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**Why Typefaces Proliferate Without Copyright Protection**

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WHY TYPEFACES PROLIFERATE WITHOUT COPYRIGHT PROTECTION

by
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The typeface design industry receives little protection from intellectual property laws, copyright or otherwise, yet produces sufficient new works. This fact challenges the incentive theory on which copyrights—which come with economic and social costs—are based.

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The ostensible purpose of the Constitution’s Intellectual Property clause is to give authors and publishers sufficient incentive to create and disseminate new works. Authors and publishers need government-granted incentives, the standard rationale goes, because expressive works are usually cheap and easy to copy and—since copies can be made without depleting the original—ininitely reproducible. They are, in economic parlance, public goods, non-excludable and non-rival. Without any impediment, it’s only rational for consumers to procure cheap or free copies of an expressive work, or to copy it themselves, rather than buying full-priced, authorized versions. These unsanctioned copies can potentially satisfy all demand for the expressive work. Classic economic theory therefore predicts that sale prices will ultimately be driven down to a work’s marginal replication.

1 U.S. CONST. art. I, § 8, cl. 8. The Intellectual Property clause grants Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” See also Eldred v. Ashcroft, 537 U.S. 186, 212 n.18 (2003) (copyright law is an “incentive” to create works); Twentieth Century Music Corp v. Aiken, 422 U.S. 151, 156 (1975) (copyright is an “incentive, to stimulate artistic creativity for the general public good”).

2 This paper uses the term “expressive work” to mean “any work that might be a candidate for copyright protection under modern law.” WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 37 (2003).


If works cannot be sold at a higher price than this, authors and publishers will have no economic incentive to invest the time or money needed to produce or distribute new works, and the public will suffer a shortage. Copyrights are an attempt to solve this problem. By granting a monopoly to the author of an expressive work the government gives him the sole right to copy it. If only the author has this right, sale-prices will remain above the marginal cost to copy, the author will get a reasonable rate of return, and thus a sufficient incentive to make new works.

The theory behind the need for copyright is intuitive, but is it right? Surely there’s a mountain of evidence to support it. Surprisingly, that evidence is hard to come by. This is a little disturbing. Copyrights, being monopolies, come with significant economic and social costs. In the famous words of Lord Macaulay, monopolies tend to make “articles scarce, to make them dear, and to make them bad.” Of course, consumers obviously have to pay more than they otherwise would if they could freely make copies. But the real prob-

7 LANDES, supra note 2, at 40.
8 NEIL WEINSTECK NETANEL, COPYRIGHT’S PARADOX 84 (2008).
11 NETANEL supra note 8, at 84.
13 See Mark S. Nadel, How Current Copyright Law Dis-
lem, as Macaulay predicted, is the result of intellectual property rights that have expanded in every way possible over the last 30 or so years. Most expressive works, regardless of romantic ideas of authorship, build on previous ones. Because copyrighted works are excluded from the public domain, and because more kinds of works are protected for longer periods, there are often constraints on making new ones. Getting permission to build on copyrighted material—assuming that it is even granted—takes time and money. If the time or money it takes is exorbitant, the copyrighted work will effectively not be available for use, or reuse. The culture the next generation of authors needs to create new works from is therefore “locked up,” to the detriment of creativity and culture. The upshot of too-broad copyright protection is that copyrights often work, paradoxically, to stifle innovation.

14 They are longer, the number of copyrightable works has increased, authors have broader rights to control uses, and penalties are harsher. Mark A. Lemley, Property, Intellectual Property, and Free Riding, 83 Tex. L. Rev. 1031, 1042 (2005).
15 Richard Posner, Law and Literature 397–99 (rev. ed. 1998) (noting that many of Shakespeare’s plots came from other sources); see Northrop Frye, Anatomy of Criticism: Four Essays 96–96 (1957) (“Poetry can only be made out of other poems; novels out of other novels.”); Jonathan Lethem, The Ecstasy of Influence, Harpers, Feb. 2007, at 59 (“[A]ppropriation, mimicry, quotation, allusion, and sublimated collaboration consist of a kind of sine qua non of the creative act, cutting across all forms and genres in the realm of cultural production.”). Lethem builds a clever essay with plagiarisms to demonstrate that most expressive works are built from others.
16 Eldred, 537 U.S. at 250 (Breyer, J., dissenting) (describing how it can be expensive to track down a copyright holder, who often cannot be found in any case).
17 Boyle, supra note 6, at 8–9, 40–41.
18 Id. at 236.
So who has benefitted from copyright maximization? Mostly large content-generating industries who have captured the legislative process to advance their interests. In a digital world expressive works tend to be more non-excludable and non-rival than they are in the analog world; these industries use the fear of digitization’s potential to destroy their business model as the rationale for blanket—and ever-expanding—copyright. They are, in short, exploiting the incentive thesis underlying the need for copyright to set their agenda, an agenda that is often against the public good copyright is supposed to advance. And they are doing so without having to support their arguments with actual evidence. It seems, then, that a good shot of empiricism is in order.

20 See Boyle, supra note 6, at 198–99.
21 Jessica Litman, Digital Copyright 22–69, 122–45 (2001). Public choice theory, where legislation is more likely to be influenced by smaller but well-organized (and well financed) groups than by the public, is often given as a reason for industry capture of the legislative process. See Olson, supra note 4, at 125–28.
23 See Boyle, supra note 6, at 54–82 (arguing that content-generating industries used the fear of piracy made possible by the Internet as fuel for rhetoric in expanding intellectual property protection). Often, these industries either explicitly—or by hinting that intellectual property is personal property, see Litman, supra note 21, at 79–86—implicitly argue that intellectual property protection should be based on Lockean, natural rights theories. Wendy Gordon, A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property, 102 Yale L.J. 1553, 1544–45 (1993). Natural rights theories basically hold that an author’s work should be protected because it is morally right to do so. However, the Constitution rejected natural rights and other theories as the basis for intellectual property. Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 349 (1991) (rejecting natural rights as the basis of intellectual property protection).
24 Boyle, supra note 6, at 236.
There is some doubt, after all, “on the universal applicability of copyright’s incentive rationale.” 26 But where is that evidence going to come from? Time cannot be run backwards to see what an industry would have looked like without strong intellectual property protection,27 to see how it might have fared if allowed to develop without government granted monopolies.28 And almost everything that could be copyrightable subject matter has been made to be.29 Almost everything, but not quite. There are some industries (a term I will use loosely

Programs, 84 HARV. L. REV. 281, 322 (1970) (copyright justification “rests not upon proven need, but rather upon uncertainty as to what would happen if protection were removed”). Cf. S. SUBCOMM. ON PATENTS, TRADEMARKS AND COPYRIGHTS, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM, STUDY NO. 15 80 (Comm. Print 1958) (“If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one.”).

26 NATANEL, supra note 8, at 85; see also Breyer, supra note 25 (who is ambivalent). Cf. ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 182 (1990) (arguing that private property rights or external regulations are not the only way to solve common-pool resource problems); id. at 214–15 (relying on the assumption that the tragedy of the commons describes what happens to every common-pool resource is problematic because that model cannot account for all the complexity in the world); Anthony Scott & James Johnson, Property Rights: Developing the Characteristics of Interests in Natural Resources, in PROGRESS IN NATURAL RESOURCE ECONOMICS 376, 377 (Anthony Scott ed., 1985) (economic models tend to ignore, for instance, the importance of convention and custom).

27 See Carrier, supra note 10, at 34.

28 Cf. Vernon Smith, Comment, after Anthony Scott & James Johnson, Property Rights: Developing the Characteristics of Interests in Natural Resources, in PROGRESS IN NATURAL RESOURCE ECONOMICS 376, 414 (Anthony Scott ed., 1985) (arguing that when designing systems to deal with property rights systems, it is “hubris to design property rights in systems and impose them on the market,” without considering how “interaction among interested parties” has created its own system).

29 See Jessica Litman, The Public Domain, 39 EMORY L.J. 965, 965–67, 998 (1990) (“Most arguments over the appropriate scope of copyright protection, unfortunately, occur in a realm in which empirical data is not only unavailable, but is also literally uncollectible.”).
to denote at least a group of people making a similar kind of expressive work)—fashion and the culinary arts, for instance—that, for whatever reason, do not receive strong intellectual property protection. How have they fared? Have they been doomed by the ruin the theory of public goods predicts and which copyrights are supposed to fix? Hardly. These industries manage to be innovative, creating lots of new expressive works. In doing so, they challenge, at least in some instances, the orthodox justification for granting copyrights. This is not to say that the incentive thesis is fundamentally wrong, just that its application has been too sweeping, covering industries whose native idiosyncrasies might have led them to be innovative without copyright.

Not very many industries operating in intellectual property law’s open areas have been written about despite the seeming importance of identifying and cataloging them. This paper adds to that list by analyzing the reasons typeface designs have proliferated despite being unprotected by copyright. Besides undermining one of the links necessary to justify overbroad copyright laws, this analysis also suggests that copyright protection could be limited in an industry to the extent that it is needed to produce sufficient new expressive works. The need for copyright is not necessarily a one-size-fits-all proposition. Some ex-

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31 See id. at 1762; Boyle, supra note 6, at 213.
32 See Raustiala, supra note 30, at 1765, 1776–77.
34 See Dotan Oliar & Christopher Sprigman, There’s No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy, 94 Va. L. Rev. 1787, 1831–32 (2008) (arguing that industries should not be lumped together since they are
pressive works might not score high on the spectrum of public goodedness;\textsuperscript{35} if they do, the industry that produces them manages to be innovative anyway. If copyright is supposed to strike a balance between the economic and social costs of granting a monopoly and the benefit the public enjoys when more expressive works are made than otherwise would have been,\textsuperscript{36} then the ideal level of protection should be tailored to the level needed to induce an author or publisher to invest in them.

Part II of this paper begins by defining some crucial terms related to typefaces to avoid any confusion. It then establishes that typeface designs are, in fact, an open area of intellectual property law. They are not copyrightable subject matter because they are too functional, and other forms of intellectual property provide little protection. I also argue that typefaces are likely to remain unprotected by copyright—despite belief in some circles that they could be—because of some unconsidered functionality problems. I further argue that copyright, if it were granted by legislation or allowed by case law, could both stagnant the industry and leave the typefaces that require the most investment unprotected anyway. This paper then shows that despite the copyrightability of digitized typefaces as software, the typeface designs themselves are unprotected by copyright. There are, for instance, other ways to copy a typeface design than by duplicating a digital file in which that design may reside. In fact, plagiarizing typefaces by other means is common. Part II con-

\textsuperscript{35} Hardy, supra note 22, at 211–33 (2001).

\textsuperscript{36} LANDES, supra note 2, at 69 (“A fundamental task of copyright law [is]...to strike the optimal balance between the effect of copyright protection in encouraging the creation of new works by reducing copying and its effect in discouraging the creation of new works by raising the cost of creating them.”); Nadel, supra note 13, at 788 (copyright is a “necessary evil”).
cludes by demonstrating that typefaces do indeed proliferate.

Part III details the mechanisms that have allowed typefaces to proliferate. It begins with an argument for the uniqueness of typefaces among other expressive works unprotected by intellectual property laws. They are functional, yet unlike other functional expressive works, they exist primarily as non-rivalrous digital files. This uniqueness allows several of the mechanisms at work in intellectual property law’s other open areas to collaborate in fostering significant innovation in typeface designs. Part III.B shows how changes in technology have always required new typefaces to address the limitations inherent in each technology. It then shows how technology, especially digitization, made innovation in the industry possible, and sometimes compelled it. Part III.C discusses the ways in which industry norms can mitigate copying among typeface designers. It surveys the general theory of norms, which predict that norms would be somewhat effective among an industry with the characteristics of typeface design. It then details some industry norms, and demonstrate how they are enforced. Part III.C concludes by noting that even if norms fail, there are some aspects of typefaces that can be difficult to reproduce. Part III.D shows that typefaces have always had to be made to conform to aesthetic movements. Furthermore, other changes, including the needs of advertising, have moored the need for new typefaces to quick-moving, fashion-like cycles, and that these cycles are accelerated by plagiarism and file sharing. Part III.E argues that to the extent prices for typeface designs have fallen, file-sharing is not to blame. The biggest culprit is the bundling of typefaces with software to make the software more attractive. Typefaces are, in fact, sometimes specifically made to sell that more lucrative product. Part III.F concludes with a brief discussion of non-monetary incentives, though mostly to give legitimacy to the amateur creations that have
formed a large portion of new typeface designs since the digitization of typeface production.

II Typeface Design is an Open Area of IP Law

About the first thing anybody does when they write about typefaces in the context of copyright is to define some crucial terms, though sometimes these definitions are ghettoized to the footnotes. The usual definitions straighten out the modern conflation of the words *typeface* and *font*. Historically, a *typeface* was a “set of fonts of related design,” while a *font* was a “set of characters of a given typefaces, all of one particular size and style.” For instance, Times New Roman would have been a typeface, while Times New Roman 12-point size would have been a font within the Times New Roman typeface family, and Times New Roman 10-point another. Today, largely because digitization has meant that different-sized characters can be created from one set of master characters rather than being made separately by hand or machine, *font* has generally come to refer to what before had been differentiated. One problem with trying to revert to the old definition, however, is that *font* has an alternative sense beyond that already given: it has also been defined as the physical embodiment of a typeface, whether in metal type or a digital file.

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38 PHIL BAINES & ANDREW HASLAM, TYPE AND TYPOGRAPHY 6 (2002).

39 See ROBIN KINROSS, MODERN TYPOGRAPHY 169 n.9 (2d ed. 2004).

40 Compare Terrence J. Carroll, Comment, Protection for Typeface Designs: A Copyright Proposal, 10 SANTA CLARA COMPUTER & HIGH TECH. L.J. 139, 141 n.2 (1994) (defining a font as an article “in which a typeface resides as the implement of printing technology, regardless of medium or form” (quoting H. Rep. No. 102-1790, at §1001(b)(4) (1991)) with BAINES, supra note 38, at 6 (defining a font as a “set of characters of a given typefaces, all of one particular size and style”).
These alternative sense are traceable to the fact that before digitization a font could only have been embodied in a separately made set of metal type. Before a 1992 regulation issued by the Copyright Office saying that it would register computer font files and a 1998 district court case ruling that computer font files are copyrightable as software, the alternative uses of the word *font* was not much of an issue in a copyright context. But since then, ignoring or glossing these different senses could cause confusion about just what in typeface design is copyrightable and what is not.\(^4^2\)

For that reason, I am defining how I will use *font* and *typeface* at the outset. I will keep to the traditional usage of typeface. It will refer specifically to all the ranges of fonts of the same family. What this in effect means is that *typeface* will refer to the design, the creative expression, of a set of related fonts. *Font* will strictly be used to refer to one size and weight of a set of characters of a typeface. A digital file describing a set of characters will not be called a *font* as it usually is but, to differentiate it from a mere font, a computer font.\(^4^3\) If I am referring to a non-digital embodiment (in metal, for instance) of a typeface I will use the term *type* or *metal type*, depending on whether its obvious by the context what’s being referred to.\(^4^4\)

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42 See, e.g., Lipton, note 37, at 21 (where loose usage of “typeface” and “font” was partly responsible, I think, for her mistaken premise that because computer fonts have received copyright protection that typeface designs can no longer be copied legally).
44 See Baines, supra note 38, at 6 (“Type is the physical object, a piece of metal with a raised face at one end containing the reversed image of a character.”).
A Typeface Designs Are (Probably) Not Copyrightable

Though it seems to be taken for granted, judging by acquiesce to it, that typefaces are not copyrightable subject matter under the 1976 Copyright Act,45 that they actually are not is somewhat debatable. Because the Act does not explicitly address the copyrightability of typefaces, the supposedly damning evidence against it is the House Committee Report that accompanied the Act. In that Report, the Committee said that it had “considered, but [chose] to defer, the possibility of protecting typefaces” because they are not “copyrightable ‘pictorial, graphic, or sculptural work’ within the meaning of this bill and the application of the dividing line in section 101.”46 Section 101 defines the scope of copyrightable pictorial, graphic, or sculptural (PSG) works.47 The crux of the definition is that, for PSG works deemed to be “useful articles,” only the portions of them not dictated by their “mechanical or utilitarian aspects” and which are also “identifiable separately from, and capable of existing independently of, the

45 See, e.g., Carroll, supra note 40, at 141-42 (arguing that typefaces should be protected by copyright law, but taking as its unquestioned premise that current law forbids it). The 1909 Copyright Act did not explicitly deny protection to typeface design, though Copyright Office Regulations later issued under the 1909 Act did. See Lillian Abbott Pfohl, Serif Wars: An Argument for the Protection of Typeface Design, 2001 SYRACUSE L. & TECH. J. 1, 8-9 (2001).
46 H. REP. No. 94-1476, at 55 (1976). The Committee defined typefaces “as a set 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.” Id.
47 PSG works are “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.” 17 U.S.C. § 101 (2008).
utilitarian aspects of the article."48 are copyrightable. This is the “separability” test. In other words, utilitarian PSG works only receive copyright protection if they have aesthetic elements that are not dictated by their functionality, and only those aesthetic elements are protectable. (Generally, copyright does not protect useful articles because that would intrude on the scope of patent law, granting patent-like protection of a longer duration than patent law authorizes.) What the House Report says, then, is that typefaces are not protectable because they are useful articles and no part of their design, or at least not more than an insignificant part, is not dictated by its function. Presumably, the argument goes, the Committee’s report evinces Congressional intent—or at least House intent—that typefaces are too utilitarian to be copyrightable.

Nimmer, for one, has expressed some doubt over whether the House Report is as conclusive as acquiescence to it would suggest.49 His argument, in a nutshell, is that typefaces are not wholly utilitarian works and thus are not accurately placed, as the House Report does, on the wrong side of the “dividing line” between copyrightable PSG works and uncopyrightable functional objects.50 Section 101 defines a “useful article,” in part, as an article that “convey[s] information.”51 For Nimmer, if a typeface is not conveying information, then “it serves no utilitarian function” and is not a useful article.52 He then argues that a court construing Section 101 has a duty to follow that text, rather than the House Committee’s interpretation of it, whose indication of Congressional intent is lessened anyway by the fact that the Senate’s Report on the Act does

48 Id.
50 Id.
52 Nimmer, supra note 49, at § 2.15.
not say anything about that body’s opinion on the copyrightability of typefaces.53 Furthermore, even if the House Report has properly placed typeface designs outside the category of PSG works, that might merely express the House’s opinion on the copyrightability of typefaces under the 1909 Act, upon which the copyrightability of PSG works in the 1976 Act rests, rather than the House’s intent to exclude typefaces from protection.54 Patry’s copyright treatise is firmer in asserting that Congress intended typefaces to be uncopyrightable under the 1976 Act. It points out that the House Report specifically notes that typefaces are the only “protectable subject matter” that Congress could have protected but “expressly decided not to.”55 Patry suggests that Congress was convinced by the publishing industry lobby, which expressed fears that a printer could, unbeknownst to the publisher, use an infringing typeface, and that works they print could be enjoined from sale, subject to destruction, and the publishers liable for damages.56

1 Typeface Designs are Likely to Remain Unprotected: Unconsidered Functionality Problems

Whatever the problems of relying on a weak legislative history as proof of Congressional intent regarding the copyrightability of typefaces, no typeface can be protected if it is too functional. Nimmer’s suggestion that typefaces can sometimes qualify as PSG works, and thus be subject to the separability test, makes at least one significant assumption. That assumption—that a typeface’s design is dictated by more than merely functional considerations—is, not surprisingly, the basis for many arguments that typefaces can be copyrightable

53 Id.
54 See id. It’s also not completely clear that the 1909 Act excluded typefaces from protection. Id. at § 2.26.
56 Id.
subject matter.57 If a typeface design is influenced by aesthetic decisions that have nothing to do with their status as the “building blocks” of words,58 the argument goes, then that typeface design should have enough features that would render it a copyrightable PSG work. There are, of course, direct counter-arguments to this facially valid though simplistic reasoning: some contend that a typeface’s job is always to convey information, so typefaces are always functional;59 a variant is that the sine qua non of typefaces is legibility, so that a typeface can never be other than primarily functional.60 As one typeface designer

57 And there is no shortage of typeface companies or industry interest groups arguing that typefaces should be protected by copyright law. See supra note 45 (listing a few industry trade groups or commentators arguing for protection). There have also been efforts to protect typeface design through legislation protecting industrial design. Carroll, supra note 40, at 170. This is completely expected behavior. Cf. Lawrence Lessig, The Creative Commons, 55 PFLA. L. REV. 763, 774-77 (2003) (describing how the RIAA conspired to lobby to change copyright laws to retard digital radio, which could not otherwise be easily “concentrated, segmented, [and]...controlled”). “Bias, and fear of bias, make an author’s judgment on copyright a little unreliable.” Plant, note 12, at 168; see also Rudy VanderLans, The Trouble with Type, 43 EMIGRE (1997), reprinted in TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 223, 223-27 (Steven Heller & Philip B. Meggs eds. 2001) (typeface designers believe that typefaces will be underproduced without copyright protection).


59 See, e.g., id. (“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.”); Jonathan L. Mezrich, Extension of Copyrights to Fonts—Can the Alphabet be Far Behind?, 4 COMP. L. REV. & TECH. J. 62, 62 (1998) (a letter, in its most basic form, comprises the alphabet itself).

60 See, e.g, 15 Omnibus Copyright Revision Legislative History 1166, 1230 (1977) [hereinafter Copyright Legislative History] (statement of position of Howard B. Rockman,
has said, “Letters are legible. If they are not legible, then they are not letters.”

My purpose in rehashing some of this is not to evaluate the merits of these arguments under the current copyright regime. I would never, however, claim that typeface designs are not motivated largely, or even mostly, by aesthetic considerations. In fact, as discussed below, part of the driving force for the creation of new typeface designs for the past 550 years has been changes in aesthetic tastes, both in terms of the generalizable tastes of an epoch and of more fleeting fashion-like caprices. Typeface will always have some emotional or aesthetic component. Rather, my purpose is to show that the reasons given for typefaces either being or not being mostly utilitarian have been too narrowly conceived, omitting other ways in which typefaces have functional characteristics. The furthest anyone has gone in this regard is to mention studies demonstrating that typefaces designed for extended reading (these are known as text typefaces, Times New Roman being an

Attorney for Castcraft Industries, Inc.).


62 See, e.g., FREDERICK Goudy, *TYPOLoGIA: STUDIES IN TYPE DESIGN AND TYPE MAKING* 40-41, 69 (1940) (one of the 20th century’s most famous typeface designers describing the artistic judgments necessary of a typedesigner, which largely consist of producing the right emotional effect or creating the right atmosphere for text).

63 See infra Part III.D. Melville Nimmer also made essentially this observation when called to testify on proposed revisions to the 1976 Copyright Act. See Copyright Legislative History, supra note 60, at 1038, 1040 (statement of Melville Nimmer, quoting B. ZACHRISSON, LEGIBILITY OF PRINTED TEXT 74 (1965)).

