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To © or Not to ©? Copyright and Innovation in the Digital Typeface Industry

Jacqueline D Lipton*

Abstract

Intellectual property rights are often justified by utilitarian theory. However, recent scholarship suggests that creativity thrives in some industries in the absence of intellectual property protection. These industries might be called IP's negative spaces. One such industry that has received little scholarly attention is the typeface industry. This industry has recently digitized. Its adoption of digital processes has altered its market structure in ways that necessitate reconsideration of its IP negative status, with particular emphasis on copyright. This article considers the historical denial of copyright protection for typefaces in the United States, and examines arguments both for and against extending copyright protection to digital typefaces. It compares copyright law with alternative methods of protection for digital typefaces. It also suggests that the digital typeface industry may be a useful lens through which to consider broader claims about the application of intellectual property law to IP's negative spaces in the digital age.

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I. INTRODUCTION

“A letter, no matter how elegantly designed, standing alone, is simply a building block for larger units, words, that convey information. In the same way, when we give copyright protection to the design of buildings, we do not protect individual bricks because they are fungible. We protect collections of bricks. At this atomistic level, letters look very functional.”

- Professor Dan Burk¹

Although intellectual property is often explained on the basis of utilitarian theory,² recent studies demonstrate that in some industries creativity thrives in the absence of intellectual property rights. These industries may be described as IP’s negative spaces.³ They include fashion,⁴ food,⁵ body art,⁶ and magic tricks.⁷ One other historically IP-

¹ Dan Burk, *Expression, Selection, Abstraction: Copyright’s Golden Braid*, 55 SYRACUSE L REV 593, 615 (2005).

² Kal Raustiala and Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA L REV 1687, 1688 (2006) (“The standard justification for intellectual property rights is utilitarian. Advocates for strong intellectual property (‘IP’) protections note that scientific and technological innovations, as well as music, books, and other literary and artistic works, are often difficult to create but easy to copy. Absent IP rights, they argue, copyists will free-ride on the efforts of creators, discouraging future investments in new inventions and creations. In short, copying stifles innovation.”); Adam Moore, *Intellectual Property, Innovation, and Social Progress: The Case Against Incentive Based Arguments*, 26 HAMLINE L REV 601, 606 (2003) (noting that anglo-American intellectual property systems are generally explained on the basis of utilitarian theory); 607 (“[U]tilitarian-based justifications of intellectual property are elegantly simple. Control is granted to authors and inventors of intellectual property because granting such control provides incentives necessary for social progress. Coupled with the theoretical claim that society ought to maximize social utility, we arrive at a simple, yet powerful, argument.”)

³ Raustiala and Sprigman, *supra* note ____, at 1762-4 (identifying some of IP’s “negative space” as areas where innovation thrives despite the lack of robust intellectual property protection).

⁴ *id.*; Jonathan M Barnett, *Shopping for Gucci on Canal Street: Reflections on Status Consumption, Intellectual Property, and the Incentive Thesis*, 91 VA L REV 1381 (2005); Anne Theodore Briggs, *Hung Out to Dry: Clothing Design Protection Pitfalls in United States Law*, 24 HASTINGS COMM & ENT L J 169 (2002); Jessica Litman, *The Exclusive Right to Read*, 13 CARDOZO ARTS & ENT L J 29, 44-45 (1994).

⁵ Malla Pollack, *Intellectual Property Protection for the Creative Chef, or How to Copyright a Cake: A Modest Proposal*, 12 CARDOZO L REV 1477 (1991).

⁶ Thomas F Cotter and Angela M Mirabole, *Written on the Body: Intellectual Property Rights in Tattoos, Makeup, and Other Body Art*, 10 UCLA ENT L REV 97 (2003).

negative space is the typeface industry. This industry raises interesting questions about the application of intellectual property law, notably copyright, when IP-negative spaces move online. Typeface copyrights have generally been rejected in the United States⁸ on functionality grounds.⁹ However, in the digital age, the software code that generates digital typefaces may be copyrightable.¹⁰ This could result in some typeface designers utilizing the back door of software copyrights to protect her otherwise uncopyrightable typeface designs.¹¹

In fact, changes in market structure in the digital age might justify an extension of copyright to digital typefaces regardless of the copyrightability of the underlying code. As the digital typeface market evolves, raising the increased threat of digital piracy, arguments might be made to alter past policies and accept typeface copyrights. At the international level, it has generally been accepted that typefaces are copyrightable subject matter. Thus, the American position on typeface copyrights is now an outlier.¹² In a

⁷ See, for example, Campbell Robertson, *Dueling Magicians: Whose Trick is it Anyway?*, N.Y. TIMES, Sept. 27, 2006, at E1.

⁸ MARSHALL LEAFFER, UNDERSTANDING COPYRIGHT LAW, 100 (4 ed) (“Examples of express exclusion [from the term “works of authorship” for copyright purposes] are industrial design and typeface design, which Congress has explicitly indicated are not to be considered works of authorship.”).

⁹ The rejection of functional or utilitarian articles from protection as “pictorial, graphic, and sculptural works” is found in 17 U.S.C. § 101 (“Pictorial, graphic, and sculptural works” include two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints and art reproductions, maps, globes, charts, diagrams, models, and technical drawings, including architectural plans. Such works shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”). See more detailed discussion in Part II.A. *infra*.

¹⁰ Copyright Regulation § 202.10(c), as cited in *Eltra v Ringer*, 579 F. 2d 294, 298 (1978). See, now 37 C.F.R. 202.1(e), expressly excluding “typefaces as typefaces” from copyright protection. See also *Adobe Systems v Southern Software*, 1998 U.S. Dist. LEXIS 1941; 45 U.S.P.Q. 2D (BNA) 1827; Copy L Rep (CCH) P27,785 (1998) (holding that digitized font could be copyrighted).

¹¹ Of course, software copyrights protect different aspects of a digital font than typeface copyrights *per se*. This article does not mean to suggest they are one and the same thing, rather that in some circumstances digital typeface designers may be attempting to utilize software copyrights to chill innovation by competing font designers. See discussion in Part III.B *infra*.

¹² The American view of the non-copyrightability of typefaces is not shared in many European jurisdictions, for example, the British Copyright, Designs, and Patents Act of 1988 specifically recognizes that typefaces may be copyrightable as “artistic works”: Copyright, Designs, and Patents Act, Eng. (1988), §§ 4 (definition of “artistic work”); 54 (recognizing that a copyright in an artistic work might comprise the design of a typeface). See also French « Code de la Propriété intellectuelle » Article L. 112.2, 8. Les œuvres graphiques et typographiques (affording copyright protection to typefaces). At the international level, typefaces have also been considered important enough to merit consideration for a form of international *sui generis* intellectual property protection. The Vienna Agreement for the Protection of Type Faces and Their International Deposit of 1973, while never actually brought into force, did recognize that several countries already accepted copyright and design right protection for typefaces: Full text available at <http://www.austlii.edu.au/au/other/dfat/seldoc/1973/2203.html>, last viewed on September 11, 2008. See also Terrence J Carroll, *Protection for Typeface Designs: A Copyright Proposal*, 10 SANTA CLARA COMPUTER AND HIGH TECH LAW JOURNAL 139, 169-170 (1994) (comparing various countries’ approaches to intellectual property protections for typeface designs).

seamless, borderless, digital world, it may be necessary for American policy to change to accommodate digital developments in typeface markets, and to promote global harmonization.

This article examines the claim that moves to a digital typeface market sufficiently alter incentives to innovation to merit a reconsideration of intellectual property protections within the industry. It considers arguments both for and against the copyrightability of digital typefaces. It also touches on the implications of this digital typeface case study for some of IP's negative spaces more generally. While not coming to definite conclusions about whether copyright protection should be extended to digital typefaces, it does identify the key arguments both for and against such an extension, and calls for additional empirical research to determine the necessity of such a move. It also suggests that if digital typefaces are to be copyrightable, such a policy shift should be made prospectively and should not operate on a retroactive basis. This would mitigate concerns about proprietization of public domain materials, and would be consistent with developments in other previously IP negative spaces that have ultimately attracted copyright protection.¹³

Part II considers the basis on which copyright protection for fonts and typefaces has historically been rejected in the United States.¹⁴ It includes a detailed examination of policy arguments both for and against typeface copyrights. Part III identifies digital age developments in the typeface industry that are relevant to the copyright question, both in terms of digital market structures and the ability of typeface designers to utilize digital technology to protect their work. Part IV considers the potential application of the Digital Millennium Copyright Act ("DMCA") to digital typefaces, along with the possibility that this legislation could create overbroad protection for digital typefaces, if copyrighted. Part V considers alternative avenues of protection for digital typeface designers including design patents, trademarks, trade secrets, emerging online norms, technological protection measures ("TPMs"), and restrictive contractual licenses. It compares these with copyright, in an attempt to ascertain the most effective means to protect the efforts of a digital typeface designer. Part VI draws some conclusions about the appropriate role of copyright law in protecting digital typefaces. It also considers the extent to which the digital typeface example might illuminate more general questions about the promotion of innovation in IP's negative spaces as they move online.

II. TYPEFACES, FONTS, AND IP'S NEGATIVE SPACES

A. TYPEFACE COPYRIGHTS: LEGAL ISSUES

An initial word about terminology is in order. It is useful to understand the historical difference between a "font" and a "typeface", and to appreciate that this distinction has largely been lost in the digital age. Traditionally, a "typeface" was: "a set

¹³ LEAFFER, *supra* note ____, at 133 (discussing prospective extension of copyright to previously uncopyrightable architectural works).

¹⁴ The terminological distinction between "fonts" and "typefaces" is considered in Part II.A *infra*.

of letters, numbers, or other symbolic characters, whose forms are related by repeating design elements consistently applied in a notational system and are intended to be embodied in articles whose intrinsic utilitarian function is for use in composing text or other cognizable combinations of characters.”¹⁵ A “font”, on the other hand, was: “an article in which a typeface resides as the implement of printing technology, regardless of the medium or form.”¹⁶ A typeface was the artistic creation of a typeface designer,¹⁷ while a font was the result of an industrial process to enable typefaces to be reproduced in the printing process. Fonts were made in foundries which created usually metal blocks embodying designs created by typeface designers.¹⁸ The distinction between fonts and typefaces has become anachronistic in the digital age because the role of the foundry has effectively been removed from the process by the advent of digital typesetting technologies. Thus, the terms font and typeface are now used interchangeably to denote the product of a typeface designer’s efforts reproduced in a digital format.¹⁹

Within the United States, the historically prevailing view has been that typefaces are not copyrightable subject-matter.²⁰ The typeface industry might thus be described as one of IP’s traditionally negative spaces, although this view has not been universally accepted.²¹ Of course, it is important to recognize that there has never been a clear cut borderline between IP’s negative spaces and IP’s protected spaces. The identification of

¹⁵ Carroll, *supra* note ____, at 141 (footnote 2).

¹⁶ H.R. 1790, 102nd Cong, 1st Sess, § 1001(b)(4) (1991).

¹⁷ ROBERT BRINGHURST, THE ELEMENTS OF TYPOGRAPHIC STYLE VERSION 3.1, 333-345 (2005) (glossary of noted typeface designers).

¹⁸ *id.*, 346-356 (glossary of noted foundries).

¹⁹ LESLIE CABARGA, LOGO, FONT, AND LETTERING BIBLE, 12 (2004) (“Before computers, a font was called a *typeface* or *face*. *Font* or *fount* originally referred to the product of a foundry where hot metal is poured into molds, and *type font* referred to the complete character set in one specific point size and style of type within a type family. Now *font* has become revived as the term for any computer typeface sold, traded, pirated or offered for free.”); See also Wikipedia’s definition of “typeface” as of September 10, 2008, available at <http://en.wikipedia.org/wiki/Typeface> (“The term *typeface* is frequently conflated with *font*; the two terms had more clearly differentiated meanings before the advent of desktop publishing. The current distinction between font and typeface is that a font designates a specific member of a type family such as roman, boldface, or italic type, while typeface designates a consistent visual appearance or style which can be a “family” or related set of fonts. For example, a given typeface such as Arial may include roman, bold, and italic fonts. In the metal type era, a font also meant a specific point size, but with digital scalable outline fonts this distinction is no longer valid, as a single font may be scaled to any size.”)

²⁰ LEAFFER, *supra* note ____, at 100 (“Examples of express exclusion [from the term “works of authorship” for copyright purposes] are industrial design and typeface design, which Congress has explicitly indicated are not to be considered works of authorship.”); NIMMER ON COPYRIGHT, § 2.15 (“Are typeface designs copyrightable? Any argument of copyrightability may appear to be foreclosed by reason of the House Committee’s statement that it “has considered, but chosen to defer, the possibility of protecting the design of typefaces The Committee does not regard the design of typeface ... to be a copyrightable ‘pictorial, graphic, or sculptural work’ within the meaning of this bill and the application of the dividing line in section 101.”)

