge Roth’s dissent articulates Southco’s arguments. See *id.* at 290-97.

⁵² *Southco III*, 324 F.3d at 278.

⁵³ *Id.* at 278.

⁵⁴ *Id.* at 283-85. Southco also claimed copyright in the individual product names and numbers, but the court found these unprotectable under the longstanding exclusion of short phrases and titles from copyright protection. *Id.* at 285-87. See Hughes, *supra* note 46, at 599 (“*Southco III* finally put the brakes—at least in one circuit—on the dangerous reasoning that an individual number might be protectable because of the research, analysis and judgment involved in each evaluation or designation.”).

products in the class (that is, characteristics that would interest prospective purchasers); it had to assign one or more digits to express each characteristic; and it had to assign a number or other symbol to represent each of the relevant values of each characteristic.”⁵⁵ This did require some skill and judgment, but “[o]nce these decisions were made, the system was in place and all of the products in the class could be numbered without the slightest bit of creativity.”⁵⁶ Insofar as any originality could be discerned, it lay in Southco’s development of rules for the numbering system, not in the pairing of numbers and products.

In a subsequent case, ATC tried to distinguish its numbering system from Southco’s and take cover under *ADA* by characterizing its system as a “taxonomy.” As in *Southco*, ATC alleged that its competitor was a copyright infringer because it reproduced the taxonomy in the latter’s catalog of transmission parts.⁵⁷ ATC claimed creativity in:

(1) deciding what kind of information to convey in part numbers; (2) predicting future developments in the transmission parts industry and deciding how many slots to leave open in a given subcategory to allow for these developments; (3) deciding whether an apparently novel part that doesn’t obviously fit in any of the existing classifications should be assigned to a new category and if the latter, which one; (4) designing the part numbers; and (5) devising the overall part numbers that places the parts into different categories.⁵⁸

The court accepted that “[a]t least some of the decisions made by ATC are arguably ‘non-obvious choices’ made from ‘among more than a few options,’”⁵⁹ but nevertheless ruled against the copyrightability of the taxonomy because “the creative aspects of the ATC classification scheme” lay in its ideas.⁶⁰ Original ideas, the court held, are not copyrightable under section 102(b). “ATC cannot copyright its predictions of how many types of sealing rings will be developed in the future, its judgment that O-rings and sealing rings should form two separate categories of parts, or its judgment that a new part belongs with the retainers as opposed to the pressure plates.”⁶¹

Southco visited the Third Circuit three times before being resolved by the court en banc. *Southco, Inc. v. Kanebridge Corp.*, 258 F.3d 148 (3d Cir. 2001) (*Southco I*) vacated a preliminary injunction against Kanebridge because the court thought Southco was unlikely to succeed on the merits because of doubts about the originality of its numbering system. *Southco, Inc. v. Kanebridge Corp.*, 324 F.3d 190 (3d Cir. 2003) (*Southco II*) reversed summary judgment for Kanebridge because an affidavit about the system created a triable issue of fact about its originality. *Southco, Inc. v. Kanebridge Corp.*, 390 F.3d 276 (3d Cir. 2004) (*Southco III*) reconsidered *Southco II* en banc and affirmed summary judgment for Kanebridge. The Supreme Court denied the petition for certiorari, 126 S.Ct. 336 (2005).

⁵⁵ *Southco III*, 390 F.3d at 282.

⁵⁶ *Id.*

⁵⁷ *ATC Distribution, Inc. v. Whatever It Takes Transmissions & Parts, Inc.*, 402 F.3d 700 (6th Cir. 2005).

⁵⁸ *Id.* at 706.

⁵⁹ *Id.* at 707, quoting from *Matthew Bender & Co. v. West Pub’g Co.*, 158 F.3d 674, 682 (2d Cir. 1998).

⁶⁰ *ATC*, 402 F.3d at 707.

⁶¹ *Id.*

Nor was the court was persuaded that the numbers themselves were original works of authorship entitled to copyright protection. Characterizing *ADA*'s rationale for this holding as "rather opaque,"⁶² the Sixth Circuit doubted its soundness.⁶³ Yet, the court went on to say that even if "some strings of numbers used to designate an item or procedure could be sufficiently creative to merit copyright protection, the part numbers at issue in the case before us do not evidence any such creativity. ATC's allocation of numbers to parts was an essentially random process, serving only to provide a useful shorthand way of referring to each part."⁶⁴ The court expressed concern that allowing copyright in part numbers "would provide a way for the creators of otherwise uncopyrightable ideas or works to gain some degree of copyright protection through the back door simply by assigning short numbers or other shorthand phrases to those ideas or works (or their component parts)."⁶⁵ The real competition between ATC and WITTP, after all, was in sales of uncopyrightable transmission parts, not in sales of catalogs.

C. Why Are Systems Uncopyrightable?

The copyright claims discussed above rested on assertions of creativity in the pairing of particular numbers with discrete phenomena in accordance with rule-based systems for efficiently organizing information for a specific purpose. All four systems were, moreover, promulgated with the intent that they would become industry standards.⁶⁶ The Ninth and Seventh Circuits in *PMIC* and *ADA* erred in not seriously analyzing the section 102(b) challenges to these systems. The Third Circuit in *Southco* and the Sixth Circuit in *ATC* correctly recognized that systematic ways of assigning numbers to phenomena are unprotectable by copyright law under section 102(b). Their analyses would have been even stronger had they invoked the long history of copyright cases denying protection to systems and had they discussed policy rationales for excluding systems and their component parts from the scope of copyright protection.

Even before the landmark *Baker v. Selden* decision in which the Supreme Court ruled that bookkeeping systems and their constituent parts (embodied in sample ledger sheets) were unprotectable by copyright law,⁶⁷ the Supreme Court ruled that copyright did not protect a symbol system for representing specific types of information on maps of urban areas prepared to assess fire insurance risks.⁶⁸ Perris, who had mapped certain wards of New York City, sued Hexamer for infringement because the latter used the same symbol system in his comparable map of urban Philadelphia.

