WHY TYPEFACES PROLIFERATE WITHOUT COPYRIGHT PROTECTION

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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.

INTRODUCTION

The ostensible purpose of the Constitution's Intellectual Property clause is to give authors and publishers sufficient incentive to create and disseminate new works.[1] Authors and publishers need government-granted incentives, the standard rationale goes, because expressive works[2] are usually cheap and easy to copy and—since copies can be made without depleting the original—infinitely reproducible.[3] They are, in economic parlance, public goods, non-excludable and non-rivalrous. 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.[4] These unsanctioned copies can potentially satisfy all demand for the expressive work.[5] Classic economic theory therefore predicts that sale prices will ultimately be driven down to a work's marginal replication cost.[6] 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.[7] Copyrights are an attempt to solve this problem.[8] 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

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1. 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." U.S. CONST. art. I, § 8, cl. 8. *See also* Eldred v. Ashcroft, 537 U.S. 186, 212 n.18 (2003) (stating that copyright law is an "incentive" to create works for the public good).

2. This article 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).

3. Dotan Oliar, *Making Sense of the Intellectual Property Clause: Promotion of Progress as a Limitation on Congress's Intellectual Property Power*, 94 GEO. L.J. 1771, 1797 (2006).

4. *See* MANCUR OLSON, THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS 14–15 (rev. ed. 1971).

5. James Boyle, *Cruel, Mean, or Lavish? Economic Analysis, Price Discrimination and Digital Intellectual Property*, 53 VAND. L. REV. 2007, 2012 (2000). Public goods, whether they are expressive works or not, always risk underproduction because of their amenability to free-riding copyists. LANDES & POSNER, *supra* note 2, at 40.

6. JAMES BOYLE, THE PUBLIC DOMAIN 38 (2008); DAVID W. BARNES & LYNN A. STOUT, CASES AND MATERIALS ON LAW AND ECONOMICS 349 (1992) ("Marginal costs include only the additional costs of producing one more unit.").

7. LANDES & POSNER, *supra* note 2, at 40.

8. NEIL WEINSTOCK NETANEL, COPYRIGHT'S PARADOX 84 (2008).

marginal cost to copy, the author will get a reasonable rate of return, and thus a sufficient incentive to make new works.[9]

The theory behind the need for copyright is intuitive, but is it right?[10] Surely there's a mountain of evidence to support it. Surprisingly, that evidence is hard to come by.[11] 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."[12] Macaulay's warning has become even truer as intellectual property rights have expanded in every way possible over the last thirty or so years.[13] Most expressive works, regardless of romantic ideas of authorship, build on previous ones.[14] 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.[15] 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,"[16] to the detriment of creativity and culture.[17] The upshot of too-broad copyright protection is that copyrights often work, paradoxically, to stifle innovation.[18]

So who has benefitted from copyright maximization?[19] Mostly large content-generating industries who have captured the legislative process to advance their interests.[20] In a digital world expressive works tend to be

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9. Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 296 (2002).

10. *See* Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1, 34 (2004).

11. NETANEL, *supra* note 8.

12. Thomas Macaulay, *A Speech Delivered in the House of Commons on the 5th of February, 1841, in* 2 CRITICAL CONCEPTS IN LAW 9, 12 (David Vaver ed., 2006); *see also* Arnold Plant, *The Economic Aspects of Copyright in Books*, 1 ECONOMICA 167, 169–70 (1934).

13. Rights last 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).

14. *See* Jonathan Lethem, *The Ecstasy of Influence: A Plagiarism*, HARPER'S MAG., Feb. 1, 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. *Id.*

15. Eldred v. Ashcroft, 537 U.S. 186, 250 (2003) (Breyer, J., dissenting) (describing how it can be expensive to track down a copyright holder, who often cannot be found in any case).

16. BOYLE, *supra* note 6, at 8–9, 40–41.

17. *Id.* at 236.

18. Michele Boldrin & David K. Levine, *The Case Against Intellectual Monopoly*, 45 INT'L ECON. REV. 327, 348 (2004).

19. *See* BOYLE, *supra* note 6, at 198–99.

20. JESSICA LITMAN, DIGITAL COPYRIGHT 22–69, 122–45 (2001). Public choice

more non-excludable and non-rivalrous than they are in the analog world;[21] these industries use the fear of digitization's potential to destroy their business model as the rationale for blanket—and ever-expanding— copyright.[22] 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.[23] It seems, then, that a good shot of empiricism is in order.[24] There is some doubt, after all, on the "universal applicability of copyright's incentive rationale."[25] 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, to see how it might have fared if allowed to develop without government granted monopolies.[26] And almost everything that could be copyrightable subject matter has been made to be.[27] Almost everything, but not quite. There are some industries (a term I will use loosely 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 enjoy 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

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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.

21. *See* Trotter Hardy, *Not So Different: Tangible, Intangible, Digital, and Analog Works and Their Comparison for Copyright Purposes*, 26 U. DAYTON L. REV. 211, 233 (2001).

22. *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).

23. *Id.* at 236.

24. *See*, *e.g.*, Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 322 (1970) (suggesting copyright justification "rests not upon proven need, but rather upon uncertainty as to what would happen if protection were removed").

25. NETANEL, *supra* note 8, at 86. *Cf.* ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 182, 214–15 (1990) (arguing that private property rights or external regulations are not the only way to solve common-pool resource problems); 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) (explaining that economic models tend to ignore, for instance, the importance of convention and custom).

26. *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).

27. *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.").

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.[28] 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.[29]

Not many industries operating in intellectual property law's open areas have been written about, despite the seeming importance of identifying and cataloging them.[30] This article adds to that list by analyzing the reasons typeface designs have proliferated despite being unprotected by copyright. This undermines one of the links necessary to justify the over-broad copyright laws that have upset the balance between the economic and social costs of granting a monopoly and the benefit the public receives when more expressive works are made than otherwise would have been.[31] While one recent article by Professor Lipton has discussed typefaces in the context of intellectual property law's open areas,[32] that article does not focus on what has allowed typefaces to proliferate despite a lack of copyright protection. Instead, it essentially argues that the digitization of typefaces has meant that an industry that had previously operated in intellectual property's open areas no longer is, and that the typeface industry can therefore serve as an example of what will happen to other industries as they, too, digitize. However, this conclusion—one that does not further our understanding of why intellectual property law's open areas do not suffer the fate which classic economic theory predicts—is reached from premises that ignore some important facts (for example, the protection of computer fonts as software is not as much of an impediment in the copying of typeface designs as Professor Lipton assumes) that will be covered in this article.

Part I 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, and that they are likely to remain unprotectable by copyright—despite belief in some circles that they could be—because of some unconsidered functionality

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28. Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA. L. REV. 1687, 1691 (2006).

29. *See id*. at 1762; BOYLE, *supra* note 6, at 213.

30. *See* Raustiala & Sprigman, *supra* note 28, at 1765, 1776–77.

31. LANDES & POSNER, *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.").

32. Jacqueline D. Lipton, *To © or Not to ©? Copyright and Innovation in the Digital Typeface Industry*, 43 U.C. DAVIS L. REV. 143 (2009).

problems. I further argue that copyright, if it were granted by legislation or allowed by case law, could both stagnate 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 I concludes by demonstrating that typefaces do indeed proliferate.

Part II 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 II.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 II.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 demonstrates how they are enforced. Part II.C concludes by noting that even if norms fail, there are some aspects of typefaces that can be difficult to reproduce. Part II.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 II.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 II.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.

I.   THE IP PROTECTION OF TYPEFACE DESIGNS

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.[33] 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 typeface, all of one particular size and style."[34] 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.[35] 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.[36] These alternative senses 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,[37] 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.[38]

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,

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33. *See*, *e.g.*, *id.* at 148.

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

35. *See* ROBIN KINROSS, MODERN TYPOGRAPHY 169 n.9 (Hyphen Press 2004) (1992).

36. *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.R. 1790, 102d Cong. (1st Sess. 1991)), *with* BAINES & HASLAM, *supra* note 34 (defining a font as a "set of characters of a given typeface, all of one particular size and style").

37. *See* Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6,201–02 (Feb. 21, 1992); Adobe Sys. Inc. v. S. Software, Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

38. *See*, *e.g.*, Lipton, *supra* note 32, at 163 (where loose usage of "typeface" and "font" was partly responsible, I think, for the mistaken premise that because computer fonts receive copyright protection that typeface designs can no longer be copied legally).

to differentiate it from a mere font, a *computer font*.[39] 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 it is obvious by the context what's being referred to.[40]

A. *Typeface Designs are Unprotected by IP, and Are Likely to Remain So*

Though the issue is somewhat confused, typefaces are generally considered to be and are in fact treated as uncopyrightable. This article will take for granted the uncopyrightability of typefaces designs.[41] Furthermore, other methods of intellectual property protection—trademark law, state unfair competition law, and design patents—offer either little, no, or impractical protection.[42] Neither do contractual licensing provisions. Typical licenses for computer fonts establish the extent to which they can be modified,[43] how many computers they can be installed on, and whether and how they can be embedded in documents, such as PDFs.[44] These terms only affect computer fonts as software; they

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39. Wikipedia suggested this classification. *See* Wikipedia, *Computer Font*, http://en.wikipedia.org/wiki/Computer_font (last visited Mar. 7, 2010).

40. *See* BAINES & HASLAM, *supra* note 34 ("Type is the physical object, a piece of metal with a raised face at one end containing the reversed image of a character.").

41. Well, not entirely for granted. The Copyright Office has issued regulations listing typefaces as works that it will not register. 37 C.F.R. § 202.1(e) (1992). 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. *See* Chevron U.S., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 865 (1984); Bonneville Int'l Corp. v. Peters, 347 F.3d 485, 486 (3d Cir. 2003) (suggesting that courts should give the Copyright Office deference on their determinations of what is copyrightable). For some analyses and historical discussion on the copyrightability of typefaces, *see* 1 MELVILLE NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.15 (2009); 2 WILLIAM PATRY, PATRY ON COPYRIGHT § 4.19 (2009).

42. *See* Leonard Storch Enter., Inc. v. Mergenthaler Linotype Co., 1979 WL 1067 (E.D.N.Y. Apr. 5, 1979) (federal law generally preempts state unfair competition claims involving copied typeface designs); MARSHALL A. LEAFFER, UNDERSTANDING COPYRIGHT LAW 126 (2005) (noting that design patents have a high rate of being invalidated when challenged in federal court); Lipton, *supra* note 32, at 182–84 (trademark law does not provide protection to typeface designs); Lipton, *supra* note 32, at 178–82 (design patents probably do not provide protection to computer fonts, and even if they do, they are difficult to obtain, making them impractical); J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2460 (1994) ("[T]he [design] patent process has proved too rigid, slow, . . . and too strict in excluding the bulk of all commercial designs on grounds of obviousness.").

43. Typographers and graphic designers commonly need to modify a computer font slightly to suit a particular purpose or remedy a defect. *See* ROBERT BRINGHURST, THE ELEMENTS OF TYPOGRAPHIC STYLE 198–208 (3d ed. 2004). 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.

44. For examples of typical licenses, see LINOTYPE, LICENSE AGREEMENT FOR FONT

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.[45] This is not even to mention the difficulty of enforcing licenses against third parties who are violating the *de jure* terms of a license.[46]

In any case, no typeface is copyrightable under the 1976 Copyright Act if it is too functional. Section 101 of the Copyright Act defines the scope of copyrightable pictorial, graphic, or sculptural (PGS) works.[47] The crux of the definition is that, for PGS works deemed to be "useful articles," only the portions of them not dictated by their "mechanical or utilitarian aspects" and which are also "identifi[able] separately from, and capable of existing independently of, the utilitarian aspects of the article" are copyrightable.[48] This is the "separability" test. In other words, utilitarian PGS works only receive copyright protection if they have aesthetic elements that are not dictated by their functionality, and only those aesthetic elements are protectable. The suggestion by Nimmer[49] (and others) that typefaces can sometimes qualify as PGS 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 subject matter.[50] If a typeface design is influenced by aesthetic decisions that have nothing to do with their status as the "building blocks" of words,[51] the argument goes, then that typeface design should have enough features that would render it a copyrightable PGS 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

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SOFTWARE (2003), *available at* http://www.fontshop.com/help/licenses/linotype/.