²¹ NIMMER ON COPYRIGHT, § 2.15 (detailed analysis of the question of the copyrightability of fonts and typefaces, and noting that the question is still arguably an open one under federal copyright law in the United States). See also discussion in Burk, *supra* note ____, at 614-615 (noting that the copyrightability of typefaces has historically been contested territory in the United States, and citing the Copyright Office’s refusal to register typefaces and Congress’ apparent intent in the enactment of the 1976 copyright act to exclude typefaces from copyrightability).

an industry as an IP negative space often has more to do with practices within the industry than with legal decisions against copyrightability.²² Thus, the typeface industry can be regarded as an IP negative industry to the same extent as any other industry traditionally identified as such, including the fashion,²³ food,²⁴ and body art²⁵ industries. The typeface industry may be a particularly useful example of an IP negative industry because the issue of typeface copyrights has been expressly considered by the Copyright Office and the American courts.²⁶ As a result, there is some executive and judicial authority on the copyrightability of typefaces, although detailed examination reveals inconsistencies in policy, particularly as the industry moves online.²⁷

The 1976 copyright act extends copyright protection to: “pictorial, graphic, and sculptural works”.²⁸ The definition of “pictorial, graphic, and sculptural works” includes: “two-dimensional and three-dimensional works of fine, graphic, and applied art Such works shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”²⁹ This definition, along with the House Report accompanying the bill for the 1976 act,³⁰ has raised some questions about the copyrightability of typefaces.³¹

While a typeface may be a work of applied art, copyright protection would only extend to artistic aspects of its form, not its utilitarian attributes. If the artistic attributes are *de minimis*, or are not severable from the functional aspects, they will not be copyrightable. The House Committee report on the 1976 bill states that the Committee: “has considered, but chosen to defer, the possibility of protecting the design of typefaces The Committee does not regard the design of typeface ... to be a copyrightable ‘pictorial, graphic, or sculptural work’ within the meaning of this bill and the application of the dividing line in section 101.”³² Here, the dividing line refers to the ability to separate the artistic elements of a useful article from its utilitarian aspects.

²² Raustiala and Sprigman, *supra* note ____, at 1698-1705 (noting practices in the fashion industry that have avoided reliance on powerful IP protections, other than trademarks, despite the absence of any express rejection of, say, copyright protection for products of the fashion industry); Cotter and Mirabole, *supra* note ____ (explaining that in the absence of clear legal arguments to the contrary, there are some good reasons why tattoos and body art, generally recognized as an IP negative space, could attract copyright protection).

²³ Raustiala and Sprigman, *supra* note ____; Barnett, *supra* note ____.

²⁴ Pollack, *supra* note ____.

²⁵ Cotter and Mirabole, *supra* note ____.

²⁶ See discussion in Part II.A *infra*.

²⁷ See discussion in Parts II.A and II.B *infra*.

²⁸ 17 U.S.C. § 102(a)(5).

²⁹ 17 U.S.C. § 101.

³⁰ H.R. Rep 94-1476, 94th Cong., 2d Sess. 55 (1976).

³¹ NIMMER ON COPYRIGHT, § 2.15.

³² H.R. Rep 94-1476, 94th Cong., 2d Sess. 55 (1976).

Most courts and commentators have taken the words of the House Report to end the matter.³³ However, some disagree: for example, Professor Melville Nimmer raises various concerns about this view.³⁴ The first and most obvious is that the words in the Report appear to directly contradict the statutory text, rather than interpreting it.³⁵ In the case of such a contradiction, courts are obliged to follow the statutory text, rather than the Report.³⁶ Additionally, the Senate Report does not comment on the copyrightability of typefaces, presumably leaving the statutory text to speak for itself.³⁷ There is technically no reason why the House Report should be given more weight than the Senate Report where the two appear to conflict.³⁸ There is also an apparent conflict within the House Report itself. It states that the list of copyrightable subject matter in § 102 of the 1976 bill was intended to cover all classes of works specified in § 5(g) of the 1909 copyright act.³⁹ Thus if typefaces were protected as “works of art” under § 5(g) of the 1909 act, they would likewise be protected under § 102(a)(5) of the 1976 act. The statement in the House Report that § 102 will protect works specified in § 5(g) of the previous legislation potentially conflicts with the statement that typefaces are not copyrightable.⁴⁰ There could be a conflict if a realistic argument could be made that typefaces were, in fact, protectable under § 5(g) of the prior legislation.

The leading case on point under the 1909 act is *Eltra v Ringer*.⁴¹ Both the District Court for the Eastern District of Virginia, and the Fourth Circuit Court of Appeals held typefaces to be uncopyrightable.⁴² However, as Professor Nimmer notes, the grounds for these holdings were not particularly strong.⁴³ He also questions whether the *Eltra* decision might have been overturned in subsequent litigation under the 1909 act, had the 1976 act not been implemented in the meantime.⁴⁴ The Fourth Circuit Court of Appeals in *Eltra* based its reasoning largely on Copyright Office Regulations defining “works of

³³ LEAFFER, *supra* note ___, at 100 (“Examples of express exclusion [from the definition of “works of authorship” in the copyright act] are industrial design and typeface design, which Congress has explicitly indicated are not to be considered works of authorship.”).

³⁴ NIMMER ON COPYRIGHT, § 2.15 (detailed analysis of the question of the copyrightability of fonts and typefaces, and noting that the question is still arguably an open one under federal copyright law in the United States). See also Burk, *supra* note ___, at 614-615 (noting that the copyrightability of typefaces has historically been contested territory in the United States, and citing the Copyright Office’s refusal to register typefaces and Congress’ apparent intent in the enactment of the 1976 copyright act to exclude typefaces from copyrightability).

³⁵ NIMMER ON COPYRIGHT, § 2.15.

³⁶ *id.*

³⁷ *id.*

³⁸ *id.*

³⁹ H.R. Rep 94-1476, 94th Cong., 2d Sess. 53 (1976).

⁴⁰ NIMMER ON COPYRIGHT, § 2.15.

⁴¹ 194 U.S.P.Q. (BNA) 198 (1976); *aff’d* 579 F. 2d 294 (1978). For a detailed discussion of the *Eltra* case, see Carroll, *supra* note ___, at 154-166.

⁴² *Eltra v Ringer*, 194 U.S.P.Q. (BNA) 198 (1976); *aff’d* 579 F. 2d 294 (1978).

⁴³ NIMMER ON COPYRIGHT, § 2.15 (“Congressional acquiescence in an administrative interpretation inferred from legislative inaction is always a thin reed upon which to base statutory construction. Such inaction may be due to many factors having nothing to do with acquiescence in the substantive content of the administrative rule. Particularly is this true where the administrative agency itself continues its rule for reasons other than its own conviction that its rule is substantively correct. It is, then, open to some doubt as to whether future judicial decisions applying the 1909 Act will follow the *Eltra* holding.”)

⁴⁴ NIMMER ON COPYRIGHT, § 2.15.

art” under the 1909 act to exclude purely utilitarian articles. The relevant regulation stated that: “If the sole intrinsic function of an article is its utility, the fact that the article is unique and attractively shaped will not qualify it as a work of art. However, if the shape of a utilitarian article incorporates features, such as artistic sculpture, carving, or pictorial representation, which can be identified separately and are capable of existing independently as a work of art, such features will be eligible for registration.”⁴⁵ The Court of Appeals held that under this regulation: “it is patent that typeface is an industrial design in which the design cannot exist independently and separately as a work of art. Because of this, typeface has never been considered entitled to copyright under the provisions of § 5(g).”⁴⁶

Although this would appear to be a strong argument against the copyrightability of typefaces, this may be overstating the case. As Professor Nimmer notes,⁴⁷ the Court of Appeals cites longstanding Congressional acquiescence in the Copyright Office’s interpretation of the 1909 act as an example of Congressional intent. This is not necessarily a strong argument in favor of the Copyright Office’s interpretation of § 5(g) of the 1909 act.⁴⁸ In fact, the District Court had expressly stated that the typeface in question was a “work of art” under § 5(g) of the 1909 Act and that the Copyright Register’s denial of copyrightability for typefaces in its regulations was erroneous.⁴⁹ However, at the end of the day, it found Congressional acquiescence in the Copyright Register’s practice to be decisive, as well as the fact that, in enacting the 1976 act, Congress appears to have intended to maintain the status quo.⁵⁰ The Court of Appeals did not agree with the District Court that the Register’s interpretation of § 5(g) was erroneous. However, it was persuaded by the point about Congressional acquiescence.⁵¹

In the wake of *Eltra*, there is room for debate about the copyrightability of typefaces in the United States. Although some post-*Eltra* cases have supported the view that typefaces are not copyrightable, others suggest that the question has never been settled. While cases like *Leonard Storch Enterprises v Mergenthaler Linotype*,⁵² follow

⁴⁵ Copyright Regulation § 202.10(c), as cited in *Eltra v Ringer*, 579 F. 2d 294, 298 (1978). See, now 37 C.F.R. 202.1(e), expressly excluding “typefaces as typefaces” from copyright protection.

⁴⁶ *Eltra v Ringer*, 579 F. 2d 294, 298 (1978).

⁴⁷ NIMMER ON COPYRIGHT, § 2.15 (“[T]he appellate court, like the trial court, also relied upon “the long acquiescence of Congress in the Regulation.””)

⁴⁸ *id.* (“The conclusion by the *Eltra* court appears most doubtful. As indicated above, the Copyright Office itself had previously expressed doubt as to whether its own Regulation correctly interpreted the law. The fact that the Copyright Office did not change its Regulation under the 1909 Act apparently had nothing to do with Congressional acquiescence, nor perhaps even with a belief that the Regulations were correct.”)

⁴⁹ *Eltra v Ringer*, 194 U.S.P.Q. (BNA) 198, ___ (1976).

⁵⁰ *id.*, at ___ (“The Court is aware that “the views of a subsequent Congress form a hazardous basis for inferring intent of an earlier one.” ... and certainly Congress’s inaction on amendatory legislation comes within these cautionary words. Nevertheless, the legislative history here is very relevant and is not just inaction, but actual acquiescence in the administrative interpretation given the Copyright Act.”)

⁵¹ This view, has, however, been criticized: NIMMER ON COPYRIGHT, § 2.15 (“The conclusion by the *Eltra* court appears most doubtful. As indicated above, the Copyright Office itself had previously expressed doubt as to whether its own Regulation correctly interpreted the law. The fact that the Copyright Office did not change its Regulation under the 1909 Act apparently had nothing to do with Congressional acquiescence, nor perhaps even with a belief that the Regulations were correct.”)

⁵² Not Reported in F Supp, 1979 WL 1067 (E.D.N.Y.) (1979).

Eltra in holding that typefaces are not copyrightable under the 1909 and, presumably also the 1976, act,⁵³ more recent cases may bring that proposition into doubt. The difficulty is that many of the more recent cases muddy the theoretical waters because they deal with digital fonts. It seems to be the case that even if the typeface designs themselves are not copyrightable, the underlying software code is copyrightable. This might indirectly and incidentally provide copyright protection for at least some aspects of typeface designs. Thus, if *Eltra* is correct that typefaces are not intended to be copyrightable, the incidental extension of copyright to digital fonts via protection of the underlying code is potentially problematic as a matter of policy.⁵⁴

In *Agfa Monotype v International Typeface*,⁵⁵ for example, the District Court for the Northern District of Illinois did not apparently entertain arguments about the copyrightability of a digital typeface in determining whether there had been an infringement of the anti-circumvention provisions of the DMCA.⁵⁶ The court followed an earlier ruling that DMCA liability will only be found where a copyright holder demonstrates a “reasonable relationship between the circumvention at issue and a use relating to a property right for which the Copyright Act permits the copyright holder to withhold authorization”.⁵⁷ However, rather than concentrate on whether or not the plaintiffs had established a valid copyright in their typefaces, the court focused instead on whether the plaintiff had failed to prove actual circumvention of a technological protection measure.⁵⁸ The court does not discuss the question whether digital typefaces are copyrightable subject matter under the 1976 act. This lack of discussion may be read as an implicit acknowledgment that the plaintiff’s typefaces were copyrightable as such. Other cases have been clearer in accepting the copyrightability of font-generating software code.⁵⁹ However there is little clear judicial guidance about the copyrightability of digital typefaces as such, distinct from their underlying code.

B. TYPEFACE COPYRIGHTS: POLICY CONSIDERATIONS

⁵³ *id.*, at ___ (“There can be little dispute that Mergenthaler’s typeface designs are not copyrightable. In response to repeated requests the Copyright Office recently agreed to reconsider its longstanding policy of refusing copyright protection to typeface designs, and after extended public hearings adhered to that position. Its determination has been litigated by defendant and upheld by the Fourth Circuit An opportunity to place such typefaces under the protection of federal copyright law was declined by Congress during the preparation of the Copyright Act of 1976.”)

⁵⁴ Of course, copyrighting code and copyrighting the products generated by code are two different questions. However, there may be some situations in which they are tantamount to the same thing. This issue is taken up in more detail in Part III.B *infra*.