The maps were made after a careful survey and examination of the lots and buildings in the enumerated wards of the city, and were so marked with arbitrary coloring and signs, explained by a reference or key, that an

⁶² Id. at 708.

⁶³ Id.

⁶⁴ Id.

⁶⁵ Id. at 709,

⁶⁶ AMA Coding Process, *supra* note 10; *ADA*, 1996 U.S. Dist. LEXIS 5809 at 13; *Southco III*, 390 F.3d at 279; *ATC*, 402 F.3d at 703.

⁶⁷ 101 U.S. 99 (1880).

⁶⁸ *Perris v. Hexamer*, 99 U.S. 674 (1878).

insurer could see at a glance what were the general characteristics of the different buildings within the territory delineated, and many other details of construction and occupancy necessary for his information when taking risks. They are useful contrivances for the despatch of business, but of no value whatever except in connection with the identical property they purport to describe.⁶⁹

The Court concluded:

The complainants have no more an exclusive right to use the form of the characters they employ to express their ideas upon the face of the map, than they have to use the form of type they select to print the key. Scarcely any map is published on which certain arbitrary signs, explained by a key printed at some convenient place for reference, are not used to designate objects of special interest, such as rivers, railroads, boundaries, cities, towns, &c.; and yet we think it has never been supposed that a simple copyright of the map gave the publisher an exclusive right to the use upon other maps of the particular signs and key which he saw fit to adopt for the purposes of his delineations. That, however, is what the complainants seek to accomplish in this case. The defendant has not copied their maps. All he has done at any time has been to use to some extent their system of arbitrary signs and their key.⁷⁰

The comprehensibility of maps would be impeded if subsequent developers had to use entirely different symbol systems for each map. *Perris* is an example of a system held unprotectable by copyright law notwithstanding the fact that its component parts were not “dictated by functional considerations,”⁷¹ as Judge Easterbrook seemed to think was necessary for a system to be ineligible for protection under section 102(b).

In explaining why bookkeeping and other useful systems should not be protected by copyright law, the Court in *Baker v. Selden* observed that to give the author of a book an exclusive right in a useful art, such as a bookkeeping system, depicted in the book “would be a surprise and fraud on the public. That is the province of letters patent, not of copyright.”⁷² This was relevant in *Baker* because Selden had filed a patent on his bookkeeping system, although no patent had apparently issued.⁷³ The Court did not want to allow Selden to misuse his copyright by getting patent-like protection for the system through the copyright in his book. Selden could protect his description of the system through copyright, but not the system itself.⁷⁴

⁶⁹ Id. at 675.

⁷⁰ Id. at 676.

⁷¹ *ADA*, 126 F.3d at 979.

⁷² 101 U.S. 99, 102 (1880).

⁷³ See Samuelson, *supra* note 48, at 174.

⁷⁴ *Baker*, 101 U.S. at 102-04.

Although useful arts can generally “only be represented in concrete forms of wood, metal, stone or some other physical embodiment,” the principle that copyright doesn’t protect useful systems still applied even when, as with Selden’s forms, they are embodied in a book.⁷⁵ In *Baker*, the selection and arrangement of headings and columns was deemed too useful to be protected by copyright.⁷⁶ Because some systematic organizations of information have been patented,⁷⁷ *Baker*’s concerns about possible misuses of copyright to obtain patent-like protection may have some significance in information systems cases.

Many cases after *Baker* applied its system/description distinction. Especially pertinent to the numbering system cases are *Griggs v. Perrin*⁷⁸ and *Brief English Systems v. Owen*.⁷⁹ In these cases, plaintiffs sued authors of competing books on the shorthand systems each plaintiff had devised. Both systems involved the assignment of particular abbreviations and symbols to represent particular letters, words, phrases, and the like for such purposes as stenographic transcription. The courts ruled against the copyright claims in both cases, citing *Baker*.⁸⁰ These cases are notable because in neither case was the particular shorthand system at issue dictated by specific rules or functionality. Many shorthand systems have, in fact, been developed over time, just as many bookkeeping systems have been developed. Contrary to Judge Easterbrook’s conclusion, the fact that other systems might be devised does not entitle a particular system to obtain copyright protection.⁸¹

When faced with assessing whether a particular information artifact is an uncopyrightable “system,” courts should start by recognizing that systems, by their nature, consist of interdependent, interrelated parts that are integrated into a whole scheme.⁸² This is true of bookkeeping systems, shorthand systems, burial insurance

⁷⁵ *Id.* at 105.

⁷⁶ This contradicts Judge Easterbrook’s assumption that the utility of an information artifact is only relevant to pictorial, sculptural and graphic works. See *supra* note 39 and accompanying text.

⁷⁷ See, e.g., U.S. Patent No. 6.446.061 Taxonomy Generation for Document Collections (2002).

⁷⁸ 49 F. 15 (C.C.N.D.N.Y. 1892).

⁷⁹ 48 F.2d 555 (2d Cir.), cert. denied, 321 U.S. 785 (1931).

⁸⁰ *Griggs*, 49 F. at 15 (“complainant has no right to a monopoly of the art of shorthand writing”); *Brief English*, 48 F.2d at 556 (“the plaintiff’s shorthand system, as such, is open to use by whoever will take the trouble to learn and use it”).

