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## INVESTIGATING DESIGN

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# INVESTIGATING DESIGN

Mark McKenna\* & Jessica Silbey†

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## INTRODUCTION

Design is ascendant. Steve Jobs' legendary obsession with design was widely regarded as Apple's comparative advantage, and that lesson has not been lost on Apple's competitors.<sup>1</sup> Design thinking is a growth industry, in business and at universities,<sup>2</sup> and design professionals continue to take on increasingly significant roles within firms.<sup>3</sup> The growing economic significance of design has been reflected in an explosion of design patent applications and increasing amount of design litigation.<sup>4</sup> The long-running Apple/Samsung conflict brought design patents into the limelight,<sup>5</sup> but recent battles over the design of cheerleading uniforms and replacement auto parts demonstrate the range of contexts in which design protection is at issue and the degree to which it affects the economic welfare of both national and global industries.<sup>6</sup>

Despite design's growing economic and legal importance, relatively little is known by legal scholars and policymakers about designers or the design process. That lacuna is particularly striking given modern intellectual property scholarship's empirical turn,<sup>7</sup> and particularly in light of the wide range of creators and creative

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<sup>1</sup> Walter Isaacson, *How Steve Jobs' Love of Simplicity Fueled a Design Revolution*, SMITHSONIAN MAG., Sept. 2012.

<sup>2</sup> See, e.g., Falon Fatemi, *Why Design Thinking Is the Future of Sales*, FORBES (Jan. 15, 2019, 3:46 PM), <https://www.forbes.com/sites/falonfatemi/2019/01/15/why-design-thinking-is-the-future-of-sales/?sh=143cd9934683> [<https://perma.cc/2Z9J-Z8RJ>]; Clark G. Gilbert et al., *Design Thinking for Higher Education*, STAN. SOC. INNOVATION REV., Winter 2018, at 36.

<sup>3</sup> Vivien Walsh, *Design, Innovation and the Boundaries of the Firm*, 25 RSCH. POL'Y 509 (1996).

<sup>4</sup> Prior to 1990, the ratio of issued design patents to design patent applications was roughly the same as the ratio of issued utility patents to utility patent applications. In 1990, however, the design patent ratio jumped from 50% to 70%, and it averaged 77% between 1990 and 2012. During the same period, the utility patent ratio declined from about 60% to about 45%. As a consequence of those changes, the ratio of issued design patents to issued utility patents, which had hovered near 6% since around 1960, jumped to about 10%, peaking at 16% in 2008. From 1990 to 2013, approximately 10% of all issued patents were design patents. See *U.S. Patent Statistics Chart Calendar Years 1963–2020*, U.S. PAT. & TRADEMARK OFF. (May 2021), [https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us\\_stat.htm](https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm) [<https://perma.cc/47ZM-52JG>] (providing data on which these calculations are based).

<sup>5</sup> One part of that conflict reached the Supreme Court. *Samsung Elecs. Co. v. Apple Inc.*, 580 U.S. 53 (2016).

<sup>6</sup> *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 137 S. Ct. 1002 (2017) (design of cheerleader uniforms); *Auto. Body Parts Ass'n v. Ford Glob. Techs., LLC*, 930 F.3d 1314 (Fed. Cir. 2019) (design of automotive parts).

<sup>7</sup> One indication of the influence of empirical studies in IP is the fact that empirical studies is the only methodologically-organized intellectual property subject matter ejournal on SSRN. All the rest of the

contexts that have drawn empirical scholars' attention. This paper begins to fill that gap, drawing from original data collected over several years of interviewing designers, observing where and how they work, and listening to the explanations of their practice.

Studying designers and the practice of design is not only economically and culturally relevant, it is also significant to legal scholars and policymakers because design's place among the intellectual property regimes has been an enduring puzzle. To some extent, that is because of the nature of design and its relationship to the objects of IP protection. In both theory and structure, each area of IP works outward from paradigmatic subject matter.<sup>8</sup> Copyright law originally protected books, maps, and charts;<sup>9</sup> patent law protected machines and chemical compositions;<sup>10</sup> trademark law focused on words and logos affixed to the goods or to their labels and tags.<sup>11</sup> Those narrowly-defined categories of subject matter excluded most design. In 1842, Congress developed the design patent system to extend protection to objects of industrial design like textiles, stoves, silverware, dishes, and furniture.<sup>12</sup> Design patents protected the way those articles looked, in contrast to utility patents, which focused on the way the articles worked.<sup>13</sup>

But design's fit within a patent system has always been awkward. For many years, courts vacillated between approaches that, at one extreme, aggressively excluded designs that had any relationship to function, and at the other extreme, loosened the rules so much that design patents amounted to backdoor utility

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eJournals are denominated by substantive area of IP (copyright, trademark, patent, and "other"). See Browse eLibrary, SSRN, <https://papers.ssrn.com/sol3/DisplayJournalBrowse.cfm> [<https://perma.cc/T2QR-CCJP>] (last visited Apr. 24, 2023).

<sup>8</sup> BRAD SHERMAN & LIONEL BENTLY, *THE MAKING OF MODERN INTELLECTUAL PROPERTY LAW: THE BRITISH EXPERIENCE, 1760–1911* (1999).

<sup>9</sup> Copyright Act of 1790, Pub. L. No. 1–15, 1 Stat. 124.

<sup>10</sup> SHERMAN & BENTLY, *supra* note 8.

<sup>11</sup> See Mark P. McKenna, *Property and Equity in Trademark Law*, 23 MARQ. INTELL. PROP. L. REV. 117, 119–20 (2019) [hereinafter McKenna, *Property & Equity in Trademark Law*].

<sup>12</sup> See Act of Aug. 29, 1842, ch. 263 § 3, 5 Stat. 543.

<sup>13</sup> Jason J. Du Mont & Mark D. Janis, *The Origins of American Design Patent Protection*, 88 IND. L.J. 837 (2013).

patents.<sup>14</sup> Congress eventually settled on “ornamentality” as the distinguishing feature of design patent subject matter.<sup>15</sup> Ornamentality was meant to contrast with the “utility” that marks the subject of utility patent protection.<sup>16</sup> But requiring “ornamentality” (whatever that is) did not effectively keep design patent clear of utility patent.<sup>17</sup> Because design patent offers protection for the designs of articles that are obviously useful, courts have always struggled to differentiate the ornamental and useful aspects of those articles.<sup>18</sup> Controversially, at least from the perspective of most academics, the Federal Circuit has “solved” that problem by interpreting ornamentality as mere nonfunctionality and then defining functionality so narrowly that vanishingly few designs are disqualified on functionality grounds.<sup>19</sup> That approach appears to resolve any conflict with utility patent law, but only by waving the conflict away.

Design protection is also now complicated by the fact that copyright and trademark law have both expanded dramatically in the years since Congress created the first patent design statute. Where there was once a gap between these intellectual property regimes, there is now overlap: today, parties commonly claim multiple forms of protection for precisely the same features of a design.<sup>20</sup> For example, in a lawsuit against Forever 21, Puma asserted design patent, copyright, and trademark infringement based on alleged copying of the same features of a shoe it developed in collaboration with singer Rihanna, which it alleged Forever 21 copied.<sup>21</sup>

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<sup>14</sup> See Mark P. McKenna & Katherine J. Strandburg, *Progress and Competition in Design*, 17 STAN. TECH. L. REV. 1, 32–36 (2013); see also Peter S. Menell & Ella Corren, *Design Patent Law’s Identity Crisis*, 36 BERKELEY TECH. L.J. 1 (2021).

<sup>15</sup> Act of May 9, 1902, Pub. L. No. 57-109, § 4929, 32 Stat. 193.

<sup>16</sup> *Id.*

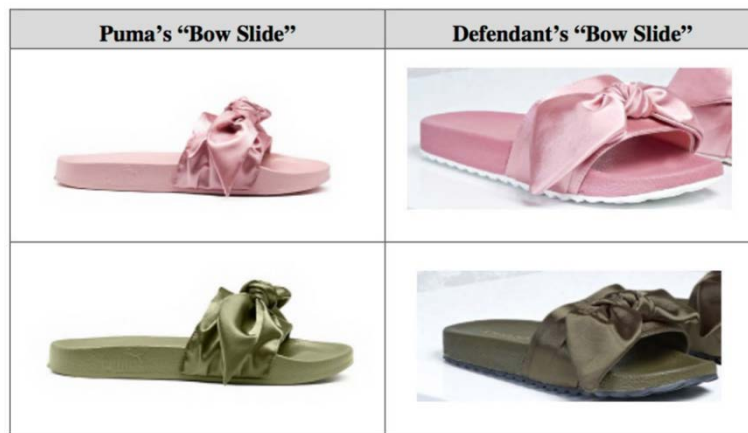
<sup>17</sup> Sarah Burstein, *Intelligent Design & Egyptian Goddess: A Response to Professors Buccafusco, Lemley & Masur*, 68 DUKE L.J. ONLINE 94 (2019) [hereinafter Burstein, *Intelligent Design*].

<sup>18</sup> *Id.*

<sup>19</sup> Mark P. McKenna, *Fixing Functionality in Design Patent Law*, 36 BERKELEY TECH. L.J. 195 (2021) [hereinafter McKenna, *Fixing Functionality*]; McKenna & Strandburg, *supra* note 14; Christopher Buccafusco & Mark A. Lemley, *Functionality Screens*, 103 VA. L. REV. 1293 (2017). The Patent Office and Federal Circuit have also enabled parties to claim small fragments of articles, bringing even more functional features within the system. See Sarah Burstein, *Whole Designs*, 92 COLO. L. REV. 181 (2021).

<sup>20</sup> Or, at least, probably the same features. Because there are meaningful differences in the claiming methodologies in each of these systems, it is sometimes hard to tell if the legal claims are identical. See Jeanne C. Fromer & Mark P. McKenna, *Claiming Design*, 167 U. PA. L. REV. 123 (2018).

<sup>21</sup> Amended Complaint at 3-12, *Puma SE v. Forever 21, Inc.*, 2017 WL 3309169 (C.D. Cal. Apr. 4, 2017) (No. 2:17-cv-02523-PSG-E) [hereinafter *Puma Amended Complaint*]; see also Complaint at 11-17,



Perhaps unsurprisingly, copyright and trademark have struggled to develop rules for eligibility and for infringement in relation to design.<sup>22</sup> One reason is that extending trademark or copyright protection to design introduces the same problem of backdoor protection of functional features.<sup>23</sup> Copyright and trademark law have, in general, taken that concern more seriously than design patent law, and both copyright and trademark have legal doctrines that police the boundary with utility patent law. Although those doctrines take different forms, they all seek radical separation of “functional” and “nonfunctional” (aesthetic or source-indicating) features on the theory that functional matter “belongs” exclusively to utility patent.<sup>24</sup>

The problems the channeling doctrines seek to solve are foundational and urgent. And yet, those doctrines are some of the most difficult in all of IP. For one thing, all of the doctrines reflect persistent disagreement about the reasons for

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*Skinny Brand Jeans LLC v. QVC, Inc.*, 2018 WL 4177993 (E.D. Pa. May 14, 2018) (No. 2:18-cv-02011-JCJ) (asserting trade dress, unfair competition, and copyright infringement claims against QVC, which allegedly copied Skinny Brand Jeans’s “unique, innovative, distinctive and recognizable slimming wash pattern” and “stomach restraining panel” for women’s jeans).

<sup>22</sup> Fromer & McKenna, *supra* note 20, at 146–69.

<sup>23</sup> See, e.g., Buccafusco & Lemley, *supra* note 19, at 1305–06.

<sup>24</sup> McKenna & Strandburg, *supra* note 14, at 18–19 (referring to this as the “utility patent supremacy principle”). The policy of channeling particular subject matter to certain forms of protection reflects a view that each system balances public and private interests differently, and that respecting the judgments made by the appropriate system best advances the constitutional goal of “progress of science and useful arts.” U.S. CONST., art. 1, § 8, cl. 8.

refusing protection to functional features.<sup>25</sup> Sometimes those doctrines focus on concerns about undermining utility patent law; other times they prioritize issues of competitive need.<sup>26</sup> More fundamentally, it turns out to be very hard to operationalize rules for identifying and separating “functional features.” Doing so requires a clear sense of what “functions” are relevant and a methodology for identifying and assessing functionality in individual cases.

One significant challenge is that all of the channeling doctrines draw a binary distinction between functional features, on the one hand, and aesthetic or source-indicating features on the other hand.<sup>27</sup> But as our research confirms, design often defies that binary. Designers frequently seek to integrate form and function, and as a result, design output is routinely *both* aesthetic and functional. Even features that might on their own be susceptible of categorization are often blended in ways that resist disentanglement of the whole. Design practice, it turns out, is an existential challenge to the separation IP regimes seek and thus also to the policies that justify that separation.

Design has also sometimes been a difficult fit in the IP system because designers are not IP’s typical protagonists.<sup>28</sup> Each IP system envisions archetypal creators who pursue specific goals, produce typical outputs, and work in particular ways or according to certain identifiable processes. Authors produce creative works, and copyrightability is entirely bound up with the process of creation—the making by a human of an original work of authorship that springs from their personality.<sup>29</sup> Patent law focuses on invention, a particular human activity directed toward “technological innovation.”<sup>30</sup> Trademark law protects source-identifying signs—at its core, distinctive names and logos—but only for the purposes of preventing

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<sup>25</sup> See McKenna & Strandburg, *supra* note 14, at 18.

<sup>26</sup> See Mark P. McKenna, *(Dys)Functionality*, 48 HOUS. L. REV. 823 (2011) [hereinafter McKenna, *(Dys)Functionality*]; McKenna, *Fixing Functionality*, *supra* note 19.

<sup>27</sup> See McKenna, *(Dys)Functionality*, *supra* note 26, at 843.

<sup>28</sup> See Jessica Silbey, *Mythical Beginnings of Intellectual Property Law*, 15 GEO. MASON L. REV. 319 (2008) [hereinafter Silbey, *Mythical Beginnings*].

<sup>29</sup> See discussion *infra* Section I.A.2.

<sup>30</sup> See discussion *infra* Section I.A.2; see also Mark P. McKenna & Christopher Jon Sprigman, *What’s In, and What’s Out: How IP’s Boundary Rules Shape Innovation*, 30 HARV. J.L. & TECH. 491 (2017) (describing the focus on technological innovation and its inconsistent application).



confusion about the commercial origins of products or services.<sup>31</sup> Disputes about subject matter boundaries (about whether certain outputs more naturally belong to patent, copyright, or trademark) often are at least in part about whether what is claimed is the result of the process the invoked IP system recognizes and whether protection serves the policy goals toward which that system is directed.<sup>32</sup> Design practice, with its inherent interdisciplinarity in object and process, fundamentally challenges these boundaries, putting pressure on their subject matter canons.<sup>33</sup>

The designers in our study do not fit the “author” or “inventor” paradigms on which our IP systems have developed.<sup>34</sup> In some ways, designers are hybrids; in other ways, designers are meaningfully different from both authors and inventors. In several notable respects, our designers’ goals and conceptions of design excellence are uncomfortably misaligned with IP doctrine.<sup>35</sup>

First, our designers emphasize process over product, inverting the focus of the IP system, which focuses specifically on outputs.<sup>36</sup> Designers describe this process as intentionally and thoroughly multidisciplinary. Designers frequently work in teams comprised of people with complementary disciplinary training—for example, architecture, engineering, graphic art, and ethnography. Even when teams are small or designers are working solo, they draw on multiple disciplines or approaches,

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<sup>31</sup> See McKenna, *(Dys)Functionality*, *supra* note 26, at 843 (discussing the boundary between trademark and design patent law).