⁵⁵ 404 F Supp 2d 1030 (2005).

⁵⁶ 17 U.S.C. §& 1201(a)(2)(A), 1201(b)(1).

⁵⁷ 404 F Supp 2d 1030, 1035 (2005) (citing *Chamberlain Group v Skylink Technologies*, 381 F 3d 1178, 1204 (Fed. Cir. 2004)).

⁵⁸ *id.*, at 1035-1037 (2005). The court also rejected the plaintiff’s argument that the defendants had developed technology *primarily designed or produced to circumvent* the plaintiff’s encryption measures in contravention of the DMCA: 17 U.S.C. § 1201(a); *Agfa Monotype v International Typeface*, 404 F Supp 2d 1030, 1036-7 (2005).

⁵⁹ These cases largely follow 1992 Copyright Office regulations on this point. See “Registerability of Computer Programs that Generate Typefaces”, 57 Fed. Reg. 6201, at 6201-2 (Feb 12, 1992); cited in *Adobe Systems v Southern Software*, 1998 U.S. Dist. LEXIS 1951, pp 12-13 (1998).

1. Separability of Artistic and Functional Elements

In theory, there are good policy arguments both for and against typeface copyrights. As noted above,⁶⁰ the statutory definition of “pictorial, graphic, and sculptural works” states that only the artistic elements of these works are copyrightable, not their functional elements.⁶¹ In particular, the statute contemplates a separability test for aspects of the design of a useful article. Fonts and typefaces are problematic in this regard. On the one hand, they are useful articles – certainly the old fashioned physical films and plates that embodied fonts in industrial age printing were useful articles in this sense.⁶² The question is whether and, if so, when artistic elements of a typeface design might be physically or conceptually separable⁶³ from its functional attributes, outside cases where a design is reproduced by physical plates or celluloid film.⁶⁴

The answer is likely to be case specific. Many fonts in and of themselves are not particularly artistic because they are the most obvious ways of expressing given letter forms. One might compare the letter “A” in the Times New Roman or Arial fonts - “A” and “A” respectively - with a more unusual font like “Magneto” - currently included in Microsoft Office products - in which the an upper case “A” appears as “*A*”. Of course, even this Magneto “A” is obviously recognizable as the upper case letter “A”. If it was not easily recognizable as such, it would not be able to perform its function as a building block for text. There are much more creative examples of typeface designs: for example, the Christmas Lights font and Christmas Tree font set out in Figure 1.

Figure 1: Examples of Christmas Tree font and Christmas Lights font



Christmas Lights font⁶⁵

⁶⁰ See Part II.A *supra*.

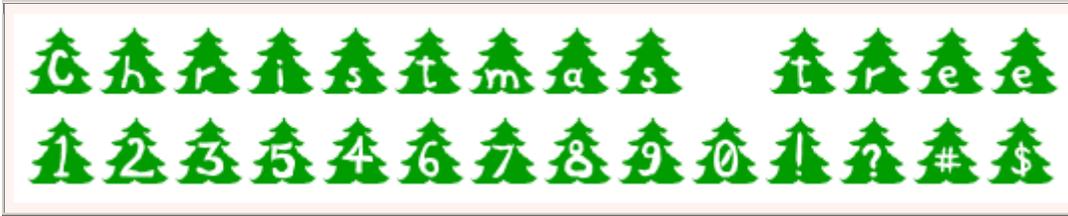
⁶¹ 17 U.S.C. § 101.

⁶² Burk, *supra* note ____, at 615.

⁶³ LEAFFER, *supra* note ____, at 121-125 (discussion of physical and conceptual separability doctrines from copyright law); Robert Denicola, *Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles*, 67 MINN L REV 707 (1983) (advocating a new approach to copyright's separability test that focuses on the process of creation, suggesting that copyright should be reserved to features of an item that reflect aesthetic perspective of an artist or designer unconstrained by the utilitarian environment in which she may be designing).

⁶⁴ BRINGHURST, *supra* note ____, AT 325 (describing pre-digital printing technologies involving wooden or metal plates, and later celluloid film, all tangible functional articles).

⁶⁵ Available for purchase at: <http://www.fontsnthings.com/holiday/christmas.shtml>, last viewed on September 11, 2008.

Christmas Tree font⁶⁶

The letterforms in these fonts are clearly recognizable as such, despite the creative presentation. Again, they need to be recognizable as letters or they would not be able to perform their function. If all letterforms are identifiable as letters, which are in turn identifiable as building blocks of language, then does it follow that all typefaces should be uncopyrightable as functional or utilitarian articles? Or are there some circumstances in which the creative aspects of a typeface might be separately protected as artistic works, despite the utilitarian purpose of the typeface overall?⁶⁷

A typeface's artistic elements are usually not *physically* separable from the functional elements in the sense generally contemplated by copyright law. One of the leading cases on physical separability - *Mazer v Stein*⁶⁸ - illustrates this. In *Mazer*, the United States Supreme Court upheld the copyrightability of statuettes of Balinese dancers used as bases for a functional item – a lamp.⁶⁹ The statuettes were physically separable from the lamps. It was therefore not difficult for the court to accept that the artistic and functional elements of the lamp could be meaningfully separated. However, most cases are not this simple. Often courts must determine whether artistic elements may be conceptually, as opposed to physically, separated from the functional elements.⁷⁰ It is within the conceptual separability jurisprudence that typeface designs must be considered.

Typefaces are part and parcel of the letterforms they depict. They cannot be physically separated. A conceptual separation may make sense in some cases, but it would depend on how artistic the font actually is and, in a sense, how necessary its artistic elements are to the depiction of the underlying letterform. A variety of judicial

⁶⁶ Available for purchase at: http://simplythebest.net/fonts/fonts/christmas_tree.html, last viewed on September 11, 2008.

⁶⁷ Of course, if copyright protection is unavailable, there may be other options for typeface designers. Design patents may play a role here, as might some state unfair competition or misappropriation laws. Fonts might be also protected through a combination of technological protection measures (“TPMs”) and contractual licensing, regardless of the availability of an underlying intellectual property right. These possibilities are considered in Part IV *infra*.

⁶⁸ 347 U.S. 201 (1954).

⁶⁹ For a discussion of the case and some subsequent decisions on point, see LEAFFER, *supra* note ____, at 119-120.

⁷⁰ For a detailed discussion of the problems associated with the separability test, and suggestions for its reform, see Denicola, *supra* note __; Anne Theodore Briggs, *Hung Out to Dry: Clothing Design Protection Pitfalls in United States Law*, 24 HASTINGS COMM & ENT L J 169, 183-185 (2002) (surveying different judicial formulations of the conceptual separability test in copyright law).

approaches to conceptual separability have evolved over the years. They include the idea of separating the artistic and utilitarian functions into primary and secondary functions.⁷¹ Other judicial formulations have included considerations of whether the item in question stimulates an artistic conception in a reasonable person which is separate from its utilitarian function.⁷² Additionally, some courts have asked whether the design of an article reflected the designer's artistic judgment as opposed to being dictated by more functional concerns.⁷³

Legal commentators have suggested their own approaches to separability. Professor Denicola, for example, proposed that copyright should be reserved to features of an item that reflect the aesthetic perspective of an artist or designer unconstrained by the utilitarian environment in which she may be designing.⁷⁴ His concern was less with physical or conceptual separation, but rather with how artistic a designer had actually managed to be within the constraints of a given product. In the typeface industry, for example, a designer will be constrained to a significant extent by the shape of, say, a letter "G". Under Professor Denicola's test, one would need to consider how artistic the designer had managed to be, given these constraints.⁷⁵

An example of where a designer has exercised significant creativity despite the constraints of given letterforms might be found in the Putty Peeps font – see Figure 2. This font utilizes putty-like versions of the human form to create its letterforms.⁷⁶ The designer seems less constrained by letterforms than even the designers of the Christmas fonts above, focusing instead of how to make putty-like people vaguely resemble given letterforms. Here, one might be able to say that the artistic elements of the font are conceptually separable from the utilitarian functions of the letterforms either because the idea of using human-like shapes as letters is sufficiently severable from the letterforms themselves to satisfy conceptual separability, or because the designer was not overly constrained by the given letterforms in developing the font.

Figure 2: Examples of Putty Peeps font⁷⁷

⁷¹ *Kieselstein-Cord v Accessories by Pearl*, 632 F 2d 989, 993 (2d Cir 1980); see also discussion in Carroll, *supra* note ___, at 151-2 (discussing potential application of this conceptual separability approach to typefaces).

⁷² *Carol Barnhart Inc v Economy Cover*, 773 F 2d 411, 412 (2d Cir 1985); Carroll, *supra* note ___, at 152-3 (discussing the potential application of this separability test to typefaces).

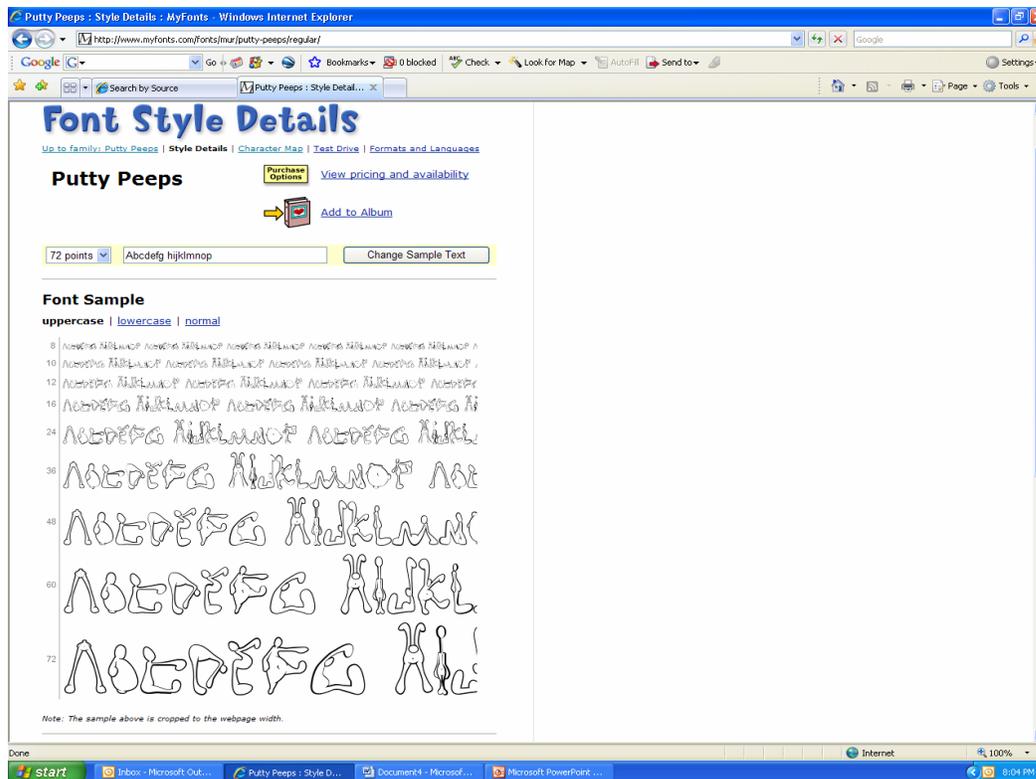
⁷³ *Brandir International Inc v Cascade Pacific Lumber Company*, 834 F 2d 1142, 1145 (2d Cir 1987); Carroll, *supra* note ___, at 153-4 (discussing this approach to separability and how it might apply in the typeface context).

⁷⁴ Denicola, *supra* note ___.

⁷⁵ See discussion in Carroll, *supra* note ___, at 154 (describing the potential application of the Denicola separability test to typefaces).

⁷⁶ Available for license online at <http://www.myfonts.com/fonts/mur/putty-peeps/>, last viewed on December 1, 2008.

⁷⁷ *id.*



The following discussion considers other examples of letterform designs that are both artistic and functional. Several are functional in more than one respect. Consider, for example, the design of a nightlight for a child’s bedroom where the base of the lamp is an alphabet letter denoting, say, the first letter of the child’s name. Presumably, this three dimensional representation of a letterform - if sufficiently artistic and original for copyright purposes⁷⁸ - would be physically separable from the functional aspects of the lamp under *Mazer v Stein*.⁷⁹ However, there is another kind of functionality—the functionality of the letterform itself. A letter “A”, even as sculpted into a lamp base, is still a building block of language. This is the kind of functionality problem faced in attempts to copyright creative typefaces more generally.

While it is not likely that the apparent copyright exclusions for typefaces are intended to cover a letterform sculpture in a lamp base merely because the letter is attached to a physical item, is it possible that copyrightability is excluded because the lamp base is a building block of language and as such serves the utilitarian function of expressing the first letter of a child’s name? The answer might be to try to distinguish between cases where letterforms *are* art, as opposed to situations where they serve as building blocks for text. However, this line may be more difficult to draw in practice

⁷⁸ The standard of originality required for copyright protection is relatively low: NIMMER ON COPYRIGHT, § 2.01[A] (“[I]t is now clearly established, both as a matter of congressional intent and judicial construction, that the originality necessary to support a copyright merely calls for independent creation, not novelty...”).