45. *See* Sony Computer Entm't, Inc. v. Connectix Corp., 203 F.3d 596, 608 (9th Cir. 2000).

46. *See* Lipton, *supra* note 32, at 186–88.

47. PGS works are "two-dimensional and three-dimensional works of fine, graphic, and applied art . . . ." 17 U.S.C. § 101 (2010).

48. *Id*.

49. NIMMER & NIMMER, *supra* note 41.

50. There is no shortage of typeface companies or industry interest groups arguing that typefaces should be protected by copyright law. There have also been efforts to protect typeface design through legislation protecting industrial design. *See* 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) (explaining that typeface designers believe that typefaces will be underproduced without copyright protection).

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

information, so typefaces are always functional;[52] a variant is that the *sine qua non* of typefaces is legibility, so that a typeface can never be other than primarily functional.[53] As one typeface designer has said, "Letters are legible. If they are not legible, then they are not letters."[54]

My purpose in rehashing some of this is not to evaluate the merits of these arguments under the current copyright regime. 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,[55] Times New Roman being an 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?[56] 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.[57] 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.[58] 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

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52. *See*, *e.g.*, *id*. ("A letter . . . 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.").

53. *See*, *e.g.*, 15 Omnibus Copyright Revision Legislative History 1166, 1230 (1977) [hereinafter Copyright Legislative History] (statement of position of Howard B. Rockman, Attorney for Castcraft Industries, Inc.).

54. Véronique Vienne, *Soup of the Day*, Metropolis (1995), *reprinted in* Looking Closer 2: Critical Writings On Graphic Design 9, 11–12 (Michael Bierut et al. eds., 1997) (quoting Dutch typeface designer Peter Merterns).

55. *See* Carroll, *supra* note 36, 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. Frederick Compton Avis, Type Face Terminology 40 (1965). Text typefaces are contrasted with display typefaces, which are usually serif-less and are meant for setting short amounts of text, like headlines, captions, or advertising, meant to grab the reader's attention.

56. 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).

57. *See* Joshua Yaffa, *The Road to Clarity*, N.Y. Times, Aug. 12, 2007, § 6 (Magazine), at 36.

58. *Id*.

mitigate the effects of halation. The design's aesthetics, then, are inextricably linked to the design's functionality. There are endless similar examples of typefaces, like the 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,[59] 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.

Aside from the standard-fare doctrinal considerations for not allowing typefaces to be protected by copyright, there are practical considerations too. 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."[60] 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.[61] 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.[62] 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[63] that in many cases determining what's derivative of what and what's substantially similar to what would be a quagmire.[64] 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.

To give an example of the difficulty involved, imagine having to

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59. *See infra* Part II.B.1.

60. LOXLEY, *supra* note 56, at 96. The Trajan column was erected in 114 A.D.

61. *See* Lipton, *supra* note 32, at 166 (noting the difficulty of applying substantial similarity tests to typefaces designs).

62. *See* WARREN CHAPPELL & ROBERT BRINGHURST, A SHORT HISTORY OF THE PRINTED WORD 107–08 (2d ed. 1999).

63. 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 ON TYPOGRAPHY 54, 55–56 (Steven Heller & Philip B. Meggs eds., 2001).

64. This is not only a new problem, but an historical one as well. *See* LOXLEY, *supra* note 56, at 62 (describing how the house typeface of Louis XIV was hard to police because variations of it were often subtle).

judge, say, Adobe's Garamond Premiere Pro and Adobe's Arno Pro.[65] 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 designs. 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 typefaces, 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-copyrightable elements is copyrightable, and it has been suggested that typeface designs should be no different.[66] But, typefaces are hard to describe technically and objectively, and they resist classifications that are too rigid.[67] The differences between them can be very subtle and hard to articulate.[68] What to one expert is piracy (making only trivial changes to an existing design, for instance),[69] is to another a

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65. *See* Adobe.com, Garamond Premier Pro, http://www.adobe.com/type/browser/ landing/garamond/garamond.html (last visited Mar. 10, 2010) [hereinafter Garamond Premier Pro] (providing description and samples of Garamond Premiere Pro); Adobe.com, Arno Pro, http://www.adobe.com/type/browser/landing/arno/arno.html (last visited Mar. 10, 2010) (providing description and samples of Arno Pro).

66. *See, e.g.*, COPYRIGHT LEGISLATIVE HISTORY, *supra* note 53, at 1231.

67. *See, e.g.*, HELVETICA (Swiss Dots 2007) (a documentary about the typeface Helvetica; comments of Hoefler and Frere-Jones).

68. 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 whether one design was copied from another, they sometimes cannot agree, despite some very close analyses. *See* Discussion thread of Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 [hereinafter Bloody Rip Off Artists].

69. Many typefaces are thought to be pirated, minor variations of existing designs. Lillian Abbott Pfohl, *Serif Wars: An Argument for the Protection of Typeface Design,* 2001 SYRACUSE L. & TECH. J. 1, 24 n.119 (2001).

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,[70] or silly amateur novelty designs (letters superimposed on Christmas trees!).[71] 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 attributed.[72] It could also strangle future designs, since typefaces typically build only incrementally on previous ones:[73] 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.[74] Copyright protection might make typefaces more novel, and therefore less useful, at least for certain purposes.

B.   *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[75] and a district court decision, *Adobe Systems, Inc. v. Southern Software, Inc.*, citing the Copyright Office's decision, finding

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70. *See* VanderLans, *supra* note 50, at 224.

71. *See* Lipton, *supra* note 32, at 156–60 (giving examples of novelty fonts that might pass the separability test, but whose worth, by even lax standards, is dubious).

72. *See* Mark S. Nadel, *How Current Copyright Law Discourages Creative Output: The Overlooked Impact of Marketing*, 19 BERKELEY TECH. L.J. 785, 803 (2004).

73. Lipton, *supra* note 32, at 163.

74. *See* Shubha Ghosh, *Deprivatizing Copyright*, 54 CASE W. RES. L. REV. 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).

75. Registrability of Computer Programs that Generate Typefaces, *supra* note 37 ("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 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.").

them copyrightable subject matter.[76] 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,"[77] a kind of static picture where a separate font file exists for every size and weight of every letter (it was, in this respect, a lot like metal type).[78] In the interim between the Copyright Office'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 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.[79]

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.[80] But it's not entirely clear that computer

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76. Adobe Sys. Inc. v. S. Software, Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

77. Jonathan L. Mezrich, *Extension of Copyrights to Fonts—Can the Alphabet Be Far Behind?*, 4 COMP. L. REV. & TECH. J. 62, 64 (1998).

78. Wikipedia, *supra* note 39; *see also* Policy Decision on Copyrightability of Digitized Typefaces, 53 Fed. Reg. 38,110 (Sept. 29, 1988) (noting the Copyright Office's 1988 decision not to register computer fonts).

79. *See, e.g.*, *Adobe Sys., Inc.*, 1998 WL 104303 at *4–*5 (explaining the process of codifying computer fonts).

80. *Id.*; Registrability of Computer Programs that Generate Typefaces, 57 Fed. Reg. 6201–02 (Feb. 21, 1992) (explaining that the code which embodies the selection of the points that describe a letter, "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,

fonts are copyrightable. 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 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.[81] 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.[82] 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.[83]

C.   The Protection of Computer Fonts Does Not Prevent Typeface Designs From Being Copied

Protection for computer fonts is not the same thing as protection for typeface designs themselves, however. There are other ways to copy, reproduce, or "reverse engineer" a typeface design than copying or modifying a computer font file. In fact, the digitization of typeface design has made the legal copying of typeface designs, on the whole, infinitely easier.[84] If the history of type design is anything, it's one of

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among other things, has to "possess[] at least some minimal [and indeed very low] degree of creativity").

81. *See*, *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 (last visited Mar. 9, 2010) (under the heading "This is money").

82. *See*, *e.g.*, Philip W. Snyder, *Typeface Design After the Desktop Revolution: A New Case For Legal Protection*, 16 COLUM.-VLA J.L. & ARTS 97, 114 n.80 (1991). Another argument against the protectability of computer fonts is that the methods of making computer fonts have changed since *Adobe Systems* was decided (the events leading to the case occurred largely in 1995, *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.

83. *See*, *e.g.*, Adobe.com, Anti-Piracy Initiative, http://www.adobe.com/aboutadobe/ antipiracy/fonts.html (last visited, Mar. 9, 2010); Adobe.com, Font Folio 11, http://www.adobe.com/products/fontfolio/ (last visited Mar. 9, 2010) [hereinafter Font Folio] (listing computer fonts for sale as "software"). The industry had been pushing the Copyright Office for protection of computer fonts since the 1980s. Snyder, *supra* note 82, at 110.

84. *But see generally* Lipton, *supra* note 32. 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.

copying, plagiarism, and revivals.[85] 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. The amount of skill, labor, and time it took to actually make type in this era is shocking.[86] Creating a single font (one style and weight in a typeface family) would take a punchcutter—who had a unique set of skills, part metallurgist, part sculpture, part metalsmith[87]—800 hours of full-time work.[88] It took William Caslon 14 years to cut his namesake typeface.[89] 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.[90] There was, in other words, "a very high bar to plagiarism."[91] Copying a complete typeface family would take almost as long as it took to make it in the first place— years.[92] 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.[93] 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.[94] So, as long as somebody could draw, or beginning

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85. LEWIS BLACKWELL, 20TH CENTURY TYPE 126 (3d ed. 2004) (noting that copying typefaces is as old as type-founding itself); *see* ALEXANDER LAWSON, ANATOMY OF A TYPEFACE 132–33 (1990) (noting that 15th and 16th century type designers used existing designs as models for their own).

86. 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 69, 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 53, at 1168.

87. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 266. Gutenberg had been a goldsmith. CAHALAN, *supra* note 68, at 13.

88. LAWSON, *supra* note 85, at 386–89.

89. CAHALAN, *supra* note 68, at 14.

90. LAWSON, *supra* note 85, at 390–97.

91. Scott Thurm, *Copy This Typeface? Court Ruling Counsels Caution*, WALL ST. J., July 1998, at B1 (quoting Charles Bigelow, a font designer who used to teach typography at Stanford University).

92. *See* Rudy VanderLans, *Copping an Attitude*, 38 EMIGRE (1996), *available at* http://www.emigre.com/Editorial.php?sect=1&id=2.

93. *See* J. Abbot Miller & Ellen Lupton, *A Natural History of Typography*, *in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 19, 19 (Michael Bierut et al. eds., 1994) (describing how the Linotype machine worked).

94. John Downer, *Call It What It Is*, EMIGRE (2003), *available at* http://www.emigre.com/Editorial.php?sect=2&id=1. A punch is a form from which type can be made.

about 1890, photographically enlarge,[95] a letterform, typefaces could be copied with less skill and in less time than in the previous 400 years. But it was really not 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.[96]

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.[97] Each had to have a "convincing library" of typefaces to sell their machines.[98] 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.[99] Piracy and mimicry was especially common in Victorian America,[100] 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.[101]

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95. Posting of William Berkson to Typophile, Old-school Type "Piracy," http://dev.typophile.com/node/31101 (Feb. 3, 2007, 07:39) [hereinafter Posting of William Berkson].

96. *See* Snyder, *supra* note 82, at 100 n.11 (explaining that phototype reduced manufacturing costs, and therefore the cost to copy by 90 percent or more); *id.* at 101 n.12 (explaining that phototype enabled foundries to routinely copy other foundries' designs). Phototype begat the first industry effort to lobby for copyright protection of typeface designs. *See* Emily King, *New Faces: Type Design in the First Decade of Device-Independent Digital Typesetting* (1999) (unpublished Ph.D. dissertation, Kingston University), *available at* http://www.typotheque.com/articles/new_faces_abstract.