<sup>32</sup> *Id.*

<sup>33</sup> Studying the alignment or misalignment between design practice and intellectual property law adds to the existing literature focusing the gap between law on the books and law on the ground. For such a study on copyright, trademark, and utility patent and everyday creators and innovators, see JESSICA SILBEY, *THE EUREKA MYTH: CREATORS, INNOVATORS AND EVERYDAY INTELLECTUAL PROPERTY* (2015) [hereinafter SILBEY, *THE EUREKA MYTH*].

<sup>34</sup> Dare we say, they are “tertium quid”? See *Wal-Mart Stores, Inc. v. Samara Bros.*, 529 U.S. 205, 215 (2000) (referring to restaurant design as “tertium quid”—neither product packaging nor design).

<sup>35</sup> See SILBEY, *THE EUREKA MYTH*, *supra* note 33.

<sup>36</sup> IP rights attach to intangible works and inventions, not their tangible embodiments, but that does not change the fact that IP rights generally focus on outputs rather than the processes of creating them. That is true notwithstanding the inclusion of processes in utility patent subject matter. It is no surprise that courts have long struggled to cabin that category, and for a long time emphasized that patentable processes must produce “useful, concrete, and *tangible* result[s].” *State St. Bank & Tr. Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998) (quoting *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994)). And they found process claims invalid unless the process was tied to a particular machine or effected a physical transformation of a composition of matter or a manufacture. *In re Comiskey*, 554 F.3d 967, 980 (Fed. Cir. 2009).

reaching for broad “precedent” or practice exemplars and melding technical training with anthropological approaches that are intended to discern user needs and address consumer desires. Copying and iterating are routine. As social science and technology scholar Bruno Latour writes, to “design is always to redesign,”<sup>37</sup> an understanding of originality and creativity that challenges IP’s traditional orientation.<sup>38</sup>

Second, designers describe their process as one of problem finding and problem solving. The design process may produce a new way of doing something or a new tool or object to experience the world. But the “problems” designers seek to solve are extraordinarily wide-ranging and do not fit neatly in the categories IP doctrines recognize in their attempts to differentiate subject matter.<sup>39</sup> Designers may seek greater usability—e.g., a better electric toothbrush—but “better” here might be judged in terms of both style and ease of use, and those dimensions may be indistinguishable from each other. Functionality is not merely technical; it also relates to desirability and elegance, and sometimes also fit with brand language.

Third, designers repeatedly describe their quest for an essential *coherence*, a melding of form and function and the elimination of excess. Design is always seeking a “not only . . . but also” balance.<sup>40</sup> Useful and beautiful features are inseparable, and every feature serves a purpose.<sup>41</sup> Writing about just this inseparability, Latour explains that “[t]oday everyone with an iPhone knows that it would be absurd to distinguish what has been designed from what has been planned, calculated, arrayed, arranged, packed, packaged, defined, projected, tinkered, written down in code, disposed of and so on.”<sup>42</sup> Coherence is the gold standard in design. And yet that coherence, the inseparability of form and function, profoundly frustrates IP doctrine.

Our goal in this Article is not to argue for or against any particular legal protection for design. Instead, our research offers a new (albeit partial) explanation for the difficulty of developing design protection rules within or adjacent to other IP

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<sup>37</sup> Bruno Latour, Sciences-Po, A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk) (Sept. 3, 2008), in 112-DESIGN-CORNWALL, 2008, at 5.

<sup>38</sup> See Silbey, *Mythical Beginnings*, *supra* note 28.

<sup>39</sup> “[D]esign has been spreading continuously so that it increasingly matters to the very substance of production. What is more, design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and . . . to nature itself.” Latour, *supra* note 37, at 2.

<sup>40</sup> *Id.*

<sup>41</sup> Design literature describes this coherence not just as a formal feature of “good” design, but as an ethical consideration for the practice as a whole. Latour describes the transformation of the metric of “good or bad” design into an ethical question as a “matter of concern.” *Id.* at 11.

<sup>42</sup> *Id.* at 2.

regimes. As lawyers and legal scholars, we tend to think outwardly from the systems we have, but our research shows that design is different in important ways, making the evolution from existing IP systems fraught with problems from the outset. Designers' processes differ from those imagined by existing IP regimes, and designers value their outputs for different reasons.

This Article proceeds in three parts. First, we briefly explain the archetypal protagonists of IP law and its subject matter, as well as the doctrinal puzzles at the boundaries of IP regimes. The second part is the focus of this Article and our original contribution to the field. There we describe and analyze interview data that demonstrate how design practice is structured around professional disciplinary features that render it inherently unsuitable to legal rules established for existing intellectual property regulation. In particular, we recount the celebrated interdisciplinarity of design work, the prioritization of process over product, and the goal of cohesive design that leaves no excess features and prioritizes certain values over others, celebrating a "design ethic."<sup>43</sup> There is much more in the interview data than is captured by these three themes, but we focus on these here as a first step toward a more informed conversation and a more appropriate and tailored design law regime.<sup>44</sup>

We focus specifically on intellectual property protection for design, but our discussion implicates larger trans-substantive legal questions. One concerns the benefit of channeling certain subject matter to particular legal regimes and avoiding overlap, a common problem that raises thorny preemption and double-recovery

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<sup>43</sup> As one example of design ethics, see IDEO, *THE LITTLE BOOK OF DESIGN RESEARCH ETHICS* (2015). See also Latour, *supra* note 37, at 5 (describing the "fifth and decisive advantage of the concept of design is that it necessarily involves an ethical dimension which is tied into the obvious question of *good versus bad design*." (emphasis added); see *id.* at 11 ("there is something inherently normative in design because of the necessary follow up question, 'Is it well or badly designed?' . . . if for each detail the question of good and bad has to be raised; if every aspect has become a disputed matter of concern and can no longer be stabilized as an indisputable matter of fact; then we are obviously entering into a completely new political territory.")).

<sup>44</sup> As we describe in Appendix A (Research Methods), the hallmark of qualitative empirical research is to identify the relevant variants among heterogeneous data with which to generate hypotheses that explain a particular phenomenon (here, design law's doctrinal challenges with design practice's output). The three themes we focus on are common among the heterogeneous data, stratified along relevant axes, but variations within these themes exist, as do other themes. This Article is one aspect of the research. Other descriptions and analyses of the data will follow in other articles. See *infra* Appendix A (describing in more detail the empirical research method); see *infra* Appendix B (relevant details of the interviewees representing our stratified sample).

problems.<sup>45</sup> Another question concerns the choice between adapting existing law to accommodate new practices and professions (as copyright and trademark have evolved toward design) and creating new *sui generis* regimes (like the design patent law system, which is largely duplicative and not exclusive).<sup>46</sup> We do not purport to answer those questions definitively, but our data brings relevant context to these important and broader debates.

We end the Article with some thoughts about where to go from here, including suggestions for more data analysis, further legal research, and practical law reform. We also draw some conclusions about the relationship between design law, design practice, and intellectual property law and scholarship more generally. We specifically situate this project within the body of empirical legal scholarship that aims to understand and explain complex phenomena in order to promote progress through fair, evidence-based lawmaking.<sup>47</sup> Of course, intellectual property protection for design need not be structured solely by reference to the goals and norms of design practice—the right institutional design depends also on broader cultural and economic considerations, just as in all other areas touched by intellectual property law. But it would be exceedingly odd to ignore design practice completely while claiming to promote the progress of design. Our research aims to complement and inform policy debates about appropriate legal protection.

## I. BACKGROUND ON DESIGN AND IP LAW

“Design” is an extremely broad and ill-defined category. Indeed, as we describe below, it is often difficult for designers themselves to define the category, except by reference to some traditionally-identified disciplines. Design scholar Karl Ulrich defines design in extremely broad terms, as “conceiving and giving form to artifacts that solve problems.”<sup>48</sup> Herbert Simon similarly explained in his now famous

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<sup>45</sup> See, e.g., Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 STAN. L. REV. 311 (2008) (describing how channeling between IP rights is important for efficiency purposes, to reduce overinvestment, and encourage public disclosure of information).

<sup>46</sup> *Sui generis* regime debate has been on-going within IP law, as in other legal regimes. See, e.g., Peter Yu, *Data Producer’s Right and the Protection of Machine-Generated Data*, 93 TUL. L. REV. 859 (2019); J. Janewa OseiTutu, *A Sui Generis Regime for Traditional Knowledge: The Cultural Divide in Intellectual Property Law*, 15 MARQ. INTEL. PROP. L. REV. 147 (2011).

<sup>47</sup> Two appendices follow the article’s conclusion describing in more detail the empirical research method (Appendix A) and relevant details of the interviewees (Appendix B).

<sup>48</sup> *Id.* (emphasis omitted).

“Science of Design: Creating the Artificial” that a designer is one “who devises a course of action aimed at changing existing situations into preferred ones.”<sup>49</sup>

Intellectual property law is not particularly more precise. Some types of design fit quite comfortably within existing IP systems, even conventionally understood. Copyright has long protected works of fine art, including sculptural works and many forms of graphic design—even highly “functional” ones like maps and charts.<sup>50</sup> Trademark law has always protected “devices” (what we would now call logos), and modern trademark law protects, without much controversy, the design of packaging.<sup>51</sup> Despite this breadth, when IP lawyers and scholars talk about protection for “design,” they generally have in mind the design of functional products—computer equipment, cars, furniture and housewares—which can be protected under multiple different IP systems.<sup>52</sup>

Copyright law protects the broad class of “original works of authorship fixed in any tangible medium of expression,” which includes “pictorial, graphic, and sculptural works.”<sup>53</sup> But, among other limitations, the design of a useful article is copyrightable only to the extent that its features are “separable” from the utilitarian aspects of the article.<sup>54</sup> Trademark law protects “trade dress,”<sup>55</sup> which includes both product packaging and product design. Those categories, however, are subject to different legal rules, making application sometimes difficult in the context of design. According to the Court in *Wal-Mart Stores, Inc. v. Samara Brothers, Inc.*, product packaging is used “most often to identify the product’s source of the product.”<sup>56</sup> By contrast, “[c]onsumer predisposition to equate [product design features] with the

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<sup>49</sup> Herbert A. Simon, *The Science of Design: Creating the Artificial*, 4 DESIGN ISSUES 67 (1988).

<sup>50</sup> The subject matter of the first U.S. Copyright Act was “[m]aps, [c]harts, and books.” U.S. Copyright Act of 1790, Pub. L. No. 1–15, 1 Stat. 124.

<sup>51</sup> *Wal-Mart Stores, Inc. v. Samara Bros.*, 529 U.S. 205, 209 (2000).

<sup>52</sup> *Id.*

<sup>53</sup> 17 U.S.C. § 102(a) (2012).

<sup>54</sup> *Id.* § 101 (“[T]he design of a useful article . . . shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates . . . features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.”).

<sup>55</sup> See *Two Pesos, Inc. v. Taco Cabana, Inc.*, 505 U.S. 763, 765–67 (1992) (holding that inherently distinctive, non-functional trade dress is protectible under § 43(a) of the Lanham Act without proof of secondary meaning). We say *primarily* because there is a design element to many logos and stylized trademarks, which are not trade dress.

<sup>56</sup> *Samara Bros.*, 529 U.S. at 212.

source does not exist” because “[c]onsumers are aware of the reality that, almost invariably, even the most unusual of product designs—such as a cocktail shaker shaped like a penguin—is intended not to identify the source, but to render the product itself more useful or more appealing.”<sup>57</sup> As a result, unlike product packaging, which can be inherently distinctive, trade dress protection is available for product design only upon a showing of secondary meaning.<sup>58</sup> Characteristic of the lack of clarity around the concept of “design,” the Supreme Court never defined the categories of product design or packaging.<sup>59</sup> Making matters worse, courts sometimes ignore these legal categories when they believe consumer understanding does not match the presumptions embedded in the governing rules.<sup>60</sup>

Design patents are available for any “new, original and ornamental design for an article of manufacture.”<sup>61</sup> As Sarah Burstein has described, courts once had a reasonably constrained idea of what “article[s] of manufacture” were, and they understood configurations and surface ornamentations of those articles to be patentable.<sup>62</sup> Modern design patent law is more capacious: the Supreme Court defined an article of manufacture as “simply a thing made by hand or machine,”<sup>63</sup> and the Federal Circuit’s predecessor approved of patents on evanescent designs like the patterns created by fountains when they are running.<sup>64</sup> The Federal Circuit has more recently accepted that design patents can comprise even small fragments of

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<sup>57</sup> *Id.* at 213.

<sup>58</sup> This differential treatment is particularly appropriate, according to the Court, because a producer “can ordinarily obtain protection for a design that is inherently source identifying (if any such exists), but that does not yet have secondary meaning, by securing a design patent or a copyright for the design.” *Id.* at 214.

<sup>59</sup> The Supreme Court acknowledged this problem, but instead of defining the categories, it simply created a default rule, instructing courts to treat ambiguous subject matter as product design and require secondary meaning. *Id.* at 215.

<sup>60</sup> See Mark A. Lemley & Mark P. McKenna, *Trademark Spaces and Trademark Law’s Secret Step Zero*, 75 STAN. L. REV. 1 (2023) (describing courts’ and the Trademark Office’s departures from the structure for evaluating trade dress distinctiveness, and particularly their “step zero” determinations of whether a feature functions as a trademark).

<sup>61</sup> 35 U.S.C. § 171(a) (2012).

<sup>62</sup> Sarah Burstein, *The “Article of Manufacture” in 1887*, 32 BERKELEY TECH. L.J. 1, 83 (2017) (arguing that courts understood “article of manufacture” to mean a “tangible item made by humans—other than a machine or composition of matter—that had a unitary structure and was complete in itself for use or for sale”).

<sup>63</sup> *Samsung Elecs. Co. v. Apple Inc.*, 580 U.S. 53, 60 (2016).

<sup>64</sup> *In re Hruby*, 373 F.2d 997 (C.C.P.A. 1967).

articles, like the shank of a drill bit.<sup>65</sup> As a result, design patents now regularly issue for things like the head of bolted hardware, sneaker soles, and the particular curved angle of a car window.<sup>66</sup>

The expansion of design patent, copyright, and trademark subject matter has resulted in frequently overlapping rights, and it has made the functionality problem intractable. The next sections describe these problems in light of design law and practice.