⁷⁹ 347 U.S. 201 (1954).

than we might assume. Consider the following representations of the alphabet used to attach children’s names to their bedroom doors – see Figure 3.

Figure 3: “Hang-a-Name” Blocks⁸⁰



In this example, the letterforms serve in a functional capacity both as building blocks of language, and as a signage system for a bedroom door. They are also arguably artistic in that the design of the letters and accompanying pictures are original creations of the designer.⁸¹ If a lamp-base or door sign would otherwise be copyrightable – assuming sufficient originality in the design⁸² – should copyright protection be denied because the article also happens to incorporate communicative text? This is presumably not the intention of the copyright act. In a similar vein, how would current copyright policy treat three dimensional educational alphabet toys, such as the “alphabet train” – see Figure 4?

Figure 4: Alphabet Train Toy⁸³



⁸⁰ Available for purchase online at StarBooks: see <http://www.starbooks4u.com/product/gifts/45>, last viewed on September 12, 2008.

⁸¹ NIMMER ON COPYRIGHT, § 2.01[A] (“Although in some early copyright cases, the distinction was not recognized, it is now clearly established, both as a matter of congressional intent and judicial construction, that the originality necessary to support a copyright merely calls for independent creation, not novelty.”)

⁸² *id.*

⁸³ Available for purchase online at Sensory Edge: see <http://www.sensoryedge.com/thandgrnupu.html>, last viewed on September 12, 2008.

Again, these letters serve communicative functions as building blocks of text, as well as functioning as educational toys. The letters may be more or less creative in their presentation. However, the question remains - assuming sufficient originality in design⁸⁴ - whether the article is barred from copyrightability because of these utilitarian attributes.⁸⁵ In all of these examples, letters are used in both an artistic and utilitarian way simultaneously. Additionally, there are two distinct utilitarian functions for the typefaces – serving as building blocks of text while simultaneously serving as a lamp base, toy, or door sign. Can the various utilitarian aspects be meaningfully divorced either physically or conceptually from the aesthetic aspects for the purposes of copyright law? Presumably they cannot be removed physically from functioning as building blocks of language, but is there a potential conceptual separation? It may be the case in applying one of the conceptual separability tests outlined above that a sufficiently artistic iteration of a font in one of these contexts could satisfy the requirements of the copyright act.

2. *Merger and Scènes à Faire*

Another way to look at problem of copyrightability of typefaces outside of the separability test would be to consider the merger and scènes à faire doctrines that prevent copyright monopolies over essential building blocks for expression. The idea of the merger doctrine is that if a given idea is inextricably merged with its expression, the expression is not copyrightable.⁸⁶ Otherwise, the copyright holder would effectively obtain a monopoly over the idea itself. It has not been clear whether merger is a bar to initial copyrightable or is rather a defense to a copyright infringement action.⁸⁷ However, the underlying policy is the same – the prevention of monopolies over ideas through copyrighting expression that is inextricably tied to that idea.

In the typeface context, it is arguable that in some cases allowing the copyrighting of a typeface would be tantamount to copying the underlying letterform – an essential building block of language. However, there may be other cases in which the presentation of the letterform is so unique in a particular typeface design that it may be considered not to be merged with its underlying letterform. For example, the Putty Peeps typeface

⁸⁴ NIMMER ON COPYRIGHT, § 2.01[A] (“Although in some early copyright cases, the distinction was not recognized, it is now clearly established, both as a matter of congressional intent and judicial construction, that the originality necessary to support a copyright merely calls for independent creation, not novelty.”)

⁸⁵ Interestingly, previous case law on the copyrightability of toys has suggested that toys may be copyrightable as pictorial, graphical or sculptural works: *id.*, at § 2.18[H][1]. The assumption has been that toys *per se* are generally not subject to the useful articles test applicable to works of applied art because toys are not generally “useful articles”: *id.* (“If a toy qualifies as a pictorial, graphic or sculptural work, its copyrightability is not subject to the special requirements for “useful articles” applicable to works of applied art. This for the reason that a toy is not a “useful article” under the statutory definition because “toys do not even have *an* intrinsic function other than the portrayal of the real item.”). However, this previous authority does not focus on educational toys as opposed to dolls and models.

⁸⁶ *id.*, at § 13.03[A][3].

⁸⁷ *id.*

design elements⁸⁸ might arguably not be merged with the underlying letterforms because the shapes of the typeface design are so distinct from the standard representations of given letter forms. Alternatively, one might argue that in the digital age, because there is now an infinite variety of ways to design typefaces quickly and cheaply, no one typeface design can be said to be merged with the expression of the given letterform. There will always be other ways to express the relevant letterform. Unless all possible letterforms were copyrighted, there could never be a monopoly in letterforms by copyright holders. If copyright protection were prospective, rather than retrospective,⁸⁹ and a number of popular fonts are now in the public domain – such as Times New Roman and Helvetica – the copyrightability of new typefaces could never effectively monopolize all uses of a given letterform.

The *scènes à faire* doctrine is similar to the merger doctrine in that it attempts to prevent monopolies in expression associated with particular foundational ideas.⁹⁰ It generally applies to literary, dramatic, and musical works in which there are key themes within the art, such as stock characters, scenes, and settings, that tend to be repeated from work to work as a matter of course.⁹¹ It is more difficult to apply this doctrine to typeface designs. It may be possible to argue that certain elements of a typeface design, such as serifs,⁹² are *scènes à faire* in the typeface design industry, such that the reproduction of a public domain non-serif typeface with serifs added would not suffice to attract copyright protection for the new typeface.⁹³ Thus, the *scènes à faire* doctrine could operate alongside the merger doctrine to ensure that undesirable monopolies in expression were not created if copyright law was extended to typefaces in the digital age.

3. Typefaces and Compilations: Levels of Abstraction

It is also worth considering another question about typeface copyrightability in terms of traditional copyright doctrine: that is, the question whether it makes sense to consider typeface designs as a constituent part of an otherwise copyrightable compilation. Consider, for example, typefaces as building blocks of literary text. Provided that the substance of the resulting text itself is original for copyright purposes,⁹⁴ presumably the

⁸⁸ See Figure 2 *supra*.

⁸⁹ As noted in the Introduction, prospective extension of copyright law to typefaces would be necessary to mitigate concerns about monopolization of the public domain. It would also be consistent with moves of other previously IP negative spaces, such as architecture, to a copyright protected status: see discussion in LEAFFER, *supra* note ___, at 133 (on prospective extension of copyright law to architecture).

⁹⁰ NIMMER ON COPYRIGHT, § 13.03[A][4].

⁹¹ *id.*

⁹² BRINGHURST, *supra* note ___, at 330 (defining “serif” as a “stroke added to the beginning or end of one of the main strokes of a letter”); for example, the Times New Roman typeface has serifs, while the Arial typeface does not).

⁹³ This example is perhaps an oversimplification as there are many different types of serifs that can be added to letterforms in a serif typeface: BRINGHURST, *supra* note ___, at 330 (definition of “serif”). Some new ways of adding distinctive serifs may, in fact, create a sufficiently original new typeface even if based on an existing non-serif typeface design.

⁹⁴ NIMMER ON COPYRIGHT, at § 2.01[A].

text as a whole would be protected by copyright as a literary work.⁹⁵ Is there nevertheless a valid policy argument for protecting some of the constituent parts of the text, such as the distinctive artistic character of the typeface used? Analogies could be made here with other situations where both an entire work, and its constituent elements, may qualify for copyright protection. Compilations of literary works, for example, may merit copyright protection as such,⁹⁶ while their constituent elements – the underlying works – may also merit individual copyright protection. An anthology of short stories by different authors, for example, might attract copyright as an anthology, while individual authors may hold separate individual copyrights in their respective contributions.

In this vein, might typeface designs be considered copyrightable *per se*, despite the ability of the designed letterforms to be compiled into a larger copyright work in the form of a literary text? Of course, this reasoning to some extent ignores the different levels of abstraction between a letterform and a text, versus a text and a compilation of texts. As Professor Burk has pointed out, the question concerning levels of abstraction can be particularly significant in ascertaining whether something is insufficiently original or overly functional to merit copyright protection.⁹⁷ In particular, Professor Burk has noted that in the digital world, every piece of content can ultimately be reduced to bits, and that every bit is basically just a functional building block for something else.⁹⁸ Bits are the “1”s and “0”s that form the basis of all software code.⁹⁹ Every digital letterform ultimately reduces to bits. Thus, every digital text is made up of digital letters, and every digital letter - whatever its typeface design – is made up of software code, and all software code is made up of bits. At what level of abstraction should we consider the copyrightability question?

Assuming, for the moment, that it makes sense to apply the copyrightability question to the letterform stage of the equation, is there any clear policy justification why a sufficiently original typeface design should not be copyrightable? It may be the case that many, if not most, existing typefaces are insufficiently original to merit copyright protection. Fonts like Times New Roman, Helvetica, and Arial may be too old, too common, or too closely associated with basic letterforms to attract copyright protection. Thus, it may end up being the case that copyright would only protect letterforms that are so artistic and unusual that they are less effective than these standard fonts in communicating information to a reader.

But is there necessarily any problem with that? In the area of software copyrights, it has been suggested that very basic functional code may not be copyrightable as a result of the application of the merger¹⁰⁰ or scènes à faire doctrines.¹⁰¹

⁹⁵ 17 U.S.C. § 102(a)(1) (extending copyright protection to “literary works”)

⁹⁶ 17 U.S.C. § 103(a) (copyright protection for compilations and derivative works).

⁹⁷ Burk, *supra* note ___, at 615.

⁹⁸ *id.* (“A single bit, a single pixel, merely functions as a building block.”)

⁹⁹ MATTHEW BENDER & CO, COMPUTER LAW, (Lexis online treatise) § 2.03[2] (explaining the binary nature of computer technology and the requirement to reduce everything to “1”s and “0”s).

¹⁰⁰ *Lexmark v Static Control Components*, 387 F.3d 522, 535-537 (2004) (describing the application of these doctrines in the computer software context).

In other words, if a particular way of writing code is the only effective way, or the standard way, of expressing a particular idea – which is often the case with, say, encryption code¹⁰² – then the code should not be copyrightable on that basis. The aim of copyright law is to protect original creative works of authorship. Thus, particularly functional typeface designs, like particularly functional software code, should arguably not be copyrightable. However, this does not mean that typefaces should be uncopyrightable as such. It simply means that the field of typeface design, like the field of software coding, will generally only attract thin copyright protection.¹⁰³ This view is consistent with past developments in copyright law, and also with the stated policies underlying copyright law to promote artistic innovation.¹⁰⁴

III. COPYRIGHT AND THE DIGITAL TYPEFACE INDUSTRY

A. DIGITAL AGE CHANGES IN MARKET STRUCTURE

In considering the applicability of copyright law to the digital typeface industry, it is necessary to understand the dramatic changes in structure of this industry as compared with its pre-digital predecessor. For one thing, moves online have changed the players involved in the industry, both in nature and in number. Prior to the digital age, there were various different iterations of the physical industry. Each involved a separation of the typeface design and font production functions. Early in the development of typesetting, the printing of text required the use of wooden, and later metal, blocks created at foundries on the basis of designs provided by typeface designers.¹⁰⁵ Later, physical world iterations of the typeface industry involved the reduction of a graphical artist's typeface design to a glyph palette that was reduced to the form of a filmstrip or wheel generally made out of celluloid.¹⁰⁶

¹⁰¹ *id.*

¹⁰² *id.*, at 536 (“Generally speaking, “lock-out” codes fall on the functional-idea rather than the original-expression side of the copyright line. Manufacturers of interoperable devices such as computers and software, game consoles and video games, printers and toner cartridges, or automobiles and replacement parts may employ a security system to bar the use of unauthorized components. To “unlock” and permit operation of the primary device (*i.e.*, the computer, the game console, the printer, the car), the component must contain either a certain code sequence or be able to respond appropriately to an authentication process. To the extent compatibility requires that a particular code sequence be included in the component device to permit its use, the merger and scenes a faire doctrines generally preclude the code sequence from obtaining copyright protection.”)

¹⁰³ Pamela Samuelson, *Frontiers of Intellectual Property: Why Copyright Law Excludes Systems and Processes from the Scope of Its Protection*, 85 TEXAS L REV 1921, 1924 (2007) (noting appropriateness of thin copyright protection for software code) [hereinafter, *Frontiers*].

¹⁰⁴ *Mazer v Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance the public welfare through the talents of authors and inventors in science and the useful arts.”). See also discussion in LEAFFER, *supra* note ___, at § 1.08[A]; NIMMER ON COPYRIGHT, § 1.03[A].

¹⁰⁵ BRINGHURST, *supra* note ___, at 325 (defining “font” in the world of metal type as a given alphabet in a given size reduced to a metal font plate).