⁸¹ Dental procedures could, of course, be classified “by complexity or by the tools required to perform them or by the parts of the mouth involved or by the anesthesia employed, or in any of a dozen ways.” *ADA*, 126 F.3d at 979. Judge Easterbrook may be right that a multitude of systems for organizing dental procedures is possible, but the purpose for which a system is designed will influence the appropriate choice of categories. Because the ADA Code was developed to make it easier for dentists, insurers, and the like to record data for billing and related purposes, the rules for constructing such a system will differ substantially than rules for constructing system of dental procedures for other purposes.

⁸² The Oxford English Dictionary Online (2d Ed. 1989) defines system as “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.” McGraw-Hill Dictionary of Scientific and Technical Terms (6th Ed. 2003) defines the term “system,” when used in the science and technology realm, as “a method of organizing entities or terms; in particular organizing such entities into a larger aggregate.” Similarly, Webster’s Third New International Dictionary, Unabridged (rev. ed. 1993) defines “system” as “a complex unity formed of many often diverse

systems,⁸³ systems for playing musical instruments,⁸⁴ systems for reorganizing insolvent life insurance companies,⁸⁵ systems for issuing bonds to cover replacement of lost securities,⁸⁶ systems for consolidating freight tariff information,⁸⁷ systems for teaching problem-solving techniques,⁸⁸ among others. Games are another kind of unprotectable system under 102(b).⁸⁹ Interestingly, while rules of games structure the players' interactions, outcomes of games are not mechanically deterministic.⁹⁰

Mathematical formulae and the periodic table of chemical elements are other examples of systematic arrangements of information that are unprotectable under section 102(b).⁹¹ Considerable originality may underlie formulae, but mathematical precision and comprehensibility of mathematical ideas are better served by standardizing the language elements of formulae.⁹² The periodic table is a useful tool for teaching students about the fields of chemistry and physics precisely because of its standardized representation of atomic phenomena. Gratuitous differences in the fields of mathematics and science would impede effective communication.

Elsewhere I have argued that computer languages, such as the macro command language at issue in *Lotus Dev. Corp. v. Borland Int'l*, are unprotectable systems under copyright law.⁹³ An earlier lawsuit involving *Lotus 1-2-3* recognized that "the exact hierarchy--or structure, sequence and organization--of the menu system is a fundamental

parts subject to a common plan or serving a common purpose," as "an aggregation or assemblage of objects joined in regular interaction or interdependence... a coherent unification," and as "the structure or whole formed by the essential principles or facts of a science or branch of knowledge or thought; an organized or methodically arranged set of ideas, theories or speculations."

⁸³ *Burk v. Johnson*, 146 F. 209 (8th Cir. 1906); *Burk v. Relief & Burial Ass'n*, 2 Haw. 388 (D. Haw. 1909).

⁸⁴ *Jackson v. C.G. Conn Ltd.*, 9 U.S.P.Q. (BNA) 225 (W.D. Okla. 1931).

⁸⁵ *Crume v. Pacific Mutual Life Ins. Co.*, 140 F.3d 182 (7th Cir. 1944), cert. denied, 322 U.S. 755 (1945).

⁸⁶ *Continental Casualty Co. v. Beardsley*, 253 F.2d 702 (2d Cir. 1958).

⁸⁷ *Guthrie v. Curlett*, 36 F.2d 694 (2d Cir. 1929). That Guthrie was trying to protect the method or system of consolidating this information is evident from the fact that he had gotten a patent on this method, a patent he tried to enforce against Curlett. After the Second Circuit held the patent invalid in *Guthrie v. Curlett*, 10 F.2d 725 (2d Cir. 1926), Guthrie sued Curlett for copyright infringement.

⁸⁸ *Kepner-Tregoe, Inc. v. Carabio*, 203 U.S.P.Q. (BNA) 124 (E.D. Mich. 1979).

⁸⁹ *Landsberg v. Scrabble Crossword Puzzle Game Players, Inc.*, 736 F.2d 485 (9th Cir. 1984).

⁹⁰ *Southco III* implies that unprotectable systems are mechanically deterministic, but the game example shows that this is not necessary.

⁹¹ The periodic table of elements is in the public domain and is widely available on the Internet. See, e.g., <http://www.csudh.edu/oliver/pubdomdb.htm>. Hughes agrees that mathematical formulae are unprotectable subject matter from copyright. Hughes, *supra* note 46, at 599.

⁹² When analyzing a new mathematical formula created by math whiz A, math whiz B should not have to use different notations (e.g., N instead of X, O instead of Y, P instead of Z) to convey insights about flaws in A's analysis or uses to which the formula might be put.

⁹³ See 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), republished in revised form, 6 Berkeley Tech. L. J. 209 (1992). See also *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 (1995); *The Nature of Copyright Analysis for Computer Programs: Copyright Law Professors' Brief Amicus Curiae in Lotus v. Borland* (brief to First Circuit Court of Appeals), 16 Hastings COMMENT L. J. 657 (1994); Pamela Samuelson, *Some New Kinds of Authorship Made Possible by Computers and Some Intellectual Property Questions They Raise*, 53 U. Pitt. L. Rev. 685 (1992). Languages and their component parts are essential inputs to expression that copyright law ought not to protect.

part of the functionality of the macros”⁹⁴ and that the command hierarchy was an integral part of the Lotus macro-command language.⁹⁵ Use of exactly the same command terms in exactly the same order and hierarchical structure as in 1-2-3 was necessary for users to be able to reuse macros constructed in the Lotus macros language for commonly executed sequences of functions when using other programs.⁹⁶ User investments in their macros and their desire to reuse the macros when using Borland’s software was a factor in the First Circuit’s ruling that the Lotus command hierarchy was unprotectable under section 102(b).⁹⁷

Thus, it may be relevant that the AMA characterized the purpose of CPT as “to provide a uniform *language* that accurately describes medical, surgical, and diagnostic services, and thereby serves as an effective means for reliable *communication* among physicians, and other healthcare providers, patients, and third parties.”⁹⁸ Similarly, ADA had encouraged use of its Code by dentists, insurers, and others because “standardization of *language* promotes interchange among professionals.”⁹⁹ AMA and ADA developed uniform standard names and numbers for medical and dental procedures to enable more effective and efficient record-keeping and information processing about these procedures. These standards promoted interoperability of data among many professionals who had to exchange information on a daily basis. HCFA mandated use of the CPT to lower its costs for processing Medicare and Medicaid claims, standardize payments to doctors for the same procedures, and avert fraud arising from non-uniform reporting procedures.¹⁰⁰ Facilitating efficient record-keeping is among the reasons that copyright law precludes protection of blank forms,¹⁰¹ and this reinforces the rationale for denying copyright to numbering systems.