### A. *Difficulty Extrapolating to Design: The Subject Matter Problem*

One of the primary challenges for assimilating design into the various IP systems is that design and designers are not the archetypal subjects of IP. Like origin stories that authorize current legal structures through the force of narrative explanation, archetypal IP originators (and the work they produce) persistently structure these areas of law.<sup>67</sup> As our data show, designers are not authors who seek only creative expression, nor are they inventors pursuing only technological innovation. In some ways, designers are hybrids of authors and inventors; in other ways they are neither. None of the existing IP regimes fit designers well, and each IP regime diminishes designers by attempting to characterize them in terms recognizable to that system.

#### 1. Designers are not “Inventors”

Patent law is directed at “invention,” which it understands to be a particular kind of human activity. Those who engage in that activity are “inventors.” At least paradigmatically, inventors solve particular kinds of scientific and technological problems.<sup>68</sup> Invention is a mental activity more than a physical one—it is, famously,

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<sup>65</sup> *In re Zahn*, 617 F.2d 261 (Fed. Cir. 1980).

<sup>66</sup> See, e.g., U.S. D798,701 (“Simulated Bolted Hardware”); U.S. D861,302 (“Shoe Bottom”); U.S. D792,820 (“Compound Curved Trapezoidal Window”).

<sup>67</sup> Silbey, *Mythical Beginnings*, *supra* note 28. Although IP policy espouses an ideology of democratic opportunity and access—e.g., anyone can be a creator or innovator—these archetypes have been criticized for their grounding in socio-political situations that historically privilege certain kinds of people and contexts. *Id.* See also ANJALI VATS, *THE COLOR OF CREATORSHIP* (2020).

<sup>68</sup> We can dispute this rigid characterization and the ones that follow about authorship, but the point is that IP law instantiates them for the purposes of channeling and regulating the activity and output. See SHERMAN & BENTLY, *supra* note 8.

“not the work of the hands, but of the brain.”<sup>69</sup> As a result, patent doctrine traditionally prioritized conception of the invention in the mind of the inventor over the work necessary to reduce the invention to practice.<sup>70</sup> But invention is not mere discovery. Laws of nature, like the correlation between metabolites in a patient’s blood and the dosage of a medication, are not patentable because they are not invented; they are merely found.<sup>71</sup> The same is true of abstract ideas and natural phenomena—a particular person might be the first to discover an idea or phenomenon, but that person does not *invent* the idea or discovery.<sup>72</sup>

Inventions are patentable only when they are novel, non-obvious, and useful, but many scholars believe non-obviousness is the primary substantive hurdle to patentability today.<sup>73</sup> Importantly, non-obviousness is judged from the perspective of the hypothetical “person having ordinary skill in the art” (the PHOSITA).<sup>74</sup> The inventor displays “ingenuity” and is not merely someone with mechanical or artisanal skills.<sup>75</sup> The Supreme Court recently characterized obviousness in these terms:

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<sup>69</sup> Edison v. Foote, 1871 C.D. 80 (Comm’r Pat. 1871).

<sup>70</sup> *In re Hardee*, 223 U.S.P.Q. 1122, 1123 (Comm’r Pat. & Trademarks 1984) (“The threshold question in determining inventorship is who conceived the invention . . . . Insofar as defining an inventor is concerned, reduction to practice per se is irrelevant.”).

<sup>71</sup> *Mayo Collaborative Servs. v. Prometheus Lab’ys, Inc.*, 566 U.S. 66, 77 (2012) (“While it takes a human action (the administration of a thiopurine drug) to trigger a manifestation of this relation in a particular person, the relation itself exists in principle apart from any human action.”).

<sup>72</sup> *Alice Corp. Pty. Ltd. v. CLS Bank, Int’l*, 573 U.S. 208 (2014); *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

<sup>73</sup> See, e.g., Laura Pedraza-Fariña & Ryan Whalen, *A Network Theory of Patentability*, 87 U. CHI. L. REV. 63 (2020) (relying on network theory and describing non-obviousness in terms of the combination of knowledge from distant fields). Novelty implies difference from what came before, but only in the narrow sense that a claimed invention must not be exactly like the prior art. To anticipate, a single prior art reference must disclose every element of the claimed invention. The utility requirement does very little to limit patent law’s domain, as modern utility doctrine requires only that a claimed invention work for its intended purpose and have some credible use. See *Brenner v. Manson*, 383 U.S. 519, 533 (1966). As Professor Michael Risch has said, “the requirement that an invention be useful has been nearly nonexistent—essentially ignored.” Michael Risch, *A Surprisingly Useful Requirement*, 19 GEO. MASON L. REV. 57, 58 (2011).

<sup>74</sup> *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 13–14 (1966); *Hotchkiss v. Greenwood*, 52 U.S. 248, 267 (1850).

<sup>75</sup> *Hotchkiss*, 52 U.S. at 267.



When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance, the fact that a combination was obvious to try might show that it was obvious under [the Patent Act].<sup>76</sup>

Interviews with designers make clear that designers are not merely inventors in this sense.<sup>77</sup> Designers emphatically work with their hands *and* their minds. They build prototypes and test models. Iteration, not discovery or revelation, is the primary method of problem-solving. Many designers differentiate design from engineering precisely by reference to this iterative process. Designers explain (and our data elaborate) that their work is based on tinkering, brainstorming, and is more emergent. Also, most designers do not work alone but, as the data describe in detail, they work in interdisciplinary teams, a hallmark of their practice.<sup>78</sup> And designers rarely consider their final output a “first” or “novel.” Instead, designers generally regard their work as building upon things that came before, which is what makes the work relevant and useful but also familiar and desirable.

Moreover, while utility patent law imagines inventors as skilled in a particular art and therefore evaluates obviousness in relation to “pertinent art,”<sup>79</sup> designers tend to roam broadly. For many designers, hewing closely to precedent would be an incomplete process that is unlikely to produce good design. Designers describe a regular and expected practice of borrowing and taking inspiration from a wide range of fields and objects.

Like inventors, designers consider themselves to be doing useful work, solving problems (or “finding and solving” problems, as the data explain). But designers conceive of the “problems” they identify and solve in much broader terms—they are not just solving scientific or technical problems. Designers often explain that part of

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<sup>76</sup> *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

<sup>77</sup> *See infra* Part II.

<sup>78</sup> Even the designers who are more like studio artists, for example Felicia Ferrone and Jonathan Adler in our study, work with teams to facilitate scale manufacturing and conceptual changes that arise in the production processes. *See infra* Part II.

<sup>79</sup> *See, e.g.*, U.S. PAT. & TRADEMARK OFF., U.S. DEP'T OF COM., MANUAL OF PATENT EXAMINING PROCEDURE § 2164.05(b) (9th ed. 2020) (“Specification Must Be Enabling to Persons Skilled in the Art”); *see also* Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885 (2004).

what makes their work useful is that it is also beautiful, and the “invention” is the seamless blending of form and function, of the aesthetic and the useful. In all of these ways, designers differ from the prototypical inventor of utility patent law—a concept design patent law builds upon, given its doctrinal and conceptual structure,<sup>80</sup> however ill-suited the comparison is in fact.

## 2. Designers are not “Authors”

Like inventors, authors have been variously described as having “creative genius”<sup>81</sup> and as being driven by a “creative spark.”<sup>82</sup> Copyright law’s sine qua non is “originality,” which does not literally mean unique but simply independently created by a person.<sup>83</sup> An author is “he to whom anything owes its origin,”<sup>84</sup> and in this way, copyright authors and authorship are one, a unified self or personality that is celebrated in the most famous copyright law cases.<sup>85</sup> “Personality always contains something unique. It expresses a singularity even in handwriting, and a very modest grade of art has in it something irreducible, which is one man’s alone.”<sup>86</sup>

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<sup>80</sup> Du Mont & Janis, *supra* note 13, at 841–48.

<sup>81</sup> United States v. Paramount Pictures, Inc., 334 U.S. 131, 158 (1948).

<sup>82</sup> Feist Publ’ns v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991). The “romantic author” has come in for much criticism from scholars, who often characterize authorship rhetoric as a front for the interests of major content owners. MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* (1993); *see also* Martha Woodmansee, *The Genius and the Copyright: Economic and Legal Conditions of the Emergence of the ‘Author,’* 17 *EIGHTEENTH-CENTURY STUD.* 425 (1984); Peter Jaszi, *On the Author Effect: Contemporary Copyright and Collective Creativity*, in *THE CONSTRUCTION OF AUTHORSHIP: TEXTUAL APPROPRIATION IN LAW AND LITERATURE* 29, 31 (Martha Woodmansee & Peter Jaszi eds., 1994).

<sup>83</sup> Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 58 (1884).

<sup>84</sup> *Id.*

<sup>85</sup> *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 250 (1903). According to Mala Chatterjee, works of authorship are to be contrasted with inventions because the former are “author-individuated” while the latter are “structure-individuated.” Mala Chatterjee, *Understanding Intellectual Property: Expression, Function, and Individuation* (July 27, 2021) (unpublished manuscript) (on file with authors). Inventions are defined by their structure, and it is therefore not possible for two people to independently invent the same thing (meaning that we do not call the second version of the same thing an “invention” precisely because invention requires novelty in relation to structure). A work of authorship, by contrast, cannot be conceived of independently of the mind that brought that work into being. Two works that originate from different people can be structurally identical and still be distinct works precisely because works are individuated in terms of their source. For an earlier argument along similar lines, see ABRAHAM DRASSINOWER, *WHAT’S WRONG WITH COPYING?* (2015).

<sup>86</sup> *Bleistein*, 188 U.S. at 250.

Consider the monkey selfie case.



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This photograph would unquestionably be copyrightable if it were taken by a human being. But it is not copyrightable when it is taken by a monkey—not because there is something different about the photograph itself, but because it’s not the product of authorship.<sup>88</sup> Authorship is fundamentally a *human* activity.<sup>89</sup> To be more precise, it is a particular kind of human activity that is directed toward creative expression.<sup>90</sup> Copyright law does not protect facts or ideas, not because they do not sometimes originate with particular people, but because they are not the results of that creative activity.<sup>91</sup> Facts and ideas may be new, but they are not *authored*.<sup>92</sup>

Few designers regard their work as driven by their own creative genius or individual originality. Many designers work in multi-disciplinary teams, and in that respect, if they resemble copyright authors, it would be as joint-authors for whom

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<sup>87</sup> *Naruto v. Slater*, 888 F.3d 418 (9th Cir. 2018).

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> That is not to say that copyright’s concept of creativity is straightforward. See Dan L. Burk, *Thirty-Six Views of Copyright Authorship*, by Jackson Pollock, 58 HOUS. L. REV. 263 (2020).

<sup>91</sup> *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 547 (1985) (“[N]o author may copyright facts or ideas.” (citing 17 U.S.C. § 102 (2012))). But see Jessica Silbey, *A Matter of Facts: The Copyright Fact-Exclusion and its Implication for Disinformation and Democracy* (draft on file with author) [hereinafter Silbey, *A Matter of Facts*] (arguing that the concept of “facts” in copyright is broader than the traditional reading of *Feist* (and *Harper & Row*) has presumed).

<sup>92</sup> See DRASSINOWER, *supra* note 85 (making the point that authorship is a particular kind of human creative activity—in his view, a communicative act); see also *Feist Publ’ns v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991).

individual contributions are intentionally merged into an inseparable whole.<sup>93</sup> More significantly, as the disciplinary and market trend of human-centered design implies, designers are beholden to the audience of their designed work—ultimately the users—who have particular needs, identities, and even cultures. As the interview data show, designers consider their clients and consumers to be collaborators, and successful design incorporates their voices and experiences. Even the most “author”-centered designers—those designing automobiles, home goods, and decorative objects (e.g., stemware and ceramics)—describe their process and products as less subjectively expressive and “authored” and more objectively empirical and historical, driven by material, aesthetic, and cultural constraints.<sup>94</sup>

Many designers describe successful design as “telling a story,” and that certainly has tones of authorship. But we understood these explanations to be primarily about the coherence the designs bring to the life of the user in context. The designed object or process brings new meaning to situations. In this respect, designers are like anthropologists or sociologists whose work is necessarily informed and constrained by lived culture and social organizations.<sup>95</sup> Not coincidentally, sociology and anthropology are two fields of social inquiry on which designers explicitly rely in doing their work.

Many of the designers we interviewed create brand materials and describe themselves as brand managers.<sup>96</sup> Even when not designing logos or other materials conventionally regarded as trademarks, designers often described a need for the design to fit a brand identity and exemplify the essence of the brand. As one designer explains when describing a redesigned OXO dustpan,

I was like, “They just nailed it.” It was that tiny thing, that, like, I couldn’t even do a good job of explaining, we certainly can’t explain it well in copy, you just

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<sup>93</sup> Thomson v. Larson, 147 F.3d 195, 200–01 (2d Cir. 1998).

<sup>94</sup> We understand that many authors would say the same thing about their process. We are not distinguishing designers from all creators but instead from the author as narrowly conceived as producing a “personal reaction” and expressing something “unique” containing the author’s “personality.” See *Bleistein*, 188 U.S. at 250.

<sup>95</sup> Mu Tian, Ping Deng & Yingying Zhang, *How Does Culture Influence Innovation: A Systematic Literature Review*, 56 MGMT. DECISION 1088, 1098–1100 (2018) (finding that national and organizational culture impacts innovation).

<sup>96</sup> Michael Rock described this work in detail in his interview. See *infra* note 128; Appendix B.

have to experience it, and you're like, "They thought of it. They thought of everything." It's those moments that make people fall in love with the brand.<sup>97</sup>

But excellent design is about more than identification, and most designers do not think of themselves only as developing brands. Design work melds form, function, and emotion. When designers describe themselves as designing "experiences," adding "delight" and "discovery" to people's lives with redesigned objects, and "not just adding more stuff to the world"—all of which is described in more detail in Part II—they are talking about brands as much broader concepts than trademark doctrine recognizes. Despite producing work that is often the object of patent, copyright, and trademark law, designers' professional practice is an uncomfortable fit within those IP regimes.

### B. *The Functionality Problem*

As we described above, each area of IP has prototypical subject matter, which is conceived in part by reference to prototypical creators. Utility patent is widely described as focusing on "technological" innovation.<sup>98</sup> Congress created the design patent system because it did not believe design was suited to utility patent protection; it meant to create protection for the way articles looked, and utility patent was concerned with the way they worked.<sup>99</sup> Neither copyright nor trademark provided an answer, since both at that time excluded design.<sup>100</sup> The design patent system was therefore created to fill a perceived gap; specifically, it was meant to protect the appearance, but not the function, of articles of manufacture.

It would have made little sense to create a distinct form of patent protection for design if that system turned out to be duplicative of utility patent, or—even worse—if it proved to be an alternative system by which parties could effectively protect the function of an article without meeting the purportedly rigorous requirements of utility patent law. The same concerns about backdoor utility patents presented, perhaps even more strongly in the copyright and trademark contexts (because of their

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<sup>97</sup> Interview with "Kate," Marketing and Design Professional, OXO, in N.Y.C, N.Y. (Dec. 11, 2018).