64 See Carroll, supra note 40, at 145-47. Text typefaces usually include serifs, which are thought to aid in readability by providing more differentiation among letters—and words—and by guiding the eye down a line of text. “Serifs” are the finishing strokes at the end of a letter’s main strokes. F.C. Avis, TYPE FACE TERMINOLOGY 40 (1965). The little horizontal tic or stroke at the top of a lowercase “l” is an example of a serif. Text typefaces are contrasted with display typefaces, which
example) are all almost equally readable, in terms of how long it takes to read a given text. If one text typeface, whose chief design consideration is avowedly though not actually functional, then how can it be said that typeface designs on the whole are functional? But this is not the whole story when it comes to functionality. Consider, for instance, a typeface for highway signs designed to mitigate the effects of halation (glare, basically) so that signs are readable at greater distances, especially at night. AT&T liked the openness and friendliness of the design so much that it commissioned a slightly modified version of it to serve in its new logo, which, the company hopes, will offset its stodgy image. That openness and friendliness was partly a result of the typeface’s large counters (the enclosed spaces of a letter, like the inside of an “o” or an “a”) needed to mitigate the effects of halation. The design’s aesthetics, then, are inextricably linked to the design’s functionality. There is also the well-known adage that text typefaces seek a kind of transparency—it should be a “crystal goblet,” transparent to its contents—so that it does not intrude on the text. Is this strived-for transparency a functional aspect of typeface design? There are endless similar examples of typefaces, like the

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65 What if a text typeface was explicitly designed to maximize readability, even if a study shows the design has a negligible effect on readability? See Simon Loxley, *Type: The Secret History of Letters* 71 (2004) (describing a 19th century text typeface specifically designed with readability in mind).


67 Id.

one for the highway sign, designed according to functional considerations that are not as simple as whether text typefaces can be read quickly in a book. It is one of the forces driving innovation in type design. I return to this subject later, but suffice it to say for now, though, that the effect these kinds of characteristics have on the separability test may be so intractable that typeface designs are destined to remain in intellectual property law’s open areas, despite industry efforts to the contrary.

The arguments that have been offered in support of the copyrightability of typefaces as PSG works have thus had a kind of straw man feel: some of the more difficult issues of functionality have been missed. It has not helped that the second pillar other than the House Committee Report on which the notion of the uncopyrightability of typefaces usually rests is a case, *Eltra Corp. v. Ringer*, that took an even simpler view. Decided in 1978 under the 1909 Copyright Act, *Eltra* nevertheless looked to the 1976 Act’s legislative history for guidance. The court ultimately deferred to the House Report’s view that typefaces are too functional to be eligible for a PSG work’s separability test for determining which parts of it are copyrightable. The court’s language, however, is absolute in a way that seems unwarranted: typefaces are objects of “industrial design” that “cannot exist independently and separately as a work of art.” This exaggerated assertion that typefaces have no aesthetic component whatsoever has been crucial straw to

69 See infra Part III.B.1.
70 *Eltra Corp. v. Ringer*, 579 F.2d 294 (9th Cir. 1978).
72 *Eltra*, 579 F.2d at 297–98. Not that it would have mattered much which Act the decision was decided under. The requirements for copyrighting PSG works is the same under each.
73 See *Eltra*, 579 F.2d at 297; *Mazer v. Stein*, 347 U.S. 201 (1954) (the case which the separability doctrine codified in Copyright *Oc regulations originate*).
74 *Eltra*, 579 F.2d at 298.
the straw man. It’s easy to argue against such absolutes. Eltra has not been challenged in court, and has only been cited in other cases for the proposition that typefaces are not protectable under copyright law. Nimmer, however, points out the circularity of the decision’s reasoning: Eltra largely defers to the interpretation found in the House Report; the House Report relies on a very tenuous case of Congressional intent under the 1909 Act; yet Eltra is supposed to be deciding whether typefaces are copyrightable under the 1909 Act. Other commentators furthermore believe that more recent cases on separability issues make it more likely that a court today would find typefaces to be copyrightable subject matter.

This paper, however, is not really about whether typefaces should or should not be copyrightable. Instead, it is about how the type design industry innovates without copyright protection. What’s important, then, is that typefaces are de facto uncopyrightable. Besides acquiescence to the House Committee’s Report in public and industry perception and in case law, the Copyright Office has issued regulations codifying the holding in Eltra, listing typefaces as works that it will not register. The deference courts are required to give to the interpretation of a statute by regulatory agencies whose job it is to implement the statute will make it difficult for anybody to successfully challenge, in court, the Copyright Office’s decision that typeface designs are not copyrightable.

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75 Pfohl, supra note 45, at 10.
77 See Nimmer, note 49, at § 2.15.
78 See, e.g., Carroll, supra note 40, at 149-154. See generally Burk, supra note 58, at (trying to demonstrate that typefaces are eligible for copyright protection because they could pass the separability test). These opinions are subject to the caveat that they ignore the functionality issues mentioned above.
80 See Chevron v. N.R.D.C., 467 U.S. 837, (1984); Bonneville Int’l Corp. v. Peters, 347 F.3d 485, 486 (3d
Typefaces Designs are Likely to Remain Unprotected: The Problem of Derivative Works

Aside from the standard-fare doctrinal considerations for not allowing typefaces to be protected by copyright, there are practical considerations too. These might fall under the category of “be careful what you wish for.” As the famous, early 20th century typeface designer Frederic Goudy said on seeing the famed letters carved in the Trajan column: “The old fellers stole all our best ideas.” The problem, in other words, would be in deciding when a typeface infringes on another by being derivative of it or substantially similar to it.

In a sense, all typefaces are derivative of the ideal alphabet. But to the extent that there is somewhere an ideal, Platonic letter-form, it is unknowable. This fundamental fact of typefaces—that it is impossible to determine to what extent a design incorporates the Platonic letter-form—is the first hurdle that any judge trying to separate uncopyrightable public domain elements from copyrightable expression will have to face. This problem aside, so many typefaces are already redesigns of, or references to, historical typefaces that in many cases determining what’s derivative of what and what’s substantially similar to what would be a

Cir. 2003) (suggesting that courts should give the Copyright Office deference on their determinations of what is copyrightable).
81 Loxley, supra note 65, at 96. The Trajan column was erected in 114 AD.
82 See Lipton, supra note 37, at 25 (noting the difficulty of applying substantial similarity tests to typefaces designs), 31-35.
84 There are, for instance, at least 15 to 20 versions of Garamond made by various type foundries of varying fidelity to Claude Garamond’s original 16th century design, and still more that are a version of Garamond, but with a different name. Jerry Kelly, Adobe Garamond: A New Adaptation of a Sixteenth-Century Type, 13 Printing Hist.: The J. of Am. Printing Ass’n (1991), reprinted in Texts on Type: Critical Writings onTypography 54, 55-56 (Steven Heller & Philip B. Meggs eds. 2001).
This is to say nothing of the fact that the sheer abundance of typefaces, and that their shape is constrained by the alphabet, means there are bound to be some typefaces that look like others. The parallels typeface design has to fashion are instructive. In fashion, influences come from so many directions that it is impossible to pinpoint just what is derived from what. Innovation is rarely a “matter of creativity ex nihilo...[but] of mutation and pastiche.” Comparisons to music are apt, too, where virtually no style, genre, or song is not without its antecedent elements, all mashed together.

To give an example of the difficulty involved, imagine having to judge, say, Adobe’s Garamond Premiere Pro and Adobe’s Arno Pro. The Garamond is a meticulously researched recreation of the early 16th century original; Arno Pro is a modern typeface designed “in the tradition” of 15th and 16th century northern Italian de-

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85 This is not a new problem, but an historical one as well. See Loxley, supra note 65, at 62 (describing how the house typeface of Louis XIV was hard to police because variations of it were often subtle).
87 VINCENT B. LITICH, THEORY MATTERS 123 (2003). The intellectual property regime in fashion is “politically stable” - meaning that the industry does not even lobby for strong intellectual property protection - even though piracy and plagiarism are rife. Raustiala, supra note 30, at 1699. Designers partly accept copying because they recognize that, ultimately, all designs are derivative of something, and therefore all future designs will be derivative of something.
88 See Boyle, supra note 6, at 122-159.
signs. To the layman, the two are almost exactly the same, though someone sensitive enough might note that they have a slightly different feel. Both are warm, humanist, typefaces of Renaissance provenance, but Garamond could be said to be a little more elegant, and Arno a little more authoritative. This owes largely to their serifs. The serifs of the two are typically finished differently, for instance: Arno’s are sharper while Garamond’s are more rounded. At normal text sizes that difference could be measured in fractions of a millimeter. That’s not even to mention that the manner in which their serifs terminate, or their shape as a whole, are necessarily unique. And what of the fact that both, being humanist typefaces, feature axes (drawing a line in an “o” from the points, on its top and bottom, where the stroke is the thinnest will reveal the letter’s axis) whose angles mimic those that would be made if handwritten? Can you copyright the angle of the axis of an “o”? Ignoring for the moment that Garamond is a copy of a public domain typeface, it seems that no single element of either typeface would be, standing on its own, copyrightable. Of course, there are plenty of other areas of creative expression that require experts to suss out whether a work is derived from or substantially similar to another, or to determine that the selection and arrangement of non-copyrighitable elements is copyrightable, and it has been suggested that typeface designs should be no different. But typefaces are hard to describe technically and objectively, and they resist classifications that are too rigid. The differences between them can be very subtle and hard to articulate. What to one expert is

90 For a definition of “serif,” see supra note 64.
91 See, e.g., Copyright Legislative History, supra note 60, at 1231.
92 See, e.g., HELVETICA (Swiss Dots 2007) (a documentary about the typeface Helvetica; comments of Hoefler and Frere-Jones).
93 ANTHONY CAHALAN, TYPE, TRENDS AND FASHION: A STUDY OF THE LATE TWENTIETH CENTURY PROLIFERATION OF TYPEFACES 91 (2008). In fact, when type designers as a community have had to judge
piracy (making only trivial changes to an existing design, for instance), is to another a distinct and, at least according to the norms that guide the industry, permissible variation.

The result of copyright protection for typefaces might therefore be that the only protectable typefaces are only the most novel, least useful, ones, such as typefaces of the 1970s and 80s born out of postmodern, deconstructionist theories, or silly amateur novelty designs (letters superimposed on Christmas trees). Ironically, the typefaces that require the most investment and time to create—text typefaces meant for professionals—would be the hardest to protect owing the most, as they do, to historic designs and, legibility being paramount, adhering closest to an ideal letter-form. Because the cost of clearing proposed designs, or becoming entangled in litigation after their release, might increase the cost of production, protecting typefaces might also drive out the independent designers to whom the recent boom in typeface production has been partly attrib-

whether one design was copied from another, they sometimes cannot agree, despite some very close analyses. See Discussion thread of Typophile, Bloody Rip O• Artists!, [hereinafter Bloody Rip O• Artists].

Many typefaces are thought to be pirated, minor variations of existing designs. Pfohl, supra note 45, at 24 n.119.

Among computer fonts, there is also the problem of determining what kind of computer font file would constitute a derivative work of the original. What if, for instance, someone converts a computer font first into another font format before modifying a design or distributing it? See Philip W. Snyder, Typeface Design After the Desktop Revolution: A New Case For Legal Protection, 16 COLUM.-VLA J.L. & ARTS 97, 114 n.86 (1991).

But see id. at 115 (arguing that protection of typeface designs would result in the production of more typefaces).

See VanderLans, supra note 57, at 224.

See Lipton, supra note 37, at 10-14 (giving examples of novelty fonts that might pass the separability test, but whose worth, by even lax standards, is debatable).
uted." It could also strangle future designs, since typefaces typically build only incrementally on previous ones: new typefaces require that designers have access to existing designs, if only to reshuffle old elements in new ways. The better question to ask in deciding whether to be in favor of copyright protection for typefaces might not be whether enough typefaces are created, but if the right kinds of typefaces are created. Copyright protection might make typefaces more novel, and therefore less useful, at least for certain purposes.

It has not been my intention to argue for or against the protection of typeface designs except in the context of suggesting they are more likely than not to remain uncopyrightable subject matter. But hopefully this discussion illustrates that whatever the merits of typeface design as copyrightable subject matter are, they are expressive works, a point without which it does not do any good to analyze typeface as an example of an open area of intellectual property law.

B Other IP Laws Do Not Protect Typeface Designs

Copyright law is not the only way to protect expressive works. Trademark and state unfair competition law possibly could give author’s some control over their creations. While some foundries do police other designers’ use of trademarked typeface names, trademarks will not protect the design themselves. State unfair

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99 See Nadel, note 13, at 803; Oliar, supra note 34, at 1858–59.
100 Litpton, supra note 37, at 21.
101 See Shubha Ghosh, Deprivatizing Copyright, 54 CASE W. RES. 387, 396 (2003) (suggesting that what’s important when considering whether expressive works should receive protection is to ask not whether more or less of the work would be produced, but the nature of works that would be produced).
102 See Litpton, supra note 37, at 37–38. Trademark law guards against confusion in the marketplace. Goods of a similar category usually cannot share identical or con-
competition laws have not been much use either, mostly because courts view their use as efforts to circumvent Congressional intent in the area of copyright law.\textsuperscript{103}

Typeface designers seem to hold a general belief that typeface designs can be protected via design patents. This is not entirely untrue. 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.”\textsuperscript{104} When typefaces were still embodied in three dimensional metal type, design patents were routinely granted.\textsuperscript{105} That practice mostly ceased, however, when type designs began to be embodied first in two-dimensional film, and finally as bits of digital information.\textsuperscript{106} Typefaces embodied in two dimensions or, as is the case of a computer font file, zero dimensions, do not have the “distinctive appearance or shape”—which is traditionally what design patents have protected—of three dimensional metal type.\textsuperscript{107} Even though the Patent Office issued Guidelines in 1996 saying that the fact typefaces are no longer embodied in metal type should not rule out their protectability,\textsuperscript{108} "the patent process has proved

\textsuperscript{103} See, e.g., Leonard Storch Enter., Inc. v. Mergenthaler Linotype Co., 1979 WL 1067 (E.D.N.Y. April 5, 1979). This case holds that because federal law generally preempts state unfair competition claims involving copied typeface designs, \textit{id.} at *2, a remedy would only be given to the plaintiff \textbf{if necessary for him to stay in} competition with the copyist. \textit{id.} at *9. This is a high standard to meet.


\textsuperscript{105} See Leonard Storch Enter., 1979 WL 1067 at *5.

\textsuperscript{106} See \textit{id.}

\textsuperscript{107} \textit{Id.; see also} Guidelines for Examination of Design Patent Applications for Computer-Generated Icons, 61 Fed. Reg. 11380, 11381-82 (Patent and Trademark Office, March 20, 1996) [hereinafter \textit{Guidelines}] (noting that three-dimensional metal type has traditionally been what has been protected).

\textsuperscript{108} Guidelines, \textit{supra} note 107, at 11381-82.
too rigid, slow,…and too strict in excluding the bulk of all commercial designs on grounds of obviousness” to be of much use. Further-
more, the validity of the design patents that have been issued for metal type likely would not fare well if challenged in court, to say nothing of a design patent for a computer font. When even a successful typeface only sells 500 licenses or so a year for as little as $50 each the time and expense of seeking a design patent is a little unrealistic for most type designers, many of whom work independ-
ently.

The section immediately following this one details why computer fonts are considered soft-
ware and are therefore copyrightable, but su•ce it to say for now that since typefaces are al-
most exclusively distributed as computer fonts they are, like most software, not actually sold, but licensed. A brief review of this practice is therefore necessary. Although the

109 J.H. Reichman, Legal Hybrids Between the Patent and Copyright Paradigms, 94 Colum. L. Rev. 2432, 2460 (1994); see also MARSHALL LAEFFER, UNDERSTANDING COPYRIGHT LAW 126 (4th ed. 2005) (noting the time and expense of ob-
taining a design patent, and the high standards that have to be met); Raustiala, supra note 30, at 1704–05 (design patents have not been successful in protecting fashion designs, either, and for the same reasons).

110 See LAEFFER, supra note 109, at 126 (noting the de-
sign patents have a high rate of being invalidated when challenged in federal court).

111 See Rob Walker, Type Casting, N.Y. TIMES, July 17, 2005, § 6 (Magazine), at 20.


113 See id.

114 See Elizabeth I. Winston, Why Sell What You Can Li-
cense? Contracting Around Statutory Protection of Intel-
lectual Property, 14 GEO. MASON L. REV. 93, 100 (2006). The software industry pioneered the use of licenses be-
cause, for a time, it was not clear that copyright law protected software. See Mark A. Lemley, Intellectual Property and Shrinkwrap Licenses, 68 S. CAL. L. REV. 1239, 1242–43 (1995).

after Adobe Anti-Piracy Initiative] (emphasizing that computer fonts are not sold, but licensed).
licensing of expressive works initially went through a period where licenses were thought to be invalid for preemption or adhesion reasons, or because what was purported to be a license was really a sale, software licenses are now generally enforceable, though still very controversial. Typical licenses for computer fonts establish the extent to which they can be modified, how many computers they can


117 See Lemley, supra note 114, at 1248–49. Contracts of adhesion, or shrinkwrap licenses, are problematic because the agreement is not the result of a bargain between the parties involved.

118 See Winston, supra note 114, at 104 (noting that licensing is intended to get around copyright’s first sale doctrine, where the copyright owner, by “placing a copyrighted item in the stream of commerce by selling it[,] has exhausted his exclusive statutory right to control its distribution”).

119 See, e.g., Altera Corp. v. Clear Logic, Inc., 424 F.3d 1079, 1089–90 (9th Cir. 2005); see also Raymond T. Nimmer, Copyright and Computer Technology § 1:97 n.5 (2002).

120 See, e.g., Christina Bohannan, Copyright Preemption of Contracts, 67 Md. L. Rev. 616, 634–42 (2008). But see Winston, supra note 114, at 129 (arguing for instances when licenses should be enforced). Licensing software is controversial because it potentially creates a para-copyright system that does not have to concern itself with the public benefit that is supposed to be part of the bargain inherent in copyright law. See Lemley, supra note 114, at 1282.

121 Typographers and graphic designers commonly need to modify a computer font. See Bringhurst, supra note 68, at 198–208. Take Arno Pro again, for instance. The descend-ers of its capital “Q” and “J” overlap if the two letters are placed side-by-side, something the type designer would never have probably considered because there is rarely reason for these two letters to appear consecutively (“q” usually, of course, being followed by an “u”). But in legal citation, “Quarterly Journal” is abbreviated to “Q.J.,” and the descenders overlap. If this combination appeared in, say, a book, the book designer, if he were conscientious, would adjust the spacing between the letters to prevent the un-
be installed on, and whether and how they can be embedded in documents, such as PDFs. These terms only affect computer fonts as software; they do not affect the design of a typeface itself. Anyone, even those to whom a computer font has been licensed, is free to copy a typeface design as long as he is not doing so by copying the digital computer font file. "Reverse engineering" a computer font by copying the design it produces cannot be prohibited. In short, the practice of licensing typefaces does not act to close typeface designs from intellectual property law’s open areas.

C Computer Fonts Are (Probably) Protected By Copyright

The belief that computer fonts are protected is based on Copyright Office regulations reversing an earlier policy of refusing registration to computer fonts and a district court decision, 123

sightly overlap. Something like this is generally acceptable according to a license’s terms. But licenses prohibit the modification of a computer font to the extent that it would, in effect, become a different design. For examples of typical licenses, see Adobe Anti-Piracy Initiative, supra note 115; Linotype, License Agreement For Font Software (2003).


124 Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6201-02 (Feb., 21, 1992) (“After a careful review of the testimony and the written comments, the Copyright Office is persuaded that creating scalable typefonts using already-digitized typeface represents a significant change in the industry since our previous Policy Decision... For example, the creation of scalable font output programs to produce harmonious
Adobe Systems, Inc. v. Southern Software, Inc., citing the Copyright Office’s decision, ending copyrightable subject matter. The reversal of the Copyright Office can be explained by changes in the ways computer fonts are generated. Previously, computer fonts were mostly bitmapped images. A bitmapped computer font is really nothing more than “the computerized representation of a typeface,” where a separate font file had to exist for every size and weight of a letter (it was, in this respect, a lot like metal type). In the interim between the Copyright’s original position and their reversal, computer fonts had largely ceased being bitmapped, and instead had become outlined.

Outline fonts describe the lines and curves of letters, allowing the same computer font file to describe the same letter in all sizes, whether it’s on screen or residing in a printer’s memory waiting to be printed. To simplify, computer outline fonts are a set of points, selected by the font’s designer, describing the outside of a letter. The advantage of outlined computer fonts is that since only the outline of the letter is described, a character can be enlarged or shrunk by simply increasing or decreasing the distance between the points. For displaying or printing, software connects these lines, and shades in the letter. In some instances, the points a font editor (if he is re-digitizing an existing computer font) or “internal software” (if the typeface is 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 unprotectable shape of the letters nor functionally mandated.”).

126 Mezrich, supra note 59, at 64.
being designed from scratch) selects are entirely dictated by the shape to be drawn. It would not make any sense, for instance, to represent a straight line with anything but two end-points. But describing curves is a different matter, requiring the editor or the software to judge the best and most efficient way to place points. Other software translates these efforts and assigns coordinates that become the computer font file. The code of the computer font file is the end result.128

The Copyright Office, and the district court case which soon followed, reasoned that because sometimes the font editor makes some choices about where to place points there is enough creativity involved—the creativity missing in bitmapped computer fonts—to make the resulting code copyrightable.129 But just as it’s not entirely clear that typefaces are not copyrightable despite widespread acquiescence to the idea, it’s likewise not clear that computer fonts are copyrightable.130 The Copyright Office and the district court decision take it for granted that computer fonts are software. The prior refusal was based on the idea that bitmapped computer fonts, though software, were

128 See, e.g., Adobe Sys., Inc., 1998 WL 104303 at *4-*5, *14-*17 (giving an explanation of the process just described).
129 Id. at *14-*17; Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6201-02 (Feb., 21, 1992) (the code which embodies the selection of the points that describe a letter, “assuming it meets the usual standard of authorship, is [] registrable as a computer program”); see also Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (establishing that to be copyrightable a work, among other things, has to “possess[] at least some minimal [and indeed very low] degree of creativity”).
130 I have a perhaps unsupportable suspicion that typeface vendors take advantage of general ignorance of the fact that a computer font does not draw a font on screen or translate it into print. It only tells the software whose job that is what the letters it’s drawing or printing should look like. Of course, the software that interprets the computer font file for rendering is copyrightable. But this is not the same as the computer font file.
not creative enough. Some argue, however, that the code that describes a modern outlined computer font is not software at all, but a set of data points.\textsuperscript{131} If that’s accurate, protecting a computer font would be like protecting metal type because of the type-maker’s decisions about how to best hold his chisel when carving it. The counter-argument is that the data points are a set of instructions that tells a computer or printer what to display or print and, as such, are properly classifiable as software.\textsuperscript{132} The difference between labeling a computer font software or a set of data points is somewhat semantic. The type design industry, for its part, sells very hard the idea that computer fonts are software.\textsuperscript{131}

\textbf{D} \textit{The Protection of Computer Fonts Does Not Prevent Typeface Designs From Being Copied}\textsuperscript{••}

Protection for computer fonts is not the same thing as protection for typeface designs them-

\textsuperscript{131} See, \textit{e.g.}, Luc Devroye, School of Computer Science, McGill University, Legal, Copyright and Trademark in the Type World, http://cg.scs.carleton.ca/~luc/legal.html (under heading “This is money”) [hereinafter This is money].