Judge Easterbrook may be right that merely calling an intellectual artifact a “system” should not automatically disqualify it from copyright protection.¹⁰² However, if plaintiffs characterize it as a system, as AMA did in its contract with HCFA¹⁰³ and the

⁹⁴ Lotus Dev. Corp. v. Paperback Software Int’l, 740 F. Supp. 37, 65 (D. Mass. 1990).

⁹⁵ Id. at 72-73.

⁹⁶ Lotus Dev. Corp. v. Borland Int’l, Inc. 49 F.3d 807, 817-18 (1st Cir. 1995), aff’d by an equally divided court, 516 U.S. 233 (1996). The First Circuit, however, characterized the command hierarchy as an unprotectable “method of operation” under 102(b). Id.

⁹⁷ Id.

⁹⁸ CPT Process, supra note 10, at 1 (emphasis added).

⁹⁹ ADA, 126 F.3d at 981 (emphasis added). Interchange is, in this context, a synonym for communication. Thus, ADA code has essentially the same data interoperability purpose as AMA’s code.

¹⁰⁰ See, e.g., CPT Process, supra note 10; Matherlee, supra note 43. See also ROBERT J. GLUSHKO, DOCUMENT ENGINEERING sec. 16.2.3.5 (2005).

¹⁰¹ The Nimmer treatise considers lack of originality as the only basis for denying copyright to blank forms. See NIMMER, supra note 25, secs. 2.08, 2.18 (2004). Other policy considerations support denial of copyright in forms: forms may embody systems, standard forms lower training and information processing costs, and such forms may be useful in facilitating non-copyrightable transactions. See, e.g., Bibbero Sys., Inc. v. Colwell Sys., Inc., 893 F.2d 1104 (9th Cir. 2004)(medical billing form held uncopyrightable).

¹⁰² Computer programs, for example, may literally be “processes,” but they are copyrightable under legislation passed by Congress. See, e.g., Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240 (1983) (operating system programs held copyrightable).

¹⁰³ PMIC, 121 F.3d at 517. See supra note 32 regarding the Ninth Circuit’s frequent use of “system.”

Ninth Circuit did in *PMIC*,¹⁰⁴ and it fits standard definitions of “system”,¹⁰⁵ courts should at least consider whether the artifact is the kind of system that should be ineligible for copyright protection. (Merely calling numbering system a “taxonomy” shouldn’t avert the inquiry.¹⁰⁶ Taxonomies are, by definition, systematic classifications of information that group subcomponents into logical categories based on similarities in clusters of phenomena.¹⁰⁷ The Sixth Circuit in *ATC* recognized the interchangeability of “taxonomy” and “system” in connection with numbering scheme at issue there.¹⁰⁸)

Revisiting the claimed creativity in ADA’s “taxonomy” in light of *ATC*, it becomes evident that the creativity of the ADA Code also lay in the creation of the system (“the fundamental scheme,” as *ADA* calls it.¹⁰⁹). *ADA* says the decision to use 5 digits instead of 4 or 6 was creative. Yet 5 digits was an obvious choice if dental professionals participating in the Code development process thought it likely that new categories of procedures might be developed beyond the 4-digit codes already in the Code. The most reasonable way to accommodate this possibility was to make the first digit a zero.¹¹⁰ The second and third digits represented a particular category of dental procedures, while the fourth and fifth represented specific procedures within each category.

Restorative procedures, for example, were represented by the number “21.” Numbering specific procedures within this category reflected the number of surfaces being restored. 02110, for example, was the number assigned for restorative amalgams for one primary surface, while 02120 was for amalgams for two primary surfaces, and so forth.¹¹¹ In general, the ADA Code left 10 spaces between procedures, presumably because there was some likelihood that in the future new procedures might need to be added in the restoration or other categories. In some cases, procedures had only one space between them (e.g., 02130 for three-surfaced amalgams, but 02131 for four-surfaced amalgams),¹¹² but this seems as arbitrary as decisions that *ATC* made about whether aluminum screws should be numbered 10 or 11. The ADA Code, moreover, drew substantially from a pre-existing code.¹¹³

¹⁰⁴ See supra note 32.

¹⁰⁵ See supra note 82.

¹⁰⁶ Judge Easterbrook mainly called the ADA code a “taxonomy,” but he also referred to it as a numbering system. *ADA*, 126 F.3d at 977.

¹⁰⁷ Webster’s Third New International Dictionary (1993) defines “taxonomy” as “systematic distinguishing, ordering, and naming of type groups within a subject field.”

¹⁰⁸ *ATC*, 402 F.3d at 704-06. Few copyright cases involve taxonomies. *Lipton v. Nature Co.*, 71 F.3d 464 (2d Cir. 1995) did not involve a taxonomy in the Webster’s Dictionary sense, supra note 107, because Lipton had compiled his collection of venery from fifteenth-century texts and manuscripts and arranged them based on their “lyrical and poetic potential.” *Id.* at 467.

¹⁰⁹ *ADA*, 126 F.3d at 979.