¹⁰⁶ *id.*

However, in the digital world, the font is effectively both the glyph palette and the digital information encoding it.¹⁰⁷ Where a typeface designer produces her own typefaces via software such as Adobe Illustrator,¹⁰⁸ she is effectively both the typeface designer and foundry all in one. The two functions are now aggregated. Alongside this aggregation comes a significant decrease in barriers to entry. Anyone who can afford a typeface design software package can design her own type. This increases the number of players in the design market exponentially. Further, as digital type can be licensed cheaply and easily online, more designers are entering into the market and licensing their own wares. This evidences another aggregation of functions – designers can now license their own designs directly to customers and do not have to be employed by design houses to do so. This is much like the way in which authors and musicians can now effectively produce and market their own music and books online. They no longer require intermediaries to manufacture and distribute their wares.

Another significant change to the font industry in the digital age is the increased anonymity of the players. This comes with the exponential increase in industry participants. Anonymity can refer to two things. Designer-distributors can literally be anonymous online. As they do not have to physically interact with customers, they can be relatively anonymous in terms of identity. More significantly, there is a kind of anonymity when a previously compact industry becomes suddenly so large in terms of players. In the older and smaller iteration of the industry, participants generally knew each other and often had repeated business dealings with each other. This allowed for the establishment of relatively well developed norms, including norms about appropriate and inappropriate usage of others' designs. In such industries, there can be less need for legal regulation, including intellectual property protection, because industry participants can effectively self-regulate to a certain extent. One typeface designer, for example, has written about the acceptance of “creative copying” in developing new typefaces.¹⁰⁹ However, he also explains that as a matter of accepted practice: “Copying, or using “reference” material, should be done as an aid, not as a crutch. Try never to copy anything verbatim. Besides being plagiaristic, it’s just dirty pool.”¹¹⁰ These words suggest that although designers are concerned about unauthorized copying, they expect and understand that some degree of copying is necessary and accepted as a normative matter.

Moves to a larger scale, more anonymous online industry may negatively impact participants' awareness of, and conformity with, previous norms. While a small group of players may have loosely accepted the idea that over-zealous copying of others' designs is “dirty pool”,¹¹¹ a larger group of market participants who have spent less time in the industry – and are perhaps only engaging in it as a hobby rather than a profession – may have less stake in identifying and conforming to existing norms. They may simply be unaware that such norms exist. Additionally, norms that relate to acceptable versus

¹⁰⁷ *id.*, 325-6.

¹⁰⁸ CABARGA, *supra* note ____, at 128-133 (describing popularity and usage of this font designing package).

¹⁰⁹ *id.*, at 38.

¹¹⁰ *id.*

¹¹¹ *id.*

unacceptable levels of copying in the physical world presumably need to adapt to the needs of the digital industry. When there are less participants and less fonts, it is presumably easier to avoid unacceptable copying. However, with an almost infinite number of fonts now available digitally, presumably there are often lesser degrees of design separation between them. Thus, norms about copying must presumably change in this context. Of course, one could argue the opposite by saying that if there are now infinite ways of creating new designs there is no excuse for any copying. Nevertheless, this would still change the copying norms, albeit in the opposite direction. Arguably more anecdotal and empirical work needs to be done now to ascertain how these norms are developing, if at all, in practice.¹¹²

Along with greater diversity in the number of fonts and font designers in digital markets, there is also a greater diversity of customers. In the pre-digital age, physical fonts were licensed largely to commercial printers who published books, periodicals, newspapers, posters, and other forms of text. In the digital font industry, the potential licensees of fonts have increased exponentially. Along with the desktop publishing revolution came the desires of private individuals to access a variety of fonts for their own purposes. Individuals now design their own websites, posters, party invitations, blogs, and the like. This opens up large new markets for online fonts. Not only has the group of font designers and distributors aggregated and enlarged, so too has the group of prospective licensees for the wares of those designers and distributors.

Is there anything about this new digital market structure that might justify greater latitude in copyrighting typefaces? It may be that the ability to assert a copyright in a digital font gives digital age font designers more comfort in releasing their works into new online marketplaces where the threat of digital piracy may be very real. Even if they do not intend to ever bring a copyright action due to cost and resource limitations, the ability to send a credible threat of a copyright infringement action to an alleged wrongdoer might be worth something. Additionally, if pre-digital norms against overzealous font borrowing are likely to be lost as the number and anonymity of players increases in the digital market, might copyright law fill the void? If market players cannot rely on previous norms to keep each other in check, might at least the threat of a copyright action play a similar role in the digital world?

On the other side of the coin, might the ready acceptance of copyrights in digital typefaces potentially damage innovation in the typeface industry? There is some evidence that much of the work in this industry is incremental and builds on earlier work of previous designers.¹¹³ If this is the case, locking up that work behind copyright law may stifle innovation in the industry. This is similar to arguments that have been raised in the software code industry. As with typefaces, developments in the software coding

¹¹² The development of norms in the digital font industry is considered in more detail in Part V.H *infra*.

¹¹³ CABARGA, *supra* note ____, at 203 (“Looking backwards, whether thousands of years or to yesterday, becomes the vehicle through which seemingly new ideas spring into being. Think of it as recycling. When it comes to type design, with its necessary adherence to conventionalized letterforms and the need for some degree of legibility as its guiding constraint, mining the past for viable models is often seen as a necessary, if not proud, tradition.”)

industry tend to be incremental.¹¹⁴ Thus, the ability to lock up code for lengthy periods of time under various intellectual property regimes can be damaging to developments in relevant industries.¹¹⁵ In the code industry, there has been some concern about patent thickets that stifle innovation in software development.¹¹⁶ Copyright protection, with its lengthy duration, poses many similar problems.¹¹⁷

B. COPYRIGHT LAW AND SOFTWARE CODE: IMPLICATIONS FOR DIGITAL TYPEFACE COPYRIGHTABILITY

In the 1980s, copyright law and policy makers addressed the contentious issue of the extent to which software code should be accepted as copyrightable subject matter.¹¹⁸ At the end of the day, software code obtained thin copyright protection.¹¹⁹ Nevertheless, even the relatively limited reach of copyright law to code had unforeseen consequences with which courts are still grappling today.¹²⁰ To these consequences, one might add questions of the copyrightability of font-generating software code. In 1992, for example, the Copyright Register adopted regulations about this issue, noting that: “[T]he creation of scalable font output programs to produce harmonious fonts consisting of hundreds of characters typically involves many decisions in drafting the instructions that drive the printer. The expression of these decisions is neither limited by the unprotectible shape of the letters nor functionally mandated. This expression, assuming it meets the usual standard of authorship, is thus registrable as a computer program.”¹²¹

Of course, there is a separate debate about the extent to which, and circumstances in which, computer code should be copyrightable more generally. Professor Samuelson has raised concerns about early judicial failures to limit findings about the copyrightability of code under § 102(b) of the copyright act.¹²² Section 102(b) was

¹¹⁴ Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2330-2332 (1994) (describing ways in which innovation in computer programming is largely incremental and cumulative in character) [hereinafter, *Manifesto*].

¹¹⁵ Jacqueline Lipton, *IP's Problem Child: Shifting the Paradigms for Software Protection*, 58 HASTINGS L J 205, 208 (2006) (“While some companies in the computer software industry are unquestionably flourishing in today’s marketplace, they may be doing so by taking advantage of competitors who lack the wherewithal to combat software copyrights. These large software companies also utilize questionable software patents, restrictive DRM, and contractual measures to stifle competition. All of these barriers may be standing in the way of the incremental developments essential for software innovation.”) [hereinafter, *IP's Problem Child*].

¹¹⁶ David Evans and Anne Layne-Farrar, *Software Patents and Open Source: The Battle Over Intellectual Property Rights*, 9 VA. J.L. & TECH. 10 (2004) (describing concerns about the development of patent thickets in the software industry that could stifle innovation).

¹¹⁷ Lipton, *IP's Problem Child*, *supra* note ____, at 208.

¹¹⁸ Samuelson, *Manifesto*, *supra* note ____; Lipton, *IP's Problem Child*, *supra* note ____; Samuelson, *Frontiers*, *supra* note ____.

¹¹⁹ Samuelson, *Frontiers*, *supra* note ____, at 1924 (“Thin copyright protection for [computer] programs is especially appropriate given the availability of patent protection for program innovations.”)

¹²⁰ Lipton, *IP's Problem Child*, *supra* note ____ (discussing a variety of these unseen consequences).

¹²¹ “Registerability of Computer Programs that Generate Typefaces”, 57 Fed. Reg. 6201, at 6201-2 (Feb 12, 1992); cited in *Adobe Systems v Southern Software*, 1998 U.S. Dist. LEXIS 1951, pp 12-13 (1998).

¹²² Samuelson, *Frontiers*, *supra* note ____.

intended to ensure that copyright protection does not extend to ideas, processes, and methods that are more appropriately covered by other laws such as patent and trade secrecy.¹²³ This includes computer code which should, as a result, only obtain thin copyright protection.¹²⁴ Of course, the Copyright Office's position that otherwise copyrightable code is not rendered unregistrable just because the code's output may not qualify for copyright protection seems reasonable. However, the Copyright Office must be vigilant to ensure that any code submitted for copyright registration, including code that generates typefaces, meets copyright's originality requirements.

If software copyrights generally, and font-generating software copyrights in particular, have the potential to stifle innovation, then should copyright law refrain from protecting font-generating code at all? If typefaces were regarded as uncopyrightable even in the digital age, would there be any good reason to accept an indirect extension of copyright to typefaces by copyrighting the underlying code? It is only an unforeseen incident of the extension of copyright law to code generally that creates this possibility, not an express legislative intent to protect typefaces through copyright. One might argue that typefaces should either be copyrightable as such, or they should not be copyrightable as a general policy matter. If they are to be copyrightable, even if they only receive thin copyright protection, the law should be clear on this point. If they are not copyrightable, then it may be necessary to reconsider the situation that allows indirect protection via copyrighting the underlying code.

It may be the case that many software programs that generate code are in reality insufficiently original to attract copyright protection. For example, font designers who do not actually write code, but who use programs such as Adobe Illustrator to assist them in developing code, may not be creating original code in the sense required by copyright law. Their efforts are not in the code-writing area. The code production is merely incidental to the generation of their font designs. Nevertheless, many of these designers claim copyright in their end products.¹²⁵ It is therefore necessary for the Copyright Office to consider the question of the copyrightability of font-generating code with a clearer focus than has been the case in the past. Are these designers asserting copyright in their designs, or rather in the underlying code, or both? The legal basis on which copyright is asserted by these designers is currently unclear.

It is also important to recognize that even where underlying code is copyrighted, the copyright does not necessarily extend to the design of the resulting typeface *per se*. Through reverse engineering, or even independent coding, it is possible to generate a

¹²³ 17 U.S.C. § 102(b) (“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.”)

¹²⁴ Samuelson, *Frontiers*, *supra* note ___, at 1924 (“Thin copyright protection for [computer] programs is especially appropriate given the availability of patent protection for program innovations.”)

¹²⁵ To see the extent to which designers of digital fonts claim copyrights in those fonts, it is only necessary to look at copyright notices attached to fonts on services such as www.myfonts.com, last viewed on November 30, 2008.

very similar looking font with different underlying code.¹²⁶ This is another reason why it is important to ascertain whether digital font designers who claim copyrights are actually intending to protect their designs or merely the underlying code. If they are claiming copyrights in the code, and not the resulting designs, then a competitor who creates the same design with different code will not be infringing the asserted copyright. If, on the other hand, the designer is intending to assert copyright in the designs as such, then even the independent creation of new code that generates the same design may result in an infringement of the design. This is why it is necessary in the digital age to clarify the extent to which copyright law extends to digital typefaces and their underlying software code.

In making this determination, it will be necessary to consider whether changes in market structure for digital fonts merit any changes in copyright policy. It may be that copyright protection was not necessary in the pre-digital world, but that changing market forces in the digital age necessitate a reconsideration of this policy.¹²⁷ If this is the case, this industry may be an example of a market that could previously operate in IP's negative space, but whose move online requires an extension of copyright law. In this regard, the digital typeface industry would differ from, say, the movie, music, and print industries in which moves to digital market models necessitated enhanced protections for *existing* copyrights.¹²⁸ The typeface industry would, by contrast, be an example of a market in which copyrights did not previously exist, but are now necessary because of market changes in the online industry.

IV. TYPEFACES AND THE DIGITAL MILLENNIUM COPYRIGHT ACT

While the typeface copyright question in the digital age remains unsettled, the DMCA poses interesting problems relating to the protection of digital typefaces. The acceptance of digital typeface copyrights – and copyrights in font-generating code – could potentially lead to overbroad protection of digital typefaces through the anti-circumvention provisions of the DMCA. Digital typeface designers might also derive some protection for their works from the copyright management information (“CMI”) protections in the DMCA. The DMCA was implemented to assist copyright holders obtain protection against a number of digital age threats, such as large scale digital copyright piracy.¹²⁹ One of the statutory goals was to provide support for attempts by rights holders to protect their digital works through the use of various digital rights management (“DRM”) technologies.