\textsuperscript{132} See, \textit{e.g.}, Snyder, \textit{supra} note 95, at 114 n.80. Another argument against the protectability of computer fonts is that the methods of making computer fonts have changed since \textit{Adobe Systems} was decided (the events leading to the case occurred largely in 1995, \textit{Adobe Sys., Inc.}, 1998 WL 104303 at *3), or that the computer fonts involved were produced in a way that would be atypical today. The upshot of either scenario is that font editors, who in the case seem to be a kind of technician, no longer—or don’t often—select points according to the shape of a letter. Rather, modern font creation software might automatically place points when it exports a typeface designer’s typeface into a computer font.

selves, however. There are other ways to copy a typeface design than copying a computer font file. In fact, the digitization of typeface design has made the legal copying of typefaces, on the whole, infinitely easier. If the history of type design is anything, it’s one of copying, plagiarism, and revivals. But from the advent of movable type in the 15th century until the early 19th century, the act of designing a typeface was, by far, the least labor intensive part of making type. This is not to say that plagiarism was not a concern for type designers. One of the earliest known forms of intellectual property protection was a patent granted in late 15th century Venice for a typeface design. But the amount of skill, labor, and time it took to actually make type in this era is shocking. Creating a single font (one style and weight in a typeface family) would take a punchcutter—who had a unique

134 But see generally Lipton, supra note 37. Lipton argues that the protection of computer fonts has transformed what had previously been an industry operating in intellectual property law’s open areas into one that no longer is. This argument is close to being based on the premise that protection for computer fonts has meant that typefaces can no longer be legally copied.


137 For a discussion of revivals, see infra section III.C.3.

138 Chappell, supra note 83, at 75-76.

139 The time it took to make physical type, especially considering that punches had to be made for every size of letter desired, also meant that any type designer would enjoy a considerable lead time over a plagiarist. See Pfohl, supra note 45, at 5-6. Since the process of making type was largely industrial, it required significant overhead. The amount of money it took to put out a complete typeface in all weights and sizes was several hundred thousand dollars. A would-be plagiarist, therefore, had little economic incentive to copy a design, especially considering the lead time advantage the original designer had. See Copyright Legislative History, supra note 60, at 1168.
set of skills, part metallurgist, part sculpture, part metalsmith—800 hours of full-time work. It took William Caslon 14 years to cut his namesake typeface. From the advent of movable type in the middle of the 15th century until the latter 19th century, the process of making type essentially did not change, though the work did become more specialized and compartmentalized, and therefore somewhat faster. There was, in other words, “a very high bar to plagiarism.” Copying a complete typeface family would take almost as long as it took make it in the first place—years. While the introduction of the Monotype and Linotype typesetting machines at the end of the 19th century greatly decreased the time it took to make type for text-setting, these were not technologies that aided copying designs in any way. But at the end of the 19th century, the pantograph was introduced. It allowed a person unskilled in the art of making type to engrave punches and matrices by tracing large drawings of letters. So, as long as somebody could draw, or beginning about 1890, photographically enlarge, a letterform, typefaces could be copied with less skill and in less time than in the previous 400 years. But it was really not

140 See Chappell, supra note 83, at 266. Gutenberg had been a goldsmith. Cahalan, supra note 93, at 13.
141 Lawson, supra note 136, at 386–89.
142 Cahalan, supra note 93, at 14.
143 Lawson, supra note 136, at 390–97.
144 Thurm, supra note 183.
until the middle of the last century, with the development of phototype—where a copyist could literally photograph and create a typeface from printed letters, though not necessarily with great results—that any reasonably feasible way to reproduce typefaces existed.\textsuperscript{149}

Regardless of the relatively difficult process of copying through the development of phototype, type foundries often had enough incentive to make the process worth their while. For one, many of the machine typesetting systems in use from the end of the 19th century to the beginning of phototype era in the mid 20th century were proprietary, each only able to use type specifically made for it. To stay competitive, Monotype and Linotype—two of the biggest type foundries of the day, making type primarily to sell their machines—would often have to make their own versions of popular typefaces that existed only for the other manufacturer’s typesetting system.\textsuperscript{150} Each had to have a "convincing library" of typefaces to sell their machines.\textsuperscript{151} Similarly, in the early 20th century’s explosion of display faces, foundries had trouble keeping up with demand without making at least superficial copies of other foundries’ designs.\textsuperscript{152} Piracy and mimicry was

\textsuperscript{149} See Blackwell, supra note 135, at 126; Snyder, supra note 95, at 100 n.11 (noting that phototype reduced manufacturing costs, and therefore the cost to copy by, by 90 percent or more); Snyder, supra note 95, at 101 n.12 (describing how phototype enabled foundries to routinely copy other foundries’ designs). Phototype begat the first industry effort to lobby for copyright protection of typeface designs. See King, supra note 123.

\textsuperscript{150} Posting of William Berkson, supra note 148. This phenomenon, where the manufacture of a product using typefaces makes typefaces to help sell the product, repeats itself with the advent of the personal computer. See infra Part III.E.

\textsuperscript{151} King, supra note 123.

\textsuperscript{152} See Lawson, supra note 136, at 337. ATF, formed as a conglomeration of many typefoundries in the 1920s, was widely known to have plagiarized European typefaces through the 20s and 30s. See David Pankow, A Face by Another Other Name Is Still My Face: A Tale of Type Piracy, 19 Printing History: J. of the Am. Printing Hist. Ass’n (1998), reprinted in Texts on Type: Critical Writings on
especially common in Victorian America, a fact at least partly attributable to the high cost of importing metal type—which is very heavy—from overseas, where most new designs at the time originated.

Computer fonts can obviously be copied by duplicating the digital file which contains them. As described above, this probably infringes the copyright in the computer font as software. But there are other ways of copying a typeface digitally that are completely legal, and relatively trivial for someone who has, like any typeface designer would, the right technical competence. For one, any typeface that can be seen can be recreated from scratch with font editing software. But this requires a certain amount of skill, and it’s difficult to get an accurate, faithful copy. There is a much easier way. Namely, printed typefaces can be scanned into a computer, imported into font design software, manipulated or refined, and then saved as a computer font file. Copying that used to cost a quarter million dollars can now be done for “pennies.”

Typography 239, 237-49 (Steven Heller & Philip B. Meggs eds. 2001).

153 Steven Heller & Louise Fili, Typology: Type Design From the Victorian Era to the Digital Age 22-26 (1999).
154 Steven Heller & Anne Fink, Faces on the Edge: Type in the Digital Age 108 (1997).
155 See supra Part II.C.
157 Baines, supra note 38, at 101; Blackwell, supra note 135, at 148. In fact, there is even software solely dedicated to this task, promising to turn a graphic from a scanned image into a computer font in “six simple steps.” See FontLab, ScanFont, http://www.fontlab.com/font-converter/scanfont/.
158 Thurm, supra note 183. The figure “pennies” is certainly an exaggeration, coming as it does from typeface designer with an interest in making copying seem as easy and cheap as possible. Yes, that is what it would cost to only scan a typeface and create a computer font file, but it does not account for the steps in between needed to make the resulting computer font practical to use, like establishing kerning tables and interpolating weights (bold, for examples), though a font editor can accomplish some of this automatically. See Baines, supra
While obviously this process is not one a typical consumer would endure to get a typeface he fancied—especially since the computer font can probably be found somewhere on the Internet—it is one that might be undertaken by someone, like the Monotype and Linotype of yore, with enough motivation. Knockoffs are often made, for instance, to avoid licensing fees. When the Macintosh was introduced in 1984 Apple created pastiches of existing typefaces for just this reason. Every major foundry, and Apple and Microsoft, makes a version of the ubiquitous Times New Roman and Helvetica (Microsoft’s Arial is a knockoff of Helvetica) to stay competitive or to avoid licensing fees. It’s also common for a company that wants to use a particular typeface for advertising or corporate branding to commission a designer to copy it if its license is too restrictive, limiting, for instance, its use in a


160 LOXLEY, note 65, at 229–30. The Macintosh was the “first personal computer where the typefaces mattered.” Id.

161 See LAWSON, note 136, at 270. The biggest foundries often have historically had the worst reputation for copying designs, perhaps because they have the most to lose if they are not competitive with other foundries. See This is money, supra note 131 (Monotype’s Book Antiqua, which later became a system font included in Microsoft’s Windows, is a copy of Hermann Zapf’s 1948 Palatino); Luc Devroye, School of Computer Science, McGill University, Legal, Copyright and Trademark in the Type World, http://cg.scs.carleton.ca/~luc/legal.html (under heading “Monotype’s copies [sic] of fonts”) (designer Mark Simonson noting that Monotype created its own version of many popular fonts—including Helvetica and Palatino—at Microsoft’s request, so that the latter could avoid some licensing fees).
corporate ad campaign or on merchandise.\textsuperscript{162} And, of course, foundries of all sizes make knockoffs, especially of popular designs, simply to sell them.\textsuperscript{163}

\textbf{E Despite a Lack of IP Protection, Typefaces Proliferate}\#\#

Typeface designs are unprotected, and probably unprotectable, by copyright, and the copyrightability of computer fonts is not a backdoor to protecting the designs themselves. So how has the industry fared? In terms of the amount of typefaces created and distributed—the criteria by which copyright, or lack of it, should be judged—it's doing just fine. The number of typefaces in existence, or produced in any given period, is hard to pin down.\textsuperscript{164} Partly this is because so many have been created in the 20 years since digitization that the numbers change rapidly; partly it's because the number of typefaces is just really hard to count. A 1974 estimate pegged the number at 3,621.\textsuperscript{165} A 1990 estimate is of 44,000 typefaces;\textsuperscript{166} a 1996 estimate is of 50,000 to 60,000.\textsuperscript{167} A 2002 estimate was of 100,000.\textsuperscript{168} Today, the website fonts.com lists 153,839 com-

\begin{footnotes}
\footnote{162}{See P22 & P22 distributed End User Agreement, \url{http://www.p22.com/support/license.html}. This foundry's license reads: "If you have purchased the font(s) license for use on a large scale campaign such as in the course of entertainment promotion, advertising, corporate identity design, product packaging, store signage or in any way that requires the multi media (television, internet, print or other) output of the font(s), an additional license may be required." In fact, licensing issues are one of the primary reasons corporations commission typefaces rather than buy existing ones. CAHALAN, supra note 93, at 88.}
\footnote{163}{See, e.g., Discussion thread of Typophile, Bloody Rip O\• Artists!, \url{http://typophile.com/node/36209}.}
\footnote{164}{CAHALAN, supra note 93, at 60–61. Estimates in the 90s ranged widely, from 10,000 to 60,000. \textit{Id.}}
\footnote{165}{\textit{Id.} at 61.}
\footnote{166}{Randall Rothenberg, \textit{Computers Change the Face of Type}, N.Y. TIMES, July 23, 1990, at D1.}
\footnote{167}{Liu, supra note 112.}
\footnote{168}{CAHALAN, supra note 93, at 61.}
\end{footnotes}
puter fonts for sale. Some current estimates are as high as a quarter million.\textsuperscript{169} If 1974’s estimate is credible, and if the current number of 100,000 seems like as good a guess as any other, then there has been a 2,762 percent increase in in the last 30 or so years.\textsuperscript{170} As one designer has noted, “[t]here’s really been a tremendous explosion.”\textsuperscript{171} Hidden in the wide range across time is an important point. Digitization is blamed for making copying designs easier, destroying the incentive to create new typefaces, and yet the net result of it, whatever the absolute numbers, has been that more typefaces have been designed since digitization than in the previous millennium.\textsuperscript{172} There may actually be an overabundance of typefaces.\textsuperscript{173} As the average consumer can attest, he probably rarely uses more than a few of the hundred or so that come pre-installed on his computer. Furthermore, as anybody who has looked has probably discovered, there are tens of thousands of inexpensive and free typefaces available to download, legally.\textsuperscript{174} The situation, in short, is ideal for the consumer: typefaces are abundant and cheap.

But are they good? The incentive thesis is not just about the number of expressive works that are produced, it is also about whether an industry invests as fully in their creation and dissemination as they would if they had some legal control over copying.\textsuperscript{175} There’s no evidence to suggest under-investment. Yes, it’s

\textsuperscript{169} Snyder, supra note 95, at 98 n.3.
\textsuperscript{170} Cahalan, supra note 93, at 61.
\textsuperscript{171} Jessica Bennett, Just Go to Helvetica, Newsweek, Apr. 7, 2008, at 54. There are so many, in fact, that some graphic designers report trouble identifying typefaces, let alone picking one to use. See Cahalan, supra note 93, at 114–15.
\textsuperscript{172} See Chappell, supra note 83, at 278.
\textsuperscript{173} See Heller, supra note 153, at 9 (there may be more type designs “than will ever be used effectively”).
\textsuperscript{174} Bennett, supra note 171.
true that there are many poorly made or trivial typefaces, probably more—both absolutely and proportionally—than before. But this is not the result of the industry pulling investments in new designs it would have otherwise made. Instead, it’s the result of the digitization, and resulting democratization, of typeface design. Typefaces today can be made much more easily and cheaply than before.\textsuperscript{176} Setting up a foundry before digitization required a large investment in both equipment and labor, meaning that only larger, well capitalized companies could enter the market.\textsuperscript{177} Now, font editing software, some of it free,\textsuperscript{178} and the Internet have made it possible for a single person to run a foundry, even as a part-time business or hobby, from his basement.\textsuperscript{179} Today, there are maybe 500 type designers (and maybe 100 foundries) in the world, not counting amateurs and dilettantes.\textsuperscript{180} This might not sound like a lot, and it isn’t, but in the metal type era there were only 20, and until digitization there were only about 50.\textsuperscript{181} And where before a large foundry might release five typefaces a year, now even a small foundry can release hundreds and, because the overhead required to produce a typeface design is so small, with little financial risk.\textsuperscript{182} With all these extra designers, amateurs and professionals, and all these extra designs, there’s bound to be some poor typefaces.

\textsuperscript{176} See Blackwell, supra note 135, at 152; Rothenberg, supra note 166.  
\textsuperscript{177} See Postrel, supra note 504 (“Having an idea for a typeface used to be like having an idea for a new-model car.”).  
\textsuperscript{178} Fontforge is a free, open-source font editor. There are even Internet sites that allow visitors to create, via user-friendly applets that run in web browsers, their own typeface and download the results. See http://www.FontStruct.com.  
\textsuperscript{179} See Kinross, supra note 39, at 168-69.  
\textsuperscript{180} See Liu, supra note 112.  
\textsuperscript{181} See id.  
\textsuperscript{182} Loxley, supra note 65, at 236. Digitization has also increased the speed by which established designers could churn out type. See Snyder, supra note 95, at 116 n.93.
In fact, developing a professional typeface today can potentially take more investment than at any time since type was carved in metal by hand. While digitization has greatly sped up the process of designing typefaces, it has also meant, since the late 1990s development of the OpenType computer font format, that a font file can now contain tens of thousands of characters (65,536 to be precise). Designing all these characters takes an enormous amount of time. Customers come to expect this expanded character set, and also the refinements, like kerning tables, digitization has allowed.

Digitization, then, is a double-edge sword: it has produced more typefaces and spurred demand, yet it is also the mechanism that makes plagiarism easier, not to mention facilitated file-sharing. Which side of that sword is sharper? The answer is apparent: digitization has lead to an explosion of typefaces. By contrast, what has Europe bought by granting a monopoly on typefaces? Numbers have proved to

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183 Adobe’s Garamond Premiere Pro and Adobe’s Arno Pro, both recently made typefaces, took years to create. See Garamond Premier Pro, supra note 89 (description and samples of Garamond Premiere Pro); Arno Pro, supra note 89 (description and samples of Arno Pro); see also Scott Thurm, Copy This Typeface? Court Rules Caution, WALL ST. J., July 1998, at B1 (designing a complete typeface family, comprising thousands of characters, can take up to three years).

184 BLACKWELL, supra note 135, at 138, 173–74; William M. Bulkeley, Font War: That’s My Type, WALL ST. J., Nov. 19, 1993, at B1 (letters can be automatically scaled; parts of letters can automatically be reused—“P” in an “R” for instance).

185 KINROSS, supra note 39, at 173 n.12.

186 See ADOBE, ARNO PRO (2007). (Robert Slimbach describes the process of designing a new typeface for OpenType).

187 See id. (comments of Adobe designer Robert Slimbach). Kerning tables hold information about how to kern text. To kern means to make fine adjustments to the default spacing between combinations of certain letters. See BAINES, supra note 38, at 102.


189 Liu, supra note 112.

190 See, e.g., Copyright, Designs, and Patents Act,
be hard to come by. Partly this is because the
typeface design industry is relatively small,
and partly it’s because the typeface industry
is a cottage industry, aside from a few big
foundries. Considering that the content gener-
ating industry in the United States is, depend-
ing on how you count, somewhere in the
neighborhood of $1 trillion per year, type-
face design is truly not even a drop in the
bucket. But one (relatively old) estimate at
least places annual worldwide sales of type-
fices at $300 million per year, with the United
States responsible for half of that. This
jibes with another estimate that about half of
the world’s typeface designers reside in the
United States. Anecdotal evidence, too, seems
to at least suggest that the American market is
certainly not less vibrant than the European
one, and probably more so. While it is hard
to conclusively show that the typeface industry
in the United States is stronger than Europe’s
despite (or even because of) the lack of copy-
right protection, Europe’s does not seem to be
doing any better, even though it su•ers the so-
cial loss caused by the grant of a monopoly.

Like typeface designs, databases are pro-
tected in Europe but not in the United
States. Here, the statistics are conclusive:

1988, § 54 (Eng.) (England recognizing that typefaces
might be protectable); Law No. 97-283 of March 27, 1997,
Journal Officiel de la République de Française,
[J.O.] [Official Gazette of France], July 1, 1997, p. 8
(France protecting typefaces under copyright law).
191 STEPHEN E. SIWEK, INT’L INTELLECTUAL PROP. ALLIANCE (IIPA),
COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2006 REPORT 2
192 Consider Adobe, which is one of the largest type
foundries in the world. It has annual revenues of over
$3 billion, yet type makes up less than 5 percent of
that. See Adobe Sys. Inc., Annual Report (Form 10-K), at
45 (Jan. 24, 2008).
193 Rothenberg, supra note 166.
194 CAHALAN, supra note 93, at 62.
195 See generally HELLER, supra note 154.
196 See Boyle, supra note 6, at 207. Boyle explains that
in 1996 the European Union gave a “high level of copy-
right protection to databases,” while in the United
the database industry in the United States has fared very well, exploding in about the past 30 years. And what did Europe buy with its monopoly? A relatively stagnant database industry that, despite the two economies being about the same size, went from being half the size of the United States’, to a third. Not only that, but the quality of European databases has been low, and the movement of data has been constrained. Like typefaces, databases are a good “natural experiment” testing the traditional incentive theory on which copyright law in the United States derives.

III The Mechanisms of Innovation

Though cataloging and understanding the list of industries operating in intellectual property law’s open areas seems important, only the culinary arts, magic, fashion, stand-up comedy, and databases have been examined to any significant degree. In addition, Justice Breyer wrote a famous law review article when he was still a professor in response to the proposed term extensions in the 1976 Copyright

States protection for databases is precluded by the Supreme Court’s 1991 ruling, see Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340 (1991), that unoriginal compilations of facts are not copyrightable.

197 See Boyle, supra note 6, at 210-11.
198 Id. at 211, 218-219.
199 Id. at 212-13.
200 Id. at 207, 209.
201 Raustiala, supra note 30, at 1776-77.
204 See Barnett, supra note 175; Raustiala, supra note 30.
205 See Oliar, note 34.
206 See Boyle, supra note 6, at 207-19.
Act. Breyer analyzed why foreign books flourished in the United States prior to 1891, when the U.S. first recognized copyrights in foreign works.\footnote{Before that, the Copyright Act of 1790 basically permitted piracy of foreign works. \textit{See} Copyright Act of 1790, 1 Stat. 124 § 5 (1790); Breyer, \textit{supra} note 25, at 283 n.8.} His conclusion, essentially, was that the case for copyright for books is "weak."\footnote{Breyer, \textit{supra} note 25, at 294–96, 321.} In 19th century America, English books were cheap and American publishers profited. Most importantly, English authors were paid well for their American editions,\footnote{Plant, \textit{supra} note 12, at 173. Nineteenth century America is not, of course, the only instance where authors were paid despite having no copyright protection. \"Monks and scholars in the middle ages\" were paid too, usually by the outright sale of their manuscripts. Breyer, \textit{supra} note 25, at 282; Plant, \textit{supra} note 12, at 171. Of course, before the advent of the printing press, the lead-time advantage a manuscript enjoyed against a would-be plagiarist was considerable. \textit{Id.}}\footnote{Plant, \textit{supra} note 12, at 172.} often better than for their English ones.\footnote{Breyer, \textit{supra} note 25, at 299–300; Plant, \textit{supra} note 12, at 173. American publishers would retaliate against any other American publisher—if they later were able to come out of with a rival edition—by publishing a dirt-cheap edition of the work, even at a loss. Breyer, \textit{supra} note 25, at 300–02; Plant, \textit{supra} note 12, at 713.} (American publishers paid English authors for his advance sheets to guarantee themselves a significant lead-time advantage over other publishers.\footnote{See Tom Bell, \textit{Indelicate Imbalancing in Copyright and Patent Law}, in \textit{COPY FIGHTS: THE FUTURE OF INTELLECTUAL PROPERTY IN THE INFORMATION AGE} 1, 9 (Adam Thierer & Wayne Crews eds., 2002); \textit{COPYRIGHT LAW} 200 (Craig Joince et al. eds., 5th ed. 2001). The listing here of uninhabited ar-})

No other industries operating in intellectual property law's open areas have been examined, partly because most kinds of expressive works are copyrightable. But there are still a few uncopyrightable ones left that could be, including perfume, tattoos, furniture design, fireworks displays, hairstyles, sports plays, car bodies, uninhabited architectural structures, and new words and slogans.\footnote{As this}
list suggests, deciding what qualifies as a bona fide open area of intellectual property law can be hard. Some listed here could justifiably receive some kind of treatment; others could not. Typeface designs, on the other hand, justifiably could, which is why the fact they have not been is so notable, and why their omission from even being mentioned as an industry operating in the open areas of intellectual property law is more notable still. 213

A Functionality, Rivalrousness, and Innovation

Typefaces serve a functional purpose. In this respect, they are like fashion, architecture, or cuisine: clothes are needed for warmth, buildings are needed for shelter, food is needed for nourishment, and typefaces are needed for printing words. Consider the first type designers: they were, first and foremost, printers. Gutenberg in the 15th century didn’t invent the first typeface for any other reason than that, being the Western world’s first printer, there was no other type for him to use. Until the 16th century when a division of labor appeared, separating the job of printer and typeface designer, 214 a printer typically

213 But see Lipton, supra note 37, at 2 (noting the omission from the list of mentioned or written-about industries operating in intellectual property law’s open areas).