<sup>98</sup> In practice, "technological" is not as limiting as many assume. *See* McKenna & Sprigman, *supra* note 30.

<sup>99</sup> Du Mont & Janis, *supra* note 13, at 837.

<sup>100</sup> *See id.* at 843 ("[W]hen design patent protection was introduced in 1842, it was the sole form of American intellectual property protection for designs.").

longer term of protection) when those systems expanded to offer more protection to design.<sup>101</sup>

To address these concerns, all of the non-utility patent IP systems have long sought to distinguish the proper objects of protection from the functional aspects that “belong” to utility patent law.<sup>102</sup> Each system does this somewhat differently, but copyright, trademark, and design patent all have doctrines premised on the same underlying principle: functional features are excluded from protection because utility patent law has the sole responsibility for determining the conditions under which functional features are protected.<sup>103</sup>

Design’s intrinsic hybridity has always made that distinction a challenge. The functionality rules in each of these areas aim to separate the way articles work from the way they look—to determine if claimed features are either functional, on the one hand, or ornamental/aesthetic/source-identifying, on the other hand.<sup>104</sup> As our data reveal, that is an impossible task, because most design features have multiple, overlapping characteristics.

Design patent law has all but surrendered to this problem, having reduced the ornamentality requirement to non-functionality and then excluding almost nothing on functionality grounds.<sup>105</sup> Under the prevailing rule, design patent law disqualifies a claimed design only when the design, as a whole, is “dictated by” functional considerations—a standard that is met only when there are virtually no alternative designs available.<sup>106</sup> Unsurprisingly, that is exceedingly rare.

Trademark law has long been influenced by two distinct ideas about the purposes of functionality doctrine that manifest in contradictory approaches.<sup>107</sup> On one view, functionality is about channeling useful features to utility patent law—not necessarily because those features will be protected by utility patent, but because

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<sup>101</sup> See McKenna, *(Dys)Functionality*, *supra* note 26, at 847.

<sup>102</sup> See *id.* at 847–48.

<sup>103</sup> See McKenna & Strandburg, *supra* note 14, at 17.

<sup>104</sup> See McKenna, *(Dys)Functionality*, *supra* note 26, at 848.

<sup>105</sup> See McKenna, *Fixing Functionality*, *supra* note 19; Burstein, *Intelligent Design*, *supra* note 17.

<sup>106</sup> See, e.g., PHG Techs., LLC v. St. John Cos., 469 F.3d 1361, 1366 (Fed. Cir. 2006) (“The design of a useful article is deemed to be functional when ‘the appearance of the claimed design is “dictated by” the use or purpose of the article.’”) (quoting L.A. Gear, Inc. v. Thom McAn Shoe Co., 988 F.2d 1117, 1123 (Fed. Cir. 1993)).

<sup>107</sup> See McKenna, *(Dys)Functionality*, *supra* note 26; McKenna, *Fixing Functionality*, *supra* note 19.

utility patent law should make the policy judgments regarding protection of those features. Courts influenced by this understanding of functionality exclude features that have any relationship to function, even if there are other ways to accomplish the function.<sup>108</sup> On the other view, features are functional only if their exclusive use would impose a significant competitive disadvantage on others. That is, a feature is not functional, no matter how much it impacts utility, unless there are very few alternative designs.<sup>109</sup> The Supreme Court's decision in *Traffix* emphasized the first channeling approach and downplayed the second approach of competitive need.<sup>110</sup> Nevertheless, functionality doctrine as a whole continues to reflect both of these views.

One way copyright deals with functionality is through the separability rule, which limits protection of useful articles to features that are "separable" from the utilitarian aspects of the article.<sup>111</sup> The separability doctrine has been the source of

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<sup>108</sup> See, e.g., *Ezaki Glico Kabushiki Kaisha v. Lotte Intern. Am. Corp.*, 986 F.3d 250, 260 (3d Cir. 2021) ("Every aspect of Pocky is useful. The nine other designs do not make it less so."); *Specialized Seating, Inc. v. Greenwich Indus., L.P.*, 616 F.3d 722, 727 (7th Cir. 2010) ("Another goal [of functionality], as *Traffix* stressed, is to separate the spheres of patent and trademark law, and to ensure that the term of a patent is not extended beyond the period authorized by the legislature. A design such as Clarin's x-frame chair is functional not because it is the only way to do things, but because it represents one of many solutions to a problem."); *Eppendorf-Netheler-Hinz GmbH v. Ritter GmbH*, 289 F.3d 351, 358 (5th Cir. 2002) ("the design features for which Eppendorf seeks trade dress rights are functional if they are essential to the use or purpose of the Combitips or affect the cost or quality of the Combitips. The availability of alternative designs is irrelevant.")

<sup>109</sup> See, e.g., *Blumenthal Distrib., Inc. v. Herman Miller, Inc.*, No. 18-56471, 2020 WL 3458983, at \*5 (9th Cir. June 25, 2020) (emphasizing that "the proper standard for whether a claimed trade dress consisting of an 'overall appearance' is functional is whether 'protecting the trade dress threatens to eliminate a substantial swath of competitive alternatives in the relevant market.'" (quoting *Clicks Billiards, Inc. v. Sixshooters, Inc.*, 251 F.3d 1252, 1261 n.5 (9th Cir. 2001))); *Bodum USA, Inc. v. A Top New Casting Inc.*, 927 F.3d 486, 492 (7th Cir. 2019) ("Thus, to establish it has a valid trade dress, Bodum did not have to prove that something like a handle does not serve any function. It merely needed to prove that preventing competitors from copying the Chambord's particular design would not significantly disadvantage them from producing a competitive and cost-efficient French press coffeemaker."); *Valu Eng'g., Inc. v. Rexnord Corp.*, 278 F.3d 1268, 1276 (Fed. Cir. 2002) (reaffirming reliance on alternative designs as "a legitimate source of evidence to determine whether a feature is functional in the first place").

<sup>110</sup> *Traffix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23, 33 (2001) ("Where the design is functional under the *Inwood* formulation there is no need to proceed further to consider if there is a competitive necessity for the feature."). The Court found the claimed dual-spring design functional even though the record suggested other designs were available and not particularly costly. See *Mktg. Displays, Inc. v. Traffix Devices, Inc.*, 200 F.3d 929 (6th Cir. 1999), *rev'd*, 532 U.S. 23 (2001) (noting availability of other designs).

<sup>111</sup> 17 U.S.C. § 101 (1976) ("[T]he design of a useful article . . . shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates . . . features that can be

decades of confusion, which was streamlined but not helped by the Supreme Court's recent *Star Athletica* decision.<sup>112</sup> According to the Supreme Court, features that are incorporated into a useful article are separable, and thus potentially copyrightable, if they "(1) can be perceived as a two- or three-dimensional work of art separate from the useful article and (2) would qualify as a protectable pictorial, graphic, or sculptural work—either on [their] own or fixed in some other tangible medium of expression—if [they] were imagined separately from the useful article."<sup>113</sup> Conceptual separability has proven notoriously difficult to apply—and even scholars who typically disagree about other copyright matters are united in their criticism of the Supreme Court's attempt at clarifying the separability rule in *Star Athletica*.<sup>114</sup>

What these doctrines have in common is that they all attempt to separate and distinguish the "functional" aspects of a design from the non-functional or aesthetic aspects. Whatever the internal motivations for that approach, the whole project is at odds with the process of design and designers' goals, as reflected in our research. While intellectual property doctrine seeks separation, designers typically seek integration of form and function.

These functionality doctrines also diverge from the work of designers in that the law conceives of "functionality" in narrower terms than do designers. While IP's functionality doctrines overwhelmingly focus on "technical" problems that are supposedly the domain of utility patent law, designers seek to solve a wide range of different kinds of problems and face many different types of constraints.<sup>115</sup>

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identified separately from, and are capable of existing independently of, the utilitarian aspects of the article . . . [a] 'useful article' is an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information.").

<sup>112</sup> *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 580 U.S. 405 (2017).

<sup>113</sup> *Id.* at 409.

<sup>114</sup> See, e.g., Rebecca Tushnet, *Shoveling a Path After Star Athletica*, 66 UCLA L. REV. 1216, 1218 (2019) ("The best I can say about the case is that my copyright students' situation has improved: Instead of having to learn up to nine incompatible approaches to copyright protection for useful articles, as in the past, they only have to learn one that's self-contradictory."); Barton Beebe, *Star Athletica and the Problem of Panaestheticism*, 9 U.C. IRVINE L. REV. 275, 276 (2019); *From Shovels to Jerseys: A Guide to Apply Star Athletica v. Varsity Brands*, U. PA. L. REV. ONLINE (2017); Mark P. McKenna, *Knowing Separability When We See It*, 166 U. PA. L. REV. ONLINE 127 (2017) [hereinafter McKenna, *Knowing Separability*].

<sup>115</sup> That does not mean there are not plenty of problems trying to determine what functions count. For a description of that problem, see McKenna, *(Dys)Functionality*, *supra* note 26, at 843–58 (describing the differences between aesthetic and utilitarian functionality).



To be sure, trademark law's *aesthetic* functionality doctrine contemplates other, non-technical contributions.<sup>116</sup> The shape of the round beach towel, for example, may or may not serve any kind of technical function.<sup>117</sup> Consumers, however, might want a round towel because it is fashionable.<sup>118</sup> If they do, that shape is considered aesthetically functional even though the "function" is quite different from a dual spring design for road construction signs.<sup>119</sup> But it is telling that aesthetic functionality is much more controversial than its utilitarian counterpart. Many courts continue to reject that doctrine or have looked for ways to avoid applying the doctrine even when it seems called for.<sup>120</sup> Features that are functional in the utilitarian sense raise concerns about interference with utility patent law. Features that are aesthetically desirable, whatever their competitive significance, do not seem as important for courts to guarantee their access. Data from design practice elevates the importance of the *aesthetic* "function," thereby broadening the category of what counts as "functional" and challenging the narrow doctrinal conception in IP law.

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<sup>116</sup> See J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION, § 7:80 (5th ed. 2021). That doctrine recognizes that products often "are bought largely for their aesthetic value" and so "their features may be functional because they definitely contribute to that value and thus aid the performance of an object for which the goods are intended." RESTATEMENT (FIRST) OF TORTS § 742 (AM. L. INST. 1938). According to the Supreme Court, in cases of aesthetic functionality, the question is whether exclusive use of the claimed features would put competitors at a "significant, non-reputation-related disadvantage." *TrafFix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23, 32–33 (2001).

<sup>117</sup> We note that the round beach towel was the subject of a utility patent, and the patentee claimed that the shape allowed sunbathers to reposition their bodies without having to move the towel. See *Jay Franco & Sons, Inc. v. Franek*, 615 F.3d 855, 858 (7th Cir. 2010).

<sup>118</sup> *Id.* at 859–60 ("But let us suppose with Franek—who opposed summary judgment and who is thus entitled to all reasonable inferences—that round towels are not measurably better for spinning with the sun . . . [n]o matter. Franek's mark still is functional."); *id.* at 860 ("Fashion is a form of function.").

<sup>119</sup> See *TrafFix*, 532 U.S. at 25 ("Temporary road signs with warnings like 'Road Work Ahead' or 'Left Shoulder Closed' must withstand strong gusts of wind. An inventor named Robert Sarkisian obtained two utility patents for a mechanism built upon two springs (the dual-spring design) to keep these and other outdoor signs upright despite adverse wind conditions.").

<sup>120</sup> See *Christian Louboutin S.A. v. Yves Saint Laurent Am. Holding, Inc.*, 696 F.3d 206, 221–26 (2d Cir. 2012) (straining to avoid applying aesthetic functionality); *Bd. of Supervisors for La. State Univ. Agric. & Mech. Coll. v. Smack Apparel Co.*, 550 F.3d 465, 487–88 (5th Cir. 2008) (questioning whether the doctrine exists); *Au-Tomotive Gold, Inc. v. Volkswagen of Am., Inc.*, 457 F.3d 1062, 1072–74 (9th Cir. 2006) (refusing to apply the doctrine to use of logos on keychains and license plate covers despite recognizing that "[c]onsumers sometimes buy products bearing marks such as the Nike Swoosh, the Playboy bunny ears, the Mercedes tri-point star, the Ferrari stallion, and countless sports franchise logos, for the appeal of the mark itself, without regard to whether it signifies the origin or sponsorship of the product.").

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As these descriptions suggest, copyright, trademark, and design patent all attempt in one way or another to exclude at least some functional features from protection because those features “belong” to utility patent law. But all face significant challenges, in part because they all seek to identify and separate the “useful” or “functional” aspects of a design. None of these doctrines has consistently done that well, to the consternation of lawyers and their clients who seek clarity in the application of these regulatory regimes that are central to multi-national businesses. As the research we describe below indicates, the reason may be, at least in part, because there is a fundamental disconnect between IP law’s attempts to separate form and function (the “aesthetic” and the “utilitarian”) and the reality of professional design standards and designers’ goals. IP law may have its own goals, but those goals do not align with design or design practice, which is nonetheless squarely regulated by IP law.

## II. THREE DIMENSIONS OF DESIGN

Our methodology for this Article, described in detail in Appendix A, consists primarily of long-form interviews with designers. Our interviews were stratified over relevant variations within the design field.<sup>121</sup> A qualitative empirical interview method allows us to identify, categorize, and analyze the variations in and vocabularies related to design practice from working design professionals. Following this approach, we elicit from designers their attitudes and perceptions towards, and experiences with, design as a profession and practice. Appendix B lists all the interviewees, some anonymized according to research protocols.<sup>122</sup> Face-to-face interviews allow us to deeply probe our subjects’ explanations, knowledge, and behaviors. Their responses are often independently verifiable through their public-facing work or on their websites. As Appendix A explains, interview transcripts and our qualitative analysis of them through coding, comparison, and thematic identification, form the core of our empirical methodology for the reasons we explain therein. But our data also include field notes from visits to design studios and consultancies. The richness and nuance of narrative and observational data provides a broad and solid foundation for understanding professional design practice as it evolves in the internet age.

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<sup>121</sup> See *infra* Appendix A.

<sup>122</sup> See *infra* Appendix B.

### A. *Purposive Interdisciplinarity*

We learned early in our interviews that the goal and practice of interdisciplinarity pervades design work. Interviewees explained that early design practice and education were often organized around particular design disciplines, the boundaries of which have always been emergent and dynamic.<sup>123</sup> Over the course of the twentieth and early twenty-first centuries, however, design practice expanded, and fields evolved—some were redefined, some faded and others emerged. So, for example, designers now recognize a wide range of related design fields, including packaging design, type-design, book design, information design, film and video graphics design, game design, service design, wayfinding and display design, software design, experience design (UX), user-interface design (UI), interaction design (IX), and strategic design, just to mention a few. Design schools also offer specialties in design management and design research, sustainable and regenerative design, critical race design, speculative design and design futures.<sup>124</sup> All of these fields are adjacent to but connected with research and practice disciplines of mechanical, industrial, and civil engineering, art, art history, sociology, anthropology, and political science. And many of the design disciplines are cross-cutting, explicitly combining areas of practice and context of use with ethics of sustainability or racial justice, for example.<sup>125</sup> When designers talk about striving for interdisciplinarity, they are talking about all of these things, and that is a tall order.