¹¹⁰ The Sixth Circuit perceived no creative expression in *ATC*’s decision to leave some blanks in its numbering system to leave room for future transmission parts. See supra note 61 and accompanying text.

¹¹¹ *ADA*, 1996 U.S. Dist. LEXIS 5809 at 13.

¹¹² *Id.*

¹¹³ *Id.* at 12-13. Both codes, for example, featured exactly the same names and numbers for the restorative amalgam category. *Id.*

The naming and numbering of dental procedures in ADA's Code were also products of an incremental collaborative effort of skilled practitioners in the field that these were (or should be) standard names for dental procedures organized by logical class.¹¹⁴ Judge Easterbrook may be right that “[b]lood is shed in the ADA's committees about which [procedure name] is preferable,”¹¹⁵ but blood is no more a sign of original expression in copyright law than sweat is in the aftermath of *Feist v. Rural Telephone*.¹¹⁶

To sum up, industry standard codes promulgated by organizations such as AMA and ADA may be unprotectable systems under section 102(b). Such codes or other systematic organizations of information are certainly uncopyrightable if they are dictated by rules or functionality. Yet other factors may be relevant to whether systematic organizations of information are unprotectable under section 102(b): (1) when the system is a useful art and copyright in it would give patent-like protection; (2) when second comers need to use the system to compete or communicate effectively; (3) when systematizing information is necessary to achieve efficiencies; (4) when the system is incidental to non-copyrightable transactions or processes; and (5) when systematizing the information will produce social benefits from uniformity and the social costs of diversity would be high. Standard systems of this sort are born uncopyrightable.

III. STANDARDS MAY BE OR BECOME UNPROTECTABLE BY COPYRIGHT UNDER THE SCENES A FAIRE OR MERGER DOCTRINES

Alternative theories for deciding that industry standards, such as the AMA and ADA codes, as well as ISO country, language, and currency codes, may be ineligible for copyright protection come from the scenes a faire and merger doctrines and the policies that underlie them. The scenes a faire doctrine, originally developed to recognize that certain plot structures are to be expected from works exploring certain literary or dramatic themes,¹¹⁷ has been adapted, especially in the software copyright caselaw, to recognize that expressive choices of subsequent authors may become constrained over time by the emergence of industry standards.¹¹⁸ The merger doctrine holds that if there is only one or a very small number of ways to express an idea, copyright protection will generally be unavailable to that way or those few ways in order to avoid protecting the idea.¹¹⁹ While most merger cases involve works that are uncopyrightable when first created,¹²⁰ some cases have held that an initially copyrightable work may be disqualified for copyright protection over time, as the Fifth Circuit Court of Appeals did in holding

¹¹⁴ *Id.* at 12, 48.

¹¹⁵ *ADA*, 126 F.3d at 979. Standards often emerge from tough negotiations. *Bowker & Starr*, *supra* note 1, at 9 (decades of negotiations were required to standardize sizes and capacities of CDs, and the speed, electrical settings, and amplification rules for CD players).

¹¹⁶ *Feist Pub., Inc. v. Rural Tel. Service Co.*, 499 U.S. 340 (1991) (rejecting “sweat of the brow” industrious compilation copyrights).

¹¹⁷ See, e.g., Leslie Kurtz, *Copyright: The Scenes a Faire Doctrine*, 41 Fla. L. Rev. 79 (1989).

¹¹⁸ See *infra* notes 125-38 and accompanying text.

¹¹⁹ See, e.g., 1 PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT sec. 2.3.2 (2002).

¹²⁰ See, e.g., *Herbert Rosenthal Jewelry Corp. v. Kalpakian*, 446 F.3d 738, 742 (9th Cir. 1971) (jeweled bee held uncopyrightable for lack of expressive alternatives).

that governmental adoption of a privately drafted model law as the law caused the idea of this law and its expression to merge.¹²¹

The scenes a faire doctrine struck the concurring Judge Becker in *Southco* as an plausible alternative basis for ruling that Kanebridge's catalog did not infringe Southco's copyright.¹²² Southco had "selected characteristics for its system based on customer demand," and once these characteristics were chosen, "values—such as screw thread sizes, screw lengths or ferrule types—were determined by industry standards rather than through any exercise of originality by Southco," and although finishes were specific to Southco, they were "determined by the part identity rather than through some exercise of creative expression."¹²³ Judge Becker relied on the Tenth Circuit's instructive analysis of scenes a faire in *Mitel, Inc. v. Iqtel, Inc.*¹²⁴

Mitel was in the business of manufacturing call controllers, "computer hardware that enhances the utility of a telephone system by automating the selection of a particular long distance carrier and activating optional features such as speed dialing."¹²⁵ Long distance carriers buy call controllers to install them on customer premises to "automate that customer's access to the carrier's long distance service."¹²⁶ Mitel developed a set of sixty-some four-digit numeric command codes and published them in manuals describing how to program its call controllers with the command codes.¹²⁷ Mitel claimed that its copyright in the software and manuals protected the command codes as its creative work product.¹²⁸

Iqtel initially devised its own call controller instruction set,¹²⁹ but ultimately concluded that "it could compete with Mitel only if its IQ200+ controller were compatible with Mitel's controller."¹³⁰ Iqtel came to realize that "technicians who install call controllers would be unwilling to learn Iqtel's new set of instructions in addition to the Mitel command codes and the technicians' employers would be unwilling to bear the cost of additional training."¹³¹ So Iqtel programmed its controllers to accept the Mitel command codes and translate them into Iqtel codes. Its manual included an appendix that

¹²¹ See *Veeck*, 293 F.3d 791 (model building code held unprotectable by copyright law upon its enactment by cities as law); *BOCA*, 628 F.2d 730 (vacating preliminary injunction because of doubts about the copyrightability of a model code adopted by Massachusetts).

¹²² *Southco III*, 390 F.3d at 287-89.