214 See Lawson, supra note 136, at 386. Printers per-
made one typeface, the one used for his shop. This one typeface satisfied his basic, utilitarian needs.

This utility underlies all the mechanisms responsible for today’s proliferation of typefaces. As with 16th century printers, modern needs would be adequately satisfied with a handful of typefaces, just as our need for warmth would be satisfied by a few entirely pragmatic articles of clothing. Nobody needs to buy more clothes than are necessary to keep them warm. But as long as at least this is needed, clothes become subject to, for instance, all the social forces that induce fashion cycles. This in turn induces people to buy—and designers to design—clothes that are, strictly speaking, gratuitous. Likewise with typefaces. Instead of the few that are needed simply for reading, what we actually get are hundreds of thousands. The rest of this paper will analyze the forces, other than copyright, that have morphed the few typefaces that would suffice into a rich abundance.

formed work besides designing and founding that today would be divided amongst editors, publishers, typesetters, and typographers (book designers). See BAINES, supra note 38, at 74. Something had to give.

215 See LOXLEY, supra note 65, at 36. If a printer wanted to set up shop, he would have had a problem if he did not already have type—which was expensive, even if he could have persuaded someone to sell theirs. See id. at 40–42 (Garamond’s punches were only sold after his death). Usually, then, a printer had to make his own. If a printer did not possess or could not hire the unique combination of skills needed to both design and make type, he would have had to hire somebody who could work with metal, and have them at least copy a common design. See id. (Garamond’s punches eventually spread to printers over Europe in need of type).

216 The pure utilitarianism of typefaces in this period meant that they were not conceived of as objects of design, subject to superfluous variations, even if these early typefaces were meticulously composed. More important was the skill of the craftsmanship, of the metalworking. Having no conception of a typeface as a design, printers did not even give them names. See id. at 36. Instead, the typefaces simply became known by the last name of the printer who made them. Garamond, for instance, is an early 16th century design of Parisian publisher Claude Garamond. Id. at 40–42.
dance.

Though typefaces’ functionality may underly the innovation experienced in the type design industry, there is an important difference between typefaces and other expressive works, like fashion, that are denied copyright protection because of their functionality, yet thrive nonetheless. Because typefaces today primarily exist as computer fonts—and are really only useful to anyone when they do exist as computer fonts—they have much more of the characteristics of a public good than do clothes. Clothes are rivalrous goods, even if their designs are not. But both a typeface’s design and its typical embodiment—computer fonts—are non-rivalrous. In this respect, they are more like any other commonly pirated digital media, like music. (Which is probably why, of all the content-generators operating in the open areas of intellectual property law, typeface designers are among the most vocal in calling for copyright protection.)

Magic, databases, and stand-up comedy, each an example of an innovative genre of expressive works that are largely denied copyright protection, are also generally non-rivalrous. They are not, however, functional in the way that typeface and clothes are.

Typefaces therefore have no exact analogue among other expressive works in intellectual property law’s open areas that have been stud-

217 Canalan, supra note 93, at 37 (typeface designers often compare the industry to that of music, largely because the file size of a computer font is about the same as a song, and therefore just as amenable to file sharing). Plagiarism in the fashion industry is more-or-less accepted as business-as-usual, even though, with the aid of technology, knock-offs can be produced and in stores almost as soon as the originals. See Raustiala, supra note 30, at 1714-16.

218 Compare Typeright.org, http://www.typeright.org/default.html (website of an industry trade group whose purpose is “to promote typefaces as creative works and to advocate their legal protection as intellectual property”) with Raustiala, supra note 30, at 1699 (noting that fashion designers generally do not lobby for more protection).
ied: they are functional, yet they are transmitted via non-rivalrous digital files. Expressive works like clothes that are functional yet rivalrous thrive despite—and sometimes because of—rampant copying, plagiarism, and piracy. As discussed below, typefaces are no exception. Those industries that are non-rivalrous, on the other hand, are innovative not despite copying, but because they can mitigate copying to some extent (mostly via industry norms). Because typeface designs are both functional and non-rivalrous, they proliferate for reasons that allow both functional yet rivalrous expressive works, and non-functional and non-rivalrous expressive works, to proliferate. The advantage of several mechanisms working in collaboration is that no single one has to be especially powerful for the mechanisms as a whole to foster sufficient innovation. So, while the rest of this paper will analyze the forces that typefaces’ underlying functionality has unleashed, it will do so in this context.

B How Technology Affects Innovation in Typeface Design

Changes in technology have always influenced typeface designs, even before the advent of moveable type. Typefaces were conceived as a kind of superhuman, idealized handwriting, though one permitting “exact and fast replication.” But they were conceived of as a handwriting nonetheless, partly to make the printed word acceptable to a public accustomed to script hands. The German blackletter which Gutenberg imitated for his first typeface design, for instance, had developed in the 13th

219 For a discussion of this phenomenon in context of the fashion industry, see infra section III.D.1.
220 BRINGHURST, supra note 68, at 18–19. Italics were developed as a closer but less idealized imitation of handwriting. See LAWSON, supra note 136, at 84–91.
221 See Loxley, supra note 65, at 14 (Gutenberg Bible designed to look as though written, to be acceptable to the public).
The roman letters most of Europe would adopt to type soon after Gutenberg began printing originated as script, too. Because typeface designs are modeled to some extent on handwriting, the first typeface designs were partly dictated by the pens used to write the scripts on which the first types were based. Later changes in pen technologies therefore spurred the development of new designs. The change from flat-edged brush, then to the broad-nibbed pen, and finally to the quill in the 19th century all caused general changes in handwriting. The changing handwriting had to be reflected, stylized, and regularized in sub-


223 Loxley, supra note 65, at 27. Roman letters’ consistent size and width worked well in combination with other letters, especially in comparison to blackletter designs, which is why romans won out over blackletters.

224 See Bringhurst, supra note 68, at 130 (“This remarkable shift in type design [from more-or-less Renaissance designs to Romanticism and Neoclassicism]—like all structural shifts in type design—is the record of an underlying change in handwriting.”). In fact, the technologies of writing implements that pre-date the pen affected typeface designs. The roman letters inscribed on the Trajan column have long served as an aspirational model for majuscule letters. These letters were inscribed with a chisel. Chappell, supra note 83, at 24–27.

225 See Chappell, supra note 83, at 24–27, 198–99. For instance, Renaissance designs have the characteristics of “letters produced by a broadnib pen held in the right hand in comfortable and relaxed writing position.” Bringhurst, supra note 68, at 123. Beginning in the 18th century, the broadnib pen is replaced by the “pointed and flexible quill.” Id. at 130. “Used with restraint, it produces a Neoclassical flourish. Used with greater force, it produces a more dramatic and Romantic one.” Id. The ballpoint pen and felt-tip pen have also been cited as having affected handwriting in the 20th century, though changes in pen usage are no longer reflected in typeface designs. See Chappell, supra note 83, at 276–77.
sequent typefaces. This process continued when technologies changed in the dominant modes of written communication. When in the early 19th century all iron and machine driven printing presses (until then, printing presses were made from wood and hand driven) were invented, the dominant aesthetic of typefaces changed, too, reflecting the technology. Where before the more organic nature of printing presses were faithfully echoed in typefaces that imitated the natural motions of handwriting, iron presses led to typefaces made of more rigid, artificial characters, with great exaggerations between thick and thin letter strokes. And when computers became the dominant mode of writing, some typefaces embodied, even celebrated, the crude, digital aesthetic of early computer technology.

1 Technology Forces Innovation

The most straightforward place to see the ways in which technology can be responsible for motivating the creation of new typefaces is to look at how typefaces either had to be created to deal with the limitations of a particular technology, printing or otherwise. Type has been made from wood, lead, and electrons; type has been set by hand, phototype, and computer; type has been displayed on paper and screen. Every change in printing, typesetting, or typeface design technologies has required typefaces conforming to their limitations. But the

226 CHAPPELL, supra note 83, at 198-99. This is to say nothing of various script typefaces, which imitate an ideal calligraphic penmanship, or of modern digitized versions of a person’s handwriting. See LAWSON, supra note 136, at 349-66.
227 See CHAPPELL, supra note 83, at 193; see also HELLER, supra note 154, at 5 (new technologies for typesetting allowed for new aesthetic values).
228 See BAINES, supra note 38, at 94. It has long been suggested that typeface designs should be the aesthetic embodiment of the medium they are designed for. See, e.g., Loxley, supra note 65, at 238-39.
limitations of one technology are not the same as those of another, so designs for one technology do not always translate well, if at all, to the next. So when new technologies arise, new typefaces have to be made. Indeed, as one type critic has noted, “[p]erhaps typefaces in general work best when they have been specifically designed for the medium in which they are used.”

The special demands of the newspaper industry have been a particularly rich source of innovation. In fact, the demands of the newspaper industry in the 19th and early 20th century were possibly a greater influence on type design than any other aesthetic influence or technical compromise. Newspapers are the most profitable when they can be printed as quickly as possible on cheap paper. A typeface design has to account for this, and other, contingencies. For instance, high speed printing is susceptible to ink trapping, where ink seeps out of what are supposed to be its bounds, collecting especially in a letter’s counters. Typefaces commissioned for newspaper presses often have to compensate for this phenomena by containing notches at the junctions of letter strokes so that when ink is squeezed out it collects in these notches, rather than some-

231 LOXLEY, supra note 65, at 238.
232 See LAWSON, supra note 136, at 235. At the same time such design restrictions tooketh away, they also gaveth. The hard metal needed to withstand the rigors of newspaper printing also allowed characters to be composed of finer, more delicate, and sharper lines. See Talbot Baines Reed, Old and New Fashions in Typography, 77 INLAND PRINTER (1926), reprinted in TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 6, 14 (Steven Heller & Philip B. Meggs eds. 2001). Text faces meant strictly for book design are not generally subject to the same limitations as those meant for newspapers, and can be designed from more purely aesthetic principles. See Gerard Unger (trans. by Rudy VanderLans), Legible? 23 EMIGRE (1992), in LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 108, 113–114 (Michael Bierut et al. eds. 1994).
233 See BLACKWELL, supra note 135, at 78.
Another way to compensate for ink-trapping is to design a typeface that has no sharp angles in which ink is likely to be trapped and later smudged, and/or to design typefaces with relatively fat letters. The ubiquitous Times New Roman—commissioned by The London Times—was designed with ink trapping in mind. It was also designed to be compact, and readable at small sizes, thus saving on space, which saved on paper, and money. Though many of the problems that had to be designed around in the late 19th and early 20th century were eventually mitigated by advances in printing technologies, some problems will be intractable as long as newspapers are printed on paper. In 2007, The Wall Street Journal adopted a design meant to squeeze more text on each page without compromising legibility. In 2001 they commissioned a design for the tiny print of their financial tables. The result was partly influenced by the need "to correct for the blurring that takes place when thin ink hits cheap paper at high speed." The New York Times commissioned a typeface to compensate for the effects different atmospheric conditions have on printing in different regions its native.

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234 See id.
235 See LOXLEY, supra note 65, at 131.
236 See id. Commissions of this sort are not restricted to the newspaper industry. Sabon, a popular text typeface, was commissioned by German printers in the 1960s to be 5 percent narrower than the Garamond from which it was based. See Rudy VanderLans, Copping an Attitude, 38 EMIGRE (1996), available at http://www.emigre.com/Editorial.php?sect=1&id=2. In fact, the first italic was developed, in the 15th century, to save space and, therefore, money (italics are, among other things, squeezed versions of their roman counterpart). CAHALAN, supra note 93, at 14.
237 What happens when ink is pressed into paper has always been a consideration in type design. See BLACKWELL, supra note 135, at 96 (machine made paper has different technical requirements than handmade paper); LAWSON, supra note 136, at 123 (low paper quality in post-war Germany led to the creation of Palatino, a widely used typeface).
238 Postrel, supra note 504.
239 Id.
tional edition is printed. The goal, in other words, was to ensure that the newspaper looks the same no matter where its printed.240

Newspapers might not be printed on paper for much longer, but news and most other content will be rendered digitally. Though typefaces have always had to be designed with the demands of technical requirements,241 digitization has multiplied the factors a designer must consider. For a time, typefaces had to be designed within the confines of early digital technology’s severe limitations.242 For instance, early computer memory (and also printer and screen resolution) was very meager. For this reason, computer fonts could not have curves, but instead had to be built out of block-like units.243 Though those limitations have been overcome (and in retrospect were very ephemeral) and no longer have to be designed around, there is still one area where only relatively poor resolution is possible: screens.244 This is why, for instance, most typeface designed

240 See Hoefler & Frere-Jones, Mercury Text, http://www.typography.com/fonts/font_overview.php?productLineID=100017. The typeface developed for this project (the problem was solved by developing a typeface with different “grades,” each used under certain conditions) can also be used to compensate for typeface printed in different mediums. Id. Hoefler and Frere-Jones, who received each of the commissions mentioned above, are very well-known type-designers. Typeface designs often have a shortcoming when printed on or with a certain medium. See, e.g., Lawson, supra note 136, at 166.

241 See Blackwell, supra note 135, at 96 (high speed presses required different things of a typeface design than hand presses).

242 Heller, supra note 154, at 5-6; Loxley, supra note 65, at 209.

243 See Baines, supra note 38, at 69; Kinross, supra note 39, at 169 (Lucida, a still prevalent typeface, was designed for low resolution printer). There were other limitations, too. For instance, computer fonts could only include 256 characters. Hudson, supra note 229, at 26, 30-31.

specifically for the web are sans serif. The resolution of screens does not render the fine details of serifs very well at normal text sizes.245 Of course, the need for designs that work sensibly on screen is a necessity not just for computers, but for television and cell phones, too.246 There are even digital typeface companies that specialize in creating digital fonts for digital hardware.247

Design constraints and quirks are not only a product of digitization: they have been common to every major change in printing technology. The development of typesetting machines at the end of the 19th century was the first real change in the technology of setting text since the invention of type. Though these machines made it cheaper and faster to set text, they had their own quirks, each with their own set of design restrictions.248 For example, the Linotype machine could not kern249 letter combinations. Typefaces made for this machine had to account for this deficiency by, for instance, being design with relatively large letter-spacing.250 Phototype, the other significant typesetting technology (besides digitization) to have emerged, had its own quirks that had to be designed around, and designed for, as well.251 For one, it required typefaces that

245 See Loxley, supra note 65, at 238.
246 See Elizabeth Woyke, Android’s Very Own Font, Forbes.com (Sept. 26, 2008), http://www.forbes.com/2008/09/25/font-android-g1-tech-wire-cx_ew_0926font (describing the two year process to create a typeface family for the smart phone built to run Google’s Android mobile operating system); Press Release, Monotype Imaging, Monotype Imaging Announces Fonts for Verizon Wireless Mobile User Interfaces (Jan. 15, 2008) (Monotype creating new typeface family for Verizon, meant to optimize legibility on a small screen at both large and small sizes).
247 See Woyke, supra note 246.
248 See Lawson, supra note 136, at 156 (when typefaces designed for machine typesetting are translated into digital type, the restrictions are lifted).
249 See supra, note 187.
250 See Loxley, supra note 65, at 201-05.
251 See Bringhurst, supra note 68, at 139. The change from
were more solid than their counterpart in another medium. Otherwise, the typeface would look spindly when printed. When machine text setting overlapped with phototypesetting (which it did for about 30 years between the advent of phototype and digitization), typefaces were often released in two versions, a “metal” version, and a phototype version.

2 At the Same Time, Technology Makes Innovation Possible

Of course, new technologies don’t just impose limitations, they also open up new possibilities. For instance, refinements in printing and paper technology in the 18th century meant that less pressure had to be applied to type. More delicate designs, including hairline serifs, were possible. These possibilities were eventually embodied in new designs, and indeed a whole new aesthetic. And while typesetting machines had certain limitations that had to be designed for, many typefaces, especially historical revivals, would not have been made in the first place if not for their invention. It may be true that creating proprietary historical revivals, or any typeface for that matter, was only a means to sell more machines, but innovation often has crass roots. Typefaces are hardly ever designed for purely aesthetic reasons.

machine typesetting to phototypesetting required the The London Times to replace Times New Roman with Times Europa, a typeface designed for the latter method of typesetting. LAWSON, supra note 136, at 276.

252 LAWSON, supra note 136, at 143. More than anything, this is because “letters designed to be printed in three dimensions [that is, pressed onto the printed page] look weaker when printed in two [electrochemically transferred to paper].” BRINGHURST, supra note 68, at 139. Galliard, by famed designer Matthew Carter, was the first typeface designed especially for phototype technology. LAWSON, supra note 136, at 141.

253 BLACKWELL, supra note 135, at 104.

254 CAHALAN, supra note 93, at 15.

255 Id.

256 See BAINES, supra note 38, at 58; BLACKWELL, supra note 135, at 58–59.

257 See BLACKWELL, supra note 135, at 26 (noting that typesetting machines required proprietary typefaces).
sons; design is inseparable from technology and commerce. Whatever the motivation, typesetting machines were the first typesetting technology since printing began to be the spur for new typefaces. Similarly, phototypesetting created its own rush of new designs, beginning especially in the 1970s. For one, phototype allowed for narrower (even overlapping) letter spacing and shorter descenders (the tail of a “y” for instance) while still retaining legibility. Typefaces were inevitably designed accordingly; indeed, for a time in the 1970s, much advertising copy exhibited the faddish aesthetic made possible by phototype.

The digitization of typeface design and typesetting is the first technology to undoubtedly be responsible for more designs because of the possibilities it opens than the limitations it imposes. I have mentioned the democratization of the type design industry that made it possible for more people to design more type, but digitization has had other curious effects. The smaller foundries that digitization permits tend to be run by designers. They are not just less risk-averse than the professional managers

258 See Kinross, supra note 39, at 171.
259 Chappell, supra note 83, at 249 (Monotype and Linotype commissioned new designs, and revivals, for their machines to satisfy the market). The Monotype typesetting machine allowed, in one typeface, romans to be combined with italics. This was a benefit of the machine designers created new typefaces to take advantage of. Bringhurst, supra note 68, at 140. A typeface called Imprint, designed in 1913, was the first specifically for machine setting. Blackwell, supra note 135, at 38. Other more niche, artisan technologies, like copperplate engraving, lithography, and wood type, also allowed new designs that had previously been impossible, or at least impractical. Tobias Frere-Jones, Experiments in Type Design, AIGA Boston J. (1999), reprinted in Texts on Type: Critical Writings on Typography 228, 17 (Steven Heller & Philip B. Meggs eds. 2001).
260 Bringhurst, supra note 68, at 139–40.
261 Loxley, supra note 65, at 201–06.
262 See David Berlow, So You Want to Create Your Own Typeface?, Folio (Jan. 1990), http://findarticles.com/p/articles/mi_m3065/is_n1_v19/ai_8226607.
that usually run large, established foundries, they are also closer to newer design theory taught in universities and design schools, and closer to the avant-garde design community.\textsuperscript{263} Combine this with the low cost of digital distribution—where typefaces which it would not have been economical to release in the past (a prototype version or an experiment, for instance) now can be\textsuperscript{264}—and these foundries are much more naturally inclined to be innovative. Digitization has also meant that for the first time in history typeface designers are completely liberated from any concern for designing within the confines of proprietary typesetting systems like the Monotype and Linotype machines or, rather, from the concerns of the manufacturers of these systems, for whom they often worked.\textsuperscript{265} Designers now create typefaces at their whim, free from both the practical constraints of proprietary systems, and the kinds of business calculations and conservative professionalism they engender.\textsuperscript{266}

But the democratization of the industry and its ancillary effects is not the only consequence of digitization that leads to more typeface designs. For one, computers have raised the awareness of typefaces in ordinary consumers—who had previously been somewhat oblivious to typefaces\textsuperscript{267}—increasing the demand among them.\textsuperscript{268} For another, just as revivals were made for typesetting machines and then phototype systems, digital revivals are also made; often these are revivals of typefaces already revived.

\textsuperscript{263} See Heller, supra note 154, at 6; VanderLans, supra note 236.
\textsuperscript{264} See Frere-Jones, supra note 259, at 17.
\textsuperscript{265} See generally King, supra note 123. This occurred around 1988, when both Postscript, a page description language, and Fontographer, a typeface design program, were available. These allowed the creation and use of any computer font with any combination of personal computer and output device.
\textsuperscript{266} See id.
\textsuperscript{267} Peter Wayner, Down With Helvetica: Design Your Own Font, N.Y. TIMES, June 26, 2008, at C6.
\textsuperscript{268} See Berlow, supra note 262.
for either machine or phototype text setting.\textsuperscript{269} But even re-revivals are not slavish copies of an original revival. Often, because of the limitations of prior technologies, digitization provides the first chance to faithfully reproduce an historic design.\textsuperscript{270} Furthermore, digitized versions of a metal type or phototype version do not have to account for the printing systems for which the originals were designed. For instance, Claude Garamond’s original punches\textsuperscript{271} on which Adobe based their definitive digitized Garamond are cut thinner than the results of printing from Claude Garamond’s punches would suggest.\textsuperscript{272} Garamond cut his type thinner than it appears on paper to account for the amount ink spreads when it is pressed by type.\textsuperscript{273} A serious revival has to consider that modern printing methods do not press type into paper in the same way as 16th century printing methods. If it does not, slavish copies can end up being poor imitations.\textsuperscript{274} Because they are not slavish copies, they count as new expressive works.

\begin{footnotes}
\item[269] See BRINGHURST, supra note 68, at 140 (noting how most revivals have passed through the “stylistic filters” of machine type and phototype being cut for before digitization); CHAPPELL, supra note 83, at 57-58 (Janson, a widely used text typeface, was originally made in the 17th century; it was adapted for the Linotype machine in 1954, and digitized 40 years after that).
\item[270] HELLER, supra note 153, at 185. Historical typefaces, especially as they might appear as printed, can have many irregularities endemic to the design itself, or the result of “uneven casting, bad inking, and rough press work.” Reed, supra note 232, at 9. A digitized version can choose to keep these irregularities for effect or, as is more often the case, contemporize and normalize them. See Karrie Jacobs, An Existential Guide to Type, Metropolis (1988), reprinted in Texts on Type: Critical Writings on Typography 21, 23-24 (Steven Heller & Philip B. Meggs eds. 2001).
\item[271] See supra note 147 for a definition of “punch.”
\item[272] Kelly, supra note 84, at 56-58.
\item[273] Id. An interesting question this raises is what is the true typeface, the one embodied in physical type, or the printed result? See Frere-Jones, supra note 259, at 230-31.
\item[274] See CAHALAN, supra note 93, at 37.
\end{footnotes}
Despite the oft lamented denigration of type design standards attributed to the digitization of the design process, digitization has lead to new technological tools that can, and do, increase the quality of typefaces. When these tools were new, no existing typefaces employed them. Typefaces therefore have to be created when consumers demand that which they know is possible.\textsuperscript{275} OpenType, for instance, is a cross-platform font file format developed by Adobe and Microsoft. The first OpenType computer fonts were released around 2001. Perhaps the most important feature of the OpenType format is that it can contain, in one package, a character set large enough to encompass the whole range of characters and symbols, in any language, a typographer or graphic designer needs when setting text.\textsuperscript{276} These characters include the usual majuscule and miniscule roman letters and numbers, but also, for instance, Cyrillic and Greek alphabets; true small caps, superscripts, fractions, and subscripts; ligatures, old style numerals, alternative swashes, accented letters, punctuation, and symbols.\textsuperscript{277} Moreover, each alphabet may come in as many as five optical sizes, each of those coming in at least

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\textsuperscript{275} See Berry, supra note 278, at 35 (OpenType “promises a revolution, or at least a speeded-up revolution, in mass typography”).
\textsuperscript{276} Adobe, OpenType User Guide for Adobe Fonts 2 (2007); Kinross, supra note 39, at 172. The predominant font file format before OpenType limited character sets to 256. If a user needed to access more “expert” characters, he needed to have more than one computer font of the typeface family installed, and juggle between them.
\textsuperscript{277} Small caps are often “faked” by shrinking a regular majuscule letter. This, however, results in a small cap that is not in proportion. Ligatures are two or more letters combined into one. “f” followed by “i” are commonly formed into a ligature, since the dot of the “i” will form an unsightly overlap because it is too close or overlaps with the end of the “f.” See generally Adobe, Typography Primer (2000). Before OpenType, it could still take a year or two, especially if the typeface included many sizes and weights. See Richard Sine, Type Minds, METRO, Aug. 1996, http://www.metroactive.com/papers/metro/08.08.96/cover/fonts1-9632.html.
\end{flushright}
italic and bold weights, and often several others (light, semi-bold, etc.). This, and other typographic refinements OpenType makes possible, means that new typefaces have to be created to satisfy market demand for advanced typographic features.