Designers and design firms described to us how they aim for interdisciplinarity at several levels of practice: at the level of the firm, the team, and the individual. We spoke with firm or company managers and individual designers who described hiring with the purpose of building an interdisciplinary firm with interdisciplinary capacities. This means ensuring that their designers can work on interdisciplinary teams that work with a variety of field-experts. It also means that each individual has the capacity to develop their own practice, learn new skills, and expand their range

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<sup>123</sup> Many of our interviewees referred to traditional categories of graphic design, architecture, automotive design, and industrial design.

<sup>124</sup> *MFA in Design for Responsible Innovation*, UNIV. OF ILL. URBANA-CHAMPAIGN SCH. OF ART & DESIGN, <https://art.illinois.edu/programs-and-applying/masters-programs/mfa-design-for-responsible-innovation/> [<https://perma.cc/SKL4-9MWC>] (last visited June 6, 2021). See also IIT INSTITUTE OF DESIGN, <https://id.iit.edu/> [<https://perma.cc/Q3UC-FWFV>] (last visited June 6, 2021).

<sup>125</sup> “Good design learns from anthropology, . . . social work, . . . community organizing.” George Aye, *It’s Time to Define What “Good” Means in Our Industry*, DESIGN OBSERVER (Mar. 14, 2019); see also Peter Asaro, *Transforming Society by Transforming Technology: The Science and Politics of Participatory Design*, 10 ACCT. MGMT. & INFO. TECH. 257, 277 (2000) (“Participatory design emerges (1) to rectify political imbalances caused by technologies in workplace and to protect workers from technological change and (2) evolution of techno-rationalism which sought to increase the success and efficiency of new systems.”).

of expertise. Designers' theory of interdisciplinarity's benefits—more creative and innovative problem-solving and systemic inclusivity—structures the design firm, design teams, and individual designers' skill development. And as mentioned above, this systemic interdisciplinarity frustrates categorical boundaries that IP law insists upon to promote its policies.

### 1. Interdisciplinary Industry Structure

Each of the designers we interviewed had slightly different ways of describing how their firm or company was structured to achieve the desired interdisciplinarity. But all described the ways their firms drew on the value of disciplinary intersection.

Jay Newman, at design strategy firm Jump Associates, in Redwood City, California, described his firm as combining three different conceptual approaches to design under one roof. He drew a Venn diagram of three circles that overlap in the middle, each containing a distinct strategic focus, and he explained that clients need all three:

[O]ur strategy practice lives at the intersection of business strategy, how do you make money, how do you scale things, how do you like take advantage of an organization's strengths and capabilities. [Then there is] social research, or applied anthropology, or design research, right. Which is how do you identify what are the unmet needs of the world? What do people most care about? What are their cultural values, and what types of meanings do they give to things? And how can you use that as a source of new ideas, right? And then [there is] design and technology, which is how do you make things real? . . . And our specific unique take on that has been . . . in the way we hybridize those things together, so we really only recruit people who have backgrounds in all three of those fields, and interests in all three of those fields, and then we develop their capabilities across all three of those fields.<sup>126</sup>

Populating the three fields of business strategy, social research, and design at Jump Associates are professionals with background in finance, fine art, industrial design, computer science, and architecture.<sup>127</sup> Jay's characterization of interdisciplinarity builds on the melding of traditional university disciplines to form meta-categories,

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<sup>126</sup> Interview with Jay Newman, Dir., Jump Assocs., in Redwood City, Cal. (Feb. 26, 2020). Jay described this three-circle Venn Diagram as specific to Jump Associates, but in our interviews with designers from other consultancies, we heard similar organizational explanations.

<sup>127</sup> *Id.*

but he viewed it as a distinct mixture for serving their diverse clients, which included government agencies, health care and management firms, and consumer good companies.

In New York City, Michael Rock, the founder and principal at 2 x 4 Design, characterized his company in slightly different terms as being made up of groups with what he calls “proficiencies.”<sup>128</sup> He described the proficiencies in terms of the disciplinary backgrounds of 2 x 4’s professionals. He explained that some of those professionals did not start as designers, but instead as anthropologists or historians. Regardless, today they are all designers in his celebrated design firm:

The way this usually is organized, is . . . into five proficiencies. . . . There’s strategy, and those people are mostly not designers, they came out of all kinds of backgrounds. The head of strategy studied anthropology at the University of Chicago, we have one who went to Williams and then went to MOMA. They come from very different backgrounds. Then there’s a group that deals mostly with digital activations, and that means how digital intersects with space, three-dimensional space, and that guy, right there, actually, went to Yale and studied history, I think, but then he became a designer after that, . . . and then worked for MoveOn. . . . There’s strategy, digital activation, then there’s branding, which we couple into branding all different kinds of print media. . . . And that would basically be books, posters, wallpaper, that’s the hardcore graphic design part of it. Then there’s environmental designers, so those are people who work with design in the space, so how you find your way, how do you understand the space. . . . Architecture is a team in itself, and those people are the people who deal with like actually three-dimensional objects in spaces that they’re designing.<sup>129</sup>

Jay and Michael both described specific kinds of skills related to designing a product or an experience. “Strategy” is a word we heard a lot, which we interpreted as related to business development and market opportunity research. Both Jay and Michael named “strategy” as critical, but they did not claim it as the exclusive expertise of finance or businesspeople.<sup>130</sup> To the contrary, at 2 x 4, the strategy designers “came out of all kinds of backgrounds” such as anthropology and a liberal arts

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<sup>128</sup> Interview with Michael Rock, Partner and Creative Dir., 2 x 4, in N.Y.C., N.Y. (May 15, 2019).

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*; Interview with Jay Newman, *supra* note 126.

background.<sup>131</sup> The distinct idea is that business development and identification of opportunity is a holistic or at least humanistic endeavor as much as it is an economic and market-driven one. Michael's description of the five proficiencies at his firm also emphasized different media experiences for the consumer—digital, print, three-dimensional space, and built objects in space. One can imagine that “digital activations” include a lot of web-designers, but Michael pointed out that “that guy, right there” in the digital activation department “studied history” before he became a “designer.”<sup>132</sup> And digital activation designers work necessarily with those designing the three-dimensional space. The separate proficiencies are clear to Michael Rock in his firm, but their interactions and intersections are inevitable and necessary for the firm's success.

The designers explained that interdisciplinary firm organization serves the goal of better design. It is not that with more proficiencies the firms can simply do more different things for clients. In this respect, these design firms are not like law firms, for example, with many departments staffed by lawyers with specific specialties (e.g., intellectual property, tax, real estate), or like management consulting firms whose associates and partners each have experience in specific business areas (retail, healthcare, education). The benefits of interdisciplinary organization in design firms are not compartmentalization and aggregation; they are instead new ways of identifying and approaching problems that only deep interdisciplinarity and a melding of proficiencies can identify and address. We see here in this initial observation about firm structure the roots of resistance to separation between form and function and the embrace of design as characteristically holistic.<sup>133</sup>

We reached this conclusion after hearing designers' answers to our question about what distinguishes the interdisciplinarity they seek in their firms from the diversity of experience evident in large law firms and management consulting practices. They describe the interdisciplinarity of design practice—which is constitutive of the firm as well as the teams and individuals—as broadening the

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<sup>131</sup> Interview with Michael Rock, *supra* note 128.

<sup>132</sup> *Id.*

<sup>133</sup> These ideas appear in management literature in the late 1990s, when design consultancies first started experiencing exponential growth. See Bill Nixon, *Evaluating Design Performance*, 17 INT'L J. TECH. MGMT. 814, 814 (1999) (“The span of design over a product's life cycle, encompassing form (appearance), function (performance) and fit (ergonomics) is just one reason why the design function may be located in R&D, manufacturing or marketing: this diffusion of the design activity increases the difficulty of evaluation.”); *id.* at 818 (“Design is a multi-dimensional activity that interacts in different ways with customers, technology, research, finance, marketing, distribution and logistics as well as information technology.”).

impact of their designs in terms of the products or experiences they helped design and the clients they served. It produces a new way of identifying and solving problems and actuates their clients in ways previously unappreciated. This sounds idealistic, we realize, but designers are both idealistic and pragmatic. Here are two examples of the transformative change that interdisciplinary design practice can affect, one deeply pragmatic, the other more idealistic. The first is from a manager at IDEO, a global design firm whose proud history as one of the premier and original design consultancies, founded in 1979 in Palo Alto as a purported originator of the human-centered, interdisciplinary approach to design.<sup>134</sup>

There's a deliberate sort of shifting of realizing that as we can incorporate different types of people and different disciplines, we can tackle different types of problems, so originally we're hired to design the thing, you know, the product, and we team up to be able to do that, and that's a subset of . . . engineer, designer, electrical engineer, a software engineer, but as we start to realize that we can actually have a bigger impact if we can also think about the brand, we can also think about the packaging, we can also think about the website and the communications and the app and all the other things that surround the experience, then we can design a more holistic experience and therefore have a broader impact, right? So that's how, in my sort of experience, that's how we went from sort of designing things to designing experiences, right? Holistic experiences. Because, then, the next part of it was . . . are the organizations that we're working with capable of sustaining, maybe going into a new, completely new business, or a new way of working? . . . [T]he outcome of our work could be a new product or service, but it could also be sort of launching a completely new business that the organization is not necessarily capable of doing as they exist today. And that prompted the work that we're doing around organizational design, which is how do we help organizations build the capabilities for innovation, or to be able to work in different ways, or to be able to launch new businesses.<sup>135</sup>

This manager's description is pragmatic but also evolutionary, understanding that a firm that can serve the whole client can vastly expand its opportunities and capacities. The description echoes the "science of design" philosophy of Herbert Simon but is adapted to a more self-consciously human-centered design practice, teaching "designing without final goals because, in the dynamic social realm,

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<sup>134</sup> *IDEO at a Glance*, IDEO (June 25, 2021, 8:43 AM), <https://www.ideo.com/about/ideo-at-a-glance> [<https://perma.cc/WPZ3-ND3R>].

<sup>135</sup> Interview with "Allen," IDEO, in Cambridge, Mass. (Apr. 11, 2019).

changing situations over time create new goals.”<sup>136</sup> IDEO does not have headquarters; indeed, it eschews the idea of hubs and centers.<sup>137</sup> IDEO is a global design firm with over 600 designers who are described on the main website as “co-creators” with clients and as “teachers” helping diverse clients “cultivate the confidence they need to step into the future with optimism and creativity.”<sup>138</sup> For this IDEO executive, interdisciplinary firm structure empowers clients to be de facto members of the design team.<sup>139</sup>

We did not need to confirm the idealism of Jump Associates by checking a website. Jay Newman was explicitly idealistic when describing the goal of his firm and the reason for its interdisciplinary structure:

The question . . . we’re constantly asking ourselves and hoping to get our clients to ask themselves of, is, it starts from that question of “who are you at your core? Right? What is your bigger purpose in life, or the reason that your organization should exist, what’s your big why?” And that is all about an understanding of like, you know, centuries-long things that you derive meaning from, things that will go beyond you in life, as well as, you know, your own articulation of what matters most and how you want to be, right, values, right? We tend to define values as basically how do we want to act and make decisions when we’re together, what are the things that we’re gonna prize? And so our team here has a very strong center magnetic force around purpose, and the way we define our purpose is to transform lives through learning and growth, . . . and all of those words are critical, right, like, “transform,” which is the ability to change, and we mean to transform organizations, but we also mean like our own individual lives, and the people we affect to create change. “Lives” is like individuals, very personal, right?<sup>140</sup> And “learning” and “growth,” and learning is like new ideas, and growth is like individual personal development, right?<sup>141</sup>

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<sup>136</sup> DJ Huppertz, *Revisiting Herbert Simon’s “Science of Design,”* 31 DESIGN ISSUES 29, 39 (2015).

<sup>137</sup> IDEO at a Glance, *supra* note 134.

<sup>138</sup> *Id.*

<sup>139</sup> As will be clear from the analysis that follows, human-centered design is a movement within design that is not only affecting firm structure but design practice more generally.

<sup>140</sup> This resonates with George Aye’s assessment when he writes that “good design makes space for those without formal training to shape and control the project itself.” Aye, *supra* note 125.

<sup>141</sup> Interview with Jay Newman, *supra* note 126.



This is weighty utopian thinking on Jay's part. But he was earnest, stabbing his finger on the table and looking at us with intensity. He really wants Jump Associates to accomplish these goals as a firm and for its employees and clients. Like IDEO, the idea is to think and act holistically—through but beyond specific proficiencies and expertise—to effect positive change for clients and the communities the clients serve and to make clients into self-actuating problem-solvers alongside the design professionals.<sup>142</sup>

## 2. Team Interdisciplinarity

The result of this industry structure, according to the designers we interviewed, is that teams of designers are more intentionally collaborative than one might imagine creators and innovators to be in other common creative and inventive settings. The lack of siloing within firms that might otherwise lead to deep and specific expertise among professionals means that teams confront and solve problems iteratively, regularly adjusting constraints and inputs according to the diverse contributions of the team members. Although designers have to start somewhere, their iterative and collaborative teamwork means that “design never starts from scratch . . . ideas never come from thin air, they never come from the God trick, and no one ever is the sole conjurer of something. This point is crucial and one reason . . . [to see] possibility in design—it is an antidote to hubris, certainty, origins, and radical departures.”<sup>143</sup> This framing is a radical departure from IP doctrine's conception of authors and inventors and the kinds of work they perform.<sup>144</sup>

Designers' descriptions of their process also differ from accounts in IP that tend to focus on individual contributions constrained by disciplinary fields. The designers we interviewed, by contrast, describe iteration, collaboration, and drawing from

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<sup>142</sup> There is, of course, a lot of anti-social design, including design that promotes addiction or erodes privacy. *See, e.g.*, NATASHA DOW SCHÜLL, ADDICTION BY DESIGN: MACHINE GAMBLING IN LAS VEGAS (2012); WOODROW HARTZOG, PRIVACY'S BLUEPRINT: THE BATTLE TO CONTROL THE DESIGN OF NEW TECHNOLOGIES (2018). The fact that there is a “dark side” to design work does not change the fact that professionals in interviews and the theoretical literature consistently describe ideals for their practice. *See supra* notes 58 and 133; *see also infra* Section II.C. Unlike the medical and legal professions, which have ethical codes (individualized deviations from which may be sanctioned by licensing institutions), the design profession appears just to be developing an ethics that incorporates similar ideals (e.g., of “do no harm” or “duty of candor”). But designers have yet to establish a professional organization that accredits designers and excludes those that fail to meet ethical standards. The emergence of a professional ethics is a hypothesis we describe in our conclusion as ripe for further study.

<sup>143</sup> Latour, *supra* note 37, at 5.