97. Posting of William Berkson, *supra* note 95. 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 II.E.

98. King, *supra* note 96.

99. *See* LAWSON, *supra* note 85, 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 Any 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 TYPOGRAPHY 239, 247–49 (Steven Heller & Philip B. Meggs eds., 2001).

100. STEVEN HELLER & LOUISE FILI, TYPOLOGY: TYPE DESIGN FROM THE VICTORIAN ERA TO THE DIGITAL AGE 22–26 (1999).

101. STEVEN HELLER & ANNE FINK, FACES ON THE EDGE: TYPE IN THE DIGITAL AGE 108 (1997).

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. This, however, requires a certain amount of skill, and it's difficult to get an accurate, faithful copy.[102] 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.[103] Copying that used to cost a quarter million dollars can now be done much more inexpensively.[104]

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.[105] When the Macintosh was introduced in 1984, Apple created pastiches of existing typefaces for just this reason.[106] 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.[107] 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 corporate ad campaign or on merchandise.[108] And, of course, foundries of all sizes

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102. *See* Kathleen Tinkel, *The Font Pirates vs. Adobe: A Victory for the Good Guys*, MACWEEK, Feb. 16, 1998, at 14.

103. BAINES & HASLAM, *supra* note 34, at 101. 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/ (last visited Mar. 9, 2010).

104. Thurm, *supra* note 91. However, twenty hours worth of work, for instance, might not produce a good, functional computer font from a scanned copy. Posting of Mark Simonson to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 17, 2005, 11:56) (Mark Simonson, the poster, is a well known type designer).

105. Mark Simonson Studio, The Scourge of Arial, http://www.ms-studio.com/articles.html (last visited Apr. 14, 2010).

106. LOXLEY, *supra* note 56, at 229–30.

107. *See* LAWSON, *supra* note 85, 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, e.g.*, Devroye, *supra* note 81 (under the heading "Monotype's copies [sic] of fonts") (Mark Simonson noting that Monotype created its own version of many popular fonts , including Helvetica and Futura , at Microsoft's request, so that the latter could avoid some licensing fees).

108. *See* P22 End User Agreement, http://www.p22.com/support/license.html (last visited

make knockoffs, especially of popular designs, simply to sell them.[109]

D.   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.[110] Partly this is because so many have been created in the twenty 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.[111] A 1990 estimate is of 44,000 typefaces;[112] a 1996 estimate is of 50,000 to 60,000.[113] A 2002 estimate was of 100,000.[114] Today, the website fonts.com lists 153,839 computer fonts for sale (though, remember, a font can refer to a single size or weight of a typeface family). Some current estimates are as high as a quarter million.[115] 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 the last thirty or so years.[116] 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.[117] There may actually be an overabundance of typefaces.[118] As the average consumer can attest, he

Mar. 9, 2010). 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 . . . 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 68, at 88.

109. *See*, *e.g.*, Bloody Rip Off Artists, *supra* note 68.

110. CAHALAN, *supra* note 68, at 60–61. Estimates in the 90s ranged widely, from ten thousand to sixty thousand. *Id.*

111. *Id.* at 61.

112. Randall Rothenberg, *Computers Change the Face of Type*, N.Y. TIMES, July 23, 1990, at D1.

113. Caitlin Liu, *Creating a New Generation of Vivid Typefaces*, N.Y. TIMES, Aug. 5, 1996, at D5.

114. CAHALAN, *supra* note 68, at 61.

115. Snyder, *supra* note 82, at 98 n.3.

116. CAHALAN, *supra* note 68, at 61.

117. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 278.

118. *See* HELLER & FILI, *supra* note 100, at 9 (noting there may be more type designs "than will ever be used effectively").

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.[119] 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.[120] There's no evidence to suggest under-investment. Yes, it's 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.[121] 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.[122] Now, font editing software, some of it free,[123] 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.[124] Today, there are maybe 500 type designers (and maybe 100 foundries) in the world, not counting amateurs and dilettantes.[125] This might not sound like a lot, and it isn't, but in the metal type era there were only twenty, and until digitization there were only about fifty.[126] 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.[127] With all these extra designers, amateurs and professionals, and all these extra designs, there's bound to be some poor typefaces.

However, developing a professional typeface today can potentially

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119. Jessica Bennett, *Just Go to Helvetica*, NEWSWEEK, Apr. 7, 2008, at 54.

120. *See* Jonathan M. Barnett, *Shopping for Gucci on Canal Street: Reflection on Status Consumption, Intellectual Property, and the Incentive Thesis*, 91 VA. L. REV. 1381, 1384 (2005).

121. *See* BLACKWELL, *supra* note 85, at 152.

122. *See* Virginia Postrel, *Playing to Type*, THE ATLANTIC MONTHLY (Jan./Feb. 2008), *available at* http://www.theatlantic.com/doc/200801/fonts ("Having an idea for a typeface used to be like having an idea for a new-model car.").

123. 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* FontStruct, http://www.FontStruct.com (last visited Mar. 9, 2010).

124. *See* KINROSS, *supra* note 35, at 168–69.

125. *See* Liu, *supra* note 113.

126. *See id.*

127. LOXLEY, *supra* note 56, at 236. Digitization has also increased the speed by which established designers can churn out type. *See* Snyder, *supra* note 82, at 116 n.93.

take more investment than at any time since type was carved in metal by hand.[128] While digitization has greatly sped up the process of designing typefaces,[129] 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).[130] Designing all these characters takes an enormous amount of time.[131] Customers come to expect this expanded character set, and also the refinements, like kerning tables,[132] digitization has allowed.

Though digitization has facilitated plagiarism and file-sharing,[133] it has, more importantly, spurred demand[134] and lead to an explosion of typefaces. By comparison, what has Europe bought by granting monopolies to typeface designs?[135] Numbers have proved to 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 generating industry in the United States is, depending on how you count, somewhere in the neighborhood of $1 trillion per year,[136] typeface design is truly not even a drop in the bucket.[137] But, one (relatively old) estimate at least places annual worldwide sales of typefaces at $300 million per year, with the United States responsible for half of that.[138] This jibes with another estimate that about half of the world's typeface designers reside

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128. Adobe's Garamond Premiere Pro, a recently made typeface, took years to create. *See* Garamond Premier Pro, *supra* note 65.

129. BLACKWELL, *supra* note 85, at 138, 173–74; William M. Bulkeley, *Font War: That's My Type*, WALL ST. J., Nov. 19, 1993, at B1 (explaining that letters can be automatically scaled; parts of letters can automatically be reused—"P" in an "R" for instance).

130. KINROSS, *supra* note 35, at 173 n.12.

131. *See* ADOBE, ARNO PRO, http://www.adobe.com/type/browser/pdfs/arno_spec.pdf (2007) (Robert Slimbach describes the process of designing a new typeface for OpenType).

132. *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 & HASLAM, *supra* note 34, at 102.

133. *See* Liu, *supra* note 113.

134. John Hudson, *Unicode, From Text to Type, in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 24, 25 (John D. Berry ed., 2002).

135. *See, e.g.*, 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).

136. STEPHEN E. SIWEK, INT'L INTELLECTUAL PROP. ALLIANCE, COPYRIGHT INDUSTRIES IN THE U.S. ECONOMY: THE 2006 REPORT 2 (2006), *available at* http://www.iipa.com/pdf/2006_siwek_full.pdf.

137. Adobe is one of the largest type foundries in the world yet the sale of type makes up less than 5 percent of its revenue. *See* Adobe Sys. Inc., Annual Report (Form 10-K), at 45 (Jan. 24, 2008).

138. Rothenberg, *supra* note 112.

in the United States.[139] 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.[140] 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 copyright protection, Europe's does not seem to be doing any better, even though it suffers the social loss caused by the grant of a monopoly.[141]

II. THE MECHANISMS OF INNOVATION

Though cataloging and understanding the list of industries operating in intellectual property law's open areas seems important,[142] only the culinary arts,[143] magic,[144] fashion,[145] stand-up comedy,[146] and databases[147] have been examined to any significant degree.[148] 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.[149] As this list suggests, deciding what

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139. CAHALAN, *supra* note 68, at 62.

140. *See generally* HELLER & FINK, *supra* note 101.

141. *Cf.* BOYLE, *supra* note 6, at 207–19 (discussing the analogous fate of databases, which are protected in Europe but not in the United States. The database industry in the United States has greatly expanded while Europe's has stagnated).

142. Raustiala & Sprigman, *supra* note 28, at 1776–77.

143. *See* Emmanuelle Fauchart & Eric von Hippel, *Norms-based Intellectual Property Systems: The Case of French Chefs* (MIT Sloan Sch. of Mgmt., Working Paper 4576-06, 2006).

144. *See* Jacob Loshin, *Secrets Revealed: How Magicians Protect Intellectual Property Without Law*, *in* LAW AND MAGIC: A COLLECTION OF ESSAYS (2008).

145. *See* Barnett, *supra* note 120; Raustiala & Sprigman, *supra* note 28.

146. *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 (2008).

147. *See* BOYLE, *supra* note 6, at 207–19.

148. 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 Act. Prior to 1891, the U.S. did not recognize copyrights in foreign works. Breyer analyzed why, in the U.S., American editions of English books were inexpensive, American publishers profited from their sale, and why English authors were paid well for their American editions, often better than for their English ones (American publishers paid English authors for his advance sheets to guarantee themselves a significant lead-time advantage over other publishers). *See* Breyer, *supra* note 24, at 299–300; *see also* Plant, *supra* note 12, at 28.

149. *See* Tom Bell, *Indelicate Imbalancing in Copyright and Patent Law*, *in* COPY FIGHTS: THE FUTURE OF INTELLECTUAL PROPERTY IN THE INFORMATION AGE 1, 9 (Adam Thierer & Wayne Crews eds., 2002). The listing here of uninhabited architectural structures is facetious, but it illustrates the absurdity of protecting "inhabited" architectural works, as if there were a shortage of buildings that could only be cured by copyright protection. Uninhabited architectural structures (bridges, for example) are not protected because, like typefaces, they are too functional. *See* Architectural Works Copyright Protection Act, Pub. L.

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.

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,[150] a printer typically made one typeface, the one used for his shop.[151] This one typeface satisfied his basic, utilitarian needs.[152]

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

No. 101-650, 104 Stat. 5133 (1990) (codified as amended at 17 U.S.C. §§ 101-02, 120 (1994)).

150. *See* LAWSON, *supra* note 85, at 386. Printers performed work besides designing and founding that today would be divided amongst editors, publishers, typesetters, and typographers (book designers). *See* BAINES & HASLAM, *supra* note 34, at 74.

151. *See* LOXLEY, *supra* note 56, 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.*

152. 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. 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.

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.

Though typefaces' functionality may underlie 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.[153] (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.)[154] 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 studied: 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

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153. CAHALAN, *supra* note 68, at 37 (explaining that 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 & Sprigman, *supra* note 28, at 1714–16.

154. *Compare* Typeright.org, http://www.typeright.org/default.html (Jan. 26, 2007) (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 & Sprigman, *supra* note 28, at 1699 (noting that fashion designers generally do not lobby for more protection).

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."[155] But they were conceived of as a handwriting nonetheless, partly to make the printed word acceptable to a public accustomed to script hands.[156] The German blackletter which Gutenberg imitated for his first typeface design, for instance, had developed in the 13th century as a compact, quickly written script;[157] the roman letters most of Europe would adopt to type soon after Gutenberg began printing originated as script too.[158] 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.[159] 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.[160] The changing handwriting had to be reflected, stylized, and regularized in subsequent typefaces.[161]

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155. BRINGHURST, *supra* note 43, at 18–19. Italics were developed as a closer but less idealized imitation of handwriting. *See* LAWSON, *supra* note 85, at 84–91.

156. *See* LOXLEY, *supra* note 56, at 13 (noting the Gutenberg Bible designed to look as though written, to be acceptable to the public).