¹²⁶ Lipton, *IP's Problem Child*, *supra* note ____, at 212 (“Studying reverse engineering does shed some light on the level of protection software developers can realistically expect from copyright law. As noted by Professor Samuelson, it is very easy for a competitor to develop a program with identical functional behavior to the original but with completely different underlying literal code.”) (citations omitted).

¹²⁷ See discussion in Part III.A *supra*.

¹²⁸ Some of these enhanced protections are found in the anti-circumvention and copyright management information protection provisions of the DMCA: 17 U.S.C. §§ 1201, 1202. See also discussion in Part IV *infra*.

¹²⁹ LEAFFER, *supra* note ____, at 391-394 (describing Congressional purposes in enacting the DMCA).

Specifically, the DMCA seeks to support the use of CMI,¹³⁰ and the application of TPMs¹³¹ intended to control access to, and use of, digital copyright works. The term “copyright management information” is defined in the DMCA to include information that identifies a work¹³², its author,¹³³ its owner,¹³⁴ or that sets out terms and conditions under which the work may be used.¹³⁵ The DMCA prohibits the provision or distribution of false CMI,¹³⁶ as well as the removal or alteration of CMI from a work.¹³⁷ It also prohibits distribution of a work with knowledge of the removal or alteration of CMI.¹³⁸ The legislative intention was to enable copyright holders to track uses of their digital works, as well as to ensure notice to downstream users of copyright ownership, and terms and conditions on which a work may be used.

Assuming that digital typefaces are either copyrightable in their own right, or that their underlying code is copyrightable, there is no reason why a copyright holder could not avail itself of CMI, and the additional protections of the DMCA in respect of the CMI. In fact, the application of these provisions seems in some ways to serve the functions previously served by norms in the more compact physical world font industry. They are a way of putting others on notice of rights asserted - and expected to be respected - by a font designer. Of course, CMI could be employed as a purely technological measure in the font industry without the need for a copyright-based legal action behind it. However, the ability to assert a legal right under the DMCA based on preserving the integrity of CMI potentially serves an important communicative function about the validity of CMI in the digital font field.

More troubling in the realm of digital copyright law are the DMCA’s anti-circumvention provisions.¹³⁹ These provisions protect the integrity of TPMs applied to a digital work that control access to, and use of, the work. The legislation aims to prohibit

¹³⁰ *id.*, at 404 (“The term CMI includes all identifying information involving the title and other information identifying the work, the name of the author or performer, the terms and conditions for the use of the work, and other identifying numbers or symbols referring to such information or links to such information.”); 17 U.S.C. § 1202 (setting out the scope of protections for the integrity of CMI attached to copyright works); LEAFFER, *supra* note ___, at 404-405 (describing Congressional purposes in enacting the CMI protections in the copyright legislation).

¹³¹ 17 U.S.C. § 1201; LEAFFER, *supra* note ___, at 393-4 (“Section 1201 prohibits the circumvention and the manufacture or trafficking of technologies that are designed to circumvent technological safeguards, known collectively as “technological protection measures” or “TPMs.” Section 1201 distinguishes between TPMs that block unauthorized access to works, and those that control the unauthorized exercise of one or more of the exclusive rights to copyright. The former are “gatekeeper” technologies that must be bypassed (lawfully or otherwise) if a user is to read, see, hear, or otherwise perceive a work to which they have been applied. The latter are technologies, usually the same technologies, that limit the further uses of copyrighted works – reproduction, adaptation, distribution, public performance, and public display – after which access has been obtained.”)

¹³² 17 U.S.C. § 1202(c)(1).

¹³³ 17 U.S.C. § 1202(c)(2).

¹³⁴ 17 U.S.C. § 1202(c)(3).

¹³⁵ 17 U.S.C. § 1202(c)(6).

¹³⁶ 17 U.S.C. § 1202(a).

¹³⁷ 17 U.S.C. § 1202(b)(1).

¹³⁸ 17 U.S.C. §§ 1202(b)2, 1202(b)(3).

¹³⁹ 17 U.S.C. § 1201.

the circumvention of TPMs that control access to a work,¹⁴⁰ as well as the trafficking of devices that circumvent TPMs that control either access to¹⁴¹ or use of¹⁴² - a work. These provisions have been criticized for effectively negating fair use rights in many situations,¹⁴³ and for their potentially overbroad application. It is possible now for holders of valuable, but non-copyrightable works, to avail themselves of the DMCA's protections provided that *some* copyrightable material is encrypted alongside non-copyrightable material.¹⁴⁴

With respect to the protection of digital typefaces in particular, if typefaces or their underlying code are copyrightable, then rights holders can avail themselves of TPMs and the supporting provisions of the DMCA. However, as with CMI, even in circumstances where digital typefaces or their underlying code are not copyrightable, typeface designers can utilize the technology effectively outside of copyright law to control access to, and use of, their designs. Even if digital typefaces are not copyrightable at all, typeface designers might still use the anti-circumvention provisions if they encrypt *some* copyrightable material – for example some additional copyrightable software code – alongside the encrypted typeface code. One example may be code that generates a description of a particular font or letterform. This code may not be necessary for the effective operation of the font program, but may be sufficiently original for copyright purposes to attract the anti-circumvention provisions of the DMCA.

Some courts have recently held that, in order to support a DMCA claim, a plaintiff must establish a realistic link between the DMCA claim and a threat of copyright infringement.¹⁴⁵ If this view is accepted, the ability of typeface designers to utilize the DMCA to protect uncopyrightable aspects of typeface designs would be limited, even where those aspects are encrypted alongside copyrightable code. Nevertheless, the text of the DMCA on its face does not literally require the plaintiff to establish such a link.¹⁴⁶ Thus, it remains to be seen whether future courts will continue to require this link.

¹⁴⁰ 17 U.S.C. § 1201(a)(1)(A).

¹⁴¹ 17 U.S.C. § 1201(a)(2).

¹⁴² 17 U.S.C. § 1201(b)(1).

¹⁴³ See, for example, Jerome Reichman, Graeme Dinwoodie and Pamela Samuelson, *A Reverse Notice and Takedown Regime to Enable Public Interest Uses of Technically Protected Copyright Works*, 22 BERKELEY TECH L J 981 (2007); Anthony Reese, *Will Merging Access Controls and Rights Controls Undermine the Structure of Anti-Circumvention Law?*, 18 BERKELEY TECH. L.J. 619 (2003); Jacqueline D. Lipton, *Solving the Digital Piracy Puzzle: Disaggregating Fair Use from the DMCA's Anti-Device Provisions*, 19 HARV. J. L. & TECH. 111 (2005); Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Rules Need to Be Revised*, 14 BERKELEY TECH. L.J. 519 (1999).

¹⁴⁴ See, for example, LEAFFER, *supra* note ___, at 392 (“[I]t was feared that the administration’s proposals [for the DMCA] would allow copyright owners to lock up public domain materials and frustrate the fair use rights of information consumers With its passage at the end of 1998, the DMCA represents a victory for copyright owners.”)

¹⁴⁵ *Chamberlain v Skylink*, 381 F.3d 1178, 1203 (Fed Cir 2004), cert. denied, 125 S. Ct. 1669 (2005) (holding that a DMCA plaintiff must establish a link between its anti-circumvention claims and a threat of copyright infringement to support its DMCA action).

¹⁴⁶ Jacqueline Lipton, *The Law of Unintended Consequences: The Digital Millennium Copyright Act and Interoperability*, 62 WASH & LEE L REV 487, 543-4 (2005) (“[T]he point was made by judges in both the *Lexmark* and *Chamberlain* appeals that when no copyright action lies in an interoperability case, there is no relevant copyright for the plaintiff to protect under a DMCA claim. As noted above, this is not

V. ALTERNATIVES TO COPYRIGHT

A. DESIGN PATENTS

Another question that needs to be addressed to determine the scope of copyright protection necessary for digital typefaces is that of the available alternatives to copyright. This Part examines a number of options. One obvious possibility is design patent law. Section 171 of the patent act allows for the grant of a design patent for “any new, original and ornamental design for an article of manufacture”.¹⁴⁷ Design patents last for fourteen years,¹⁴⁸ in contrast to standard utility patents which last for twenty years.¹⁴⁹ In the physical world, design patents were routinely granted for the physical – usually metal – blocks produced by foundries that embodied typefaces.¹⁵⁰

The question has arisen in the digital age as to whether the same should be true of digital fonts. As there is no physical article of manufacture that embodies the font design, can design patent law meaningfully apply? In *Adobe Systems v Southern Software*,¹⁵¹ the court held that digital typeface designs qualify as statutory subject matter for design patent purposes.¹⁵² The court followed Patent Office Guidelines issued in 1996 that dealt specifically with digital typefaces. The Guidelines state that: “Traditionally, type fonts have been generated by solid blocks from which each letter or symbol was produced. Consequently, the PTO has historically granted design patents drawn to type fonts. PTO personnel should not reject claims for type fonts under Section 171 for failure to comply with the “article of manufacture” requirement on the basis that more modern methods of typesetting, including computer-generation, do not require solid printing blocks.”¹⁵³ Of course, these Guidelines assume that there is still a difference between a font and a typeface – the font being an article of manufacture that is used to produce a typeface. Thus, they may be criticized on the basis that they fail to address the reality that the functions of typeface designer and foundry are now effectively aggregated in practice. Thus, granting design patent protection to the font is tantamount to extending the protection to the generally non-patentable typeface design.

precisely what the DMCA says. There is no clear requirement of a successful copyright action to support a DMCA claim. There is only a requirement that the technological encryption measure in question effectively protects a copyright work.”)

¹⁴⁷ 35 U.S.C. § 171.

¹⁴⁸ 35 U.S.C. § 173 (“Patents for designs shall be granted for the term of fourteen years from the date of grant.”)

¹⁴⁹ 35 U.S.C. § 154(a)(2).

¹⁵⁰ *Ex parte Tayama*, 24 U.S.P.Q.2D (BNA) 1614, 1618 (Bd Pat App & Int 1992) (“The phrase “type font” may be properly interpreted as referring to letter blocks or pieces used in a conventional printing press. The blocks or pieces constitute an article or articles of manufacture [for the purposes of 35 U.S.C. § 171].”)

¹⁵¹ 1998 U.S. Dist. LEXIS 1951; 45 U.S.P.Q.2D (BNA) 1827 (1998).

¹⁵² *id.*, at 21 (LEXIS page reference).

¹⁵³ Patent and Trademark Office, *Guidelines for Examination of Design Patent Applications for Computer-Generated Icons*, 61 F.R. 11380, 11381-2 (March 20, 1996).

Interestingly, the PTO Guidelines were likely adopted to dispel subject-matter patentability concerns about fonts when the industry initially moved from three dimensional blocks to two dimensional means of font production in the form of celluloid film.¹⁵⁴ In this context, there was still a separation between the typeface design and foundry functions, although the nature of the foundry business had changed. Instead of metal plates, foundries used two dimensional celluloid film to create fonts. These film fonts were initially regarded as not being suitable statutory subject matter for design patents because they were not regarded as three dimensional articles of manufacture.¹⁵⁵ The PTO Guidelines addressed this problem by effectively accepting two dimensional celluloid fonts as patentable under § 171. However, the Guidelines went further in asserting that digital fonts could also be patentable under § 171. The Guidelines explicitly contemplate that “more modern methods of typesetting, including computer-generation” may satisfy design patent requirements as articles of manufacture.¹⁵⁶ The Guidelines draw no distinction between more modern typesetting methods that reflect earlier methods in maintaining separate typeface and foundry functions and those more modern methods that effectively aggregate these functions. Extending design patents in the latter situations effectively extends the reach of the patent to previously unpatentable typeface designs because of the aggregation of the typeface design function with the foundry function in the digital age.

Nevertheless, even assuming that digital fonts do meet the statutory subject matter criteria for design patents, there are still questions of novelty¹⁵⁷ and non-obviousness¹⁵⁸ that must be addressed. Many fonts may be insufficiently novel or may be too obvious to attract design patent protection. This may be as it should be. If the concern is with fostering optimum levels of innovation in the digital font industry, intellectual property protection should not too readily be granted to any fonts. Unfortunately, there is little guidance as to when a font will be sufficiently novel or non-obvious to satisfy the requirements of design patent law. Current industry practice suggests that design patents may not actually be realistic alternative to copyright protection. A brief survey of online font marketplaces, such as fontspace.com¹⁵⁹ and myfonts.com,¹⁶⁰ suggests that most digital font designers rely on copyrights, contractual licenses, and to some extent

¹⁵⁴ *Leonard Storch Enterprises v Mergenthaler Linotype Co*, 1979 W.L. 1067 (E.D.N.Y.); 202 U.S.P.Q. 623, 1978-81 Copr. L. Dec. P 25, 092 (1979) (“A design patent is available to any article of manufacture containing a new, original and ornamental design Approximately one thousand metallic fonts of type and a variety of other articles carrying characters have met at one time, the stringent criteria necessary to be awarded design patents. What is significant is that each of these articles is a three-dimensional object to which the letters and characters give shape or add embellishment. By contrast two dimensional film fonts cannot take on a distinctive appearance or shape merely by placing a design across its face. Film fonts, are, in this respect, similar to dress designs and it is highly questionable whether they could satisfy the requirements of a design patent.”)