<sup>144</sup> Although it is by no means a radical departure from how authors or inventors in fact work. *See* SILBEY, THE EUREKA MYTH, *supra* note 33.

diverse fields as central to a designer's professional development. Denise Burchell, a California-based designer since before the dot.com boom in the late 1990s, worked first in web design from a background in sculpture and sociology, and then worked in a consultancy, Frog, which was an early innovator, like IDEO, in design firms. She describes the benefit of working in teams of designers at this early stage of her career as changing the way she "live[s] and breathe[s] . . . design."<sup>145</sup>

[A]ll the rage [at Frog] at the time was this notion of a multidisciplinary team. So, I got exposure for the first time to industrial designers, mechanical engineers, digital designers, coders. Like [coding] was the area I was comfortable in, and I could bring some knowledge to, but there were people who had been working in design agencies for, you know, decades ahead of me. So, I wanted to learn from them, you know, what does it look like to live and breathe and critique design for the sake of being a better designer?<sup>146</sup>

Working alongside diverse designers on the same project generates a creative process of ideation and critique. The point of working together and not just in the same company is to share and develop each other's contributions as the project works through in multiple possible manifestations. This exposes designers with expertise in one field to constraints and contributions from other design fields. The emphasis on the team approach means that team members' contributions are more often considered on a lateral field rather than a hierarchical one.

George Aye, a senior designer who now runs his own firm in Chicago, but who has significant experience at both IDEO and as an in-house designer, describes design teams as "tightly linked."<sup>147</sup> This makes each designer with special expertise better not only within their own specific design field but in general. He provided an example of this interdisciplinary team function in terms of manufacturing processes:

Industrial design is mostly concerned with . . . the creation of ideas that can be physically manufactured. So that often meant that the material choice had a huge impact on whether or not you could design it, or should design it. So, if you knew that this thing can only be made of a cheaper plastic that has to be made at ten cents apiece, [and] this is a thousand-dollar object, and you're only gonna make a

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<sup>145</sup> Interview with Denise Burchell, Designer, Salesforce, in S.F., Cal. (Feb. 26, 2020).

<sup>146</sup> *Id.*

<sup>147</sup> Zoom Interview with George Aye, Co-Founder, Greater Good Studio (June 12, 2020).

hundred of them, you have a completely different strategy on whether you're gonna make it by hand, or mass produce them in the millions or billions. Right? So, what I found to my amazement was just how tightly linked the industrial designers were at the studio at IDEO . . . and how closely linked they had to work with an engineering team. So your ability to be a designer that basically became like a junior engineer made you a better designer. . . . That kind of like nudge into the next field over, like one step down the line, I thought was really inspiring.<sup>148</sup>

George is explaining that by closely linking designers in teams, each team was able to creatively and efficiently confront the particular design challenges of each project. In this example, he describes how design projects need to address constraints of material and cost, for example. There are, of course, many other constraints he does not explicitly mention here, such as usability, aesthetics, manufacturability, and marketability. The designers we interviewed explained that confronting the challenges of constraints is both a professional calling and a mark of excellence. Identifying the relevant constraints was part of the “problem finding” process. Interdisciplinary teams are better at both identifying problems and overcoming them because many constraints arise from the siloing of expertise (engineering, finance, graphic design). Combining that expertise in a single team that works synchronously to design an outcome may raise the complexity of the problem to address but may also revolutionize the nature of the solution. At least that is what designers explain.

Michael Kahwaji, a manager and senior designer at Whirlpool, described this feature of interdisciplinary teams—addressing constraints—as engaging in translation and conflict management.<sup>149</sup> Kahwaji has been at Whirlpool for fifteen years. The company’s design departments formally include industrial design, graphic art, user experience, color-finish-material, engineering, consumer insights, and production graphics. But at what Michael calls a “day-one event,”<sup>150</sup> these professionals create working teams across departments in order to overcome the focus and constraints of each. He leads the kitchen team designing stoves, ovens, refrigerators, and dishwashers. His team consists of one of each of these kinds of designers from the different departments. They do not necessarily all report to him—e.g., the graphic designers have direct reports in the graphic design department—but

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<sup>148</sup> *Id.*

<sup>149</sup> Interview with Michael Kahwaji, Senior Design Manager, Whirlpool, in Benton Harbor, Mich. (Aug. 7, 2019).

<sup>150</sup> *Id.*

each team has a member from each of these departments. The point of “co-locating,” as he called working together, is to “translate” each other’s job functions and problems for the other members of the team.<sup>151</sup> As Michael gave us a tour of the office, he described co-locating as a game-changer, in part because they had not achieved the transformative effect of synchronous collaboration before. He said the “studio engineers . . . [are] just like engineers, but they have a design sensitivity, and so they understand how to interpret what we want, and understand more the manufacturing challenges, and they work closer and better with our engineers to say, they are looking at optimization and cost-cutting.”<sup>152</sup> As we walked around the Whirlpool offices, we could see these different team members sitting in adjacent cubicles and sharing models, looking at each other’s screens, and passing samples back and forth. Michael confirmed that this was part of the design process:

We always have . . . dialogue. . . . Every kind of conflict we have, we want to unpack it with a conversation. And so, some specific examples would be Usability and Industrial Design. Usability’s primary goal is to ensure that the consumer has the best possible experience and success rate in executing and action. From Industrial Design, we want the same thing, but it needs to look good and feel good and satisfy the brand aesthetic needs as well. And we also have a [direct] connection with the consumer. Like we believe we understand usability very well. So, some things that Usability might deem severe as a problem, Industrial Design might say, “it’s not that big of a deal, because the frequency of that use is once every two months.” So if there’s a pain point for ten seconds on something you’re gonna use four times a year, and you’re gonna compromise something that they’re gonna see every time they open the door, then we’re gonna have a discussion about this. And then that either gets resolved through good, healthy dialogue, or it gets escalated to a manager.<sup>153</sup>

In many interviews, we heard echoes of Michael’s description of the way interdisciplinary teams work to address constraints through regular translation of expertise and dialogue. That focus is a result of an evolution in the industry where designers, who were previously more siloed and trained for particular skills, had to adapt to new problems clients were facing. Ann-Marie Conrado, a designer and professor of design at Notre Dame University, explained this evolution of

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<sup>151</sup> “So, my team that consists of industrial designers only, that have a direct report to me, I have dotted lines of Graphic Design, UX, Consumer Research, those all sit, some of them co-locate with my team. Our Studio Engineering, this helps us translate our ideas.” *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> *Id.*

interdisciplinary skill-building and interdisciplinary team development as way to craft new tools for cutting edge problems:

[G]raphic designers make two-dimensional things, and that's their skill, in laying stuff out on the page, and putting it in a compelling visual, whereas product designers are 3D, and we make objects, right? So, at the start of my career, and for a long time into it, I was an object maker, you know. And I'm doing that for companies. And what I think has really blurred is . . . the problems nowadays that we face are too complex to kind of fall into those simple buckets. And the problem with those buckets tends to be that you become a carpenter solving everything with a hammer, because that's your tool. And sometimes a problem doesn't need a hammer, it needs something entirely different, and so I think we've become more sophisticated in allowing the problems and the needs to sort of initiate the best pathways to solve them, and so a designer now has to be able to recognize sometimes when they're not best equipped to solve a problem for their traditional background, right? So, like I said, I'm an object maker, but maybe the outcome needs a campaign. Well, then I'll work with a graphic design firm, and say, "[w]e don't need a product here, I need to work with you to help me develop this website," or whatever.<sup>154</sup>

Interdisciplinary teams can approach problems holistically and iteratively, addressing the various constraints as they arise rather than after the fact, which is likely when designs are produced sequentially from department to department. Working on these teams enables designers to identify the limitations of their own expertise and appreciate the skills their designer-colleagues bring to the project.<sup>155</sup>

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<sup>154</sup> Interview with Ann-Marie Conrado, Professor of Indus. Design, Univ. of Notre Dame, in South Bend, Ind. (Aug. 7, 2019).

<sup>155</sup> The automotive designers we interviewed described this problem in the reverse. As a legacy design industry and still one of the most elite practices and most isolated from the rest of design practice, the automotive designers told us that one of the major challenges they faced at places like BMW and Ford was getting certain departments within engineering to work together in a collaborative and not antagonistic fashion. According to Richard Gresens,

There's always this battle, no matter what design field you're in, whether you're in product, graphic, car, industrial, you know, engineers and designers, right, it's always kind of this. And it isn't because they don't like each other. It's just that the engineers are thinking, you know, "I've got to build it for this and it's got to do this." The designer's saying, "I want it to look this good. That means it may cost a little bit more to build what I want, because of what I'm trying to do." So, there is that inherent battle. Where the two groups come together and they work seamlessly, that's where you have the most success.

This produces nimble, adaptable, open-minded teams and individual members with appreciation for and expectation of an enormous range of problems that design practice can address.<sup>156</sup>

The purposive interdisciplinarity our designers describe contrasts sharply with patent law's idea of inventors working within a particular field, which circumscribes the obviousness evaluation. The contrast with the structure of design patent law's obviousness doctrine is especially clear. Under prevailing Federal Circuit law, a court considering obviousness must first identify "a single reference, 'a something in existence, the design characteristics of which are basically the same as the claimed design.'"<sup>157</sup> Only if there is such a primary reference can the court consider whether secondary references are "so related [to the primary reference] that the appearance of certain ornamental features in one would suggest the application of those features to the other."<sup>158</sup> That approach conceives of designers as mere tweekers of existing designs—people who would regard a design as obvious only when it makes trivial changes to an already-existing design that responds to exactly the same need. Our designers would not recognize that process.

### 3. Individual Hybridity

One might think that designers form teams, and the teams then define the firm, but as the data so far demonstrate, it is the reverse. The firm conceptualizes itself into a particular form in order to address what it considers to be cutting-edge design problems, and that form involves teams that are constituted and function in a specific way. That orientation in turn shapes individual designers. This appears to be true even for designers who do not work in design firms because designers' education

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Zoom Interview with Richard Gresens, Designer (June 25, 2020).

<sup>156</sup> Latour, *supra* note 37, at 2 ("Design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and . . . to nature itself. . . . The range of things that can be designed is far wider now than a limited list of ordinary or even luxury goods."); *see also supra* note 133.

[What a designer was] It was much more fixed when I started my career, so I've been twenty-six years in design, and so the labels and the boundaries of what design is was pretty traditional . . . [a]nd it's really changed, what a designer is, the product, the end products of what their work is. The kinds of problems, and the nature of those problems that they solve has dramatically changed. And so it's opened up a much bigger umbrella . . . .

<sup>157</sup> *Durling v. Spectrum Furniture Co.*, 101 F.3d 100, 103 (Fed. Cir. 1996) (quoting *In re Rosen*, 673 F.2d 388, 391 (C.C.P.A. 1982)).

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

and professionalization are increasingly framed by the same philosophy and practice of interdisciplinarity. This orientation produces designers who may have particular expertise but who are importantly “hybrid” or “generalist.”

A young designer, still in the early stages of her career, explained that when she first started working at Yahoo! as a contract employee, her expertise was in user-experience and web design. But “because the designers at Yahoo were expected to be a little bit more of a hybrid, be able to do a lot of this architecture work as well as like actual visual design” she started getting “a lot more exposure to visual design.”<sup>159</sup> Another young designer, Alissa Rantanen, worked at the time of the interview for Insight—a company that designs medical devices and services health care companies. She explained the breadth of her work: “I do UI-UX. I do graphic design. I do research. I do the design strategy. I do all of that, which is really great. It makes me a generalist.”<sup>160</sup>

The more senior designers with decades working in design firms and companies described the intentional development of the design professional as producing a “T-shaped” person:

IDEO’s always looked for T-shaped people, meaning . . . if you imagine the letter T, the vertical of the T is having a depth in a particular area. I’m deep in graphic design, I’m deep in mechanical engineering, I’m deep in industrial design, deep in interaction design, deep in org design, deep in business design, like it goes on and on, right? . . . [A]nd then the horizontal part is the breadth, and that’s sort of your ability to engage with different types of challenges, be able to dabble in different areas, you know, you have people who are, you know, I’m a really good industrial designer, but I can also like make video, and I can also do animations, and I can also make in the shop, . . . my T came from the technical, but over time I built up other skills. And that comes from just years of working with other really talented designers and you pick up skills, you try things, you have lots of opportunities to do something different than your core discipline, because the work demands that we stretch in different ways. It’s never the engineer does the engineering, the designer does the design, but it’s always a team.<sup>161</sup>

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<sup>159</sup> Zoom Interview with “Jennifer,” Designer, Facebook (Oct. 28, 2020).

<sup>160</sup> Interview with Alissa Rantanen, Design Manager, Insight Prod. Dev., in Chi., Ill. (Feb. 5, 2018).

<sup>161</sup> Interview with “Allen,” *supra* note 135.

This senior designer at IDEO explains that the “T-shape” designer has depth of experience in a particular design field but also develops breadth across design fields by working with other designers on teams. As previously described, the work on the team is not done piecemeal according to individual designers’ expertise but is instead coordinated and integrated among team members so that, as this designer says, “you have lots of opportunities to do something different.”<sup>162</sup>

Sharing of responsibilities, despite specific expertise, changes and reshapes the individual designer. Lee Moreau is a senior designer with decades of experience across design fields. His specialty is in architecture. He explains this reshaping of individual designers through the work process not only in terms of skillsets and the application of skills to problems, but also in terms of the ability to communicate effectively both internally within the team and externally to clients:

I think to be good at this job, you have to be a generalist in some sense. So, you know the T-shape person . . . concept, that’s true, which means you need to have a strength in one thing, right? Something you’re good at. For me it’s space and architecture, but you need to be broadly conversant about lots of other things, and that allows you . . . when you put a team together and you put one engineer on it, that engineer has to not just be kind of badass at what they do, they also have to communicate the value of their capability to people in the internal team, but also to the clients, and that is hard. Not every engineer, as you can imagine, can do that.<sup>163</sup>

By being “hybrid” and “T-shaped” the designer can dissect and reconnect pieces of the problem with ease, facilitating synergies among the disciplines in ways that professionals without the cross-disciplinary nimbleness cannot. Instead of the depth of expertise designating the designer as the person who does “X,” that expertise becomes the basis of making connections and developing new abilities, broadening the range of problems to be solved and the methods by which to solve them. Indeed, the evolution of what it means to be an “expert” within design practice led to the rise of user-centered and participatory design—a central tenet of which is that users and consumers should be understood to have critical knowledge to impart and be experts on their own experiences.<sup>164</sup>

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<sup>162</sup> *Id.*

<sup>163</sup> Interview with Lee Moreau, Designer, Continuum (formerly), in Bos., Mass. (Apr. 10, 2019).