Among the “world of possibilities” opened up for typeface designers, consider the optical sizes mentioned above. In the 16th century, when type was made by hand, a type founder obviously had to physically make type for each font size he wished to have on hand. As long as he had to make new type for every size, he may as well make type that compensates for the effects of shrinking (which can make a typeface look too thin) or enlarging (which can make a typeface look to thick) type beyond a certain point. With the advent of machine typesetting (where the machine casts lines of type from single-sized masters) and phototypesetting, the practice of making different optical sizes ceased because there was no practical way to use them when typesetting. Though it could have been revived by digitization, it was not feasible to do so before the development of OpenType. For one, computer font file formats could not contain, in a single file, all the characters necessary to have more than one optical size. Since it’s very easy to just let software enlarge or shrink a computer font to get a desired font size, there was not sufficient incentive to work around the barrier a limited character set imposed. With that barrier gone, however, typeface designers can, mostly with the aid of interpolation (where font editors can automatically make a character thicker or

278 See Adobe, note 276, at 2 (mentioning, cryptically, that OpenType fonts “may include…layout features to provide richer linguistic support and advanced typographic control”); John D. Berry, United States of America, in ASSOCIATION TYPOGRAPHIQUE INTERNATIONALE REPORTS OF THE COUNTRY DELEGATES 2000-2001 35, 35 (2001) (mentioning the “typographic refinements” made possible by OpenType).

279 Adobe, supra note 186, at 5 (comments of Robert Slimbach, Adobe type designer).
thinner, for instance), create typefaces with multiple optical sizes. When they can, customers come to expect the “more balanced and easy to read” result, increasing the demand for new typefaces with optical sizes included in their character set, not to mention the generally higher standards now possible.

Technology, then, has been one of the factors that has given the typeface design industry incentives to create new typefaces, even without copyright protection. When new technologies constrain typefaces, and if no typefaces exist within those constraints, new ones have to be created. Otherwise, there would be no typefaces for the emergent typesetting system or medium. Technology also makes new typefaces possible. The market demands—and more importantly pays for—new designs, without the need for any copyright incentive to spur innovation.

C Industry Norms

Technology and its consequences, not to mention some of the mechanisms discussed below, allow typefaces to proliferate despite plagiarism of designs, or piracy of computer fonts. Norms within the industry, however, work to mitigate plagiarism among it, helping to offset the theoretical loss of incentive the industry has to create new designs.

1 General Theories of Norms Applicable to Typeface Design

A good definition of a norm is that it is a “rule governing an individual’s behavior that is di•usely enforced by…social sanctions.” The field of norms is large and unsettled.

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280 Id. at 11–12 (comments of Robert Slimbach).
281 See id. at 4–5 (comments of Robert Slimbach).
283 Michael Hechter & Karl-Dieter Opp, Introduction to SOCIAL NORMS xi, xii (Michael Hechter & Karl-Dieter Opp eds. 2001); see Ernst Fehr and Urs Fishbacher, Social
Furthermore, norms will never be able to wholly replace laws, intellectual property or otherwise, in every, or even most, instances. They have their downsides. There are, however, some generalizations widely agreed on in the field that are broadly applicable to this topic.

The first generalization is on the emergence of norms. Norms emerge for intuitive reasons. The need for norms arise when behavior has good or bad consequences on other people and when legal sanctions are not available, or when transaction costs for enforcing legal sanctions are too high, or are too little understood, to be expedient. Norms will emerge from this need when a group has some goal and they believe a norm can help them attain that goal. Norms will be successful and will perpetuate as long as the benefits to the group are high and the costs to enforce the norm are low.

The next generalization is that there has to be some way to monitor whether others in a group are violating norms, and there has to be at least some members of a group willing to serve as monitors. Monitoring serves two purposes. Most obviously, it lets those who enforce norms know when to enforce them and who to enforce them against. But it also serves as a way for a group or a member of a group to de-
termine the level of compliance with the governing norms. People largely cooperate conditionally: they will only comply with governing norms when they are assured that other members of the group are also complying (not free-riding, in other words) at a level above a certain threshold. Monitoring, and communication among a group about the results of monitoring, serves to alert members of a group about whether they should continue to observe the group’s norms. This fact largely explains what might otherwise be a paradox. If I can rely on other members of my group to monitor and sanction transgressors, why shouldn’t I free-ride on somebody else’s monitoring? Because my interest is not merely in punishment, but in determining whether it is rational (that is, I don’t want to be a sucker) for me to continue to adhere to the group’s norms. The paradox can also be explained by the prestige monitors are also granted when they catch cheaters.

This prestige offsets the “costs” of monitoring. As its definition reveals, the existence and efficacy of norms depends on a group’s ability to sanction violators. Fortunately, in the context of public goods, free-riding in violation of prevailing norms tends to elicit strong reactions. To the extent that free-riders are discovered, they are likely to also be pun-

293 See Ostrom, supra note 26, at 95-97.
294 See id. at 96.
295 See Fehr, supra note 283, at 993 (sanctioning increases levels of cooperation in running community resource properties).
ished, even if sanctioning is costly.\footnote{Fehr, supra note 291, at 993.} Sanctioning can take several forms, but it generally serves to either lessen a violator’s future opportunities in the group or to take away whatever benefit was gained by a violator’s attempt to free-ride. The latter is self-explanatory, but an example might be destroying a farmer’s crops if he has been caught appropriating more water than his share. The former can be accomplished via negative gossip (irrespective of whether the gossip is true or untrue) that signals to other members of a group that a violator is not someone with whom to conduct transactions.\footnote{See ERIC POSNER, LAW AND SOCIAL NORMS 19–27 (2000).} It can also be accomplished either by inflicting psychic harm so that the violator retracts from opportunities the group would have afforded him.\footnote{See Richard H. McAdams, A Focal Point Theory of Expressive Law, 86 Va. L. Rev. 1649, 1650–51 (2000).} Of course, a group can banish a violator outright.\footnote{See Greif et al., Coordination, Commitment, and Enforcement—The Case of the Merchant Guild, 102 J. Pol. Econ 745, 745–776 (1994) (merchants refusing to trade with any merchant who has cheated another).} Sanctioning can also serve to assure members of a group that free-riders will not have an advantage over adherents to the group’s norms, and therefore that adhering to the norms is not foolish.\footnote{See generally Fehr, supra note 283.}

The last generalization is that norms work best among smaller groups.\footnote{See, e.g., Opp, supra note 288, at 240.} The reasons for this, too, are largely intuitive. For one, the logistics of monitoring and enforcement are simplified and cheaper.\footnote{See Christine Horne, Sociological Perspectives on the Emergence of Social Norms, in SOCIAL NORMS 3, 20 (Michael Hechter & Karl-Dieter Opp eds. 2001) (the ability of a group to organize itself is important in the enforcement of norms).} For another, smaller groups are closer-knit, so its members are more likely to have “credible and reciprocal prospects” to sanction other members and to have better information on them and all their ac-
Because of personal ties in the group, that information “circulates easily.” In other words, it’s harder to get away with anything when everyone knows everyone else’s business. Personal ties also make monitoring and enforcement more efficient, effective, and likely, and make sanctions that exploit the desire for prestige and of others’ esteem more effective.

I would further suggest that the Internet has given groups that otherwise would not have the characteristics of small, close-knit groups the ability to operate as if they had, especially when what’s being monitored are public goods disseminated over the Internet or whose dissemination can be discovered over the Internet. The Internet simplifies and cheapens the logistics of monitoring and enforcement. It makes the threat of an omniscient group—which is essentially what a small group is or purports to be—more credible. Information no longer has to be remembered or transmitted by members with a special status or knowledge.

304 Id. at 178–79.
305 Cf. Lior Jacob Strahilevitz, Reputation Nation: Law in an Era of Ubiquitous Personal Information, 102 NW. U. L. REV. 1667 (2008) (examining how information and networking technologies allow for the spread of reputation-related personal information, and how this could and should affect certain areas of law).
308 See OSTROM, supra note 26, at 95–96. Here Ostrom notes that one feature of community resource properties is that they can be successfully monitored at very little cost: monitoring is a by-product of using the commons. See also Schultz, supra note 290, at 717. Here is an example where monitoring occurs by moderators on e-mail lists and discussion boards, and website administrators. Enforcement by banishment, via blocked I.P. addresses for instance, is also trivial.
309 See ELICKSON, supra note 303, at 180–81.
310 See id. at 232–33.
transgressions are there for all members of a group to see. The Internet also means that members of a group wishing to enforce its norms do not have to be geographically close to maintain the personal ties that are so important.\textsuperscript{311}

2 Industry Norms in Other Open Areas of IP Law

Magic, culinary arts, and stand-up comedy—each an industry in intellectual property law’s open areas\textsuperscript{312}—use norms within their respective industry to mitigate the copying of their expressive works. As a result, these industries innovate and thrive.\textsuperscript{313} By magic, I am not referring to commonly known novelty tricks, but the kind that might be performed by a well-known magician—David Copperfield making the Statue of Liberty disappear might be a cheesy, but apt, example.\textsuperscript{314} While the threat of a magician stealing and performing another’s trick is a concern, the bigger concern is that a trick’s secret will be publicly exposed, destroying its value.\textsuperscript{315} At the same time, however, “innovation [in magic]...is often cumulative.”\textsuperscript{316} So the industry, to be innovative, has had to devise a

\begin{itemize}
\item \textsuperscript{311} See OLSON, supra note 4, at 52-62.
\item \textsuperscript{312} See, e.g., Lambing v. Godiva Chocolatier, 142 F.3d 434 (6th Cir. 1998) (recipes uncopyrightable); Publ’ns Int’l, Ltd. v. Meredith Corp., 88 F.3d 473 (7th Cir. 1996) (same).
\item \textsuperscript{313} Christopher J. Buccafusco, On the Legal Consequences of Sauces: Should Thomas Keller’s Recipes Be Per Se Copyrightable?, 24 CARDOZO ARTS & ENT. L.J. 1121, 1150 (2007) (the culinary arts are innovative without intellectual property protection); Loshin, supra note 203, at 7, 26 (there is significant innovation in magic despite little intellectual property protection); Oliar, supra note 34, at 1793 (norms at work in stand-up comedy are sufficient to give performers incentive to create new routines).
\item \textsuperscript{314} See Loshin, supra note 203, at 27-28 (labeling this “proprietary magic”).
\item \textsuperscript{315} See id. at 13, 18. In this regard, a magic trick is not a great example of a public good. The idea of a trick, being just information, is certainly non-excludable, but it is rivalrous. See id. 18 (noting that when a magic trick is exposed, its value is destroyed).
\item \textsuperscript{316} Id. at 8.
\end{itemize}
system that both allows magicians to build on previous works, but prevents a magician’s secrets from being copied and exposed. Deciding when to share a trick’s methods so that they can be the basis of other tricks is up to the originating magician. He is likely to share it if he can trust that the methods will not spread outside those he has shared them with. Keeping tricks secret among the magic community is effectively accomplished through industry norms. Access to the upper-echelons of secrets is restricted to those who have gone through a lengthy apprenticeship that both demonstrates the apprentice’s trustworthiness and commitment, and helps them internalize the community’s norms. These norms largely prohibit the stealing of a trick after it has been invented. 

Sanctioning mechanisms punish, to good effect, violators, who might find themselves unable to advertise in trade journals, or unable to find a venue in which to perform. Chefs (those that might work at the kind of high-end restaurants warranting Michelin stars) establish and enforce norms, which have the general goal of crediting innovators, punishing plagiarists, and perpetuating a culture of sharing which allows new recipes to be created from old ones. But chefs can really only en-

317 See id. at 7 (describing how a magician will share a trick he has created with the magic community after performing it exclusively for a while). Money and prestige can be gained by sharing. Id. at 30.
318 Id. at 28–29. The first person to publish or prominently perform a trick gets credit for inventing it. People are encouraged to publish improvements and new versions of previously shared work, but derivative works should acknowledge and credit the original. These norms function to encourage innovation and sharing. Considerable prestige attaches to the inventors and “teachers” of the magic community. Id. at 29.
319 Id. at 32.
320 See Buccafusco, supra note 313, at 1150–55. Chefs generally do not want copyright protection because it would impede the norm of sharing. Id. at 1150–54. Also, borrowing is often tolerated because a certain amount of traditional dishes are expected. Id. at 1147; see also id. at 1147–48. (the history of cooking is one of "large-scale borrowing").
force these norms by exploiting other chefs’ desire to maintain the lines of sharing and, therefore, future sources of possible innovation: violators will be refused secrets and even ostracized. \(^{321}\) These means are effective because chefs at this level form a very “tight-knit” community. \(^{322}\) The salient role, however, is the role patrons play. Patrons who frequent restaurants at this level pay close attention to and are influenced by industry insiders and cognoscenti. \(^{323}\) Patrons here are much more interested in being cooked for by a certain chef than being served a certain dish. \(^{324}\) If it were not for the role of patrons, it seems a chef would have a strong incentive to plagiarize successful recipes if he did not mind being ostracized from the community. It’s the patrons who really have the ability to hurt a transgressor.

In vaudeville, stand-up comedy did not have a strong norm against joke-stealing. But with the advent of radio, television, and the Internet a stolen joke, like in magic, can destroy its value. \(^{325}\) Modern stand-up comedy therefore manages its intellectual property through a “strict injunction,” enforced by industry norms, “against joke-stealing.” \(^{326}\) For comedians, monitoring for violators is fairly easy since most stand-up bills include several come-

\(^{321}\) Id. at 1154–55.
\(^{322}\) Id. at 1154.
\(^{323}\) See id. at 1154–55. This suggests that these kinds of norms would only operate in upscale restaurants. Patrons of Chili’s are never going to make a stink if Applebee’s or TGI Friday’s also decides to deep-fry a giant battered onion and serve it as an appetizer.
\(^{324}\) See Posting of Christopher Buccafusco to The University of Chicago Law School Faculty Blog, The Negative Space of Copyright, http://uchicagolaw.typepad.com/faculty/2006/11/the_negative_sp.html (Nov. 16, 2006, 10:03 AM).
\(^{325}\) See Oliar, supra note 34, at 1860.
\(^{326}\) Id. at 1809–12. The norm, in fact, is so strong that one comedian performing a similar joke to another who performed the joke first might drop that joke from his act, even if the late-comer to the joke independently created it. Id. at 1826–27. There is a lesser norm against stealing ideas for a joke. Id. at 1821–23.
Sanctioning violators can take a variety of flavors, from negative gossip and the spread of misappropriation allegations, to refusing to work with a comedian who has a reputation of theft, to physical threats and violence. In the industry, the norm against joke-stealing is very effective. Accusations of stealing can ruin a career, not only by damaging a reputation (though comedians very much value the respect of their peers), but also by costing the accused work and bookings. Through this system of norms, the industry is able to provide comedians with enough incentive to create new material.

Governments have mostly ignored the ways in which norms help to manage the problems of public goods when governments intervene in managing them, whether those public goods come in the form of expressive works like magic, cuisine, or stand-up comedy, or whether they come as common-pool resources (CPR), like shared water supplies or grazing lands. Tailoring a copyright regime according to the incentive needed to create a sufficient number of new works seems like a morass. But industries that can successfully mitigate intra-industry copying might be the most likely candidate to at least consider tailoring. In the first place, industries that currently do use norms to manage their expressive works should not then have formal rules imposed on them. Formal rules might destroy successfully operating norms-

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327 Id. at 1812–14. Comedians will monitor on behalf of other comedians too, not just for themselves. Id. at 1815–21.
328 Id. at 1815–21. There are other norms that “regulate authorship, initial ownership, transfer, attribution, and compulsory licensing of jokes, as well as several norms that limit joke-owners’ rights.” Id.
329 Id. at 1815–21. If a nightclub owner will not, on his own initiative, refuse to book a comedian with a bad reputation, other comedians on the same bill might refuse to perform. Id.
330 Id. at 1793.
331 See Ostrom, supra note 26, at 21–22. Common pool resources are non-excludable, but are rivalrous. Id. at 24.
based regimes.\textsuperscript{332} Formal rules could also discourage norms that would otherwise have organically developed, without government intervention.\textsuperscript{333} When considering how to handle industries that could use norms to mitigate copying, the first thing to do, obviously, is to create a theoretical model that can identify those industries that would be amenable to being managed through norms and, likewise, those that would not.\textsuperscript{334} This requires empirical evidence on how industries operate without intellectual property, not theoretical models derived from theoretical predictions.\textsuperscript{335}

Acknowledging and studying the roles that norms can play—rather than mechanisms that naked economic models would predict—in managing intellectual property is important. Some work has been done on how norms successfully manage CPRs without external government control or by

\begin{itemize}
\item \textsuperscript{332} Oliar, \textit{supra} note 34, at 49 (externally imposed rules might be seen as illegitimate). Ideally, formal legal rules would complement norms for \textit{efficiency's sake}, rather than working sometimes at odds with them. See Stephen Panther, \textit{Non-Legal Sanctions}, in \textit{1 Encyclopedia of Law and Economics} 999, 1017-1020 (Bouckaert & De Geest eds., 2000) (summarizing some work in this area).
\item \textsuperscript{334} Cf. Ostrom, \textit{supra} note 26, at 24-25, 183 (calling for theoretical models that would predict when a CPR could be managed without government intervention or divvying them up into private property).
\item \textsuperscript{335} Cf. \textit{id.} at 24-25 (noting the same in the context of CPRs); \textit{id.} at 14 (“institutional arrangements do not work in the field as they do in abstract models”). Ostrom identifies basic design principles inherent to all successful, long-enduring CPRs, postulating that most of these would have to be present in any other CPR that wishes to be successful. These include clearly defined boundaries; congruence between appropriation and provision rules and local conditions; collective choice arrangements (most individuals affected by the operational rules can participate in modifying the operational rules); monitoring provisions, including ensuring that monitors are participants themselves; graduated sanctions; and \textit{efficient conflict resolution mechanisms}. \textit{Id.} at 88-91.
\end{itemize}
divvying public goods into private property, as Hardin’s *The Tragedy of the Commons* predicts is necessary to prevent the overuse and free-riding supposedly endemic to CPRs. Landes and Posner list mechanisms besides intellectual property laws whose result would be to offer authors enough incentive to create new expressive works. But Landes and Posner are ultimately dismissive of the importance of these mechanisms, claiming that strong intellectual property laws are still needed to correct other market deficiencies or quirks that would occur without them. But what if their list is not complete? One shortcoming of Law and Economics theory is that, as Robert Ellickson points out in *Order Without Law*, it is diametrically opposed to Law and Society theory and therefore somewhat naturally adverse or blind to mechanisms Law and Society theory might predict that would also limit copying. One such mechanism, of course, is social or industry norms. By not acknowledging the roles that norms can play Landes and Posner have not considered whether norms would correct the market deficiencies they believe still make strong and uniform intellectual property laws necessary. Without empirical evidence on norms, the Law and Economics theoretical model by itself would temper any ideas about tailoring.

3 Norms in the Type Design Industry

There are two basic norms in the type design

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336 See id. at 58–101 (giving several examples of successful, long-enduring CPRs).
338 They include such things as the first-mover advantage, imperfect copies, licensing, technological barriers, and low costs of creation and distribution. See Landes, *supra* note 2, at 41–50. A non-exhaustive list could further include price discrimination, advertising. See Carrier, *supra* note 10, at 36–37.
339 See Landes, *supra* note 2, at 50–51.
340 Ellickson, *supra* note 303, at 6–8, 137; see Udéhn, *supra* note 292, at 251–53 (there may be reasons people do not free-ride on public goods that economic analysis or game theory cannot predict).
industry. One is against verbatim copies, as one might predict. However, outside of file-sharing or digitally made clones, exact copies of typeface designs are actually relatively uncommon, even among knockoffs, though the differences from the original can be trivial. For example, Arial, Microsoft’s version of Helvetica, is not exactly the same as the original, though most people don’t notice the difference.\(^\text{341}\) Consider, too, the practice of making revivals of historical designs, which began in the late 19th and early 20th century when the manufacturers of composition machines needed designs for text type, and continues today.\(^\text{342}\) Reviving historical designs—mostly those created between the 15th and 17th centuries—\(^\text{343}\) is generally considered acceptable. It’s a good thing, too. Revivals are “the key theme of” modern typography,\(^\text{344}\) and borrowing elements from existing designs has always been an important and accepted part of typeface design.\(^\text{345}\) Examples abound: Times New Roman is a revival of a 16th century typeface;\(^\text{346}\) almost everyone offers some version of Garamond, an early 16th century design;\(^\text{347}\) and so on.\(^\text{348}\) But


\(^{342}\) LAMSON, supra note 136, at 54–55, 74.

\(^{343}\) See generally id.

\(^{344}\) BLACKWELL, supra note 135, at 36.

\(^{345}\) See, e.g., VanderLans, supra note 236.

\(^{346}\) BLACKWELL, supra note 135, at 76–78.