157. CHAPPELL & BRINGHURST, *supra* note 62, at 35, 40. Handwriting scripts before the invention of printing were in constant flux. *See* Robert Bringhurst, *Voices, Languages, and Scripts Around the Globe*, *in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 3, 5–6, 9–17 (John D. Berry ed., 2002).

158. LOXLEY, *supra* note 56, 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. *Id.*

159. *See* BRINGHURST, *supra* note 43, at 130. 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 & BRINGHURST, *supra* note 62, at 24–27.

160. *See* CHAPPELL & BRINGHURST, *supra* note 62, 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 a comfortable and relaxed writing position." BRINGHURST, *supra* note 43, 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 & BRINGHURST, *supra* note 62, at 276–77.

161. CHAPPELL & BRINGHURST, *supra* note 62, at 198. This is to say nothing of various script typefaces, which imitate an ideal calligraphic penmanship, or of modern digitized

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.[162] And when computers became the dominant mode of writing, some typefaces embodied, even celebrated, the crude, digital aesthetic of early computer technology.[163]

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.[164] But the 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.[165] 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."[166]

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

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versions of a person's handwriting. *See* LAWSON, *supra* note 85, at 354–66.

162. *See* CHAPPELL & BRINGHURST, *supra* note 62, at 193.

163. *See* BAINES & HASLAM, *supra* note 34, 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 56, at 238–39.

164. *See* John Hudson, *Unicode, From Text to Type*, *in* LANGUAGE, CULTURE, TYPE: INTERNATIONAL TYPE DESIGN IN THE AGE OF UNICODE 24, 25–26 (John D. Berry ed., 2002).

165. *See* HERMAN ZAPF & JOHN DREYFUS, CLASSICAL TYPOGRAPHY IN THE COMPUTER AGE 10–11 (1991).

166. LOXLEY, *supra* note 56, at 238.

technical compromise.[167] Newspapers are the most profitable when they can be printed as quickly as possible on cheap paper.[168] 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 somewhere else.[169] 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.[170] 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.[171] 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.[172] In 2007, *The Wall Street Journal* adopted a design meant to squeeze more text on each page without compromising legibility.[173] 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

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167. *See* LAWSON, *supra* note 85, 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, *supra* note 50, at 6, 14. 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, *Legible?*, 23 EMIGRE 6 (1992), *reprinted in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 108, 113–14 (Michael Bierut et al. eds., Rudy VanderLans trans., 1994).

168. *See* BLACKWELL, *supra* note 85, at 78.

169. *See id*.

170. *See* LOXLEY, *supra* note 56, at 131.

171. *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 is was based. *See* VanderLans, *supra* note 92. 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 68, at 14.

172. What happens when ink is pressed into paper has always been a consideration in type design. *See* BLACKWELL, *supra* note 85, at 96 (explaining that machine made paper has different technical requirements than handmade paper); LAWSON, *supra* note 85, at 123 (explaining how low paper quality in post-war Germany led to the creation of Palatino, a widely used typeface).

173. *See* Postrel, *supra* note 122, at 143, 145.

high speed."[174] The *New York Times* commissioned a typeface to compensate for the effects different atmospheric conditions have on printing in the different regions its national edition is printed. The goal, in other words, was to ensure that the newspaper looks the same no matter where it's printed.[175]

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,[176] 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.[177] 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.[178] 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.[179] This is why, for instance, most typeface designed specifically for the web are sans seriffed: the resolution of screens does not render the fine details of serifs very well at normal text sizes.[180] 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.[181] There are even digital typeface companies that

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174. *Id.*

175. *See* Hoefler & Frere-Jones, Mercury Text, http://www.typography.com/fonts/font_overview.php?productLineID=100017 (last visited Mar. 8, 2010). The typeface developed for the project can also be used to compensate for typeface printed in different mediums. The problem was solved by developing a typeface with different "grades," each used under certain conditions. *Id.* Typeface designs often have a shortcoming when printed on or with a certain medium. *See, e.g.*, LAWSON, *supra* note 85, at 166.

176. *See* BLACKWELL, *supra* note 85, at 96 (describing how high speed presses required different things of a typeface design than hand presses).

177. HELLER & FINK, *supra* note 101, at 5–6.

178. *See* KINROSS, *supra* note 35, at 169 (Lucida, a still prevalent typeface, was designed for low resolution printers). There were other limitations, too. For instance, computer fonts could only include 256 characters. *See* Hudson, *supra* note 164, at 26, 30–31.

179. The resolution of paper is about ten times greater than the resolution of a screen. MILES KIMBALL & ANN HAWKINS, DOCUMENT DESIGN: A GUIDE FOR TECHNICAL COMMUNICATORS 78 (2008).

180. *See* LOXLEY, *supra* note 56, at 238.

181. *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.html (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), http://ir.monotypeimaging.com/releasedetail.cfm?ReleaseID=298042 (announcing that Monotype created a new typeface family for Verizon, meant to optimize legibility on a small screen at both large and small sizes).

specialize in creating digital fonts for digital hardware.[182]

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.[183] For example, the Linotype machine could not kern letter combinations. Typefaces made for this machine had to account for this deficiency by, for instance, being designed with relatively large letter-spacing.[184] 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.[185] For one, it required typefaces that were more solid than their counterpart in another medium. Otherwise, the typeface would look spindly when printed.[186] 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.[187]

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.[188] These possibilities were eventually embodied in new designs, and indeed a whole new aesthetic.[189] 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

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182. *See* Woyke, *supra* note 181.

183. *See* LAWSON, *supra* note 85, at 155–56 (noting that when typefaces designed for machine typesetting are translated into digital type, the restrictions are lifted).

184. *See* LOXLEY, *supra* note 56, at 201, 204–05.

185. *See* BRINGHURST, *supra* note 43, at 139. The change from 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 85, at 276.

186. LAWSON, *supra* note 85, 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 43, at 139.

187. BLACKWELL, *supra* note 85, at 104.

188. CAHALAN, *supra* note 68, at 15.

189. *Id.*

their invention.[190] It may be true that creating proprietary historical revivals, or any typeface for that matter, was only a means to sell more machines,[191] but innovation often has crass roots. Typefaces are hardly ever designed for purely aesthetic reasons; design is inseparable from technology and commerce.[192] Whatever the motivation, typesetting machines were the first typesetting technology since printing began to be the spur for new typefaces.[193] Similarly, phototypesetting created its own rush of new designs, beginning especially in the 1970s.[194] For one, phototype allowed for narrower (even overlapping) letter spacing and shorter descenders (the tail of a "y" for instance) while still retaining legibility.[195] Typefaces were inevitably designed accordingly; indeed, for a time in the 1970s, much advertising copy exhibited the faddish aesthetic made possible by phototype.[196]

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 affects. The smaller foundries that digitization permits tend to be run by designers. They are not just less risk-averse than the professional managers 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.[197] 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[198]—and these foundries are much more naturally inclined to be innovative. Digitization

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190. *See* BAINES & HASLAM, *supra* note 34, at 58.

191. *See* BLACKWELL, *supra* note 85, at 26 (noting that typesetting machines required proprietary typefaces).

192. *See* KINROSS, *supra* note 35, at 171.

193. CHAPPELL & BRINGHURST, *supra* note 62, 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 43, at 140. 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, *supra* note 50, at 228, 230.

194. BRINGHURST, *supra* note 43, at 139–40.

195. LOXLEY, *supra* note 56, at 201–06.

196. *See* David Berlow, *So You Want to Create Your Own Typeface?*, FOLIO, Jan. 1990, at 74, *available at* http://findarticles.com/p/articles/mi_m3065/is_n1_v19/ai_8226607.

197. *See* VanderLans, *supra* note 92.

198. *See* Frere-Jones, *supra* note 193.

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.[199] 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.[200]

But the democratization of the industry and its ancillary effects are not the only consequences 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[201]—increasing the demand among them.[202] 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 for either machine or phototype text setting.[203] But even re-revivals are not slavish copies of a previous revival. Often, because of the limitations of prior technologies, digitization provides the first chance to faithfully reproduce a historic design.[204] 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 on which Adobe based their definitive digitized Garamond are cut thinner than the results of printing from Claude Garamond's punches would suggest.[205] Garamond cut his type thinner than it appears on paper to account for the amount ink

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199. *See generally* King, *supra* note 96. 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.

200. *See id.*

201. Peter Wayner, *Down With Helvetica: Design Your Own Font*, N.Y. TIMES, June 26, 2008, at C6, *available at* http://www.nytimes.com/2008/06/26/technology/personaltech/26basics.html.

202. *See* Berlow, *supra* note 196, at 75–76.

203. *See* BRINGHURST, *supra* note 43, at 140 (noting how most revivals have passed through the "stylistic filters" of machine type and phototype being cut before digitization); CHAPPELL & BRINGHURST, *supra* note 62, at 57–58 (providing the example of Janson, a widely used text typeface, which was originally made in the 17th century, adapted for the Linotype machine in 1954, and digitized 40 years after that).

204. HELLER & FILI, *supra* note 100, 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 167, 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, *supra* note 50, at 21, 23–24.

205. Kelly, *supra* note 63, at 56–58.

spreads when it is pressed by type.[206] 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.[207] Because they are not slavish copies, they count as new expressive works.

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.[208] 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.[209] 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.[210] Moreover, each alphabet may come in as many as five optical sizes, each of those coming in at least italic and bold weights, and often several others (light, semi-bold, etc.). This, and other typographic refinements OpenType makes possible,[211] means that new typefaces have to be created to satisfy market

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206. *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 193, at 230–31.

207. *See* CAHALAN, *supra* note 68, at 37.

208. *See* John D. Berry, *United States of America*, *in* ASSOCIATION TYPOGRAPHIQUE INTERNATIONALE REPORTS OF THE COUNTRY DELEGATES 2000-2001, at 35 (2001) (suggesting OpenType "promises a revolution, or at least a speeded-up revolution, in mass typography").

209. ADOBE, OPENTYPE USER GUIDE FOR ADOBE FONTS 2–3 (2008), http://www.adobe.com/type/browser/pdfs/OTGuide.pdf; KINROSS, *supra* note 35, 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.

210. Small caps are often "faked" by shrinking a regular majuscule letter. This, however, results in a small capital 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 to or overlaps with the end of the "f." *See generally* ADOBE, TYPOGRAPHY PRIMER (2000), https://www.adobe.com/education/pdf/type_primer.pdf.

211. *See* ADOBE, *supra* note 209, at 2 (mentioning, cryptically, that OpenType fonts "may include . . . layout features to provide richer linguistic support and/or advanced typographic control"); Berry, *supra* note 208 (mentioning the "typographic refinements" made possible by OpenType).

demand for advanced typographic features.

Among the "world of possibilities" opened up for typeface designers, consider the optical sizes mentioned above.[212] 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 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,[213] not to mention the generally higher standards now possible.[214]

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

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212. ADOBE, *supra* note 131, at 5 (comments of Robert Slimbach, Adobe type designer).
213. *Id.* at 11–12 (comments of Robert Slimbach).
214. *See id.* at 4–5 (comments of Robert Slimbach).

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 diffusely enforced by . . . social sanctions."[215] Although the field of norms is large and unsettled,[216] and although norms will never be able to wholly replace laws, intellectual property or otherwise, in every, or even most, instances,[217] there are 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[218] 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.[219] Norms will emerge from this need when a group has some goal and they believe a norm can help them attain that goal.[220] 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.[221]

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 determine the level of compliance with the governing norms.[222] 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-

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215. Robert C. Ellickson, *The Evolution of Social Norms: A Perspective From the Legal Academy*, *in* SOCIAL NORMS 35, 35 (Michael Hechter & Karl-Dieter Opp eds., 2001).

216. Michael Hechter & Karl-Dieter Opp, *Introduction* to SOCIAL NORMS xi, xii (Michael Hechter & Karl-Dieter Opp eds., 2001); *see* Ernst Fehr and Urs Fischbacher, *Social Norms and Human Cooperation*, 8 TRENDS IN COGNITIVE SCI. 185, 185, 189 (2004) (noting that the existence of norms "is one of the big unsolved problems" in social science).