<sup>164</sup> Asaro, *supra* note 125, at 270 (“As a worker in one project remarked to the researchers: ‘But you don’t always listen to us—you do what you think is right for us and the project. And you are the expert; so, who



We conducted interview after interview seeking to discern how designers understand what it means to be a “designer.” We thought it would come down to educational origins and specific skills in particular disciplines. We thought it could also be about the kinds of clients or problems designers confront. But it turns out that designers define design work primarily in terms of the themes we have just identified: the hybrid orientation and generalist skill development, the focus on solving multidimensional problems, and the interdisciplinary structure and approach. That characterization largely holds true regardless of the setting in which a designer works (solo, in-house, or in a consultancy). Being a designer is about following a method and a process to approach problems that they identify or that clients ask them to solve, an approach that has different goals and different tools than those used by lawyers or management consultants. Even when working in new areas that were previously “undesigned”—such as data science and artificial intelligence—designers describe the process in familiar terms. An IDEO manager explained:

[W]e call it “Design for Augmented Intelligence.” And it’s about augmenting human capabilities . . . [I]t’s an example of a new discipline that we brought into IDEO[,] . . . and we’ve also needed to figure out sort of how to build that into our process[.] . . . [I]t’s weird because it’s the one group that like, a “data designer” is a very much a misnomer, and therefore we call them data scientists, because that’s what people call them out in the world, but, yes, by the same rationale that [a] business designer is a designer, a data scientist is a designer, they’re just designing with different tools, right?<sup>165</sup>

No matter the designer’s particular focus—housewares, visual graphics, three-dimensional space, information architecture, web design, business strategy, brand development, or data, to name only a few—designers consider their identity as grounded in an interdisciplinary, human-centered practice. Unlike authors and inventors, designers generally do not define themselves by the tangible output they produce, which may or may not be valued or protected as property. It is the interdisciplinary process that defines the designer’s contribution. It is to this feature of process over product we now turn.

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are we to dispute your decisions?’ . . . The common response to this problem was to send experts ‘into the field.’ Rather than trying to rely exclusively on special interviews or meetings to learn about users’ work practices, . . . researchers utilized ‘action research’ methods whereby they spent a great deal of time observing and interacting with workers in their workplace. The reported consequences of this were an enhanced appreciation on the part of both workers and experts for workers’ knowledge, and an increased understanding by workers of technology and its influence on their work practices.”).

<sup>165</sup> Interview with “Allen,” *supra* note 135.

### B. *Process over Product*

Designers talk about the work they do in terms of the problems they solve. But the idea of “problem solving” for designers is both complex and subtle. The nature and definition of a “problem” is very broad, going far beyond the technical problems that are typically the focus of the various IP regimes—and even beyond the aesthetic concerns that are often contrasted with the technical problems. Problem definition is interactive and transformative, so that designers often describe themselves as both “problem finders” and “problem solvers” (and, indeed, rarely distinguish between those two concepts). Further, the practice of “problem finding” and “problem solving” focuses on human behaviors and experiences, and as the previous section described, this practice is developed in teams through discourse, experimentation, and iteration. As a result, designers produce new insights about how to restructure everyday activities—whether it be sweeping a floor, finding one’s way through an airport, or promoting a particular college curriculum. And those insights help them to identify new “problems” whose solution adds value to their client’s business.

The end result of this design process is not necessarily a new object—although sometimes it is—but a new or improved experience whose value is assessed in terms of a combination of features or characteristics that IP law’s individual regimes do not recognize or instead hierarchize and attempt to keep separate. IP law prioritizes the functional or technological over the aesthetic or expressive, and it often defines progress in terms of quantity rather than quality. Designers, by contrast, resist the idea of making “more stuff”<sup>166</sup> and celebrate qualitative excellence. Designers’ embrace a professional ethic that evaluates design outputs in terms of values like whether the design addresses real human needs.<sup>167</sup> We will have something to say later about whether these are really “needs” as opposed to “desires,” but, to designers, they are all of a piece. And that is critical for design’s interaction with IP law, which insists on a radical separation of the useful and the aesthetic. Designers oppose the idea of separability and celebrate optimized integration and coherence. Furthermore, the expression of values and identification of needs as central to design work means that designers have explicitly normative goals for their work, which as

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<sup>166</sup> See generally Barton Beebe, Bleistein, *The Problem of Aesthetic Progress, and the Making of American Copyright Law*, 117 COLUM. L. REV. 319 (2017) (describing copyright law’s twentieth-century accumulationist orientation to aesthetic progress); see also Jessica Silbey, *Against Progress: Interventions About Equality in Supreme Court Cases About Copyright Law*, 19 CHI.-KENT J. INTELL. PROP. 280, 281 (2020) (arguing that the twentieth-century IP evolution followed a “progress is more” paradigm, “more copyrighted works, more patents and more trademarks” and citing the literature on expanding scope of IP subject matter over the same period).

<sup>167</sup> See *infra* Part II.C.3.

the section below describes, distinguish between “good design” and “bad design.”<sup>168</sup> Designers’ normativity about design stands in stark contrast to the value neutrality upon which IP doctrine insists.<sup>169</sup>

### 1. Problem Solving and Problem Finding

In almost every interview, we heard designers say that embarking on a new design project was beginning a journey whose end was unknown. The iterative, generative, and dialogic process of designing meant that the path was going to be unpredictable and stochastic. A client might come with a problem of a company’s revenue loss, the desire to rebrand their services, or seek to redesign a product. But designers regularly described their practice of designing as starting with redefining the problem into something more abstract, and thereby opening up more opportunity. As Lee Moreau said, the goal was to define something “just scary enough.”<sup>170</sup>

Denise, a designer currently at Salesforce, described the beginning of a new project in terms of an “IDEO chestnut”—an object lesson in a pithy story. Somebody comes to you and they say, “[w]e want you to design us a toaster,” and the response is, “[w]e think you’re actually trying to warm bread. Is that true? Right? Because that opens it up.”<sup>171</sup> Other designers both younger and seasoned echoed this theme. An IDEO manager called it “tuning the problem statement” by helping clients “see the opportunity broader than maybe they have.”<sup>172</sup>

Specific examples throughout the interviews illuminated the diversity of objects this strategy serviced. A brand and design professional at OXO said the company’s “true magic . . . is when we solve problems people don’t realize are problems until we solve them.”<sup>173</sup> She was talking about many of OXO’s products, but she called out the company’s measuring cup in particular—one that could be read from above rather than the side, obviating the need to tilt one’s head when pouring and measuring. Alissa Rantanen, a young designer at a medical device company,

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<sup>168</sup> *Id.*

<sup>169</sup> In fact, design theory and research argues against the idea of technological neutrality. See Asaro, *supra* note 125. That obviously is not a new idea, but it is expanding into multiple fields and disciplines; see Langdon Winner, *Do Artifacts Have Politics?*, 109 DAEDALUS 121 (1980); see also LANGDON WINNER, *THE WHALE AND THE REACTOR* 19–29 (1986).

<sup>170</sup> Interview with Lee Moreau, *supra* note 163.

<sup>171</sup> Interview with Denise Burchell, *supra* note 145.

<sup>172</sup> Interview with “Allen,” *supra* note 135.

<sup>173</sup> Interview with “Kate,” *supra* note 97.

explained the process of opening up of the “problem” to reveal new opportunities in the context of medical devices in the following way:

[O]ut of research we have opportunities that are not prescriptive, they don’t say “you should do this solution.” They’re much more open-ended, of [t]he opportunity is better traceability. And then the design staff takes a look at that and says, “ok. How do we improve traceability? Well, we can look at grocery stores and see how they do that. We can look at how other people handle inventory management.” We can leverage all this, come up with a bunch of ideas . . . bounce ideas off of each other with the client, and then ultimately filter out what doesn’t align with the client’s capabilities or vision.<sup>174</sup>

Critical to the design “problem finding” process is going outside the particular field (here medical devices) and locating analogous systems or solutions in unrelated places, such as in grocery stores or factories. This broad search for problems and their solutions expands the scope of design practice and expertise and resists compartmentalization and hierarchy. Mike Smith, a designer at Jump Associates in Redwood City, explained the difference between the narrow “solution” of a back-button on a phone and the broader “problem question” of how “to give people an easy way to go back to the last place they were.”<sup>175</sup> He explained “good designers . . . are . . . experts at building design principles from strategy and things that we are seeing in the world.”<sup>176</sup> In each of the above examples, the design output—the cell phone, medical device, or kitchen utensil—is not the end in itself. Instead, the value of the design practice and strategy is to identify more fundamental needs or experiences and magnify them through the object’s form or use in a particular context.

The interdisciplinarity of teams and open field of information and experience for solving design problems contributes to the generativity and diversity of problems, processes for approaching them, and solutions. Michael Kahwaji, at Whirlpool, was one of many to put this problem-solving nature of design practice in historical context:

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<sup>174</sup> Interview with Alissa Rantanen, *supra* note 160.

<sup>175</sup> Interview with Mike Smith, Designer, Jump Assocs., in Redwood City, Cal. (Feb. 26, 2020).

<sup>176</sup> *Id.*

[T]here's been a shift . . . from designers thinking of themselves as form-givers to thinking of themselves as problem-solvers. . . . multidisciplinary. So, [my friend at] Google, for example . . . she went from a director to a lead in UX, but she's formerly an industrial designer. . . . She doesn't do UX work. So, this is where I think the future is you just wear many hats. It doesn't matter what your title is, you just solve the situation. Solve the topic at hand, because designers are capable of wearing many hats.<sup>177</sup>

The fluidity of design “fields” was apparent in almost all of our interviews. Being a “problem solver” means looking for opportunities and unmet needs by looking beyond the particular object and its formal or experiential history. As a designer at Smart Design in New York said, designers “learn[] what we need to learn to design the best products,” and that means not being confined to specific categories or contexts.

Design problems and their solutions are inevitably broad. As Bruno Latour writes, “design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and [. . .] to nature itself.”<sup>178</sup> They are not solely or strictly technical, mechanical, useful or even aesthetic.<sup>179</sup> Felicia Ferrone, who originally studied architecture but currently has her own studio in Chicago designing glassware and housewares, describes her process as having all of those dimensions:

[M]y stuff [kind of] pushes the boundary a lot of times of material production, so for example, the people who make my glassware don't make glassware like my glassware. They do either scientific stuff, or the sort of decorative butterflies . . . you need to find a person who's the true craftsman, who's up for the challenge . . . for me, to carry a piece forward, there has to be something really innovative about it, otherwise why do it? . . . There has to be something truly pushing the boundary of our expectations of what a stem is, what a wineglass is, how tall a wineglass should be, or, you know, whatever it is, there needs to be something that's really kind of adding to the discourse and history timeline.<sup>180</sup>

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<sup>177</sup> Interview with Michael Kahwaji, *supra* note 149.

<sup>178</sup> Latour, *supra* note 37, at 2.

<sup>179</sup> *Id.*; see also Huppertz, *supra* note 136, at 29–40 (explaining how the design methods movement defines design as problem solving, process-oriented activity rather than the production of physical artefacts).

<sup>180</sup> Interview with Felicia Ferrone, Housewares and Furniture Designer, in Chi., Ill. (Feb. 6, 2019).

In this quote, Felicia describes using the craft of forming new and useful glassware, which she creates by questioning proportions (tall glasses) and combining them with certain necessary features (stems). What are wine glasses for, she is asking, and can asking that question open up opportunities for what they look like? Felicia's intriguing mention of "discourse and history timeline" indicates she approaches this question of what glasses are for by situating her own glassware in a continuum of designed objects drawing significance both from their place in that history and their distinction from it. Her glasses reference older designs and are manufactured with classic materials, but she develops new shapes and uses for her glassware. She explains this further in the story of the origin of her best-selling collection:

[T]he Revolution Collection certainly came from a very architectural standpoint, where it was at the end of a dinner, you know, especially in Italy, where I was at the time, there are three million different types of glasses on the table. Wines and waters and liqueurs and grappas and, whatever, afterwards, and so for me it was just like total visual chaos. And so, I was like, "oh, how could we kind of clean this up?" And architects are obsessed, or used to be obsessed with datums, everything aligning, so that collection is this repeating proportion that you can find throughout, so there's this consistent datum across the table at the end of the meal.<sup>181</sup>

All of the glasses in Felicia's Revolution Collection have fluted columns, but some have very short stems and some no stem at all; some hold a lot of liquid, some hold less. The problem she solved was not making something attractive, or sturdy, or never seen before in glassware. She sought instead to resolve visual chaos at the dining table while accommodating the demands of many drinks and engaging with familiar aesthetic features in a revolutionary manner (hence the name of the collection).

In a completely different context—the milk industry—Ann-Marie Conrado describes reframing the problem for her client (the dairy industry lobby) as not about "how to sell more milk" but "to look at how people are making decisions about everything they put in or on their bodies and use that to then understand how they're making decisions around milk."<sup>182</sup> This "problem-finding" process reorients the problem of the dairy industry from price glut and over-production to a more abstract opportunity to serve consumers who are looking for (or maybe need) reasons to drink

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

<sup>182</sup> Interview with Ann-Marie Conrado, *supra* note 154.

milk. “It was a massive study,” Ann-Marie said, “because we were trying to make some pretty big overarching conclusions, right? And the beauty of it, like, as I was saying, like we don’t know what we’re gonna find, and that’s a scary thing.”<sup>183</sup> What Ann-Marie’s team found after visiting five metropolitan areas and interviewing and observing hundreds of people in their homes was that there are “core values that are most associated with food and drink,” which enabled the dairy industry to redirect their products in particular forms and markets.<sup>184</sup> For example, one of the values was adventurousness:

[A] group of people are driven, when they eat and drink, to explore the world. So, I’m a small dairy in Wisconsin, what can I do with that? Well, maybe I could come up with milk mixes, so I could buy a gallon of white milk, and then all of a sudden put in dulce de leche, shake it up, and now I’ve got tasty flavored milk. . . . Or let’s do adventurousness with delivery mechanisms. Oh, so maybe now we do home delivery and every week it’s a different milk.<sup>185</sup>

As both of these examples demonstrate, the kinds of problems designers solve are wide-ranging, and designers’ problem-solving approaches are profoundly interdisciplinary. In fact, according to the designers we interviewed, design problems differ from other kinds of problems (like finance or business problems) precisely because of the process by which designers approach those problems, not because of the outputs of the process. Felicia makes glassware, but she is a designer because of the way she makes glassware, which includes technical form giving, aesthetic appreciation, and cultural understanding. Ann-Marie “redesigned” the dairy industry without reshaping any object by engaging in complex ethnographic methods, extracting social significance from observations and interviews, and proposing structural and substantive changes to what the dairy industry sells (“adventurousness” through new access and flavor choices). It is no wonder the design field resists clear regulation by IP law; its processes or objects include mechanical, aesthetical, and cultural innovations, but in combinations and a chronology that resists disaggregation.

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<sup>183</sup> *Id.* This resonates with Lee Moreau’s statement that the problem-finding process optimally ends in a design that is “just scary enough.” Interview with Lee Moreau, *supra* note 163.

<sup>184</sup> Interview with Ann-Marie Conrado, *supra* note 154.