¹²³ *Id.* at 288.

¹²⁴ 124 F.3d 1366 (10th Cir. 1997). The Tenth Circuit rejected the trial court's sec. 102(b) analysis derived from the First Circuit's conclusion in *Lotus v. Borland*, see supra note 96, that a command set constituted an unprotectable method of operating a computer program. *Id.* at 1372-73. Yet, the Tenth Circuit affirmed the trial court's denial of preliminary injunction on merger and scenes a faire doctrines.

¹²⁵ *Id.* at 1368.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.* at 1373.

¹²⁹ *Id.* at 1369

¹³⁰ *Id.*

¹³¹ *Id.*

listed and cross-referenced the Iqtel and Mitel command codes. And then it copied Mitel's command codes for all of the call controllers' common functions.¹³²

Yet, the Tenth Circuit concluded that Iqtel was not an infringer. In part, this was because the court questioned the originality of the Mitel command codes insofar as the symbols were either arbitrarily assigned to functions or exhibited de minimis creativity.¹³³ But to the extent the Mitel codes were original, the Tenth Circuit concluded that they were unprotectable under the scenes a faire doctrine.¹³⁴ This doctrine “exclude[s] from protection...those elements of a work that necessarily result from external factors inherent in the subject matter of the work,” such as “hardware standards and mechanical specifications, software standards and compatibility requirements, computer manufacturer design standards, industry programming practices, and practices and demands of the industry being served.”¹³⁵

The scenes a faire doctrine “plays a particularly important role [in functional writing cases] in ensuring that copyright rewards and stimulates artistic creativity in a utilitarian work ‘in a manner that permits the free use and development of non-protectable ideas and processes’ that make the work useful.”¹³⁶ As applied to the Mitel command codes, the court concluded that “much of the expression in the command codes was dictated by the proclivities of technicians and limited by significant hardware, compatibility and industry requirements.”¹³⁷ The Mitel codes embodied industry standards, and were thus unprotectable by copyright law.

Industry standards serve an important function by allowing those in the industry or field to use the standard for effective communication. The interoperability case law, of which *Mitel* is one instance, recognizes that the design of computer program interfaces may be the product of considerable skill and judgment, and thus might seem to qualify for copyright protection.¹³⁸ However, once an interface has been developed, the parameters it establishes for the effective communication of information between one program and another constrains the design choices of subsequent programmers. The interface thus becomes an unprotectable functional design,¹³⁹ and the scenes a faire doctrine is often invoked in decisions coming to this conclusion.

Also relevant to determining whether copyright should protect industry standards is the extent of user investments in the standard. In ruling against Lotus's lawsuit against

¹³² *Id.*

¹³³ *Id.* at 1373-74.

¹³⁴ *Id.* at 1374-75.

¹³⁵ *Id.* at 1375. In support of this conclusion, the court cited *Gates Rubber Co. v. Bando Chem. Indus. Ltd.*, 9 F.3d 823, 838 (10th Cir. 1993); *Computer Assocs. Int'l, Inc. v. Altai, Inc.*, 982 F.3d 693, 709-12 (2d Cir. 1992); *Plains Cotton Coop. Assoc. v. Goodpasture Service, Inc.*, 802 F.2d 1256, 1262 (5th Cir. 1987).

¹³⁶ *Mitel*, 124 F.3d at 1375.

¹³⁷ *Id.*

¹³⁸ See, e.g., *Altai*, 982 F.2d at 709-12.

¹³⁹ See, e.g., *id.* See also Pamela Samuelson et al., *A Manifesto on the Legal Protection of Computer Programs*, 94 *Colum. L. Rev.* 2308, 2402 (1994) (program interfaces are “information equivalents to the gears that allow physical machines to interoperate”).

Borland for copying the command hierarchy of 1-2-3, the First Circuit emphasized the significant investments users had made in developing macros with Lotus's macro command language:

[U]sers employ the Lotus menu command hierarchy in writing macros. Under the district court's holding, if the user wrote a macro to shorten the time needed to perform a certain operation in Lotus 1-2-3, the user would be unable to use that macro to shorten the time needed to perform that same operation in another program. Rather, the user would have to rewrite his or her macro using that other program's menu command hierarchy. This is despite the fact that the macro is clearly the user's own work product. . . . That programs can offer users the ability to write macros in many different ways does not change the fact that, once written, the macro allows the user to perform an operation automatically.¹⁴⁰

Although Judge Boudin was not fully persuaded by the majority's 102(b) analysis, he concurred in its holding, observing that:

[r]equests for the protection of computer menus present the concern with fencing off access to the commons in an acute form. A new menu may be a creative work, but over time its importance may come to reside more in the investment that has been made by users in learning the menu and in building their own mini-programs--macros--in reliance upon the menu. Better typewriter keyboard layouts may exist, but the familiar QWERTY keyboard dominates the market because that is what everyone has learned to use.¹⁴¹

Professor Paul Goldstein has analogized the copyright caselaw on industry standards to trademark law's genericness doctrine.¹⁴² Under that doctrine, a once viable trademark may become unprotectable because widespread public use of the mark as a common name for a product or service causes it to lose its source significance.¹⁴³ *Mitel v. Iqtel* and *Lotus v. Borland* demonstrate that industry standards may become unprotectable over time.

Government adoption of a privately drafted standard, such as a model building code, may similarly cause it to become uncopyrightable upon its adoption as law under the merger of idea and expression doctrine, as happened in *Veeck v. Southern Building Code & Congress Int'l, Inc.*¹⁴⁴ SBCCI published a standard building code which the

¹⁴⁰ *Borland*, 49 F.3d at 818.

¹⁴¹ *Id.* at 819-20.