¹⁵⁵ *id.*

¹⁵⁶ Patent and Trademark Office, *Guidelines for Examination of Design Patent Applications for Computer-Generated Icons*, 61 F.R. 11380, 11381-2 (March 20, 1996).

¹⁵⁷ 35 U.S.C. § 102; see also discussion in Carroll, *supra* note ___, at 172-173.

¹⁵⁸ 35 U.S.C. § 103; see also discussion in Carroll, *supra* note ___, at 174.

¹⁵⁹ www.fontspace.com, last viewed on December 1, 2008.

¹⁶⁰ www.myfonts.com, last viewed on December 1, 2008.

trademarks, in their fonts, rather than design patents. It is not clear why this is the case. It may be that font designers are concerned about the time and expense required to obtain a design patent¹⁶¹ as compared with a copyright. They may also be concerned with the potential risks and costs of design patents being found to be invalid if challenged in a federal court.¹⁶² In many other industries, design patents are not in fact regarded as a practical alternative to copyright for these reasons.¹⁶³ Typeface copyrights may in fact generally be preferable to design patents on time, cost, and risk grounds.

It is of course possible for a digital typeface designer to attempt to claim patent protection for font-generating computer code. Code is patentable subject-matter¹⁶⁴ if it otherwise meets the novelty and non-obviousness requirements of the patent act.¹⁶⁵ This is not limited to the realm of design patents. In fact, software can attract the protection of a utility patent with its full twenty year term.¹⁶⁶ Software code actually creates many of the same difficulties for patent law as it does for copyright law. In fact, over-zealous patenting of code can stifle innovation more than over-zealous copying because patent law does not require proof of copying.¹⁶⁷ It merely requires that the defendant has used the patented idea without permission.¹⁶⁸ Copyrighted code can be relatively easy to “design around” by competitors of a copyright holder,¹⁶⁹ while this is not necessarily the case for software patents. Regardless of the availability of copyright protection for fonts and associated code, other intellectual property rights may be equally problematic in chilling innovation. The question of protecting digital fonts implicates more than copyright law, although copyright is the obvious first port of call for many digital font designers because it is fast, cheap and relatively easy to assert online.

B. TRADE SECRETS

¹⁶¹ LEAFFER, *supra* note ___, at 126 (“Despite their seeming appropriateness, design patents have not afforded a practical means for the protection of industrial design. The reasons are the time and expense required to obtain a design patent, the difficulty that many designs have in meeting the standards of patentability, and their marked tendency of being declared invalid when challenged in federal court.”); Raustiala and Sprigman, *supra* note ___, at 1704-5 (noting the drawbacks of design patents in the fashion industry as including the difficulties of meeting patents’ ‘novelty’ requirements, as well as the time and cost involved in applying for such a patent; noting in particular that the United States Patent and Trademark Office rejects approximately half of all design patent applications).

¹⁶² LEAFFER, *supra* note ___, at 126 (noting the tendency of design patents to be declared invalid in when challenged in federal court).

¹⁶³ *id.* (noting that design patents have not been a practical alternative to copyright for protecting industrial designs); Raustiala and Sprigman, *supra* note ___, at 1705 (design patents are too slow and uncertain to provide useful protection to fashion designers in the fashion industry).

¹⁶⁴ CHISUM ON PATENTS, § 1.03[6] (describing development of software patent law).

¹⁶⁵ 35 U.S.C. §§ 102, 103.

¹⁶⁶ CHISUM ON PATENTS, § 1.03[6] (describing development of software patent law); 35 U.S.C. 154(a)(2) (setting out twenty year term for standard utility patents).

¹⁶⁷ Evans and Layne-Farrar, *supra* note ___ (describing concerns about the development of patent thickets in the software industry that could stifle innovation).

¹⁶⁸ 35 U.S.C. § 154(a)(1) (describing rights of patentee).

¹⁶⁹ Lipton, *IP’s Problem Child*, *supra* note ___, at 212-213 (noting the ease with which computer programmers can design around each other’s work without creating a literal copy for copyright infringement purposes).

Trade secret protection is not likely to be available for digital typefaces. Trade secrets will protect commercially valuable information that has been kept reasonably secret against misappropriation.¹⁷⁰ The digital world has raised significant challenges for trade secret law because of the ease with which digital confidences can be lost, and valuable information can be distributed widely at the push of a button.¹⁷¹ Digital fonts are no better protected than any other valuable commercial information that exists online. The typeface designs themselves will not be protected as trade secrets because they are generally open to public view online. The underlying code could potentially be a trade secret, but only if a court viewed attempts by the typeface designer to keep the code secret - say by utilizing TPMs - to be sufficient for the purposes of trade secret law. Even if the code could be effectively protected in this way, this would be no bar to a competitor copying the design of a typeface with new underlying code. Trade secrets are therefore not likely to be particularly relevant to any ongoing debate about the protection of digital typefaces.

C. TRADEMARKS

Trademarks are another potential avenue for protecting some aspects of digital typefaces. However, they are not likely to protect typeface designs as such. Trademarks generally protect the ability of a mark or logo to function as a source identifier in the sense of distinguishing one entity's products or services from those of another.¹⁷² Thus, a particularly distinctive typeface presented in a particular way, such as the familiar Coca-Cola logo, may attract trademark protection. However, in this case, the font is attached to Coca-Cola's logo and the trademark would reside in the Coca-Cola Corporation, and not in the hands of the typeface designer. Most typefaces are designed on commission for the manufacturer of a particular product,¹⁷³ and trademark protection will generally inhere in the typeface in the context of the mark. Thus, a typeface is unlikely to be associated with a typeface designer in the trademark sense, but rather with the business entity for which it was designed.

In some cases a typeface designer will design a typeface for her own business logo, in which case she could potentially claim trademark rights in it. And perhaps in the highly unusual case, a well-known typeface is so well connected with its designer as to attain trademark status: for example, it is relatively common knowledge, at least in the graphic design business, that the Helvetica font was designed by the Swiss typeface

¹⁷⁰ See, for example, Uniform Trade Secrets Act, § 4 (definition of "trade secret").

¹⁷¹ See discussion in Elizabeth A Rowe, *Introducing a Takedown for Trade Secrets on the Internet*, 2007 WIS. L. REV. 1041 (2007); Elizabeth A Rowe, *Saving Trade Secret Disclosures on the Internet Through Sequential Preservation*, 42 WAKE FOREST LAW REVIEW 1 (2007).

¹⁷² GILSON ON TRADEMARKS, § 1.03[1]-[2] (describing underlying policy rationales of modern trademark law).

¹⁷³ CABARGA, *supra* note ____, at 228-235 (describing business strategies for obtaining contracts to design fonts).

designer, Max Miedinger, in the 1950s.¹⁷⁴ However, even the fact that a typeface may be closely associated with its designer within the trade does not mean that it serves a general trademark function in the wider community in the sense of distinguishing that designer's work from the work of her competitors. Thus, a consideration of trademark law does not add much to the discussion of the potential copyrightability of digital fonts.

Of course, a typeface designer may trademark a distinctive name attached to a typeface. This is evidenced in popular online font marketplaces, such as myfonts.com and fontspace.com. Consider, for example, the distinctive name "Putty Peeps" for a typeface design incorporating putty-like human body shapes.¹⁷⁵ This name can serve as a trademark that uniquely identifies the font as a product of its designer – in this case, the MUR digital foundry.¹⁷⁶ However, the trademark does not provide protection for the creative attributes of the typeface. It merely identifies the typeface as belonging to the set of products created by a particular designer.

D. UNFAIR COMPETITION LAW

Outside of the more overtly proprietary legal actions described above, there may be alternative avenues of protection for typefaces. State unfair competition law is one possibility. In fact, the *Storch* case¹⁷⁷ that rejected design patent protection for two dimensional celluloid film fonts accepted instead the possibility that such fonts could be protected against unfair competition under a variety of state causes of action. In particular, the court in *Storch* rejected the argument that state unfair competition law might be preempted in the font context by federal copyright law. The argument was that if copyright law expressly rejected the protection of fonts, there would be no room for state law to provide protection that had effectively been denied at the federal level. Considering the 1909 copyright act, the *Storch* court gave weight to the Fourth Circuit Court's decision in *Eltra*, and found that the fonts in question were not copyrightable.¹⁷⁸ Nevertheless, it found that state unfair competition claims were not preempted by the federal copyright law.¹⁷⁹

However, the reasoning in *Storch* might have to be confined to the annals of legal history because of its reliance on the 1909 copyright act. With respect to the 1976 copyright act, some commentators have argued that state unfair competition laws may be preempted by federal copyright legislation.¹⁸⁰ Thus, the apparent decision to

¹⁷⁴ BRINGHURST, *supra* note ____, at 97 ("Helvetica is a twentieth-century Swiss revision of a late nineteenth-century German Realist face. The first weights were drawn in 1956 by Max Miedinger, based on Berthold Foundry's old Odd-job Sanserif or Akzidenz Grotesk, as it is called in German.")

¹⁷⁵ See example in Part II.B.1 *supra*.

¹⁷⁶ See <http://www.myfonts.com/foundry/mur/>, last viewed on December 1, 2008; <http://www.mur-design.com/>, last viewed on December 1, 2008.

¹⁷⁷ Not Reported in F Supp, 1979 WL 1067 (E.D.N.Y.) (1979)

¹⁷⁸ *id.*, at pp 4-5 (LEXIS page numbers).

¹⁷⁹ *id.*, at p 9 (LEXIS page numbers) ("[I]t is clear that defendant states a cause under New York [unfair competition] law....").

¹⁸⁰ See discussion in LEAFFER, *supra* note ____, at 544-546.

affirmatively remove fonts from the ambit of copyright protection at the federal level might prevent the application of state unfair competition laws.¹⁸¹ Of course, if copyright protection were acknowledged for typefaces, this might still preempt the application of state laws protecting similar interests. However, at least in that situation, the designer would be getting something in the form of thin copyright protection. Under the current regime, it is unclear whether digital fonts are copyrightable, and, at the same time, the copyright position arguably preempts the operation of state unfair competition laws. Thus, the typeface designer arguably ends up with nothing, despite the apparent threat of easy digital borrowing without attribution or compensation.

This may be an appropriate result as a matter of policy. It may be that optimum levels of innovation can be protected in the digital typeface industry without copyright or unfair competition law. However, this question needs to be examined more closely before a final determination is made. The digital age changes much about the typeface industry particularly in terms of the market structure. The copyright-unfair competition matrix may now require re-evaluation in light of the realities of the digital typeface industry. Some of the digital developments suggest overprotection for the work of typeface designers – such as potential resort by designers to DMCA protections – while others suggest underprotection – such as the ease with which digital typefaces may be copied and distributed globally at the push of a button. What is required now is a holistic look at the digital typeface industry with an eye to all relevant market forces, and legal and technological protections currently available for the work of typeface designers.

E. *SUI GENERIS* INTELLECTUAL PROPERTY PROTECTION

It is possible that the current uncertainties surrounding the legal protection of digital typefaces could be remedied by resorting to *sui generis* protection. This has been proposed in the United States with respect to digital databases which often fail to meet the originality requirements of copyright law as set out in *Feist*. In fact, *sui generis* database protection has been adopted in the European Union,¹⁸² although it has met with only limited practical success.¹⁸³ In the typeface context, there have already been some international efforts to create *sui generis* protection for typefaces that could be adopted in multiple countries.¹⁸⁴ However, the problem with *sui generis* approaches is that they often make a confusing situation even more confusing. If there is significant uncertainty

¹⁸¹ See discussion of the House Report on the 1976 copyright act in Part II.A *supra*.

¹⁸² Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.

¹⁸³ Commission of the European Communities, DG Internal Market and Services Working Paper, First Evaluation of Directive 96/9/EC on the legal protection of databases, Brussels, 12 December 2005; see also discussion in Jacqueline Lipton, *Across the Pond and Back Again: Digital Database Protection in the European Union and the United States*, in INFORMATION PROPERTY AND INFORMATION WEALTH (P Yu ed, 2007).

¹⁸⁴ Vienna Agreement for the Protection of Type Faces and Their International Deposit (1973), Art. 3 (“The Contracting States undertake, in accordance with the provisions of this Agreement, to ensure the protection of type faces, by establishing a special national deposit, or by adapting the deposit provided for in their national industrial design laws, or by their national copyright provisions. These kinds of protection may be cumulative.”)

about existing legal protections, the addition of new ones can make things more complex, particularly when it comes to establishing the relationship between new and existing rights. Thus, even if a *sui generis* approach is ultimately to be adopted, it is worth first clarifying the position on the copyrightability of typefaces, and also preferably the position on design patenting and unfair competition. If the scope of existing protections can be clearly delineated it will be easier to establish whether and where there are gaps in existing legal protections that need to be addressed. It will moreover be possible to establish more easily whether those gaps should be addressed via extensions of existing laws, or whether resorting to new *sui generis* measures may be more appropriate.