217. *See* Fauchart & von Hippel, *supra* note 143, at 27.

218. *See* Fehr & Fischbacher, *supra* note 216, at 185.

219. Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 686 (1986).

220. Karl-Dieter Opp, *Social Networks and the Emergence of Protest Norms*, *in* SOCIAL NORMS 234, 236 (Michael Hechter & Karl-Dieter Opp eds., 2001).

221. *Id.* at 236–38; *see* Smith, *supra* note 26, at 406–07.

222. Mark F. Schultz, *Fear and Norms and Rock & Roll: What Jambands Can Teach Us About Persuading People to Obey Copyright Law*, 21 BERKELEY TECH. L.J. 651, 704–05 (2006).

riding, in other words) at a level above a certain threshold.[223] Monitoring, and communication among a group about the results of monitoring,[224] 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.[225] The paradox can also be explained by the prestige monitors are also granted when they catch cheaters.[226] 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.[227] 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 punished, even if sanctioning is costly.[228] 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.[229] It can also be accomplished by inflicting psychic harm so that the violator retracts from opportunities the group would have afforded him.[230] Of course, a group can banish a violator outright.[231] 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

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223. Dah M. Kahan, *The Logic of Reciprocity: Trust, Collective Action, and Law*, 102 MICH. L. REV. 71, 71 (2003).

224. *See* Lars Udéhn, *Twenty-five Years with* The Logic of Collective Action, 36 ACTA SOCIOLOGICA 239, 254 (1993).

225. *See* OSTROM, *supra* note 25, at 95–97.

226. *See id.* at 96.

227. *See* Fehr & Fischbacher, *supra* note 216, at 187 (sanctioning increases levels of cooperation in running community resource properties).

228. *See id.* at 189.

229. *See* ERIC POSNER, LAW AND SOCIAL NORMS 19–27 (2000).

230. *See* Richard H. McAdams, *A Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1650–51 (2000).

231. *See* Greif et al., *Coordination, Commitment, and Enforcement —The Case of the Merchant Guild*, 102 J. POL. ECON. 745, 745–76 (1994) (providing the example of merchants refusing to trade with any merchant who has cheated another).

norms is not foolish.[232]

The last generalization is that norms work best among smaller groups.[233] The reasons for this, too, are largely intuitive. For one, the logistics of monitoring and enforcement are simplified and cheaper.[234] 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 actions.[235] Because of personal ties in the group, that information "circulates easily."[236] In other words, it is harder to get away with anything when everyone knows everyone else's business.[237] Personal ties also make monitoring and enforcement more efficient, effective, and likely,[238] and make sanctions that exploit the desire for prestige and of others' esteem more effective.[239] 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.[240] It makes the threat of an omniscient group—which is essentially what a small group is, or purports to be—more credible.[241] Information no longer has to be remembered or transmitted by members with a special status or knowledge;[242] transgressions are there for all members of a group to see. The Internet also enables a group to enforce its norms among its members without them having to live close to each other to

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232. *See generally* Fehr & Fischbacher, *supra* note 216.

233. *See*, *e.g.*, Opp, *supra* note 220, at 240.

234. *See* Christine Horne, *Sociological Perspectives on the Emergence of Social Norms*, *in* SOCIAL NORMS 3, 20 (Michael Hechter & Karl-Dieter Opp eds., 2001) (noting the ability of a group to organize itself is important in the enforcement of norms).

235. ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 181 (1991).

236. *Id.* at 178–79.

237. *Cf.* Lior Jacob Strahilevitz, *Reputation Nation: Law in an Era of Ubiquitous Personal Information*, 102 NW. U. L. REV. 1667 (2008) (examining how networking technologies allow for the spread of reputation-related personal information, and its effects).

238. *See* Mark Granovetter, *Threshold Models of Collective Behavior*, 83 AM. J. OF SOC. 1360, 1420–43 (1978).

239. *See* OLSON, *supra* note 4, at 60–65; *see generally* Richard H. McAdams, *Cooperation and Conflict: The Economics of Group Status Production and Race Discrimination*, 108 HARV. L. REV. 1003 (1995).

240. *See* OSTROM, *supra* note 25, at 95–96 (noting 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 222, at 717 (providing an example where monitoring occurs by moderators on e-mail lists and discussion boards, and by website administrators). Enforcement by banishment, via blocked IP addresses for instance, is also trivial.

241. *See* ELLICKSON, *supra* note 235, at 180–81.

242. *See id.* at 232–33.

maintain the personal ties that are so important for effective enforcement.[243]

2.   Industry Norms in Other Open Areas of IP Law

Magic, the culinary arts, and stand-up comedy—industries operating in intellectual property law's open areas[244]—effectively use norms and sanctioning mechanisms as would be predicted by the general theory of norms described in the section above,[245] though each in a unique way that addresses each industries' peculiarities, to mitigate the copying and, in the case of magic tricks or jokes, unwanted exposure of their expressive works.[246] At the same time, however, these norms are designed to foster innovation by permitting, within certain bounds, the use of old works in creating new ones.[247] As a result, these industries thrive.[248]

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.[249] 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-based

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243. *See* OLSON, *supra* note 4, at 52–62.

244. *See*, *e.g.*, Lambing v. Godiva Chocolatier, No. 97-5697, 1998 U.S. App. LEXIS 1983 (6th Cir. Feb. 6, 1998) (declaring recipes uncopyrightable).

245. 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, 1154–55 (2007) (describing sanctioning mechanisms among chefs); Loshin, *supra* note 144, at 32 (describing sanctioning mechanisms in magic); Oliar & Sprigman, *supra* note 146, at 1815–21 (describing sanctioning mechanisms in stand-up comedy).

246. *See* Loshin, *supra* note 144, at 13, 18. In this regard, magic tricks and jokes are not great examples of a public good. A trick or joke, being just information, is certainly non-excludable, but it is rivalrous. When a magic trick is exposed, its value is destroyed. *See* id.

247. *Id.* at 8 ("[I]nnovation in magic . . . is often cumulative."); *see* Buccafusco, *supra* note 245, at 1150–55 (stating that the goals of norms among chefs are to credit innovators, punish plagiarists, and perpetuate a culture of sharing which allows new recipes to be created from old ones).

248. *See*, *e.g.*, Buccafusco, *supra* note 245, at 1150 (noting the culinary arts are innovative without intellectual property protection); Oliar & Sprigman, *supra* note 146, at 1793 (norms are able to provide comedians with enough incentive to create new material).

249. *See* OSTROM, *supra* note 25, at 21–22. Common pool resources are non-excludable, but are rivalrous. *Id.* at 24.

regimes.[250] Formal rules could also discourage norms that would otherwise have organically developed, without government intervention.[251] 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.[252] This requires empirical evidence on how industries operate without intellectual property, not theoretical models derived from theoretical predictions.[253]

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 divvying public goods into private property,[254] as Hardin's *The Tragedy of the Commons* predicts is necessary to prevent the overuse and free-riding supposedly endemic to CPRs.[255] Landes and Posner list mechanisms besides intellectual property laws whose result would be to offer authors enough incentive to create new expressive works.[256] 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.[257] 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

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250. Oliar & Sprigman, *supra* note 146, at 1849 (recognizing that externally imposed rules might be seen as illegitimate). Ideally, formal legal rules would complement norms for efficiency's sake, rather than working sometimes at odds with them. *See* Stephan Panther, *Non-Legal Sanctions*, *in* 1 ENCYCLOPEDIA OF LAW AND ECON. 999, 1017–20 (Bouckaert & De Geest eds., 2000) (summarizing some work in this area).

251. *See* Anthony Scott & James Johnson, *Property Rights: Developing the Characteristics of Interests in Natural Resources*, *in* PROGRESS IN NATURAL RESOURCE ECONOMICS: ESSAYS IN RESOURCE ANALYSIS 376, 377 (Anthony Scott ed., 1985).

252. *Cf.* OSTROM, *supra* note 25, 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).

253. *Cf. id.* at 24–25 (noting the same in the context of CPRs); *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. *Id.* at 88–91.

254. *See id.* at 58–101 (giving several examples of successful, long-enduring CPRs).

255. *See generally* Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968).

256. They include such things as the first-mover advantage, imperfect copies, licensing, technological barriers, and low costs of creation and distribution. *See* LANDES & POSNER, *supra* note 2, at 41–50. A non-exhaustive list could further include price discrimination and advertising. *See* Carrier, *supra* note 10, at 36–37.

257. *See* LANDES & POSNER, *supra* note 2, at 50–51.

and Society theory might predict that would also limit copying.[258] 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 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.[259] 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.[260] Reviving historical designs—mostly those created between the 15th and 17th centuries[261]—is generally considered acceptable. It's a good thing, too. Revivals are the key theme of modern typography,[262] and borrowing elements from existing designs has always been an important and accepted part of typeface design.[263] Examples abound: Times New Roman is a revival of a 16th century typeface;[264] almost everyone offers some version of Garamond, an early 16th century design;[265] and so on.[266]

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258. ELLICKSON, *supra* note 235, at 6–8, 137; *see* Udéhn, *supra* note 224, at 251–53 (noting there may be reasons people do not free-ride on public goods that economic analysis or game theory cannot predict).

259. *See Arial versus Helvetica*, I LOVE TYPOGRAPHY, Oct. 6, 2007, http://ilovetypography.com/2007/10/06/arial-versus-helvetica/. Examples abound. *See, e.g.*, Bloody Rip Off Artists, *supra* note 68 (commenting that Adobe's Myriad is very slightly different from Frutiger).

260. LAWSON, *supra* note 85, at 54–55, 74.

261. *See generally id.*

262. *See* BLACKWELL, *supra* note 85, at 36.

263. *See, e.g.*, VanderLans, *supra* note 92.

264. BLACKWELL, *supra* note 85, at 76–78.

265. *See* LOXLEY, *supra* note 56, at 40–42. Complicating matters is the fact that many versions are based on designs mistakenly attributed to Garamond, though they were actually by his associates, or are even based on prior re-creations of designs mistakenly attributed to Garamond. *See* LAWSON, *supra* note 85, at 129–40, 147–50, 151–52, 158. Only a few are faithful re-creations of the original, and many reflect more the era and region in which they were made than the original itself. BLACKWELL, *supra* note 85, at 39.

266. *See, e.g.*, CHAPPELL & BRINGHURST, *supra* note 62, at 232 (noting that Centaur and Doves roman, two designs of the handcraft press movement still used today, are based on 16th

But 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.[267] In the classification scheme, knockoffs are the only classifications that do not rate as a proper revival; they seek to capitalize on commercial success and have no added originality, and therefore violate the norm against verbatim copying.[268] But what might otherwise be a knockoff is acceptable when it has been well-researched, and improves, either "technically, aesthetically, [or] functionally," the original.[269]

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.[270] Because designs are rarely verbatim copies, 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.[271] 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 different might actually satisfy different demands.[272]

Norms extend not just to independent designers, but to graphic designers, who form the biggest market for typeface designs, as well.[273]

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century designs); LAWSON, *supra* note 85, at 262 (revivals of art nouveau designs); LOXLEY, *supra* note 56, at 36–37 (digital re-creations of historical designs).

267. *See* Downer, *supra* note 94 (explaining that 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").

268. *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).

269. Posting of billtroop to Typophile, Get Those Fonts Copyrighted!, http://typophile.com/node/50470 (Oct. 15, 2008, 04:53) [hereinafter billtroop].

270. *See* CABARGA, *supra* note 268; VanderLans, *supra* note 92 (describing the practice of digital "sampling," wherein a sampled font "is a hybrid" made up of distinctive parts copied directly from existing digital fonts.").

271. *See* VanderLans, *supra* note 92; billtroop, *supra* note 269 (noting that Font Bureau, a foundry that mostly licenses computer fonts from independent designers, produces "numberless superb knock-offs," which is acceptable because "each one is impeccably researched and executed, and *each one is impeccably sourced*").