¹⁴² Goldstein, *supra* note 119, sec. 2.3.2.1 (2002). Some courts reject merger defenses if there were more than a few expressive choices when the plaintiff's work was created. However, other courts, notably in the Second Circuit, "appear hospitably inclined to the proposition that merger should be tested at the time the expression was copied rather than at the time it was created." *Id.*

¹⁴³ See, e.g., *King-Seely Thermos Co. v. Alladin Indus. Inc.*, 321 F.2d 577 (2d Cir. 1963).

¹⁴⁴ *Veeck*, 293 F.3d 791. See also *BOCA*, 628 F.2d 730. Some commentators support the ruling in *Veeck*, even if critical of some aspects of the court's reasoning. See, e.g., Cunningham, *supra* note 40; Shubha

towns of Anna and Savoy, Texas, adopted as their laws.¹⁴⁵ Peter Veeck purchased an electronic copy of SBCCI's building code and posted it on his website.¹⁴⁶ After receiving a cease and desist letter from SBCCI, Veeck sought a declaratory judgment that SBCCI's code had become uncopyrightable upon its adoption as law.¹⁴⁷ The Fifth Circuit Court of Appeals en banc reversed a grant of summary judgment to SBCCI, holding that "as law, the model codes enter the public domain and are not subject to the copyright holder's prerogatives."¹⁴⁸

The Fifth Circuit gave three reasons for its ruling: (1) not protecting enacted codes was consistent with Supreme Court decisions that laws are not subject to copyright protection;¹⁴⁹ (2) upon its adoption as law, the ideas expressed in SBCCI's Code had merged with its expression, and the Code had, for purposes of copyright law, become a "fact";¹⁵⁰ and (3) the balance of caselaw and relevant policies supported its ruling.¹⁵¹ After enactment, the only way to express the building code laws of Anna and Savoy was with the precise text of SBCCI's Code.¹⁵² Hence, the merger doctrine forbade SBCCI to claim copyright in the enacted code. *Veeck* calls into question the Ninth Circuit's ruling in *PMIC* because federal law required use of the AMA's standard, thereby limiting the range of choices of codes that could be used by medical and health professionals.

Ghosh, *Deprivatizing Copyright*, 78 Tulane L. Rev. 653 (2004); Jessica C. Tones, Note, *Copyright Monopoly vs. Public Access: Why the Law Should Not Be in Private Hands*, 55 Syr. L. Rev. 371 (2005). See also L. Ray Patterson & Craig Joyce, *Monopolizing the Law: The Scope of Copyright Protection for Law Reports and Statutory Compilations*, 36 UCLA L. Rev. 179 (1989); Malla Pollack, *Purveyance and Power, or Over-priced Free Lunch: The Intellectual Property Clause as an Ally of the Takings Clause in the Public's Control of Government*, 30 Sw. U. L. Rev. (2001). But see Katie M. Colendich, Note, *Who Owns the Law? The Effect on Copyrights When Privately-Authored Works Are Adopted or Enacted by Reference Into Law*, 78 Wash. L. Rev. 589 (2003); Maryjane Boone Bonfield, Casenote, *Can the Law Be Copyrighted?-- Fifth Circuit Holds That Model Building Codes Lose Copyrights Upon Adoption into Law*, 56 SMU L. Rev. 1025 (2003).

¹⁴⁵ *Veeck*, 293 F.3d at 793-94. See SBCCI, STANDARD BUILDING CODE (1994). The Code was drafted with the intent that state and local governments would adopt it by reference. *Id.* at iii.

¹⁴⁶ *Veeck*'s motivation for posting the law is somewhat unclear from the court's decision. He had apparently tried to go to public offices in Anna and Savoy to get a copy of the Code, but was unable to find it in one town and was only able to find the incorrect code at the other. *Id.* at 809. *Veeck* paid \$72 for his copy of the SBCCI Code that came with a license forbidding copying or distributing the Code. *Veeck*, 293 F.3d at 793. Judge Higginbotham dissented from the Fifth Circuit's ruling because *Veeck* violated express provisions of the license. *Id.* at 808. The majority opinion did not address the license issue.

¹⁴⁷ *Id.* at 793.

¹⁴⁸ *Id.* 793. A Fifth Circuit panel initially ruled to affirm, but upon rehearing, the majority en banc voted to reverse. *Id.* at 793-94. Five judges dissented. See *id.* at 806-08 (Higginbotham, J. dissenting); *id.* at 808-15 (Weiner, J. dissenting).

¹⁴⁹ *Id.* at 795-800. The court concluded that *Banks* and other precedents rendered ordinances and regulations adopted by state and municipal governments as unprotectable by copyright law as statutes and judicial opinions. *Id.* at 800. Commentators have expressed concern about the outsourcing of governmental legislative functions to private entities. See, e.g., Cunningham, *supra* note 40, at 294; Ghosh, *supra* note 144, at 684-86.

¹⁵⁰ *Veeck*, 293 F.3d at 800-03.

¹⁵¹ *Id.* at 803-08. The Fifth Circuit regarded *BOCA* as providing strong support for its ruling. *Id.* at 803. It distinguished *CCC* as a case involving state regulations that merely referred users to a book. *Id.* at 804-05. *PMIC* was, in its view, a closer case, *id.* at 805, but it did not involve "the wholesale adoption of a model code" that had been developed and promoted "for use as legislation." *Id.* at 804.

¹⁵² *Id.* at 800. See also Cunningham, *supra* note 40, at 308.

Thus, industry standards such as the AMA and ADA codes may be unprotectable by copyright law under the scenes a faire or merger doctrines. Considerations that may affect such decisions include: (1) whether industry demand or practices effectively constrain expressive choices of subsequent developers; (2) whether reuse of the standard is necessary for effective competition; (3) whether user investments in the standard are substantial enough to give rise to the right to reuse the standard; and (4) whether the government mandates use of the standard or has embodied the standard in its legal code.