\(^{347}\) See Loxley, supra note 65, at 40–42. Complicating matters is that many versions are based on designs mistakenly attributed to Garamond, though they were actually by his associates, or are even based on prior recreations of designs mistakenly attributed to Garamond. The lineage of Garamond was finally cleared up, but today there are dozens of typefaces with the name, though they may only very loosely resemble each other or the original. See LAMSON, supra note 136, at 129–40, 147–50, 151–52, 158. Only a few are faithful recreations of the original, and many reflect more the era and region in which they were made than the original itself.
what constitutes an acceptable historical revival, and an unacceptable copy? One designer has published an eight-level classification system for determining how much "inspiration" was taken from an historical design, and whether the result is acceptable.\footnote{BLAKEY, supra note 135, at 39.} In the classification scheme, knocko\-s are the only classification that do not rate as a proper revival; they only seek to capitalize on commercial success and have no added originality, and therefore violate the norm against verbatim copying.\footnote{See, e.g., CHAPPELL, supra note 83, at 232 (Centaur and Doves roman, two designs of the handcraft press movement still used today, are based on 16th century designs); LAWSON, supra note 136, at 262 (revivals of art nouveau designs); Loxley, supra note 65, at 67; Loxley, supra note 65, at 36–37 (digital recreations of historical design).} But what might otherwise be a knocko\- is acceptable when it has been well-researched, and improves, either "technically, aesthetically, [or] functionally," the original.\footnote{See Downer, supra note 147. The classification system is divided into two categories: one covering designs that "closely follow the original," and one for designs that "loosely follow the original." Classifications include Revivals/Recuttings/Reclamations, Knockos/Clones/Counterfeits, Caricatures/Parodies/Burlesques, etc.}

When it comes to contemporary designs, this schema holds, but requires, for legitimacy, that when one design borrows from another that it either includes its own original elements, alters the borrowed elements creatively, or combines borrowed elements in an original way.\footnote{See LESLIE CABARGA, LOGO, FONT, AND LETTERING BIBLE: A COMPREHENSIVE GUIDE TO THE DESIGN, CONSTRUCTION AND USAGE OF ALPHABETS AND SYMBOLS 38 (2004) (noting the norm against verbatim copying).} Because designs are rarely verbatim cop-

\footnote{Posting of billtroop to Typophile, Get Those Fonts Copyrighted!, http://typophile.com/node/50470 (Oct. 15, 2008, 4:53 AM) [hereinafter billtroop].}
ies, and because it is acceptable to copy from even contemporary designs as long as certain conditions are met, a second norm developed: one against plagiarism where, as the word suggests, the offense is not in using someone else’s ideas, but in not crediting them. Here, the norm against verbatim copying of course holds, but it also adds to it that any borrowed elements in a design be credited. As much as anything, this norm is the result of both the impossibility of creating wholly un-derivative designs, and the market reality that typefaces that are only subtly di•erent might actually satisfy di•erent demands.

Norms extend not just to independent designers, but to graphic designers, who form the biggest market for typeface designs, as well. Among the graphic design community, it’s common to download pirated computer fonts as a way to “sample” them (in e•ect building up a library from which to choose). Sometimes these sampled computer fonts are even shown to a client as part of a design proposal, or as a choice among designs. If, however, that computer font is ever used for a commercial job, the graphic designer will buy a version of the computer font he has sampled.

353 See VanderLans, supra note 236; billtroop, supra note 351 (noting that Font Bureau, a foundry that mostly licenses computer fonts from independent designers, produces “numberless superb knock-o•s,” which is accept-able because “each one is impeccably researched and executed, and each one is impeccably sourced”); Downer, supra note 147.
355 See Simonson posting, supra note 394 (consumers typically do not buy computer fonts; graphic designers do).
358 See Discussion thread of Fontleech, Weekend Discus-sion Question 6: Piracy,
fonts will not be used, or so the norm goes.359

The generalized theory of norms described above360 predicts that independent typeface designers should have some success in reducing copying and plagiarism among other independent designers. As noted, the industry is relatively small. Since computer fonts are released on the Internet, the designs are easy to monitor for copying or plagiarism and, to the extent that designers are geographically dispersed, the Internet facilitates monitoring and enforcement. This is not to suggest that there hasn’t always been monitoring. It’s just that the same force—the Internet—has both created the independent designer and the means by which he can enforce the norms of other designers. Not only that, but the Internet creates permanent record of transgressions,361 so that no monitor has to be charged with the responsibility of keeping tabs, when sanctioning is warranted, of who has been adhering to norms and who has not. The memory is built into the system.

The modern business model in the industry is, in part, a result of technologies that facilitated the copying of designs. When phototype first made copying easier, the industry reorganized itself so that the large foundries became more like agencies—accepting and distributing designs from independent designers—than foundries employing a salaried design sta•.362 When foundries operated under the old
model, monitoring for violations of norms was
hard, and enforcing norms even harder. Con-
sider, for instance, a dispute among large
foundries in the mid to late 1920s, where one
foundry accused the other of copying many of
its designs. The dispute was very public and
nasty, with competing articles in trade jour-
nals, letters back and forth among company ex-
cutives, and lots of rebukes and threats.363
Yet not a single design was retracted by the
accused. This may have partly been because
there was no easy way for the design community
as a whole to compare the designs of the two
firms; partly it may have been because, even if
the designs were blatant copies, the accused
just had too much invested to give in. The com-
panies in this era that made type primarily to
use in the lucrative typesetting machines they
manufactured364 would have been even less likely
to retract plagiarized designs in response to
any attempt at sanctioning by, for instance, shaming.

The model begun in the era of phototype has
continued in the age of the Internet, where
online foundries typically license computer
fonts from independent designers to customers.
The onus to monitor for plagiarism now falls
largely on the designer, not the foundry. The
decentralization of monitoring in this manner
might seem unfair and unwieldy, but with so
many computer fonts available from so many
sources, it’s impossible for a few entities to
successfully monitor the industry as a whole. A
foundry cannot even monitor whether the com-
puter fonts it licenses are knocko•s or not.365
The collective of individual designers, how-
ever, can: they monitor websites and alert

http://www.typography.com/
about/biographies.php. Whether it’s the only one or not,
Adobe has its own special reasons for employing salaried
designers. See infra Part III.E.
363 See Pankow, supra note 152, at 239–55.
364 See discussion supra, section II.D.
365 See Posting of segura to Typophile, Bloody Rip O•
Artists!, http://typophile
their colleagues when they spot illegal copies of their typefaces. Furthermore, enforcing norms is far easier against actual people than it is against a company. And to the extent that sanctions are directed to companies, they are more likely to comply since they have invested little, if anything, in the designs that they license out. Compare the attempt to enforce an industry norm in the 1920s mentioned above with the process today. Trawling Internet discussion forums is a good way to see monitoring and enforcement of industry norms in action. Examples of possibly plagiarized designs are ferreted out; accusations of plagiarism are typically aired and analyzed, usually by third-party, objective observers. Norms can be enforced in a variety of ways. The mildest enforcement is hardly distinct from monitoring: contacting the foundry to alert them to a knockoff they are licensing. Sanctioning can escalate to shamming, threats of a boycott, or refusals to work with or license to foundries with a reputation for selling copied or plagiarized designs. These sanctions can ultimately result in a vendor removing a computer font he is licensing even though there is no legal reason

366 CAHALAN, supra note 93, at 93.
367 See, e.g., Posting of Bald Condensed to Typophile, FontShop and Unnamed Firm Reach Agreement, http://typophile.com/node/17362 (Jan. 17, 2006, 3:12 PM); billtroop, supra note 351; Bloody Rip O• Artists, supra note 93.
368 See, e.g., billtroop, supra note 351; Bloody Rip O• Artists, supra note 93.
369 See, e.g., Posting of Miss Ti•any to Typophile, Bloody Rip O• Artists!, http://typophile.com/node/36209 (Aug. 16, 2007, 8:39 pm). Typeface also alert Internet Service Providers to website hosting pirated computer fonts, citing the DMCA. CAHALAN, supra note 93, at 93.
371 See BLACKWELL, supra note 135, at 126.
372 raph, supra note 361.
373 It’s interesting to note that foundries, like Adobe, who still employ salaried designers, are the most resistant to acknowledging plagiarism. See Bloody Rip O• Artists, supra note 93.
The “democratization” of type design might mean that there are more designers who operate outside the usual orbit of the design community, and who are therefore less susceptible to the coercive effect of norms. But when the ultimate sanction for a norm-violating design is to have it delisted from the only place it can generate much revenues (that is, an online brokerage), the norms don’t necessarily have to work against each independent designer to be effective.

There is another characteristic of the type design industry that makes it amenable to norms. I noted above that one of the few accepted universals in the field of norms is that norms tend to work better among smaller groups. This is an intuitive principle. I would add a corollary to it: Norms also work well in tournament professions. A tournament profession is one “in which participants vie for large awards that only a small fraction will eventually obtain.” In other words, you trade a

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374 See, e.g., id.
375 See Lipton, supra note 37, at 18 (making essentially this argument).
376 Steven D. Levitt & Sudhir Alladi Venkatesh, An Economic Analysis of Drug-Selling Gang’s Finances, 115 The Q.J. of Econ. 755, 773 (2000) (describing street gangs who deal drugs, where perhaps 1 in 200 dealers might make anything resembling a good living, most of the rest make less than minimum wage, and where the chance of arrest, injury, or death are greater than one). Tournament professions are also called superstar professions. See Sherwin Rosen, The Economics of Superstars, 71 The Am. Econ. Rev. 845, 845 (1981). “Superstar” has a slightly different connotation and denotation, I think. It’s usually written about in the context of the market-changing effect of technology, where a few of the most talented performers, because of broadcastings, recordings, etc., are able to satisfy market demand. Id. at 847; see also Landes, supra note 2, at 49–50 (explaining the superstar phenomenon). There have always been professions, however, where only a few of its participants are successful. For instance, there probably has never been a lucrative market for mediocre athletes, my Kansas City Chiefs notwithstanding. I prefer, for my purposes anyway, to use the term “tournament profession” because it connotes a process of active and eternal competition rather than one in which the greatest rewards of very
low wage for a small chance at a much higher one. The great majority of participants (or aspiring participants) make no or very little money, while a very few are made wealthy by it. Most show business professions are examples of tournament professions. 377 A great example is that of classical musician. 378 The top few concert pianists in the world are probably constantly booked and handsomely paid. The Julliard-trained fiftieth-best concert pianist (imagine being the fiftieth best in the world at something), by contrast, probably has to supplement his income in between stints, if he is lucky enough to get them, with the Wichita Symphony Orchestra. The industries discussed above that limit copying successfully through norms are essentially tournament professions. Stand-up comedy is a tournament profession. 379 Yes, Jerry Seinfeld is rich enough to buy a garage for his Porsches in the middle of Manhattan, but most comedians toil in obscurity on the comedy circuit. Magicians too: Davids Copperfield and Blaine are rich, and a few guys in Vegas probably are too, but mostly it’s a profession of amateurs working birthday parties. Ditto for chefs, though the average chef can probably always make a decent living. 380

It’s arguable that typeface design is a tournament professional since nobody is made rich by it. 381 Of the only about 500 type-designers in the world, 382 a few certainly make a good living, 383 and a few more are able to make a living exclusively through type de-

large markets are “skewed to the most talented people.” Rosen, supra note 376, at 845.
377 Rosen, supra note 376, at 845
378 Id.
379 Id.
380 Though there are only a handful of Michelin four-star restaurants in the world.
381 Liu, supra note 112.
382 See id.
sign. The rest either have to supplement their income with other work, or they make almost no money at all. Thus it seems to have always been. The salient fact, though, isn’t necessarily that the rewards are so high, but that the rewards are pretty good (you might get to make a living doing what you love), while the chance of actually achieving that reward is pretty small. Typeface as a tournament profession has all the characteristics of a group where norms should, in theory, operate well. Namely, it’s small and interconnected. The fact that it also has some similarity to tournament professions means that the effects of industry norms, to the extent that they exist, are magnified. Because the industry is structured like a quasi-tournament profession, anybody on the outside of success might be reluctant to violate industry norms lest they miss whatever slim chance they ever had at success, such as it is.

4 Plagiarism and the Excludability of Typeface Designs

Norms, of course, don’t always work. They are less effective among large foundries or other entities that may need a typeface of a certain design but who do not want to pay licensing fees for it, or among designers who are unscrupulous or are not well integrated within the typeface design community and who distribute their designs themselves. But plagiarizing (as distinct from duplicating the computer font file) a typeface—or creating a close derivative version—either by sight or by scanning a printed version of the typeface into a font editing program, does not always yield a perfect

384 See LAWSON, supra note 136, at 381 (noting that a few designers make a living employed by a type foundry).
385 See BLACKWELL, supra note 135, at 13. Also, most of a foundry’s revenue comes from a small number of designs, mostly those with extensive possibilities for licensing or corporate use. Id. at 154. Even a successful or award-winning design may only sell a hundred or so licenses per year. See Walker, supra note 111.
386 LOXLEY, supra note 65, at 41, 43-54, 64, 70.
substitute design. This has always been the case. It’s easy to see how having to copy a design by forging new metal type might result in flawed copies, but even in the age of phototype, which was the first technology that could feasibly copy designs, renditions were often poor. Digitization has improved attempted copies, but the results of even scanned designs are not always perfect, and may be quite inferior. In any case, even if scanned characters end up exactly like the original, there is more to plagiarizing typefaces than mechanically copying the letterforms.

How much this matters depends on the typeface. For a typeface meant for text typefaces it matters quite a bit. A typical computer font file, especially one meant for professional typesetting, contains data other than that which describes the characters themselves. There are, for instance, kerning tables. To reproduce something approaching a perfect substitute for the original, a plagiarist would have to create this data from scratch. Creating a kerning table for just a single weight of a typeface can take ten hours of work. For a typeface that is to serve only as display text, it matters less. Kerning tables, if they exist for the design, are less important. First, because of how they are used, display text has

387 See Pankow, supra note 152, at 237–49. Pankow describes the early history of ATF, a foundry formed as a conglomeration of other smaller foundries in the early 20th century. ATF was widely known to have plagiarized designs (especially European ones), which at the time could only have been accomplished freehand or with the aid of a pantograph. Even with mechanical aid, the originals were not well reproduced.

388 See Lawson, supra note 136, at 126–27.

389 See Bringhurst, supra note 68, at; Karrie Jacobs, An Existential Guide to Type, Metropolis (1988), reprinted in Texts on Type: Critical Writings on Typogra phy 21, 23 (Steven Heller & Philip B. Meggs eds. 2001) (comments of Herman Zapf).

390 Cf. Barnett, supra note 175, at 1382–83 (in fashion, poorly made counterfeit goods do not result in lost sales because they are not a perfect substitute).

391 Cahalan, supra note 93, at 87.
more room for “slop” in its spacing and kerning.\textsuperscript{392} Second, since a graphic designer might adjust the space between letters by hand to get a desired effect, a kerning table is less important. Unlike for a text typeface, adjusting the kerning or spacing for display faces is a feasible proposition since it will typically be used for smaller amounts of text. There is also the enormous character set a professional level typeface should contain.\textsuperscript{393} Now, because of OpenType allows all these characters to exist in one package, OpenType typefaces are more likely to actually contain them. The amount of time it would take to reproduce all this begins to approach the time it took to create the original in the first place, or at least a large enough chunk of it that copying this way yields diminishing returns,\textsuperscript{394} especially when the original designer will enjoy a significant lead-time advantage in sales.\textsuperscript{395} The typefaces, then, that take the longest to develop and require the most investment are therefore the most resistant to plagiarism.\textsuperscript{396}

\textsuperscript{392} Id. at 68.
\textsuperscript{393} See supra, section III.B.2.
\textsuperscript{394} See Posting of Mark Simonson to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 17, 2005, 11:56 AM) (it is not possible to make a decent copy of a design in 20 hours of work); see also Hardy, supra note 22, at 233 (suggesting that copyright is unnecessary when the cost to copy—his example being of a medieval scribe laboriously copying an illuminated manuscript—is high); Plant, supra note 12, at 171 (suggesting much the same thing about medieval manuscripts, and also noting that copying in this manner was prone to introducing errors).
\textsuperscript{395} See Nadel, supra note 13, at 822.
\textsuperscript{396} Display typefaces sometimes contain fewer characters. Even if it does not, the entire character set might not be needed (in a logo designed for UPS, for instance, only three letters are needed), so that an incomplete character set might be acceptable. See Posting of Bald Condensed to Typophile, FontShop and Unnamed Firm Reach Agreement, http://typophile.com/node/17362 (Jan. 17, 2006, 3:12 PM) (where the new UPS logo contains what seems to be an exact copy of another popular typeface).
The excludability phenomenon in typeface design has analogies in intellectual property law's other open areas. When expressive works do not receive strong copyright protection, and when they are generally non-rival and non-excludable, authors add features or services that are more rival or excludable—or emphasize those parts of expressive content that are already more rival or excludable—to mitigate their works' amenability to copying. The success of the United States' database industry, paradoxically, is perhaps attributable to the lack of copyright protection the industry receives. Because the facts themselves cannot be protected, the industry has had to compete among itself by adding features and tied services to bare facts. This makes the database more valuable than just the sum of its information.  

Most importantly, these features cannot be copied along with the database itself. Likewise, magicians put more stock in their "act" as a whole and in the originality of their presentation than in the secrets behind their tricks.  

Comedians have developed a style of stand-up that de-emphasizes the traditional joke with a punch-line of vaudeville but instead derives much of its humor from the more difficult to copy personality of the comedian. And when one patronizes a high-end restaurant, it's not necessarily to eat a particular dish, but to be cooked for by a famous chef.

Unlike an unscrupulous typeface designer, a typical consumer is not going to be scanning text and manipulating the resulting font files regardless of whether the typeface has exclud-

397 Boyle, supra note 6, at 215–16 (describing how West hyperlinks cites in cases and law review articles, provides ways to search through databases, provides summaries of cases, etc.).
398 See Loshin, supra note 203, at 13, 30.
399 See Oliar, supra note 34, at 1841–59.
able elements or not. This requires special knowledge he does not have. He might, of course, look for pirated versions. What’s important in this case is the consumer’s “cost” to copy, not just in dollars, but in the time it takes, the trouble involved, and whatever guilt might be associated with the act (a guilt partly induced by violating social norms). For an unscrupulous designer, these costs might be more acceptable since he is ultimately looking to profit from his plagiarism. But a consumer does not have as much incentive. It might be “cheaper” to buy a computer font he likes or needs than to locate a copy in cyberspace. The analogy here, in terms of the public goodliness of typefaces, should not be to music files, but to movies. With relative ease, almost any album, which retails for around $15, can be found and quickly downloaded. Movies, on the other hand, take more work. They can be harder to find, especially if they are not a new release, their file size makes them unwieldy, and, unlike compressed digital music files, the quality of compressed movies is significantly inferior to the original. When a monthly membership to Netflix begins at $8, allowing you to rent

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401 See Hardy, supra note 22, at 233, 241 (arguing that it is not important, in considering how easy an expressive work is to copy, whether the work digital or not, but instead what the “cost-to-quality” ratio is for reproductions); Ariel Katz, A Network Effects Perspective On Software Piracy, 55 U. Toronto L.J. 155, 160–61 (2005) (detailing all the “costs” of piracy, both economic and otherwise); see also Jon Elster, Rationality and Emotions, 106 Econ. J. 1386, 1386–97 (1996) (internal norms are closely tied to emotions, including regret, remorse, shame, guilt, and embarrassment). See generally Harold Demsetz, Towards a Theory of Property Rights, 57 The Am. Econ. Rev. 347 (1967) (norms, after all, are the internalization of external effects).

402 See Posting of sii to Typophile, Font Piracy and the Internet, http://typophile.com/node/27711 (Aug. 17, 2006, 12:29 PM) (graphic designer recounting instances of a colleague spending hours searching for a specific computer font, and noting that the time he spent, translated into an equivalent dollar amount, surpasses what a license to the computer fonts he was looking for would have cost).
about ten movies (depending on how fast movies are watched and returned), the “cost” to download pirated versions quickly exceeds the cost at which legitimate copies can be procured.\footnote{See Boyle, supra note 6, at 102 (“Cheap and easily acquired goods of certified quality compete very well with free goods of uncertain quality whose acquisition involves some difficulty.”). Cf. id. at 103 (making a similar point about movies, but in the context of the trouble involved decrypting and synchronizing encrypted video files).}

Norms within typeface design reasonably substitute for copyright laws within the industry. Because of the nature of the industry, norms successfully lessen the amount of plagiarism that might occur. Even where norms do not operate strongly to constrain designers, typefaces, particularly those that require the most investment to make, resist plagiarism.

D Aesthetic Movements and Fashion Cycles\footnote{See Bringhurst, supra note 222, at 9-10.}

In a sense, the history of type design is about the search for the perfect form. The problem though, is that the perfect form, if it could be known, invariably changes.\footnote{See, e.g., Friedrich Friedl et al., Typography 48-49 (1998). Constructivism was an aesthetic movement associated with Soviet propaganda, especially posters, in the} Art has always transformed with movements and epochs: Renaissance to Romanticism; Romanticism to Modernism; Modernism to Postmodernism. Typography is no different except that its inherent functionality means that new typefaces must be made when tastes change in a way that new paintings or literature, for example, do not. Most expressive works, as an end to themselves, get made regardless of the changes in artistic modes; typography, as a means to another end, gets created because of it. Since we need at least some typefaces as long as we read, just as we need clothes as long as we do not want to be naked, new ones will be created to accord with the current dominant aesthetic.\footnote{As one critic}
has said, "[i]t is the nature of type design to follow the baggage train." And so they have. Typefaces have been Renaissance, Baroque, and Neoclassical. Among the differences between typefaces made in these traditions is the slant of the axis of their letters. Renaissance typefaces have an axis that slants as if written by hand; Neoclassical typefaces have a vertical axis; Baroque typefaces have a mixture of the two. Renaissance humanism is reflected in the humanist slant of the axis; Neoclassical rationalism—inorganic, "static and restrained[,]...and far more interested in rigorous consistency"—is embodied in its unwaveringly vertical axis; the Baroque-ian mixture is indicative of that style, "rich with activity [taking] delight in the restless and dramatic play of contradictory forms." Typefaces have been Mannerist and Romantic, where the emphasis is on dramatic contrasts.

1920s. No suitable typefaces existed that matched the aesthetic, so Soviet type designers had to make many of their own. See also BRINGHURST, supra note 68, at 119–36 (describing how typeface designs evolve to match the corresponding era).