272. *See* Posting of SuperUltraFabulous to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 02:40).

273. *See* Posting of Mark Simonson to Typophile, The High Price of Piracy, http://typophile.com/node/15647 (Oct. 17, 2005, 11:56) (noting that consumers typically do

Among the graphic design community, it's common to download pirated computer fonts as a way to "sample" them (in effect building up a library from which to choose).[274] Sometimes these sampled computer fonts are even shown to a client as part of a design proposal, or as a choice among designs.[275] 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.[276] Pirated computer fonts will not be used, or so the norm goes.[277]

The generalized theory of norms described above 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,[278] 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 staff.[279] When foundries operated under the old model, monitoring for

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not buy computer fonts; graphic designers do).

274. *See* Posting of bert_vanderveen to Typophile, Piracy in the Design Community, http://typophile.com/node/16177 (Nov. 13, 2005, 12:09).

275. *See* Posting of Termopolium to Typophile, Font Piracy and the Internet, http://typophile.com/node/27711 (Aug. 17, 2006, 04:54).

276. *See* Discussion thread of Fontleech, Weekend Discussion Question 6: Piracy, http://fontleech.com/04/29/2005/weekend-discussion-questions-6-piracy (Apr. 29, 2005, 14:02).

277. *See id.*

278. *See* Posting of raph to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 16, 2007, 21:27) [hereinafter raph].

279. *See* BLACKWELL, *supra* note 85, at 126. The designer of Helvetica, perhaps the most successful design in history, was paid a wage, receiving no royalties. LOXLEY, *supra* note 56, at 174; King, *supra* note 96 ("Adobe is the only company that continues to offer full-time, waged employment to designers of original typefaces.") This source may be a little dated on this point. It appears that Hoefler & Frere-Jones employs typeface designers. *See* Hoefler & Frere-Jones, Biographies, http://www.typography.com/about/biographies.php (last visited Mar. 7, 2010).

violations of norms was hard, and enforcing norms even harder. Consider, 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 journals, letters back and forth among company executives, and lots of rebukes and threats.[280] 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 companies in this era that made type primarily to use in the lucrative typesetting machines they manufactured 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 computer fonts it licenses are knockoffs or not.[281] The collective of individual designers, however, can. They monitor websites and alert their colleagues when they spot illegal copies of their typefaces.[282] 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;[283] accusations of plagiarism are typically aired and analyzed, usually by third-party, objective observers.[284] Norms can be enforced in a variety of ways. The mildest enforcement is hardly distinct from monitoring: contacting the foundry

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280. *See* Pankow, *supra* note 99, at 239–55.
281. *See* Posting of segura to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 09:00).
282. CAHALAN, *supra* note 68, at 93.
283. *See*, *e.g.*, Posting of Bald Condensed to Typophile, FontShop and Unnamed Firm Reach Agreement, http://typophile.com/node/17362 (Jan. 17, 2006, 15:12).
284. *See*, *e.g.*, Bloody Rip Off Artists, *supra* note 68.

to alert them to a knockoff they are licensing.[285] Sanctioning can escalate to shaming,[286] threats of a boycott,[287] or refusals to work with or license to foundries with a reputation for selling copied or plagiarized designs.[288] These sanctions can ultimately result in a vendor removing a computer font he is licensing[289] even though there is no legal reason for him to do so.[290] 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.[291] 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[292] is one "in which participants vie for large awards that only a small fraction will eventually obtain."[293] In other words, you trade a 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.[294] A great example is that of

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285. *See*, *e.g.*, Posting of Miss Tiffany to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 16, 2007, 20:27). Typeface owners also alert Internet Service Providers to websites hosting pirated computer fonts, citing the DMCA. CAHALAN, *supra* note 68, at 93.

286. *See* Posting of dicharry to Typophile, Bloody Rip Off Artists!, http://typophile.com/node/36209 (Aug. 17, 2007, 20:39).

287. *See* BLACKWELL, *supra* note 85, at 126.

288. raph, *supra* note 278.

289. It's interesting to note that foundries, like Adobe, who still employ salaried designers, are the most resistant to acknowledging plagiarism. *See* Bloody Rip Off Artists, *supra* note 68.

290. *See*, *e.g.*, *id.*

291. *See* Lipton, *supra* note 32, at 168–69 (making essentially this argument).

292. 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 & POSNER, *supra* note 2, at 49–50 (explaining the superstar phenomenon).

293. 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).

294. Rosen, *supra* note 292, at 845

classical musician.[295] The top few concert pianists in the world are probably constantly booked and handsomely paid. The Juliard-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.[296] 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.[297]

It's arguable that typeface design is a tournament professional since nobody is made rich by it.[298] Of the only about 500 type-designers in the world,[299] a few certainly make a good living,[300] and a few more are able to make a living exclusively through type design.[301] The rest either have to supplement their income with other work, or they make almost no money at all.[302] Thus it seems to have always been.[303] 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

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295. *Id.*

296. *Id.*

297. Though there are only a handful of Michelin four-star restaurants in the world.

298. Liu, *supra* note 113.

299. *See id.*

300. *See* Alice Rawsthorn, *About Typeface*, N.Y. TIMES, Feb. 26, 2006, § 6 (Women's Fashion Magazine), at 176 (describing how type design has as its "king," Matthew Carter, and its "crown princes," Christian Schwarz, Frere-Jones, and Jonathan Hoefler).

301. *See* LAWSON, *supra* note 85, at 381 (noting that a few designers make a living employed by a type foundry).

302. *See* BLACKWELL, *supra* note 85, 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* Rob Walker, *Type Casting*, N.Y. TIMES, July 17, 2005, § 6 (Magazine), at 20.

303. LOXLEY, *supra* note 56, at 41, 43–54, 64, 70.

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 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,[304] but even in the age of phototype, which was the first technology that could feasibly copy designs, renditions were often poor.[305] Digitization has improved attempted copies, but the results of even scanned designs are not always perfect, and may be quite inferior.[306] 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.[307] 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.[308] 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 more room for "slop" in its spacing and kerning.[309] Second, since a graphic designer might adjust the space between letters by hand to get a desired

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304. *See* Pankow, *supra* note 99, 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.

305. *See* LAWSON, *supra* note 85, at 126–27.

306. *See* Karrie Jacobs, *An Existential Guide to Type*, METROPOLIS (1988), *reprinted in* TEXTS ON TYPE: CRITICAL WRITINGS ON TYPOGRAPHY 21, 23 (Steven Heller & Philip B. Meggs eds., 2001) (comments of Herman Zapf).

307. *Cf.* Barnett, *supra* note 120, at 1382–83 (noting that in fashion, poorly made counterfeit goods do not result in lost sales because they are not a perfect substitute).

308. CAHALAN, *supra* note 68, at 87.

309. *Id.* at 68.

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.[310] Now, because 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,[311] especially when the original designer will enjoy a significant lead-time advantage in sales.[312] The typefaces, then, that take the longest to develop and require the most investment are therefore the most resistant to plagiarism.[313]

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-rivalrous and non-excludable, authors add features or services that are more rivalrous or excludable—or emphasize those parts of expressive content that are already more rivalrous 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.[314] 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.[315] Comedians have developed a style of stand-up that de-emphasizes the traditional

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310. *See id.* at 32.

311. *See* Posting of Mark Simonson, *supra* note 104 (suggesting it is not possible to make a decent copy of a design in 20 hours of work); *see also* Plant, *supra* note 12, at 171 (suggesting that copyright is unnecessary when the cost to copy — his example being of a medieval scribe laboriously copying an illuminated manuscript—is high, and also noting that copying in this manner was prone to introducing errors).

312. *See* Nadel, *supra* note 72, at 822.

313. Display typefaces sometimes contain fewer characters. Even if they do 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, 15:12) (where the new UPS logo contains what seems to be an exact copy of another popular typeface).

314. BOYLE, *supra* note 6, at 215–16 (describing how the hyperlinks to citations West provides in cases and law review articles provide ways to search through databases, summaries of cases, etc.).

315. *See* Loshin, *supra* note 144, at 13, 30.

joke with a punch-line of vaudeville but instead derives much of its humor from the more difficult to copy persona of the comedian.[316] 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.[317]

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 excludable 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).[318] 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.[319] The analogy here, in terms of the public goodedness 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 inferior quality of compressed movies is glaringly obvious. When a monthly membership to Netflix begins at $8, allowing you to rent 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.[320]

Norms within typeface design reasonably substitute for copyright

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316. *See* Oliar & Sprigman, *supra* note 146, at 1841–59.

317. *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).

318. *See* 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) (commenting that 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) (stating that norms, after all, are the internalization of external effects).

319. *See* Posting of sii to Typophile, Font Piracy and the Internet, http://typophile.com/node/27711 (Aug. 17, 2006, 12:29) (a 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).

320. *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).

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*

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.[321] 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.[322] As one critic has said, "[i]t is the nature of type design to follow the baggage train."[323] And so it has. Typefaces have been Renaissance, Baroque, and Neoclassical.[324] 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.[325] Renaissance humanism is reflected in the humanist slant of the axis;[326] Neoclassical rationalism—inorganic, "static and restrained[,] . . . and far more interested in rigorous consistency"[327] — is

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321. *See* Bringhurst, *supra* note 157, at 9–10.

322. *See*, *e.g.*, FRIEDRICH FRIEDL ET AL., TYPOGRAPHY 48–49 (1998). Constructivism was an aesthetic movement associated with Soviet propaganda, especially posters, in the 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 43, at 119–36 (describing how typeface designs evolve to match the corresponding era).

323. Hudson, *supra* note 164, at 25.

324. *See* BRINGHURST, *supra* note 43, at 121–29.

325. CHAPPELL & BRINGHURST, *supra* note 62, at 158–61.

326. 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 56, at 140–41, 153–55) to the roman letters we know today. CHAPPELL & BRINGHURST, *supra* note 62, 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 id.* at 19–20.

327. BRINGHURST, *supra* note 43, at 128.

embodied in its unwaveringly vertical axis;[328] the Baroque-ian mixture is indicative of that style, "rich with activity [taking] delight in the restless and dramatic play of contradictory forms."[329] Typefaces have been Mannerist and Romantic, where the emphasis is on dramatic contrasts.[330] Beginning in the late 19th century, typefaces have been designed in the Victorian, Arts and Crafts, and Art Nouveau modes; 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.[331]

From the 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.[332] 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.[333] 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."[334] Instead they would be the products of geometry.[335] 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

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328. Baskerville, a British typeface popular in America in the 18th century, is said to look like American Federal architecture. *See id.*

329. *Id.* at 127.

330. *Id.* at 130. Anybody still not convinced that a typeface can have cultural significance beyond utilitarian function should consider this: the Modernist, Swiss Style Helvetica, is one of the "bleakest souvenirs of the Industrial Revolution," design embracing and representative of the industrial age. Richard Sine, *Type Minds*, METRO, Aug. 8–14, 1996, http://www.metroactive.com/papers/metro/08.08.96/cover/fonts1-9632.html (quoting Robert Bringhurst). Clarendon, a Victorian design, reflects "the hearty, stolid, bland, unstoppable aspects of the British Empire." *Id.* (quoting Robert Bringhurst).

331. *See* HELLER & FILI, *supra* note 100, at 167 (listing some of these general movements); FRIEDL, *supra* note 322, at 18–59 (giving examples of some of the types designed in these styles).

332. *See* Miller & Lupton, *supra* note 93, at 22.

333. *See* CAHALAN, *supra* note 68, at 11 (early designers spent their entire lives designing letters within a narrow, almost indistinguishable, range).