III. INCENTIVES AND COMPETITION POLICY CONCERNS ABOUT COPYRIGHTS IN STANDARDS

The principal argument in favor of copyright protection for industry standards is the claim SSOs make that they need copyright incentives to develop standards.¹⁵³ The Supreme Court's *Feist* decision, however, informs us that copyright protection is not available to information artifacts just because they are products of industrious efforts and their developers assert the need for copyright incentives.¹⁵⁴ Several considerations reinforce doubts about incentive-based arguments for copyright in standards.¹⁵⁵

First, SSOs generally have ample incentives to develop standards for use by professionals in their fields.¹⁵⁶ It is simply not credible to claim that organizations like the AMA and ADA would stop developing standard nomenclature without copyright. The fields they serve need these standards for effective communication with other health care providers, insurers, and government agencies.

Second, SSOs generally do not actually develop the standards in which they claim copyrights.¹⁵⁷ Rather, they typically rely upon volunteer service by experts in the field to develop standards and require volunteers to assign any copyright interests to the SSOs. The community development of a standard is a reason to treat the standard itself as a shared resource.¹⁵⁸

Third, SSOs generally use the revenues they derive from selling or licensing the standards to subsidize other activities of their organizations, rather than to recoup investments in the making the standard.¹⁵⁹ Even without copyright in the standards,

¹⁵³ See, e.g., *ADA*, 126 F.3d at 978. See also David Friedman, *Standards as Intellectual Property: An Economic Approach*, 19 U. Dayton L. Rev. 1109 (1994).

¹⁵⁴ *Feist*, 499 U.S. at 349-50.

¹⁵⁵ Professor Cunningham has proposed an administrative process to determine whether particular government-adopted standards should be eligible for copyright protection. Cunningham, *supra* note 40, at 293. Courts may, however, be better suited to dealing with challenges to copyrights in standards.

¹⁵⁶ See, e.g., Goldstein, *supra* note 119, at sec. 2.5.2: “[I]t is difficult to imagine an area of creative endeavor in which copyright incentive is needed less. Trade organizations have powerful reasons stemming from industry standardization, quality control, and self-regulation to produce these model codes; it is unlikely that, without copyright, they will cease producing them.” *Id.* at 2:51, n. 22.

¹⁵⁷ See, e.g., *Veeck*, 293 F.3d at 794.

¹⁵⁸ Cunningham observes that copyright controls over standards may impede the ability of those in the field to make incremental improvements to the standard. Cunningham, *supra* note 40, at 311-12.

¹⁵⁹ *Veeck*, 293 F.3d at 794.

SSOs can derive revenues from sales of print materials embodying the standard and value-added products or services.¹⁶⁰

Fourth, the Internet and World Wide Web now make it very cheap and easy to disseminate standards. Given the rise of volunteer information-posting on the Web, there is reason to be confident that users of a successful standard will put the standards online for all to use.

Fifth, once a standard has achieved success through widespread adoption, this very success enables the SSO to charge monopoly rents for use of or access to the code.¹⁶¹ The availability of copyright protection for standards may give SSOs excess incentives to invest in the creation of standards to get monopoly rents.¹⁶²

Sixth, copyrighting standards may create perverse incentives causing SSOs to invest in persuading governments to mandate use of their standards.¹⁶³ *Veeck* illustrates this temptation. Under the deal SBCCI offered, local governments such as Anna and Savoy got royalty-free rights to use the Code and one or more copies to make available in a public office.¹⁶⁴ But SBCC charged anyone else who wanted a copy of the code or access to it a substantial fee, and got referrals from building inspectors and other public officials, making public employees into a kind of free sales force for SBCCI.¹⁶⁵ The perverse incentives problem is of particular concern because of the increasing frequency with which governments are actively encouraging government adoption of privately drafted industry standards.¹⁶⁶

The long-term credibility of SSOs depends not only on their being able to produce sound standards, but also on producing standards in which the SSOs do not have such a strong financial interest that they succumb to the temptation to abuse the standards process by making its standards into a cash cow that must be purchased by anyone affected by the standard.¹⁶⁷

¹⁶⁰ *Id.* at 806.

¹⁶¹ See, e.g., SNOMED Added To UMLS Metathesaurus, available at http://www.nlm.nih.gov/research/umls/Snomed/snomed_announcement.html (U.S. government paid \$34.2 million for a perpetual license to use and allow U.S.-base private organizations to use SNOMED (an acronym of Systematized Nomenclature for Medicine). This license was negotiated to overcome burdensome licensing requirements experienced prior to its adoption. See, e.g., *snomed.faq* #9.

¹⁶² Cunningham, *supra* note 40, at 310-11.

¹⁶³ Private firms may also have incentives to invest in getting SSOs to bless their proprietary system as a standard to gain market power over the standard. Private firms may also be tempted to gain a competitive edge for their proprietary designs by taking them to an SSO and organizing efforts to gain its adoption as a standard. See, e.g., Maher, *supra* note 1, para. 18. This enhances profitability. *Id.*, para. 27.

¹⁶⁴ *Veeck*, 293 F.3d at 794. *Veeck* discovered that some public offices did not have copies of the Code or had the wrong copies. *Id.* at 809.

¹⁶⁵ Non-members of SBCCI had to pay \$72 per copy for the Code; members paid \$48. *Id.* at 808-09.

¹⁶⁶ *BOCA*, 628 F.2d at 736. See, e.g., OMB Circular A-119, 63 Fed. Reg. 8545, 8555 (Feb. 19, 1998)(urging government adoption and use of privately drafted industry standards).

¹⁶⁷ Antitrust problems arising from abuses of standard-setting processes are well-documented and longstanding. See, e.g., Hovencamp, *supra* note 3.