406 Hudson, supra note 229, at 25.
407 See BRINGHURST, supra note 68, at 121-29.
408 For an explanation of what an axis of a letter is, see supra, section II.A.2.
409 CHAPPELL, supra note 83, at 158-61.
410 The biggest revolution in type aesthetics was the transition, beginning late in the 15th century, from Gutenberg’s German blackletter (whose use finally ended after its associations with Nazism, see LOXLEY, supra note 65, at 140–41, 153–55) to the roman letters we know today. Id. at 26. This change is synonymous with the ideas of the Renaissance, perhaps the earliest “instance of a style of lettering having a cultural significance.” Id. at 27. Returns to Renaissance humanism began at the end of the 19th century, largely as a response to alienating industrialization. See CHAPPELL, supra note 83, at 19–20.
411 BRINGHURST, supra note 68, at 128.
412 Baskerville, a British typeface popular in America in the 18th century, is said to look like American Federal architecture. See id. at 128.
413 Id. at 127.
414 Id. at 130. Anybody still not convinced that a typeface can have cultural significance beyond utilitarian
Beginning in the late 19th century, typefaces have been designed in the Victorian, Arts and Crafts, and Art Nouveau mode; they have become generally Modern, in its early, late, and commercial forms, or in one of Modernism’s subdivisions: Expressionism, Dada, Futurism, Constructivism, De Stijl, Art Deco, Bauhaus, and Swiss Style; more recently, they have become PostModern: Psychedelic, Pop Art, Punk, New Functionalism, New Wave, Grunge; they have even been deconstructed.\footnote{See Miller, supra note 146, at 22.}

From of artistic movements listed above, at least one thing is apparent: the speed at which the movements appear greatly accelerates towards the latter half of the 19th century. There are a lot of causes to this, but there is an important prerequisite. Typeface design had, at some point, to unmoor itself from the calligraphic tradition that had been the main influence on typeface design through the 16th century.\footnote{See Miller, supra note 146, at 22.} Without that, typefaces would only have been designed within a narrow range that more or less mimicked handwriting, and innovations in design would have only occurred with changes in pen technology, and handwriting.\footnote{See Miller, supra note 146, at 22.} Beginning in the 16th century, letterforms were not primarily thought of as a “sequence of manual pen strokes, but as a conceptual idea bound to no particular technology.”\footnote{See Miller, supra note 146, at 22; see id. at 19-20.} Instead
they would be the products of geometry. Those vertical axes of the 18th century, for instance, are “artificial,” completely departing from how strokes would appear if written by hand. But it was not until the advent of the pantograph in the 19th century, however, that more deviant designs appeared. Because the pantograph aided in creating different sizes and weights of type, letterforms were seen as more flexible, unhinged from the process of manufacturing type. Now artists could design type, not tradesmen. Once written script no longer served as the one immutable reference point, and once digital technology allowed characters to then be taken to their logical limit, typeface designs opened themselves up to being influenced by, not just aesthetic movements, but smaller-scale changes of taste and other cultural factors.

1 The Susceptibility of Display Faces to Fashion Cycles

The end result of the process culminating in the pantograph was the 19th century’s invention of display typefaces. Display typefaces are not suitable for long, continuous text. Rather, they are meant for setting short amounts of

419 Cahalan, supra note 93, at 14. Humanist typefaces would reassert themselves in the 20th century.
420 Miller, supra note 146, at 22. Remember, the pantograph allowed typeface designs to be carved into type from enlarged drawings.
421 Cahalan, supra note 93, at 29–30.
422 An example of cultural factors that can influence design is how industrialization, by the mid 20th century, gave us not just Helvetica, but similar types in other languages, all with the aesthetics of heavy industry and centralized production. Bringhurst, supra note 222, at 9. Later in the century, type designs would become lighter, reflecting a world, among other things, of greater automation and fast, light transport. Id. at 9. One aspect of selecting a typeface is, in fact, to place content in a specific historical or cultural context. Michael Rock, Typefaces Are Rich With the Gesture and Spirit of Their Own Era, I.D. (1992), reprinted in Looking Closer: Critical Writings On Graphic Design 122, 122–23 (Michael Bierut et al. eds. 1994).
423 Chappell, supra note 83, at 283.
text—like headlines, captions, ad copy, or signs—meant to gain a reader’s attention. Though unmooring typeface designs from script hands and the manufacturing process is a prerequisite for typefaces to be susceptible to fashion cycles, unmooring an entire category of typefaces—display typefaces—from issues of readability made them far more susceptible to it. Think of, say, how a Neoclassical typeface embodies an epoch by only subtle variations over the previous one: rationalist vertical axes, for instance, differentiate a Neoclassical typeface from a humanist, Renaissance one. If there had only been text typefaces, their designs constrained as they are by readability considerations, the industry would have seen far less innovation. Indeed, today there are far fewer text typefaces than display. But display typefaces are not likewise constrained. They can therefore more closely mirror a contemporary aesthetic, and not just large-scale movements, like the Renaissance, usually identified after the fact, but also

424 See Loxley, supra note 65, at 64–65. The first display typefaces were what are known as slab serif typefaces, which were made of, as the name suggests, heavy monoline strokes and thick, square serifs. Id. at 65. One reason these may have been first chosen for display text is that they were easier to paint when used for signs. Id. The dichotomy suggested here between display and text faces is not, in fact, entirely strict. Some text typefaces are used for display, especially when they contain weights specifically design for that purpose.

425 The discovery of the Rosetta stone and other Egyptian artifacts in the 19th century lead to the creation of the first sans-serif typefaces. See Loxley, supra note 65, at 37–39; see also Lawson, supra note 136, at 265 (the popularity of sans serif faces begun with the influence of Bauhaus in the 1920s; until then, most display typefaces were serif).

426 See Ruari McLean, How Typography Happens 33 (2000) (Daniel Updike, an American printer and typographer who, among other things, started a well known private press/handcraft press at the end of the 19th century, wrote that “[o]ur composing-room has...only about seven series of standard types for book work.”). Cf. Heller, supra note 153, at 10 (display type is especially influenced by fashion trends).
smaller-scale and often self-consciously created ones. For example, whereas the differences between Renaissance and Neoclassical typefaces are subtle (anybody who does not know what to look for would have a hard time detecting any systematic difference), the differences between a high-Modernist, Swiss typeface like Helvetica and a Postmodern Grunge typeface are vast, and obvious. Because they more closely mirror current taste, they fall out of style faster, with the decline of whatever small-scale aesthetic movement that may have created them or tapped-into zeitgeist responsible for their popularity. This is especially true when a typeface is designed, as it often is, to specifically look contemporary or to have certain cultural connotations, or be associated with “periods of time, significant events, locations, industries, or countries.” Its ephemerality is guaranteed.

The typeface industry is often compared to the fashion industry. Indeed, it has many of its hallmarks. First, fashion generally cannot be protected by copyright law because, as with typefaces, it’s too functional. And yet

427 See Heller, supra note 153, at 10–11.
428 See Cahalan, supra note 93, at 77–83 (Template Gothic, a typeface popular in the late 1990s, was successful by somehow tapping into the culture’s zeitgeist).
429 Id. at 73.
430 Id. at 74.
431 See id. at 112 (comments of a typeface designer who believes the industry has made itself like the fashion industry to foster sales); Heller, supra note 153, at 107 (“typography, like style, works in cycles”); Hermann Zapf, Commentary, Has Type Design Any Future? Call for the Foundation of a “Sir Francis Drake Society,” 7 Electronic Publishing 261, 262 (1994) (typefaces “follow fashion trends”).
432 See Yiannis Gabriel & Tim Lang, The Unmanageable Consumer: Contemporary Consumption and its Fragmentation 99 (1995) (those hallmarks include “[u]niversal appeal, seeming inevitability,...a cottage industry of media pundits and image-makers sustaining it and a stream of celebrities embodying it”).
433 Raustiala, supra note 30, at 1699, 1749; see Galiano v. Harrah’s Operating Co., 416 F.3d 411, 422 (5th Cir.
the whole enormous global fashion industry is not just innovative, it’s “vibrant.” There is also the obvious comparison that, like fashion, typefaces have to be designed within the constraints of utility. Shirts, whatever they have, need a whole for the head; typefaces, whatever they look like, have to be legible. But chief among the less obvious differences is that typefaces fall in, and especially out, of style. It should be a truism to anybody living in the Western world that successful fashion designs and current styles are copied or imitated, generally moving down from haute couture finally to be dumped out the end of Old Navy. Because typefaces are a design product, they are subject to the same influences as

2005). Trade dress protection (trademark-like protection for product packaging) is not available for similar reasons. See Wal-Mart Stores, Inc. v. Samara Bros., Inc., 529 U.S. 205, 216 (2000). Protection via design patents has not proved feasible either. See Raustiala, supra note 30, at 1704-05. There is also the intractable problem of figuring out—since everybody copies design ideas from everybody else—who copied what from who. See Gluck, supra note 86, at 14, 22 (quoting academic research that “innovation in fashion is less a matter of creativity ex nihilo than of mutation and pastiche”). Fashion does use trademarks to protect its brands and their logos. See Raustiala, supra note 30, at 1699-72. However, even to the extent that fashion receives any intellectual property protection, enforcement is low. Barnett, supra note 175, at 1381-82.

434 Raustiala, supra note 30, at 1689; see id. at 1775. Part of this innovation can be attributed to the fact that the industry has resisted oligopolies, the result, perhaps, of a lack of copyright protection. See Gluck, supra note 86, at 25.

435 See SEAN JENNEN, THE MAKING OF BOOKS 246 (5th ed. 1973) (printer and typographers “tir[e] of their pets[, their] catalogues [] strewn with the dead corpses of types that flourished exotically for a day and then drooped and were forgotten”); Lawson, supra note 136, at 327 (example of a reaction to the overuse of a typeface); Loxley, supra note 65, at 4 (font vender has “seen quite a few vogues for different styles in the last few years”); Steven Heller, The Time Machine, Print 124 (1991), reprinted in LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 34, 35-36 (Michael Bierut et al. eds. 1994) (examples of typefaces coming back in style).

436 See Raustiala, supra note 30, at 1695, 1720.
other design products. Namely, consumers become "bored with what they are accustomed to seeing, and vaguely crave something different." They are, in other words, subject to fashion-like cycles. While this is true to some extent for text typefaces—which change along with wholesale aesthetic changes—it's especially true for display typefaces. Many are so closely and consciously designed as an example of, or at least a commodification of, the current faddish aesthetic that their non-ironic usefulness is destined to be short-lived. Obviously, if styles become obsolete, new ones have to be created to take their place.

Like in the fashion industry, piracy, plagiarism, and mimicry accelerate design cycles, speeding the rate at which designs become obsolete, and thereby creating demand for new ones. In the fashion industry, the process works like this: widespread copying of a design or fashion trend cues consumers into what's in style so that they not only know what to buy, but also know when tastes have shifted. As trends trickle down-market, or are imperfectly copied or pirated, the elites who set trends or status-seekers who wish to emulate them move on to a new one so that they are not identified with the class of down-market, "aspirational" consumers. Designers then have to create new

437 Loxley, supra note 65, at 3; see id. at 222.
438 See Blackwell, supra note 135, at 100 (citing two surveys, one from the 1920s, the other from the 1950s, charting the change in popularity of certain typefaces).
439 See Heller, supra note 154, at 8.
440 See Lawson, supra note 136, at 224, 354 (noting forgotten types of the 19th century).
441 See Barnett, supra note 175, at 1384-86. Barnett argues that counterfeit goods are usually imperfect, which helps, by tarnishing a design’s image, speed up its obsolescence. Unauthorized counterfeiting means that a fashion house does not have to try to accelerate the design cycle itself by establishing low-rent lines that would ultimately undermine the brand. See also Raustiala, supra note 30, at 1722 (quoting Miucci Prada, "We let others copy us. When they do, we drop it").
442 Raustiala, supra note 30, at 1728-29.
443 Id. at 1721-23, 1733; Barnett, supra note 175, at 1384-85, 1391, 1409.
designs for the status-setters. And the cycle repeats: the mainstream market moves on to the elite’s newly adopted style. “The fashion cycle, in sum, is propelled by piracy.” Of course, the key to this process is an ugly kind of Veblenian Theory-of-the-Leisure-Class snobbishness where clothes are a signal of status, ostensibly declaring a consumer’s social position and taste. It’s important not to take the comparisons of typeface to fashion too far. Clothes convey the wearer’s status; typefaces do not, especially considering that most of them cost about the same, and that many are given away free.

Yet if a typeface is popular enough, plagiarisms or variants will inevitably be created to take advantage of the original’s popularity. When a design is spread directly by file-sharing or indirectly or imperfectly by plagiarism it becomes ubiquitous faster than it otherwise would. The result is that some typefaces might have a “shelf life [only] as long as a piece of clothing.” And when a new aesthetic enters a market, its general hallmarks are copied. Because of digitization, designs in the new mode can be made and distributed quickly. Ubiquitous typefaces and styles lose their power, either because they have lost their novelty, have lost the ability to convey what they were originally designed to connote, or they become unfashionable.

It might, at first, seem strange that a type-

444 Raustiala, supra note 30, at 1726.
447 See Lawson, supra note 136, at 256-61 (about 50 variants of Cheltenham, a popular typeface for advertising in the early 20th century, were made by various foundries).
448 Cahalan, supra note 93, at 172.
449 See Bloody Rip O• Artists, supra note 93.
450 Cf. Raustiala, supra note 30, at 1714-16 (with the aid of technology, knock-o• fashions can be produced and in stores almost as soon as the originals).
451 See Cahalan, supra note 93, at 146.
face design can become obsolete, but examples abound: Think of Victorian era typefaces, the kind that might be used on a prototypical wild-west “Wanted” poster, in the yellow journalism of the era, or in its ads.\textsuperscript{452} Such designs would only be used today ironically. Famed designer Frederic Goudy began to fail because his typefaces began to look increasingly dated.\textsuperscript{453} Cheltenham became a very popular advertising typeface in the early 20th century, and then became very unpopular.\textsuperscript{454} In the 1970s and 80s, ITC, a major foundry, had a “penchant for letters of liberal proportions, tightly packed horizontally,” a style that’s passé now.\textsuperscript{455} For a time, sans-serif typefaces were considered to be the only acceptable typeface, if one wished to be contemporary.\textsuperscript{456} Helvetica falls in and out of style, its meaning changing with context: it has been a revolutionary avant-garde design embodying the ideals of Modernism, and it has been thought fascistic, commodified by capitalism and corporatism.\textsuperscript{457} Souvenir, a typeface popular in the 1970s, looks laughably dated today.\textsuperscript{458} The typeface Template Gothic is acutely associated with mid 1990s graphic design.\textsuperscript{459} In fact, typeface designers have cited the point that typefaces follow trends and fashions as the biggest reason for a typeface’s popularity at any given moment.\textsuperscript{460}

2 The Role of Advertising

If fashion-like cycles are the engine for innovation, advertising is the rest of the car, including the driver. The demand for typefaces for advertising coincided with the industrial

\begin{itemize}
\item \textsuperscript{452} See \textsc{Lawson}, supra note 136, at 354.
\item \textsuperscript{453} \textsc{Loxley}, supra note 65, at 100–01.
\item \textsuperscript{454} \textsc{Lawson}, supra note 136, at 253–61. Cheltenham was originally designed as text typeface. \textit{Id.} at 256–61.
\item \textsuperscript{455} \textsc{Loxley}, supra note 65, at 207; \textsc{King}, supra note 123.
\item \textsuperscript{456} See \textsc{McLean}, supra note 426, at 56.
\item \textsuperscript{457} See \textsc{Helvetica} (Swiss Dots 2007).
\item \textsuperscript{458} \textsc{Cahalan}, supra note 93, at 158.
\item \textsuperscript{459} See \textit{id.} at 77–83.
\item \textsuperscript{460} See \textit{id.} at 163.
\end{itemize}
revolution and its commercial vigor. After 1820, most typefounders made most of their money selling display typefaces destined for advertising instead of text typefaces destined for books, and by 1890 the demand for new typefaces outstripped supply. The market matured and stabilized by the 1920s, growing more or less into its modern incarnation, and ever since advertisers have been the primary market for typefaces. Helvetica, for instance, was developed strictly as a result of the unmet demand of advertisers. Advertisers need to gain someone’s attention before they can convey their message to him. Their problem, be they Victorian advertisers or contemporary ones is the same: how to be heard over all the shouting. Typeface design, to the extent that it serves advertising, therefore became a search for novelty, where the subtle messages conveyed by letters’ form is as significant, at least for the advertisers, as the words made from them. The progression of display faces at the end of the 19th century was one where each subsequent design was meant to out-shout the previous one. As advertising budgets grew in the first part of the 20th century to keep pace with other advertising, there was a com-

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461 See BAINES, supra note 38, at 68; Loxley, supra note 65, at 66.
462 LAWSON, supra note 136, at 308.
463 See id. 243–44, 253–55. When sans serif faces became popular in the 19th century, there was a dearth of them, and they had to be developed quickly to meet demand. FRIEDL, supra note 405, at 40–41.
464 See LAWSON, supra note 136, at 253–55.
465 FRIEDL, supra note 405, at 54–55.
466 CHAPPELL, supra note 83, at 195.
467 BLACKWELL, supra note 135, at 102.
468 CAHALAN, supra note 93, at 171 (Herman Zapf commenting on how display typefaces have to capture readers’ attention); see HELLER, supra note 153, at 59 (commenting on how the ornate typography of Victorian advertising—a “cacophony” as its sometimes referred to—eventually lead to a more simplified, minimal typographic aesthetic in advertising).
469 See LAWSON, supra note 136, at 253–55 (noting some exotic but short-lived designs).
470 See id. at 308.
mensurate need for new, novel typefaces to make campaigns, products, and corporations distinctive.\textsuperscript{471} In this way, because typefaces are so important for a business’ image, the demands of advertising have become the dominant source of demand for new typefaces.\textsuperscript{472}

Because advertising is such a large market for typeface designs, there is an all important link between aesthetic movements and fashion trends on the one hand and new typeface designs on the other: the avant-garde quickly becomes commodified by advertisers.\textsuperscript{473} Indeed, it is necessary for them to do so, since the avant-garde is by definition the source of novelty.\textsuperscript{474} This commodification accelerates the obsolescence of typefaces: designers often react to commodification—which bastardizes and corrupts the original aesthetic—with a new, oppositional aesthetic, beginning the cycle anew.\textsuperscript{475} Helvetica, for instance, was once radically Modern. It has since become the emblematic corporate typeface.\textsuperscript{476} A Grunge typeface, for instance, is oppositional, its incongruities and pseudo-sloppiness contrasting with what has

\footnotesize
471 See Heller, supra note 153, at 12 ("[T]he reason that so many type styles currently exist is that the turn-of-the-century advertising boom required a large number of different styles in order to simulate diverse voices.").
472 See Loxley, supra note 65, at 3.
473 See Cahalan, supra note 93, at 77-82 (typeface designed to be subversive and self-consciously avant-garde became used in corporate advertising and, in one instance, a large corporation’s annual financial report); Friedl, supra note 405, at 26-27, 52 (more examples of commodified ideals in type design, including those from Futurism and the punk aesthetic); Heller, supra note 153, at 95, 111, 130, 182 (the avant-garde Modern movements beginning in the 1920s eventually become commodified in advertising).
474 See Blackwell, supra note 135, at 34.
475 See Friedl, supra note 405, at 57 ("Art Nouveau’s heyday lasted for only about ten years. Its end was brought about by the superficial, industrial mass production of tasteless products and by trivial graphical designs, devaluing what were once visionary and euphoric ideas."); Heller, supra note 153, at 160.
476 See Friedl, supra note 405, at; Heller, supra note 153, at 160.
come to be viewed as the congruous blandness, suitable for a corporation, of Helvetica. Elaborate curlicue typefaces developed toward the end of the 1990s were similarly oppositional to Helvetica’s Modernism. 477

Advertisers and corporations cannot afford for their message or image to look dated, or even common. 478 When this happens, they will move on to a new design, or commission one. 479 But can’t a reasonably suitable—and previously under-used—typeface be found among the quarter million available, especially when commissioning a new one is much more expensive than buying an existing one? 480 Yes, maybe. But the spread of a typeface can be limited contractually, where the commissioner elicits from the commissionee an obligation to not sell or license the typeface he has created to anyone else. 481 This suggests that advertisers and corporations are aware that the unchecked spread

477 See Liu, supra note 383. Helvetica itself effectively replaced Futura, a typeface created in 1927, and which had been dominant in the advertising industry for 25 years. Blackwell, supra note 135, at 54–55.
478 See Cahalan, supra note 93, at at 129–37 (analysis of Rotis, a display typeface popular in the latter 1990s, which became ubiquitous in ad copy, thereby losing its effectiveness in the medium).
479 The purest example of the needs of advertising leading to the creation of a new typeface is when an advertiser or corporation commissions a typeface for an ad campaign or for corporate branding. See Blackwell, supra note 135, at 115 (commission of typeface for ad campaign with certain connotations). Because of the relatively large fee (tens thousands of dollars, possibly, Liu, supra note 112) commissions for corporate identities are the holy grail of type designers. See Blackwell, supra note 135, at 15. In the past, the Church and the State were source of commissions. Berlow, supra note 262.
480 A commercial client could also commission a cheap copy of a typeface he likes, but you tend to get what you pay for. Having a job done properly can save money that might have to be spent fixing a bad clone, which might lack a complete character set, have badly adjusted kerning pairs, be poorly copied, etc. See Posting of marian bantjes to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 14, 2005, 1:51 PM).
481 See Cahalan, supra note 93, at 88.
of a typeface dilutes the message it was chosen to convey, or that it shortens the design’s useful life.\footnote{482} By keeping computer fonts entirely to themselves, there is no chance they will end up shared over the Internet. Those wishing to piggyback on the newfound popularity used in a large ad campaign confers on a typeface have to plagiarize, rather than download, it. This not only takes work, time, and skill by typeface designers already constrained some by industry norms, but the result might not be a faithful reproduction anyway.

\textbf{E. Piracy, Prices, Bundling, Network Effects}

Intellectual property orthodoxy views piracy as a threat to the incentive to create. Because typeface designs are almost always embodied as digital files, they are much more of a pure public good than even fashion designs. They are, in this respect, much more like digital music files.\footnote{483} As such, they are usually shared in the same manner, via bittorrent indexers, one-click uploaders,\footnote{484} and Usenet groups. This kind of piracy is not the kind of, say, 1992’s, when

\footnote{482} Of course, the typeface’s designer has a countervailing interest: to be able to also sell his design to as many people as he can. Typefaces used in major ad campaigns tend to then be used in many others. A typeface designer does not want to have his now in-demand typeface cordoned off from general sale. \textit{See} Jacobs, \textit{supra} note 389, at 32. For this reason, the right of exclusive use, if it exists, is often of a limited duration.

\footnote{483} \textit{See} Walker, \textit{supra} note 111 (comment of designer comparing the file-sharing of computer fonts to that of MP3 files). The file size of the whole range of sizes and weights of a professional font is within the same ballpark as the typical digital music file, representing one song.