334. Miller & Lupton, *supra* note 93, at 21; *see* CAHALAN, *supra* note 68, at 19–20.

335. CAHALAN, *supra* note 68, at 14. Humanist typefaces would reassert themselves in the 20th century.

19th century, however, that more deviant designs appeared.[336] 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.[337] 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.[338]

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.[339] Rather, they are meant for setting short amounts of text—like headlines, captions, ad copy, or signs— meant to gain a reader's attention.[340] Often, though not always, they are sans-seriffed.[341] 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.[342] But display typefaces are not likewise

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336. Miller & Lupton, *supra* note 93, at 22. Remember, the pantograph allowed typeface designs to be carved into type from enlarged drawings.

337. CAHALAN, *supra* note 68, at 29–30.

338. 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 157, 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.* 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., May-June 1992, *reprinted in* LOOKING CLOSER: CRITICAL WRITINGS ON GRAPHIC DESIGN 122, 122–23 (Michael Bierut et al. eds., 1994).

339. CHAPPELL & BRINGHURST, *supra* note 62, at 283.

340. *See* LOXLEY, *supra* note 56, at 64–65. 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 designed for that purpose.

341. The discovery of the Rosetta stone and other Egyptian artifacts in the 19th century led to the creation of the first sans-seriffed typefaces. *Id.* at 37–39.

342. *See* RUARI MCLEAN, HOW TYPOGRAPHY HAPPENS 33 (2000) (referencing Daniel

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 smaller-scale and often self-consciously created ones.[343] 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.[344] This is especially true when a typeface is designed, as it often is, to specifically look contemporary[345] or to have certain cultural connotations, or be associated with "periods of time, significant events, locations, industries, or countries."[346] Its ephemerality is guaranteed.

The typeface industry is often compared to the fashion industry.[347] Indeed, it has many of its hallmarks.[348] First, fashion generally cannot be protected by copyright law because, as with typefaces, it's too functional.[349] And yet the whole enormous global fashion industry is not just innovative, it's "vibrant."[350] There is also the obvious comparison

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Updike, a late 19th century American printer and typographer who wrote "[o]ur composing-room has . . . only about seven series of standard types for book work"). *Cf.* HELLER & FILI, *supra* note 100, at 10 (display type is especially influenced by fashion trends).

343. *See* HELLER & FILI, *supra* note 100, at 10–11.

344. *See* CAHALAN, *supra* note 68, at 77–83 (proposing that Template Gothic, a typeface popular in the late 1990s, was successful by somehow tapping into the culture's zeitgeist).

345. *Id.* at 73.

346. *Id.* at 74.

347. *See id.* at 112 (relaying comments of a typeface designer who believes the industry has made itself like the fashion industry to foster sales); HELLER & FILI, *supra* note 100, at 107 ("[T]ypography, like style, works in cycles . . . .").

348. *See* YIANNIS GABRIEL & TIM LANG, THE UNMANAGEABLE CONSUMER: CONTEMPORARY CONSUMPTION AND ITS FRAGMENTATION 99 (1995) (including in those hallmarks "[u]niversal appeal, seeming inevitability, . . . a cottage industry of media pundits and image-makers sustaining it and a stream of celebrities embodying it").

349. Raustiala & Sprigman, *supra* note 28, at 1699, 1749; *see* Galiano v. Harrah's Operating Co., 416 F.3d 411, 422 (5th Cir. 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 & Sprigman, *supra* note 28, at 1704–05. Fashion does use trademarks to protect its brands and their logos. *See id.* at 1699–72. However, even to the extent that fashion receives any intellectual property protection, enforcement is low. Barnett, *supra* note 120, at 1381–82.

350. Raustiala & Sprigman, *supra* note 28, 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* Aram Sinnreich & Marissa Gluck, *Music & Fashion: The Balancing Act Between Creativity and Control*, THE NORMAN LEAR CENTER 25 (Conference: Ready to Share, Fashion and the Ownership of Creativity, USC Annenberg School for Communication), Jan. 29, 2005.

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.[351] 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.[352] Because typefaces are a design product, they are subject to the same influences as other design products. Namely, consumers become "bored with what they are accustomed to seeing, and vaguely crave something different."[353] They are, in other words, subject to fashion-like cycles.[354] While this is true to some extent for text typefaces—which change along with wholesale aesthetic changes—it is 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.[355] Obviously, if styles become obsolete, new ones have to be created to take their place.[356]

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.[357] 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.[358] 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,

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351. *See* SEÁN JENNET, 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"); LOXLEY, *supra* note 56, at 4 (noting that one font vendor has "seen quite a few vogues for different styles over 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) (providing examples of typefaces coming back in style).

352. *See* Raustiala & Sprigman, *supra* note 28, at 1695, 1720.

353. LOXLEY, *supra* note 56, at 3; *see id*. at 222.

354. *See* BLACKWELL, *supra* note 85, at 100 (citing two surveys, one from the 1920s, the other from the 1950s, charting the change in popularity of certain typefaces).

355. *See* HELLER & FINK, *supra* note 101, at 8.

356. *See* LAWSON, *supra* note 85, at 224, 354 (noting forgotten types of the 19th century).

357. *See* Barnett, *supra* note 120, at 1384–86 (arguing that counterfeit goods are usually imperfect and help by tarnishing a design's image and speeding 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). "We let others copy us. And when they do, we drop it." Raustiala & Sprigman, *supra* note 28, at 1722 (quoting Miucci Prada).

358. Raustiala & Sprigman, *supra* note 28, at 1728–29.

"aspirational" consumers.[359] Designers then have to create new 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."[360] Of course, the key to this process is an ugly kind
of Veblenian Theory-of-the-Leisure-Class[361] snobbishness where clothes
are a signal of status, ostensibly declaring a consumer's social position
and taste.[362] 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.[363]
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."[364] And when a new aesthetic enters a market,
its general hallmarks are copied.[365] Because of digitization, designs in the
new mode can be made and distributed quickly.[366] 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.[367]

It might, at first, seem strange that a typeface 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.[368] Such designs would only
be used today ironically. Famed designer Frederic Goudy began to fail
because his typefaces began to look increasingly dated.[369] Cheltenham
became a very popular advertising typeface in the early 20th century, and
then became very unpopular.[370] In the 1970s and 80s, ITC, a major

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359. *Id.* at 1721–23, 1733; Barnett, *supra* note 120, at 1384–85, 1391, 1409.

360. Raustiala & Sprigman, *supra* note 28, at 1726.

361. *See generally* THORSTON VEBLEN, THE THEORY OF THE LEISURE CLASS (Prometheus Books 1998) (1899).

362. *See* JULIET SCHOR, THE OVERSPENT AMERICAN: UPSCALING, DOWNSHIFTING, AND THE NEW CONSUMER 34–39 (1998).

363. *See* LAWSON, *supra* note 85, at 256–61 (explaining that about 50 variants of Cheltenham, a popular typeface for advertising in the early 20th century, were made by various foundries).

364. CAHALAN, *supra* note 68, at 172.

365. *See* Bloody Rip Off Artists, *supra* note 68.

366. *Cf.* Raustiala & Sprigman, *supra* note 28, at 1714–16 (with the aid of technology, knock-off fashions can be produced and in stores almost as soon as the originals).

367. *See* CAHALAN, *supra* note 68, at 146.

368. *See* LAWSON, *supra* note 85, at 354.

369. LOXLEY, *supra* note 56, at 100–01.

370. LAWSON, *supra* note 85, at 253–61. Cheltenham was originally designed as text

foundry, had a "penchant for letters of liberal proportions, tightly packed horizontally," a style that's passé now.[371] For a time, sans-seriffed typefaces were considered to be the only acceptable typeface, if one wished to be contemporary.[372] 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.[373] Souvenir, a typeface popular in the 1970s, looks laughably dated today.[374] The typeface Template Gothic is acutely associated with mid 1990s graphic design.[375] 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.[376]

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 revolution and its commercial vigor.[377] After 1820, most typefounders made most of their money selling display typefaces destined for advertising[378] instead of text typefaces destined for books, and by 1890 the demand for new typefaces outstripped supply.[379] The market matured and stabilized by the 1920s,[380] growing more or less into its modern incarnation,[381] and ever since advertisers have been the primary market for typefaces.[382] Helvetica, for instance, was developed strictly as a result of the unmet demand of advertisers.[383] 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.[384] Typeface design, to the extent that it serves advertising,

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typeface. *Id.* at 256–61.

    371. LOXLEY, *supra* note 56, at 207; King, *supra* note 96.

    372. *See* MCLEAN, *supra* note 342, at 56.

    373. *See* HELVETICA, *supra* note 67.

    374. CAHALAN, *supra* note 68, at 158.

    375. *See id.* at 77–83.

    376. *See id.* at 163.

    377. *See* BAINES & HASLAM, *supra* note 34, at 68.

    378. LAWSON, *supra* note 85, at 308.

    379. *See id.* at 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 322, at 40–41.

    380. *See* LAWSON, *supra* note 85, at 253–55.

    381. FRIEDL, *supra* note 322, at 54–55.

    382. CHAPPELL & BRINGHURST, *supra* note 62, at 195.

    383. BLACKWELL, *supra* note 85, at 102.

    384. CAHALAN, *supra* note 68, at 171 (Herman Zapf commenting on how display typefaces have to capture readers' attention); *see* HELLER & FILI, *supra* note 100, at 59

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.[385] 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.[386] As advertising budgets grew in the first part of the 20th century to keep pace with other advertising, there was a commensurate need for new, novel typefaces to make campaigns, products, and corporations distinctive.[387] 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.[388]

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.[389] Indeed, it is necessary for them to do so, since the avant-garde is by definition the source of novelty.[390] 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.[391] Helvetica, for instance, was once radically Modern. It has since become the emblematic corporate typeface.[392] A Grunge typeface, for instance, is oppositional, its incongruities and pseudo-sloppiness contrasting with what has 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.[393]

(commenting on how the ornate typography of Victorian advertising—a "cacophony" as it's sometimes referred to—eventually lead to a more simplified, minimal typographic aesthetic in advertising).

385. *See* LAWSON, *supra* note 85, at 253–55 (noting some exotic but short-lived designs).

386. *See id.* at 308.

387. *See* HELLER & FILI, *supra* note 100, at 12 ("The 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.").

388. *See* LOXLEY, *supra* note 56, at 3.

389. *See* CAHALAN, *supra* note 68, at 77–82 (explaining how 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); HELLER & FILI, *supra* note 100, at 95, 111, 130, 182 (the avant-garde Modern movements beginning in the 1920s eventually become commodified in advertising).

390. *See* BLACKWELL, *supra* note 85, at 34.

391. *See* FRIEDL, *supra* note 322, 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.").

392. *See* HELLER & FILI, *supra* note 100, at 160.

393. *See* Liu, *supra* note 113. Helvetica itself effectively replaced Futura, a typeface created in 1927, and which had been dominant in the advertising industry for 25 years. BLACKWELL,

Advertisers and corporations cannot afford for their message or image to look dated, or even common.[394] When this happens, they will move on to a new design, or commission one.[395] 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?[396] 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.[397] This suggests that advertisers and corporations are aware that the unchecked spread of a typeface dilutes the message it was chosen to convey, or that it shortens the design's useful life.[398] 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.

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.[399] As such, they are usually shared in the same manner, via

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supra note 85, at 54–55.

394. *See* CAHALAN, *supra* note 68, at 129–37 (analyzing Rotis, a display typeface popular in the latter 1990s, which became ubiquitous in ad copy, thereby losing its effectiveness in the medium).

395. 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 85, at 115 (describing commission of a typeface for an ad campaign with certain connotations). Because of the relatively large fee (tens thousands of dollars, possibly. Liu, *supra* note 113) commissions for corporate identities are the holy grail of type designers. *See* BLACKWELL, *supra* note 85, at 15.

396. A commercial client could also commission an inexpensive 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, 13:51).

397. *See* CAHALAN, *supra* note 68, at 88.

398. 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. *See* Jacobs, *supra* note 306, at 32. For this reason, the right of exclusive use, if it exists, is often of a limited duration.