F. CONTRACT LAW

Typeface designers may, of course, turn to contract law to protect their work. In the digital typeface industry, this is largely achieved by way of click-wrap licenses.¹⁸⁵ Typeface designers licensing their wares online can set out contractual terms that potential licensees have to agree to in order to download and use their typefaces. This is not particularly onerous in practice, and is easily facilitated in the online typeface market by online stores where designers can upload typefaces along with their license terms. The online stores then make the typefaces available for download along with the designers' preferred contractual license terms. Some online stores, such as myfonts.com,¹⁸⁶ will support licenses that limit the uses licensees can make of downloaded typefaces. Others, such as fontspace.com,¹⁸⁷ will support only licenses that are of an open source variety.¹⁸⁸

It might be argued that the apparent Congressional decision to reject copyright protection for typefaces in 1976¹⁸⁹ should pre-empt contractual protection of similar interests in typefaces. This is similar to pre-emption arguments made previously about state unfair competition law. However, there is some authority that decisions to reject copyright protection for other items, such as non-original databases, would not necessarily pre-empt the operation of state contract law.¹⁹⁰ In *Pro-CD v Zeidenberg*,¹⁹¹ for example, Judge Easterbrook held that a contract protects different rights than a

¹⁸⁵ See, for example, *ProCD v Zeidenberg*, 86 F 3d 1447 (7th Cir 1996) (upholding enforceability of click-wrap license, as well as shrink-wrap license).

¹⁸⁶ www.myfonts.com, last viewed on December 1, 2008.

¹⁸⁷ See, for example, disclaimer on www.fontspace.com, stating that: "All the fonts listed on this website are user-submitted and are checked periodically to ensure they are freeware, shareware, or under an open source license. For correct licensing, please contact the author of the font. If you see any fonts that are not under one of the above mentioned licenses, please contact us immediately." (available at www.fontspace.com, last viewed on November 21, 2008).

¹⁸⁸ Shawn Potter, *Opening Up to Open Source*, 6 RICH J L & TECH 24, 24 (2000) ("Open source ... projects are established and programmers communicate and contribute software building blocks to each other via the Internet. When a software program is completed by this method it is then offered to the public over the Internet, sometimes free of charge, but always free of the use restrictions common to most software.")

¹⁸⁹ See discussion in Part II.A *supra*.

¹⁹⁰ LEAFFER, *supra* note ____, at 538-540 (discussing arguments about copyright preemption of state contract law).

¹⁹¹ 86 F 3d 1447 (7th Cir 1996).

copyright.¹⁹² Thus, the failure to protect a non-original database under copyright law would not necessarily pre-empt the operation of a restrictive contractual license.

The main problems with relying on contractual licenses to protect a typeface designer's interests in her work will likely be enforcement in a global online market, rather than with validity of the license. Enforcement can be problematic online because it can be difficult to identify an alleged defendant who has made unauthorized use of a typeface outside the scope of the license. Even if the defendant can be identified and located geographically, the chances of that person being in the same jurisdiction as the designer will be remote. It may be very difficult for the designer to bring proceedings against a potential defendant who may be in a different corner of the world. Even if *ex parte* proceedings could be brought, the likelihood of a court order being enforced against a remote defendant is slim. Additionally, contracts will generally not be enforceable against third parties, although that proposition has recently been questioned in the digital world.¹⁹³ In any event, many online rights-holders have tended not to rely on contracts alone, but rather have attempted, with some success, to bolster the effectiveness of their licenses with restrictive TPMs.

G. TECHNOLOGY

TPMs can be used by developers and distributors of digital works either in concert with, or independently of, copyright law. If a work is copyrightable, such as digital movies and music, the use of TPMs to restrict the uses that can be made of the works is supported by the anti-circumvention provisions of the DMCA.¹⁹⁴ If the work is not copyrightable, then TPMs can be utilized effectively even in the absence of DMCA-protection. As long as the TPM is sufficiently robust, it will deter much unauthorized access to, and use of, an encrypted work. TPMs can be utilized in concert with contractual licenses to help the licensor control downstream uses of her work.

Of course, TPMs are never perfect, and today's encryption technology is only as good as the skills of tomorrow's hacker.¹⁹⁵ That is why digital content industries lobbied Congress for the anti-circumvention provisions now found in the DMCA.¹⁹⁶ Every technological encryption measure can ultimately be broken by hackers.¹⁹⁷ Thus, the acceptance of copyright protection for a given class of works will bolster the practical

¹⁹² *id.*, at 1447 (“A copyright is a right against the world. Contracts, by contrast, generally, affect only their parties: strangers may do as they please, so contracts do not create exclusive rights. Someone who found a copy of [the relevant software] on the street would not be affected by the shrink-wrap license...”).

¹⁹³ Molly Shaffer Van Houweling, *The New Servitudes*, forthcoming GEORGETOWN LAW JOURNAL, 2008 (draft currently available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1028947#, last viewed on December 27, 2008).

¹⁹⁴ 17 U.S.C. § 1201.

¹⁹⁵ DON TAPSCOTT and ANTHONY D WILLIAMS, WIKINOMICS: HOW MASS COLLABORATION CHANGES EVERYTHING, 281 (2006) (“Most technologies [sic] have long agreed that DRM is a lost cause – hackers reverse-engineer it just as fast as it gets produced.”)

¹⁹⁶ 17 U.S.C. § 1201.

¹⁹⁷ TAPSCOTT, *supra* note ____, at 281.

effectiveness of a TPM. Even if the TPM is able to be breached, the associated work would be protected by the DMCA if it were copyrightable, as long as the TPM could generally be described as an “effective” encryption measure.¹⁹⁸

While technology and contract will be useful for typeface designers even in the absence of copyright protection, the acceptance of copyright protection gives them a greater degree of comfort. Whether copyright is actually necessary to encourage innovation in the digital typeface industry is debatable. There is simply no evidence to demonstrate whether or not current uncertainties about the copyrightability of digital typefaces have had a negative impact on innovation in the online industry. In any event, at the present time, it appears that underlying software code is copyrightable, and many digital typeface designers resort to claims of copyright protection for their code, as well as utilizing contractual licenses, TPMs, and the anti-circumvention provisions of the DMCA to protect their work.

The other useful technological innovation that digital typeface designers can use to provide some measure of comfort is CMI, although in the absence of copyright protection this should technically stand for “content management information” rather than “copyright management information”. Although the attachment of CMI to works does not in and of itself create technical barriers to unauthorized use, it does serve a signaling function to others of the alleged ownership and preferred licensing terms attached to a work. This at least minimizes the risk of innocent contraventions of a designer’s preferred uses of her work, provided that the CMI is easy to find. The kind of information found in CMI might also assist in the creation of new norms for the digital typeface industry by signaling the preferences and expectations of market participants.

H. NORMS

In the pre-digital typeface industry, there seemed to be some identifiable norms against over-zealous borrowing of other’s font designs.¹⁹⁹ It will likely be more difficult to develop, identify, and enforce norms in the digital industry because of its exponentially expanded scope and scale, and the resultant anonymity of many of the participants.²⁰⁰ CMI might help here, although the industry may be of such a magnitude that it does not make much difference in the final analysis. Other areas where norms may be developed in the digital typeface industry include sector specific norms in particular digital typeface markets. One example of where some norms are developing in a distinct segment of the digital typeface market can be found in the operation of the online store, fontspace.com.²⁰¹ This business promotes only the uploading and downloading of open source fonts. Every

¹⁹⁸ *Universal City Studios v Reimerdes*, 111 F. Supp. 2d 294, 318 (2000); *aff’d* 273 F.3d 429 (2d Cir 2001) (explaining why “effective” encryption measures do not have to be perfect or unhackable to obtain protection under the DMCA, provided that they provide effective encryption in the ordinary course of their operation, as required by the words of the DMCA).

¹⁹⁹ CABARGA, *supra* note ____, at 38 (describing industry norms against verbatim copying, as compared with using prior designers’ work as “reference material”).

²⁰⁰ See discussion in Part III.A *supra*.

²⁰¹ www.fontspace.com, last viewed on December 1, 2008.

page of their website includes a disclaimer stating that fontspace.com only promotes the use of freeware and open source fonts, and that anyone who identifies a non-open source font on the service should notify the operators immediately.²⁰²

This business model suggests that perhaps online norms will develop in a different way to the norms that emerged in the physical font industry. It may be that the online industry is too large to accommodate general norms that are understood by everyone. However, the online industry may segment into different sectors, each with its own sets of norms. Thus, those who want to adhere to open source norms will gravitate to online services that support and informally enforce these norms, such as fontspace.com. Those who seek more commercial models can gravitate to other services, such as myfonts.com. Of course, even sectoral norms will not likely provide strong protections against those who are determined to make unauthorized use of fonts, but they will serve a signaling function to participants in relevant sectors of the digital industry as to acceptable behavior within that segment of the market.

VI. CONCLUSIONS

The digital typeface industry raises a number of questions that have not been satisfactorily addressed by copyright policy to date. While the copyright position on typefaces in the United States has historically been a little unclear, the consensus has been that typefaces are not copyrightable.²⁰³ Nevertheless, digital technologies and increasingly global digital markets may require a closer look by Congress, the Copyright Office, and the courts. The adoption of digital technologies raises a variety of new concerns in the digital typeface industry including the threat of digital piracy and the loss of industry norms on copying as markets increase in size and players become more anonymous. Additionally, the adoption of copyright protection for typefaces in other jurisdictions creates some pressure for the United States to follow suit in what is becoming an international digital marketplace. Because copyright protection can potentially chill innovation, it is necessary to consider relevant market factors in more detail before making a determination about the need to extend copyright to digital typefaces. If such an extension is to be made, copyrights granted for digital typefaces should only be thin. Copyrights should also only be available prospectively and not retroactively. This should mitigate concerns about propertization of the public domain.

Questions of copyrightability in the digital typeface industry may also raise more general concerns about what happens to IP's previously negative spaces when industries move online. In this context, the copyrightability of code that generates products once regarded as uncopyrightable potentially confuses the equation. Software copyrights can

²⁰² See www.fontspace.com, last viewed on November 27, 2008 (“All the fonts listed on this website are user-submitted and are checked periodically to ensure they are freeware, shareware, or under an open source license. For correct licensing, please contact the author of the font. If you see any fonts that are not under one of the above mentioned licenses, please contact us immediately.”).

²⁰³ LEAFFER, *supra* note ___, at 100 (“Examples of express exclusion [from the term “works of authorship” for copyright purposes] are industrial design and typeface design, which Congress has explicitly indicated are not to be considered works of authorship.”).

have the incidental effect of transforming what was once an IP-negative space into an IP-protected zone. While this article has focused on digital typefaces, issues of an IP-negative zone moving online are likely to arise in other fields as previously physical industries adopt digital market models. For example, the map making industry, while technically not an IP-negative space, has historically only obtained very thin copyright protection.²⁰⁴ Is it possible that in the age of Google Maps,²⁰⁵ Mapquest,²⁰⁶ and various GPS devices utilizing digital maps²⁰⁷ that the underlying map-generating software code could attract copyright protection, thus altering the copyright matrix for this industry?

Some of IP's historically negative spaces might prove to be useful testing grounds for theories about the need for intellectual property protections online more generally. If innovation was able to thrive in the absence of strong intellectual property protections offline, it is important to identify what changes in market structure online might necessitate a change in the level of available intellectual property protection. This exercise has not yet been done in any of IP's negative spaces. The above examination of the digital typeface industry is a compelling example of why more thought should be given to these issues in the future. If larger and more anonymous industries with fewer intermediaries and less barriers to entry necessitate changes in IP protection, it is worth conducting detailed examinations of relevant industries while they are still in relative infancy. This will allow appropriate levels of intellectual property protection to be developed, and globally harmonized, before innovation is chilled through either over-protection or under-protection of the efforts of market participants.

²⁰⁴ *id.*, at 137-8 (discussion of limited copyright for maps).

²⁰⁵ See <http://maps.google.com/maps?hl=en&tab=wl>, last viewed on December 31, 2008.

²⁰⁶ See <http://www.mapquest.com/beta>, last viewed on December 31, 2008.

²⁰⁷ GPS stands for "global positioning system": Wikipedia definition of "Global Positioning System", available at <http://en.wikipedia.org/wiki/GPS>, last viewed on December 31, 2008. A number of consumer products now incorporate GPS technology mapped on to pre-programmed local street maps. See, for example, the Garmin range of devices, available at <https://buy.garmin.com/shop/shop.do?cID=134>, last viewed on December 31, 2008.