\footnote{484} Anecdotal evidence suggests that—because of the low cost of memory and the inherent difficulty of detecting files that infringe copyrights—one-click hosting sites are now more commonly used for file sharing than bittorrent clients. \textit{See generally} Janko Roettgers, \textit{Piracy Beyond P2P: One-Click Hosters}, \textit{NEWTEEVEE}, June 2007, http://newteevee.com/2007/06/17/one-click-hosters/.
Adobe Systems, Inc. v. Southern Software, Inc., the case declaring computer fonts to be copyrightable, was decided. In Adobe, the plaintiff used a font editor to slightly alter 1,100 Adobe computer fonts, and then licensed them to various organizations, essentially packaging them on a CD and selling them at a deep discount. The Internet, then, has changed the pirate’s business model too. While finding a computer font can take more time than an album or song, once found, the monetary value of the computer fonts that can be downloaded for free is quite shocking. I found one link to a collection of computer fonts with a total retail value of over $50,000. It’s no wonder, then, that designers clamor for protection, and cite computer font file-sharing as a harbinger of doom. But, as with any

486 See supra Part III.C.
487 Slightly altering computer fonts before selling discount versions was a common practice, probably born from a misguided notion that by changing the computer font and altering the computer code that described the letters, the result was not infringing on software copyrights.
488 Adobe, 1998 WL 104303 at *3-*6. There are still companies that copy free computer fonts onto CDs and sell them at a low price. These, I guess, are either for people who think or are misled into thinking that such things are legal, or who have somehow discovered the Internet but not peer-to-peer file-sharing. Compare Luc Devroye, School of Computer Science, McGill University, Legal, Copyright and Trademark in the Type World, http://cg.scs.carleton.ca/~luc/legal.html (under heading “Jungclaus Consulting”) (German company sells DVD with over 30,000 computer fonts for about $15) with Thurm, supra note 183 (where a pirate, in 1998, made slight alternations to 3,300 computer fonts, selling them for about $30).
489 Adobe seems to be pretty assiduous at having uploads of its Font Folio to one-click hosting sites removed. Adobe apparently has a unit whose sole duty is to ferret out piracy. Cahalan, supra note 93, at 93.
491 See, e.g., Liu, supra note 112 (comments of Brian Heuckroth, senior product marketing manager for type-
other industry implicitly relying on classic public goods theory in place of copyright protection, where’s the evidence that doom has or will come? 492

Despite the availability of free pirated computer fonts on the Internet, it’s doubtful that, to the extent prices for computer fonts have fallen in the digital age, 493 file sharing is to blame. 494 This is not to say there’s no file sharing. The fact that $50,000 worth of computer fonts is out there for the downloading is extraordinary, but not everyone is convinced that piracy is to be faulted for the fallen prices of computer fonts. 495 The democratization of typeface design bears some responsibility. 496 With more designers and foundries in the market than ever before, prices were destined to fall. Another culprit often cited for the lower prices—and one closely related to the democratization of typeface design—is the sheer abundance of typefaces made possible by digitization. But the biggest culprit is pro-

492 See Snyder, note 95, at 125, 125 n.151 (there are no reliable statistics on losses caused by piracy or because typeface designs are in the public domain).
493 The industry has “suffered a meltdown in profits.” Liu, supra note 112. Designs that before sold for hundreds of dollars now might sell for “less than $50.” Id. See also Rothenberg, supra note 166 (documenting the fall in prices).
494 See, e.g., Baines, supra note 38, at 95 (arguing that it was inevitable prices would come down after digitization spread the typeface market to the general populace, where it was once specialized). Cf. Felix Oberholzer & Koleman Strumpf, The Effect of File Sharing on Record Sales: An Empirical Analysis, 115 THE J. OF POL. ECON. 1 (2007) (arguing that the effect of file sharing on music sales has been a wash).
495 See, e.g., Cahalan, supra note 93, at 93 (computer font distributor Eyewire does not believe that piracy affects their sales).
496 There is also the fact that the prices set in the days when typefaces were tied to proprietary systems—machine typesetting, phototypesetting, and early digital typesetting—were unsustainable once typeface designs were uncoupled from them. See id. at 30. For a discussion of the democratization of the industry, see supra, section II.D.
bly the practice of giving away computer fonts for free, which marginalizes the retail market and reduces, in the minds of consumers, the value of computer fonts. Free computer fonts come, basically, in three versions: those given away on the Internet because their quality is low enough that nobody would have paid for them anyway; those given away to lure customers to pay for other computer fonts (these can either be high quality originals or copies of existing designs); and those given away as part of a bundle with other software. The first and second has been made possible by the fact that more designers are making more typefaces, of varying degrees of quality. The latter is a phenomenon any computer user knows: every operating system comes pre-loaded with computer fonts (designs often knocked-off, remember, to avoid licensing fees). Since every consumer has at his disposal a bevy of free computer fonts, what incentive do they have to find other free computer fonts? Of course, they would have an incentive if the computer fonts they received with their operating system were inadequate for their needs. But the evidence suggests that this is not the case. For one, most documents produced by consumers use one of two typefaces: Times New Roman or Helvetica/Arial. More im-

498 See Lipton, supra note 37, at 10 (examples of poor quality novelty designs obviously made by an amateur); Simonson Posting, supra note 394 (free computer fonts are given away because they are low quality, with little effort invested).
500 Thirty-seven are given away with Windows, 120 with OS X. BLACKWELL, supra note 135, at 11.
501 See CAHALAN, supra note 93, at 38, 147.
502 CHAPPELL, supra note 83, at 285. This phenomenon is not limited to just consumers. Some designers speculate that the typeface Palatino was so widely adopted as a corporate typeface because was a default typeface on
portantly, most consumers cannot access the professional-level features of a professional-level computer font because they do not have the software to do so: either their word processor lacks the capability, or they do not own any desktop publishing software, which can be very expensive. Without the right software, there’s very little reason for consumers to find the kinds of typefaces that require the most work and investment to create. And even if they do download them, this cannot be a lost sale: who would pay hundreds of dollars for features he cannot access? There are enough adequate free computer fonts, and finding pirated ones is just difficult enough, to ensure that the casual consumer is not a big culprit here.

In any case, consumers are not the largest market for typefaces, graphic designers are. Computer fonts are also bundled with graphic design and desktop publishing software. Adobe is responsible for most of this, for the obvious reason that they are both a software developer and a type foundry. It gives away, for instance, more than one hundred of its computer fonts with its Creative Suite, which is a package of software for design professionals.

some computer and printers. CAHALAN, supra note 93, at 146.
503 For instance, Microsoft Word has about a 95 percent market share. Ina Fried, CNET, Apple’s iWork Emerges as Rival to Microsoft O•ce, Jan.23, 2006, available at http://news.cnet.com/Apples-iWork-emerges-as-rival-to-Microsoft-O•ce/2100-1012_3-6030011.html. Consumers also commonly use Word for light page layout work. Word cannot access the typographic features (ligatures, superscript and subscript, small capitals, contextual and stylistic alternate character forms, etc.) made possible by OpenType. Even if a consumer had access to these feature through Word, Word’s typesetting is poor enough that it would overshadow any aesthetic benefit OpenType features would confer.
These computer fonts are high quality ones likely to have to be bought by graphic or book designers anyway. The value of these computer fonts, if sold separately, far exceeds the value of the Creative Suite itself. This suggests that what Adobe is most interested in is not selling typeface designs, but in maximizing the network effects of its software, where the optimal position is to be the company that dominates the market of a particular good, especially if that good is software. Adobe, then, is like the Monotype and Linotype of the late 19th and early 20th century, releasing proprietary type, original or plagiarized, as a way to ensure the sales of their typesetting machines. Though Adobe might be the largest foundry in the world, selling computer fonts for them is just a sideline activity, a way for them to sell something else far more lucrative. Adobe could even afford for its typeface design division to lose money, the benefit of bundling to Adobe being a net positive since it increases software sales.

If it’s true that Adobe bundles free com-


508 Network effects occur when “the utility that a user derives from consumption of a good increases with the number of other agents consumer the good.” Michael Katz & Carl Shapiro, Network Externalities, Competition, and Compatibility, 75 Am. Econ. Rev. 424, 424 (1985). The classic example of an object whose value increases as more people use it is the telephone. One telephone is useless; a thousand are useful; a billion are indispensable.

509 See supra section III.B.

510 BLACKWELL, supra note 135, at 156. Adobe did in fact begin its retail business selling computer fonts. Now, however, the tail wags the dog. See King, supra note 123.
puter fonts to sell more software, then it might also prefer a certain amount of computer font piracy, despite protestations, and indeed lawsuits, to the contrary. Adobe benefits because piracy increases network size efficiently. In essence, pirates distribute the goods a company is seeking to monopolize over the Internet, at no cost to the company. Paying consumers are charged for the increased value of the network that piracy partly has been responsible for generating. But to even implicitly condone piracy would be for a company to admit that it is price discriminating among different classes of consumers, where pirates are "charged" nothing. By denouncing piracy, companies avoid upsetting the users who have paid. This is, in fact, typical behavior for companies seeking to gain network effects advantages for their products. It’s telling, perhaps, that the Adobe computer fonts are the most common to be shared for free over the Internet. Finding even a fairly well-known (relatively speaking, of course) computer font from an independent foundry is difficult, if not impossible. For instance, Stephen Heller, a

511 Katz, supra note 401, at 167-68.
512 See Carrier, supra note 10, at 37-38 (describing how the public internalizes distribution by using the Internet).
513 Katz, supra note 401, at 167-68.
514 Price discriminating is the practice of selling a good at different prices according to a consumer’s willingness to pay. It maximizes profit: more people buy the good because they can pay exactly what they are willing. Selling movie tickets at different prices depending on the time of day is an example of price discrimination. See Landes, supra note 2, at 39 (explaining price discrimination).
515 See Katz, supra note 401, at 179-85. Here Katz discusses Microsoft’s acceptance of high piracy rates in China as a tool for surreptitiously achieving monopoly. And this despite public protestations otherwise, which serve to disguise motives that might, in fact, be viewed as either anti-competitive, or would upset paying U.S. consumers. See also id. at 214-15. Explicitly admitting to using piracy to exclude other competitors may be evidence of antitrust violations. Id. at 94.
516 See id. at 179-85 (describing Microsoft tactics).
noted expert in the field, picked seven of the "most popular" typefaces released by independent foundries over the past ten years.\textsuperscript{517} After some searching, I could not find pirated versions of any of them. Contrast this with Adobe’s complete Font Folio, which retails for $2,600,\textsuperscript{518} and was relatively easy to find.

The conclusion that Adobe develops computer fonts mainly to sell software is supported by some interesting anecdotes. First, for a short period early in its history, when Adobe’s PostScript was by far the dominant page description language (such software being a prerequisite for desktop publishing), Adobe tried to solidify its position by encrypting the computer fonts used with PostScript so that the computer fonts could not be used with any other page description language (and, by extension, any desktop publishing program).\textsuperscript{519} Because Adobe at the time was the main supplier of computer fonts, this tactic was effective.\textsuperscript{520} A rival computer font maker soon cracked the encryption, and the closed world of computer fonts inevitably opened. Now, Adobe exploits the openness, but the anecdote reveals that the company, almost from the outset, recognized how computer fonts could be used, or misused, to gain an advantage in its software market.\textsuperscript{521}

In \textit{Agfa Monotype Corp. v. Adobe},\textsuperscript{522} two of the largest foundries in the world (Monotype and ITC) sued Adobe for violating the anti-circumvention provisions of the Digital Millennium Copyright Act (DMCA).\textsuperscript{523} The dispute was over Adobe’s Acrobat, a PDF viewer, which Adobe had recently changed to permit embedded computer fonts to be editable, thus allowing users to complete forms and change text without hav-

\textsuperscript{518} Font Folio, \textit{supra} note 133.
\textsuperscript{519} King, \textit{supra} note 123.
\textsuperscript{520} Id.
\textsuperscript{521} Id.
\textsuperscript{522} Agfa Monotype Corp. v. Adobe Sys., Inc., 404 F. Supp. 2d 1030 (N.D. Ill. 2005).
ing licenses to the computer fonts of a given PDF. What’s interesting about the case is not the DMCA claim, but that it reveals first that computer fonts had long been embedded in documents, and second that Adobe did not care, as did the other two foundries, about uses of computer fonts, including Adobe’s own, that potentially violated the licenses of any one of the three foundries. Moreover, embedded computer fonts are essentially copies of computer fonts. If someone wanted to steal a computer font, they could theoretically do it by pulling it out of the file that makes up the PDF. For a time, this was a cause of concern in the industry. The concern is a little silly in retrospect: trying to pirate typefaces from PDF files is not only horribly ine cient, but some important features of a computer font (kerning tables, for instance) cannot be extracted this way. It’s much easier to obtain a computer font via traditional file-sharing techniques. Nevertheless, the theoretical risks of having computer fonts copied applied just as much to Adobe as it did to the other two foundries. But Adobe, of course, cares far more about making Acrobat the standard PDF viewer than about any lost revenue from its foundry division. And Acrobat would have taken a tremendous hit if computer fonts could not have been embedded or been made editable. The whole raison d’être of PDFs would have been lost—PDF documents

525 Id. at 1032–33.
526 Id. at 1031.
528 See Posting of Bill Troop to http://type-design.p90.net/lists/displayarticle.html?msgid=15189 (Oct. 2, 2003, 2:45 AM) (noting the poor quality of some existing PDF extraction of a computer font). This is not even to mention that only the characters used in a PDF can be stripped from it.
wouldn’t have looked like the original. What’s more, Adobe exploits Acrobat’s dominance as a PDF viewer and editor to sell its Creative Suite set of applications that often make PDFs as their output. If the usefulness of Acrobat is diminished, then so is this selling point.

The last thing to consider is Adobe’s development, at considerable time and expense, of its “Pro” line of computer fonts. Part of what entitles an Adobe computer font the “Pro” moniker is the inclusion of optical sizes among the character set. Adobe is one of the few foundries that makes computer fonts with extensive sets of optical sizes. Graphic designers and typographers are the only ones likely to employ optical sizes. And design professionals are likely to use Adobe products. In this regard, Adobe’s typefaces serve like

529 The case was dismissed on summary judgment because nothing Adobe did “e•ectively control[ed] access to a work protected under” the DMCA. Monotype, 404 F. Supp. 2d at 1036 (quoting 17 U.S.C. § 1201(a)(2)(A) (2004)); Monotype, 404 F. Supp. 2d at 1037 (granting summary judgment). Agfa Monotype therefore could not have proved the elements necessary for a DMCA violation. Id. at 1036–37.

530 See ADOBE, supra note 186, at 11–12. For an explanation of optical sizes, see supra section III.B.2. Perhaps Adobe is almost alone in making optical sizes because Microsoft Word, by far the most popular word processor, cannot access OpenType features. If Microsoft Word cannot access OpenType features, there is less incentive for foundries to design professional-level computer fonts that can. Also, even among software that can take advantage of optical sizes, none does so automatically. See ADOBE, supra note 186, at 11–12. That is, scaling a font to a large size, for instance, does not mean that the correct optical size, compensating for the way in which a scaled-up character can look too thick, is “applied.” Instead, the user has to apply the desired optical size, and only graphic designers and typographers are likely to do so.

531 The only serious rival to InDesign, Adobe’s desktop publishing program, is QuarkXPress. InDesign is a direct descendent of Aldus Pagemaker, which is credited as being the application that made the original Macintosh successful in 1984. And the original Macintosh is credited as the device that started the digital design revolution, included among which is the revolution in typeface design. See Loxley, supra note 65, at 231–32.
almost any other feature of the software: to make the software more attractive.

F Non-monetary Incentives and Amateur Innovation

Lewis Hyde’s classic *The Gift* is the essential starting place for anyone interested in an artist’s intrinsic motivations for creating art. In it, Hyde describes the exchange between artist and consumer as a gift exchange analogous to that of many non-Western cultures (where the artist’s creation and abilities are also a gift to the artist). The nature of the exchange is destroyed when art is treated as a commodity with value, rather than an item of worth. When expression is treated as having market value, but not necessarily any worth, we tend to get works that only have a market value. In other words, we get works that are sometimes no more than a commodity. The upshot of the book, for my purposes, is that artists have varied and deep motivations for creating art, the least of which is money. Rather than saying that “no man but a blockhead ever wrote, except for money,” Samuel Johnson would have been more accurate in saying that “no man but a blockhead, in a market-industrial society, ever wrote, except for money.” The corollary would be that “no man

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533 Id. at xi-xii.
534 Id.
535 Id. at 160-272. In this section, Hyde describes the life and career of Walt Whitman and Ezra Pound, neither of whom made a living at their art. Id. at 277-78. They were, in fact, poor, accepting patronage and working second jobs. Pound in particular lamented the commodification of art and proposed something like a patronage system that precluded money from being art’s motivation. See id. at 235-38, 244-66.
537 Johnson is sometimes cited as being the first professional writer, in that his (meager) income totally derived from it.
not in a market-industrial society ever wrote for money”; more still, “nobody ever creates Art for money.” This is a gross reduction of a rich book, but the point is that the incentive thesis, when it comes to Art, is hopelessly simplistic. Hyde is not the only one to have proposed that money is not the only motivation for producing expressive works, 538 nor did he limit his discussion to fine art. Don’t forget that Boswell’s immediate retort to Johnson was: “numerous instances to refute this will occur to all who are versed in the history of literature.” 539 Scientists, for instance, publish in journals for prestige, recognition, status, and to make a contribution to their field. 540

Typeface design is no exception to the argument that expressive works are made for reasons other than money. It can’t be: with or without copyright protection, it is very difficult to make a living designing type. 541 Plenty of designers have commented on the non-monetary motivations they have for designing, motivations they often compare to those of fine artists. 542 However, in this paper I will gloss to some ex-

538 See, e.g., Lydia Pallas Loren, The Pope’s Copyright? Aligning Incentives With Reality By Using Creative Motivation to Shape Copyright Protection, 69 La. L. Rev. 1, 3, 12-13 (2008). This article argues that intrinsic motivations should be factored into decisions of how robust copyright should be in any given area. Nadel, supra note 13, at 811-12 nn.109-119 (citing examples of Aaron Copland, Bach, and others); Plant, supra note 12, at 167-68 (“Some of the most valuable literature that we possess has seen the light without the need for monetary incentives.”).

539 Boswell, supra note 536, at 731.

540 Hyde, supra note 532, at 77-84. Sometimes, in fact, they have to pay journals to publish their work. See also Landes, supra note 33, at 331.

541 See supra section III.C.3. Cf. Ku, supra note 9, at 306-07 (musicians rarely make money from royalties).

542 See Loxley, supra note 65, at 235 (noting that typefaces are designed for the challenge and enjoyment); Rock, supra note 422, at 123 (famed type designer Matthew Carter comparing the “pure[] reasons” type designs are created to the reasons fine arts are created); Postrel, supra note 504 (Matthew Carter comparing the urge to create type to the “urge...[of] a painter or sculpture or a musician”).
tent the kinds of intrinsic motivations behind type design. For one, typefaces, because of their inherent utility and necessity, have always been much more of a commodity than fine arts. But I mention non-monetary incentives for creating type because of the democratization of typeface design made possible by digitization. Whereas before the high overhead required to design and make type meant that the profession was only open to those in it for commercial gain, now amateurs with little hope or care to make money can create and distribute their own designs. The democratization of type designs, and their freedom from proprietary typesetting systems, is often criticized because untrained amateurs can now enter the field and offer low quality typefaces. Should amateur creations be regarded as legitimate? That is, do they count as a new example of an expressive work in the category of typeface design? Indeed, digital foundries do not discriminate between submissions by amateurs and professionals. They will license them both. The focus of this paper is more on professional designers (the kind, anyway, who at least hope to earn a living, or part of a living, through type design), but the question is important. It’s true that many amateur designs are, well, amateurish (remember the letters on the Christmas trees?). They may lack any kind of aesthetic sensibility. They may also lack features that a professional graphic designer or typographer would need, though the same is true of many professional designs. But whenever you discount the potential of amateurs in a given field you run the risk of being on the wrong side of history. While some designs might not be technically or aesthetically proficient, the great innovations that come to define the next era of a field often come from the current generation’s amateurs and outcasts. On the whole, then, regardless of

543 See, e.g., Heller, supra note 153, at 9.
544 Heller, supra note 153, at 186.
545 See Cahalan, supra note 93, at 31 (quote from a critic expressing a similar sentiment).
whether an amateur design can be counted as a new instance of an expressive work, the democratization of type contributes to the level of innovation in the field. Digitization and amateurism combine to question the incentive thesis and the need for copyright protection:

"'[I]ncentives’ is merely a metaphor, and as a metaphor to describe human creative activity it’s pretty crummy…. [T]he better metaphor arose on the day Michael Faraday first noticed what happened when he wrapped a coil of wire around a magnet and spun the magnet. Current flows in such a wire, but we don’t ask what the incentive is for the electrons to leave home. We say that the current results from an emergent property of the system..." 546

IV CONCLUSION

This paper has demonstrated how several mechanisms collaborate to create an environment in which an abundance of typefaces are designed, even though typefaces in the United States cannot now, or maybe ever, be copyrighted. Typefaces are functional objects, necessary for literate societies who print words on paper or display them on screens. As such, some typefaces must exist. And as long as some exist, the type design industry will be subject to the mechanisms that allow it to be innovative. Technology is one of those mechanisms. Because different technologies have limitations that affect typefaces, new designs, compensating for the limitations, have to be made when a technology is introduced. New technologies also allow typefaces to have features or benefits that were not previously possible. The market demands, and is willing to pay for, access to these features and benefits. Technology has also

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lead to the digitization of the type design process. This has caused an explosion in the number of type designers, and typeface designs. Though digitization of the industry has decreased the quality of designs in some cases, it has just as often increased quality.

Because the type design industry is relatively small and close-knit, norms within the industry are effective at mitigating plagiarism within it. This phenomenon comports both with generalizable theories of norms, and with observations from other industries in intellectual property law’s open areas that also effectively employ norms to reduce copying. Even when norms fail, typefaces, especially those that require the most time and investment to design, are resistant to plagiarism. Typefaces are also subject to the vagaries of artistic movements and fashion-like cycles. As tastes change, which they do rather quickly, new typefaces have to be made to comport with the new aesthetic. Advertising and the advertising industry is an important cog in this process helping, among other things, to speed the fashion-cycle.

Typefaces are also non-rivalrous, almost always existing as digitized computer fonts. They are therefore subject to file-sharing, like any other digital media. However, file-sharing probably has not damaged the type design industry. Among the most likely culprits for the reduction in the price of computer fonts is the practice of bundling computer fonts with operating systems and other software. This is especially true among software geared to graphic design professionals. Adobe, among the largest foundries in the world, primarily creates new typefaces to make its software, which is a much more lucrative business for it, more attractive.

Other analyses of industries operating in the open areas of intellectual property law have shown how they, too, can be innovative, creating significant new expressive works. The more interesting question is not how any one
industry operates in intellectual property law’s open areas, but whether any industry now protected by intellectual property laws would be sufficiently innovative if protection were taken away. The small number of industries that have been examined so far are probably not a large enough sample set from which an answer can be derived. More observations are therefore needed.\textsuperscript{547} What might become apparent upon such a cataloging is a general principle. This paper has shown how many mechanisms work together to encourage innovation in the typeface industry. This suggests that other industries could also have several mechanisms that work together, often in unexpected ways that could never be predicted by mere theory, to produce innovation in expressive works without protection from copyright or other intellectual property laws.\textsuperscript{548}

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\textsuperscript{548} See Raustiala, supra note 30, at 1762 (noting that the fashion industry thrives without intellectual property because of its idiosyncrasies, and that all industries producing expressive works are similarly idiosyncratic).

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