399. *See* Walker, *supra* note 302 (noting a designer's comments comparing the file-sharing

bittorrent indexers, one-click uploaders,[400] and Usenet groups. This kind of piracy is not the kind of, say, 1992's, when *Adobe Systems, Inc. v. Southern Software, Inc.*,[401] 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,[402] and then licensed them to various organizations, essentially packaging them on a CD and selling them at a deep discount.[403] 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,[404] 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 computers fonts with a total retail value of over $50,000.[405] It's no wonder, then, that designers clamor for protection, and cite computer font file-sharing as a harbinger of doom.[406] But, as with any other industry implicitly relying on classic public goods theory in place of copyright protection, where's the evidence that doom has or will come?[407]

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,[408] file sharing is to blame.[409] This is not to say

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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.

400. 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. *See generally* Posting of Janko Roetggers to NewTeeVee, Piracy Beyond P2P: One-Click Hosters, http://newteevee.com/2007/06/17/one-click-hosters/ (June 17, 2007. 00:00).

401. Adobe Sys. v. S. Software Inc., No. C 95-20710 RMW (PVT), 1998 WL 104303 (N.D. Cal. Feb. 2, 1998).

402. 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.

403. *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.

404. 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 68, at 93.

405. *See* Developer X, The Best and Most Expensive Fonts (1500 Collection), http://dxjo.net/blog/?p=729 (last visited Apr. 14, 2010).

406. *See*, *e.g.*, Liu, *supra* note 113 (referring to comments of Brian Heuckroth, senior product marketing manager for typefaces for Adobe).

407. *See* Snyder, *supra* note 82, at 125, 125 n.151 (stating there are no reliable statistics on losses caused by piracy or because typeface designs are in the public domain).

408. "[T]he industry has suffered a meltdown in profits." Liu, *supra* note 113. Designs that before sold for hundreds of dollars now might sell for "less than $50." *Id.; see also* Rothenberg, *supra* note 112 (documenting the fall in prices).

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.[410] The democratization of typeface design bears some responsibility.[411] 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 probably 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.[412] 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,[413] those given away to lure customers to pay for other computer fonts (these can either be high quality originals or copies of existing designs),[414] 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).[415] Since every consumer has at his disposal a bevy of free computer fonts, what incentive do they have to find other free computer fonts?[416] 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

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409. *See*, *e.g.*, BAINES & HASLAM, *supra* note 34, at 95 (arguing that it was inevitable prices would come down after digitization spread the typeface market to the general populace, making it no longer specialized). *Cf.* Felix Oberholzer-Gee & Koleman Strumpf, *The Effect of File Sharing on Record Sales: An Empirical Analysis*, 115 J. OF POL. ECON. 1 (2007) (arguing that the effect of file sharing on music sales has been a wash).

410. *See*, *e.g*, CAHALAN, *supra* note 68, at 93 (explaining that computer font distributor Eyewire does not believe that piracy affects their sales).

411. 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.

412. *See* King, *supra* note 96*; see generally* Discussion thread of Typophile, Free fonts, a good thing?, http://typophile.com/node/8407.

413. *See* Lipton, *supra* note 32, at 155 (providing examples of poor quality novelty designs obviously made by an amateur); Posting of Simonson, *supra* note 311 (explaining that free computer fonts are given away because they are low quality, with little effort invested).

414. *See* Walker, *supra* note 302; Typophile, FAQ Free, http://typophile.com/node/44453? (last visited Mar. 13, 2010) (providing a list of sites with free computer fonts). Many of these sites contain advertisements to the big foundries. *See* Acidfonts, Download Free Fonts, http://www.acidfonts.com (last visited Mar. 13, 2010).

415. Thirty-seven are given away with Windows, 120 with OS X. BLACKWELL, *supra* note 85, at 11.

416. *See* CAHALAN, *supra* note 68, at 38, 147.

the case. For one, most documents produced by consumers use one of two typefaces: Times New Roman or Helvetica/Arial.[417] More importantly, 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,[418] 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.[419] 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.[420] 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,[421] far exceeds the value of the Creative Suite itself.[422] 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

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417. CHAPPELL & BRINGHURST, *supra* note 62, 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 it was a default typeface on some computers and printers. CAHALAN, *supra* note 68, at 146.

418. For instance, Microsoft Word has about a 95 percent market share. Ina Fried, *Apple's iWork Emerges as Rival to Microsoft Office*, CNET NEWS, Jan. 23, 2006, http://news.cnet.com/Apples-iWork-emerges-as-rival-to-MicrosoftOffice/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 features through Word, Word's typesetting is poor enough that it would overshadow any aesthetic benefit OpenType features would confer.

419. Postrel, *supra* note 122, 143–45.

420. Posting of Thomas Phinney to Typblography, http://blogs.adobe.com/typblography/2008/09/cs4_fonts.html (Sept. 25, 2008, 17:48).

421. *See* Adobe, Minion Pro, http://www.adobe.com/cfusion/store/html/index.cfm?store=OLSUS&event=displayFontPackage&code=1719 (last visited Feb. 1, 2010). Each weight in the typeface family Minion Pro is sold for $35. The complete Minion Pro family is included in Adobe's Creative Suite.

422. The Creative Suite begins at about $1,400. *See* Adobe, Adobe Creative Suite 4 Design Standard, http://www.adobe.com/products/creativesuite/designstandard/ (last visited Feb. 1, 2010).

dominates the market of a particular good, especially if that good is software.[423] 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.[424] 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 computer 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.[425] In essence, pirates distribute the goods a company is seeking to monopolize over the Internet, at no cost to the company.[426] Paying consumers are charged for the increased value of the network that piracy partly has been responsible for generating.[427] 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.[428] By denouncing piracy, companies avoid upsetting the users who have paid. [429] This is, in fact, typical behavior for companies seeking to gain network effects advantages for their products.[430] 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)

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423. Network effects occur when "the utility that a user derives from consumption of the good increases with the number of other agents consuming the good." Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 THE 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.

424. BLACKWELL, *supra* note 85, at 156. Adobe did in fact begin its retail business selling computer fonts. Now, however, the tail wags the dog. *See* King, *supra* note 96.

425. Katz, *supra* note 318, at 167–68.

426. *See* Carrier, *supra* note 10, at 37–38 (describing how the public internalizes distribution by using the Internet).

427. Katz, *supra* note 318, at 167–68.

428. 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 & POSNER, *supra* note 2, at 39 (explaining price discrimination).

429. *See* Katz, *supra* note 318, 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.

430. *See id.* at 179–85 (describing Microsoft tactics).

computer font from an independent foundry is difficult, if not impossible. For instance, Stephen Heller, a noted expert in the field, picked seven of the "most popular" typefaces released by independent foundries over the past ten years.[431] 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,[432] 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).[433] Because Adobe at the time was the main supplier of computer fonts, this tactic was effective.[434] 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.[435]

In *Agfa Monotype v. Adobe*,[436] 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).[437] 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 having licenses to the computer fonts of a given PDF.[438] 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,[439] 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.[440] If someone

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431. *See* Steven Heller, *Acceptance Letters*, N.Y. TIMES, Aug. 29, 2004, at 26.
432. Font Folio, *supra* note 83.
433. King, *supra* note 96.
434. *Id.*
435. *Id.*
436. Agfa Monotype Corp. v. Adobe Sys., Inc., 404 F. Supp. 2d 1030 (N.D. Ill. 2005).
437. *See* 17 U.S.C § 1201(a)(1) (2004).
438. *Agfa Monotype*, 404 F. Supp. 2d at 1030–31.
439. *Id.* at 1032–33.
440. *Id.* at 1031.

wanted to steal a computer font, they could theoretically do it by pulling it out of the file that makes up the PDF.[441] 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 inefficient, but some important features of a computer font (kerning tables, for instance) cannot be extracted this way.[442] 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 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.[443]

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.[444] Graphic designers and typographers are the only ones likely to employ optical sizes. And design professionals are likely to use Adobe products.[445] In

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441. Posting of Goran Soderstrom to Typophile, http://typophile.com/node/48411 (Aug. 14, 2008, 13:16). Computer fonts extracted from a PDF often lose many OpenType features, if they exist, in the process. *Id.*

442. *See* Posting of Bill Troop to p90.net, http://type-design.p90.net/lists/ displayarticle.html?msgid=15189 (Oct. 2, 2003, 02:45) (noting the poor quality of some existing PDF extractions of a computer font). This is not even to mention that only the characters used in a PDF can be stripped from it.

443. The case was dismissed on summary judgment because nothing Agfa Monotype did "effectively control[ed] access to a work protected under" the DMCA. *Agfa Monotype*, 404 F. Supp. 2d at 1036–37 (quoting 17 U.S.C. § 1201(a)(2)(A) (2004)). Agfa Monotype therefore could not have proved the elements necessary for a DMCA violation. *See id.*

444. *See* ADOBE, *supra* note 131, at 11–12. 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 id.* 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.

445. 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

this regard, Adobe's typefaces serve like 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*[446] 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.[447] When expression is treated as having market value, but not necessarily any worth, we tend to get works that only have a market value.[448] 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.[449] Rather than saying that "[n]o man but a blockhead ever wrote, except for money,"[450] 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."[451] The corollary would be that "no man 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,[452] nor did he limit his discussion to fine art. Scientists, for instance, publish in journals for prestige, recognition, status, and to make a contribution to their field.[453]

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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 56, at 231–32.

446. LEWIS HYDE, THE GIFT: IMAGINATION AND THE EROTIC LIFE OF PROPERTY (Vintage Books 1983) (1979).

447. *Id.* at xi-xii.

448. *Id.*

449. *Id.* at 160–272.

450. JAMES BOSWELL, THE LIFE OF SAMUEL JOHNSON 731 (R.W. Chapman ed., Oxford World's Classics 1998) (1791).

451. Johnson is sometimes cited as being the first professional writer, in that his (meager) income totally derived from it. *Id.*

452. *See*, *e.g.*, Nadel, *supra* note 72, at 811–12 nn.109–119 (citing examples of Aaron Copland, Bach, and others); Plant, *supra* note 12, at 167–69 ("Some of the most valuable literature that we possess has seen the light" without "direct monetary reward"). Don't forget that Boswell's immediate retort to Johnson was: "[n]umerous instances to refute this will occur to all who are versed in the history of literature." BOSWELL, *supra* note 450.

453. HYDE, *supra* note 446, at 77–84. Sometimes, in fact, they have to pay journals to publish their work. *See also* William M. Landes & Richard Posner, *An Economic Analysis of*

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.[454] Plenty of designers have commented on the non-monetary motivations they have for designing, motivations they often compare to those of fine artists.[455] However, in this paper I will gloss to some extent 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.[456] 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.[457] 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.[458] On the whole, then, regardless of whether an amateur design can be counted as a new instance of an expressive work, the democratization of

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Copyright Law, 18 J. LEGAL STUD. 325, 331 (1989).

454. *Cf.* Ku, *supra* note 9, at 306–07 (noting that musicians rarely make money from royalties).

455. *See*, *e.g.*, LOXLEY, *supra* note 56, at 235 (noting that typefaces are designed for the challenge and enjoyment); Rock, *supra* note 338, at 123 (famed type designer Matthew Carter comparing the "pure[] reasons" type designs are created to the reasons fine arts are created).

456. *See*, *e.g.*, HELLER & FILI, *supra* note 100, at 9.

457. *Id.* at 186.

458. *See* CAHALAN, *supra* note 68, at 31 (citing a quote from a critic expressing a similar sentiment).

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 . . . .[459]

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 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 general 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

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459. Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright*, 4 FIRST MONDAY, Aug. 2, 1999, *available at* http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/684/594.

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.[460] 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.[461]

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[460]. *See* Posting of Chris Sprigman to The University of Chicago Law School Faculty Blog, *Some Negativity About a Positive Theory of IP's Negative Space*, http://uchicagolaw.typepad.com/faculty/2006/11/some_negativity.html (Nov. 16, 2006, 14:43).

[461]. *See* Raustiala & Sprigman, *supra* note 28, at 1762 (noting that the fashion industry thrives without intellectual property protection because of its idiosyncrasies, and that all industries producing expressive works are similarly idiosyncratic).