<sup>185</sup> *Id.*

## 2. Human-Centered Research and Value-Based Goals

We asked designers how they are different from management consultants, and, for the designers like Felicia and Jonathan Adler who design home goods, how they are different from artists. They were insistent on their differences, which arises from the process and their goals. First, their process is human-centered and empirical. They engage and redefine problems and generate ideas for their solution by studying and understanding specific human experience.<sup>186</sup> Second, their goals center on certain values. Designers insist they are improving people's experiences of everyday life by filling real human needs, not *just* "making more stuff" (although they sometimes are making more stuff!).<sup>187</sup> IP law speaks only of "progress of science and the useful arts" (for copyright and patent, anyway). The moral imperative of improving human welfare is at best implicit in IP law and usually beside the point.<sup>188</sup>

Most designers we interviewed go to where people live and work to understand the problems better. "Design research" includes eating in restaurants with customers, visiting their homes to see how they prepare food, and walking through airports to learn how people follow directional signage. Lee Moreau explained that from this process a designer discerns values to amplify and discovers new problems that need addressing. By contrast,

a management consultant will tell you how, they have a known answer. So, they already know what the answer is. . . . [They] engineer a process to hit that target.

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<sup>186</sup> Human-centered design is a core concept in much design practice. Tim Brown, *Design Thinking*, HARV. BUS. REV., June 2008, at 1, <https://readings.design/PDF/Tim%20Brown,%20Design%20Thinking.pdf> [<https://perma.cc/D65K-FDMG>]. Recently, more attention has been paid to human-centered design as a feature of social justice-oriented design, specifically to make design more inclusive and less harmful. See Sasha Costanza-Chock, *Design Justice, AI, and the Escape from the Matrix of Domination*, J. DESIGN & SCI., July 18, 2018, at 2, <https://jods.mitpress.mit.edu/pub/costanza-chock/release/4> [<https://perma.cc/2EWW-PW6Q>] ("[W]e must redesign these systems based on the lived experience of those they harm.").

<sup>187</sup> We understand this statement as aspirational and idealistic, understanding that the existence of professional ideals does not mean there are not outliers or deviants. See *supra* note 142 (regarding the "dark sides" of design).

<sup>188</sup> Utility in patent law is famously broad and limited only by the specific and practical utility doctrines. See *Juicy Whip, Inc. v. Orange Bang, Inc.*, 292 F.3d 728 (Fed. Cir. 2002). It is in fact questionable whether IP law cares about improving human welfare given its accumulationist trends that pay little attention to sustainability or distributive justice. Cf. JESSICA SILBEY, *AGAINST PROGRESS: INTELLECTUAL PROPERTY AND FUNDAMENTAL VALUES IN THE INTERNET AGE* 9–12 (2022) [hereinafter SILBEY, *AGAINST PROGRESS*] (comparing the accumulationist story of "progress as more" with new stories about IP concerning fundamental values, such as equality, privacy, distributive justice, and institutional resiliency).



When we do our work with design consulting, you don't know what the answer is. It's unknown outcome, so our learning is generative. . . . [W]hen we're out doing that learning, that qualitative learning . . . I'm trying to generate ideas from the experience I'm having. Not evaluate between good and bad. This is not AB testing, it's not red versus blue, it's like, "[h]mm. These are the experiences people are having. This is what people value." And what people care about is not what kind of food they buy at Chili's. What they care about is their long-term health. They care about the health of their children. And then you see, are they making choices, is the marketplace allowing them to make choices that supports their value system. And quite often, they don't.<sup>189</sup>

This qualitative learning includes in-depth interviews, at-home observation, and on-going conversations with people whose needs the designer seeks to understand and meet. Ann-Marie, talking about her work with the dairy industry, explains how she and her team would "follow and shop with every single person" she studied and "with one person, we watched him smoke meat for four hours because that was his passion . . . [and] I wanted to see the activities around food and drink that excited them."<sup>190</sup> Conversations with people are

guided inquiries, so, "I notice you're doing that. Tell me, why are you doing that?" And . . . they'll tell me like, "Oh, when I make these five meals, and dah-dah-dah-dah," so we kind of pull that out, and so for us, you know, it's a fishing expedition. And I think that's another big difference. With the market research or whatever, you sort of have an end goal in mind. We went in not knowing what we would find in the least, you know, but we believe in our process, that, you know, if we go in and we're open enough, the problems, the opportunities will make themselves known.<sup>191</sup>

Human-centered research like this produces exponentially more opportunities and ideas for new solutions to existing problems. It is diffuse, exploratory, iterative, and derivational, building from what already exists to excavate deeply felt desires or needs and harness them. The goals of this human-centered design practice are not necessarily or only business efficiencies and profits. And the result is usually not

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<sup>189</sup> Interview with Lee Moreau, *supra* note 163.

<sup>190</sup> Interview with Ann-Marie Conrado, *supra* note 154.

<sup>191</sup> *Id.*

described as merely an object to purchase. Designers describe their goals as meeting people where they are to change their behavior in ways that matter to them.

Laura Forlano describes in abstract terms how design changes behavior. She is a professor of design and teaches “design futures,” among other classes, at the Illinois Institute of Technology’s Institute of Design.<sup>192</sup> She says that “in the history of design, . . . everyone goes back to original definitions, like Herb Simon, [to say] a design is taking an existing situation and putting it into a preferred situation. And some of that is aligned with cybernetics, like early notions of changing the world, or changing systems.”<sup>193</sup> Many designers provided concrete examples of how design changes behavior, whether it encourages more toothbrushing or makes certain kitchen appliances more accessible for all kinds of bodies. Lee Moreau told us the success story of the Swiffer floor mop along these lines.

What it does is it changes the behavior. It enables a behavior, which is ‘I’m just gonna tidy up a bit [because] it actually cleans the stuff off your floor, because it has the technology in those towelettes, it’s either electrostatic or a liquid technology that actually takes the dirt off the floor, so it’s very effective, and you feel a sense of accomplishment. You take that dirty thing off, . . . a, and you’re, ‘Ewww,’ and you put it in the trash, and you know it works. It shows you that. So that behavior change [of more frequent and satisfying cleaning] is really what the Swiffer enables. It’s just that to get that feeling you have to buy a Swiffer, and you have to do it, but the product is just enabling this feeling of accomplishment, and what we’re enabling is the sense that people who value the cleanliness of their floor because they feel it’s a reflection of themselves when company comes over. So, that’s kind of a gateway design, which, if we get that right, and people use it right, if we can change their behavior.<sup>194</sup>

The Swiffer acts on the consumer to not only help accomplish everyday tasks (cleaning the floor), but to enable new behavior (cleaning it more regularly) that feels good (because cleaning the floor with the Swiffer is so satisfying and easy). Of course, in order to experience the satisfaction of this kind of “Swiffer” clean, a person has to buy a Swiffer. So, it is not as if commercial objects are irrelevant. But there are features of the objects other than the thing itself that design elevates as central to

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<sup>192</sup> Laura Forlano, IIT INST. DESIGN, <https://id.iit.edu/people/laura-forlano/> [https://perma.cc/52XQ-AGST] (last visited June 25, 2021).

<sup>193</sup> Interview with Laura Forlano, Assoc. Professor of Design, Inst. of Design, in Chi., Ill. (Nov. 14, 2019).

<sup>194</sup> Interview with Lee Moreau, *supra* note 163.

the practice of design work.<sup>195</sup> Design solves a real human need (to have a clean floor) and does so in a delightful way that brings joy to the activity. The design of the Swiffer is not to be appreciated primarily for its look or some technological achievement but for its effect on human behavior. That effect is emotional and relational, and, needless to say, cannot itself be the object of IP law's exclusivity. The "delight" and "joy" these designers describe concern the feelings the object promotes in its use, which are the reasons the object is valued, but those feelings do not define its legal valuation.<sup>196</sup>

Richard Gresens, an automotive designer for most of his career, described the kinds of problems he is solving as a designer explicitly in these emotional and experiential terms, going beyond formal and technical constraints.

[The problem] you're solving a lot of times it depends on the vehicle, right? . . . Let's take for example a minivan. So, a minivan, there's a certain set of parameters that you have to meet, right? You have to carry this much, you have to make it easy, you have to have so many cup holders in it. You have to make sure that children can easily get into it, it has a sliding door, it has these other things. All of these things you have to design around, and then make it look good, or make it look like it's really fancy. . . . And that's always the challenge, because there's a stigma with that type of vehicle. Right? So, you want to make it look like, "Hey, I feel proud to drive this vehicle." So, there's one of the things that you design around, as well as the package. How much space can I get in this vehicle? Can I give the people more space in the middle? The center console's a big issue for

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<sup>195</sup> Latour, *supra* note 37, at 2 (describing the reductive and binary way of thinking about designed objects "as if there were really two very different ways of grasping an object: one through its intrinsic materiality, the other through its more aesthetic or 'symbolic' aspects . . . . [T]he typically modernist divide between materiality on the one hand and design on the other is slowly being dissolved away. The more objects are turned into things—that is, the more matters of facts are turned into matters of concern—the more they are rendered into objects of design through and through.").

<sup>196</sup> Dieter Rams, the German mid-twentieth century industrial designer who pioneered the "less is more" approach, emphasized design characteristics like being "honest," "long-lasting," "understandable," and "unobtrusive." Those metrics, which relate to feelings and experience as much as form, resonate with many designers today. *LESS IS MORE: THE DESIGN ETHOS OF DIETER RAMS* (Klaus Kemp & Keiko Ueki-Polet eds., 2015). George Aye, principal at Design for Good, describes additional metrics like "builds power" and "honors reality," such that design that affects millions of people incorporates those who are most needy. Aye, *supra* note 125, at 5. "Good design honors reality. No one has the right to be an expert on someone else's life, but so often in the social sector, major decisions that affect millions of people living on the edge of poverty are made by those most insulated from that precarity. Why is the value of lived experience so discounted? . . . So, reflecting on projects one can ask: How well has this project/team sought to understand the cultural, political and historical context that led to today's reality?" *Id.*

people. I'll use an example. So, I had an older model of the Ford Expedition, and loved the vehicle. Big vehicle. The center console, extremely small inside for that size of vehicle. And so small was frustrating. The new Ford Expedition . . . you'll notice that [the] center console's almost twice the size. So it matches the size of the vehicle. So, what a designer will do in automotive is, you know, and probably in interior there's more problem solving because that's where you spend 95 percent of your time is on the inside. You know, how can we give you freedom of motion, but still have enough space for things? What little areas can we make that would be a nice surprise and delight for somebody to utilize?<sup>197</sup>

Cars through their various affordances produce delight, but so do medical devices—Alissa said that she aimed to make the products “more enjoyable, or more delightful.”<sup>198</sup> And so too web design and digital tools—Denise said she aims to make products “beautiful and delightful.”<sup>199</sup> An OXO executive described her own experience with one of their products (an angled dustpan) in terms of it changing her mood after a really bad day.

I got my lock broke a year ago, my mortise lock. And I was like locked in my apartment. I had to get like a locksmith in the middle of the night. And the guy drilled into my apartment, and my doormen were like, “I don't know what to do. Super's on vacation,” it was like a nightmare. So, like two o'clock in the morning they finished drilling into my apartment, I had like shards of metal all over the floor, I had a door that wouldn't lock, I mean, it was like a nightmare. So, I had just gotten from work this OXO hand-held dustpan. It wasn't even like a fancy one. It was like, you know, you had to get down on your knees and do this. And I was like tired, I was furious, I was worried about my safety, like they were like drilling in my door, whatever, long story short, the simplest products from the portfolio, and I did it, I went, “Damn. This is so lovely.” Like the actual broom, it wasn't a straight broom, it curved ever so slightly, so my arm had to curve ever so less slightly, so in the most frazzled, angry, not thoughtful state I probably have been in my life in the recent past, I was like, “They just nailed it.” Like it was that tiny thing, that, like, I couldn't even do a good job of explaining, we certainly can't explain it well in copy, you just have to experience it, and you're like, “They thought of it. They thought of everything.” So, it's those moments that make people fall in love with the brand. And there's always opportunities for that. So,

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<sup>197</sup> Zoom Interview with Richard Gresens, *supra* note 155.

<sup>198</sup> Interview with Alissa Rantanen, *supra* note 160.

<sup>199</sup> Interview with Denise Burchell, *supra* note 145.

it's not like, I am the biggest proponent of don't mess with a good thing, and as a matter of fact, celebrate it. Understand it. Embrace its iconic status, and like learn from it. But, you know, sometimes there're just delightful moments you can incorporate in something. . . .<sup>200</sup>

Many designers affirmed the emotions and experience produced by well-designed products or services. Jonathan Adler, the home goods designer, described his work as “clean and minimal . . . with a kind of optimistic spirit.”<sup>201</sup> Michael Kahwaji described successfully designed kitchen appliances as about whether “the design delivers the emotion we want the brand to feel.”<sup>202</sup> We may be skeptical about the sincerity of this happy talk about consumer goods like cars, dishwashers, lamps, dustpans, digital tools or medical devices. But in interview after interview, designers expressed that the *experience* of the good or service was paramount, and the experience was primary when compared to its isolated mechanical or aesthetic features.

We pressed interviewees on these descriptions of the object of design and explanations for successful design practice. Lee described the exercise as “separating what really matters from what's interesting,”<sup>203</sup> and many confirmed that they did not just want to make “more junk.” Alissa, one of the younger designers we interviewed, said:

I really appreciate aesthetics, and look and feel, and beautiful things, and . . . that's part of my passion. But I do not want to do something superficial. Because I don't think this world needs more junk, for lack of a better word. . . . the ideal is some balance . . . and something that I know will have a real impact.<sup>204</sup>

Mike Smith, at Jump Associates, confirmed that “the main anchor of solving the problems is we go find the needs that people have, we don't go look for wants that people have.”<sup>205</sup> Sometimes that means not making something that can be made and

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<sup>200</sup> Interview with “Kate,” *supra* note 97.

<sup>201</sup> Interview with Jonathan Adler, Designer, in N.Y.C., N.Y. (Dec. 10, 2018).

<sup>202</sup> Interview with Michael Kahwaji, *supra* note 149.

<sup>203</sup> Interview with Lee Moreau, *supra* note 163.

<sup>204</sup> Interview with Alissa Rantanen, *supra* note 160.

<sup>205</sup> Interview with Mike Smith, *supra* note 175.

sold to just add to the landfills. The OXO executive said you have to ask yourself, “does the world need yet another pizza cutter? I feel like there needs to be a real rationale, especially for a brand like ours, as to why everything exists. It needs to be purposeful; it needs to be doing something different.”<sup>206</sup>

What does “purposeful” mean in this context? What is “real impact” or, as many of the designers said, what is design that “tells a story” and is “meaningful”?<sup>207</sup> These descriptions arose in widely diverse design contexts, including contexts in which it might seem strange to find “stories” or “meaning” in the objects or processes the designers create. For example, Felicia explains that some housewares she designed have not been as successful because she is “not telling the story right. Something need[s] more context for someone to understand it.”<sup>208</sup> Kathleen Low, a designer at Impossible, a Silicon Valley design consultancy, complained that when clients

want designs really fast . . . we can create beautiful designs for them, and they’re going to love it, but for us, it’s not meaningful because they didn’t want to speak to users, they didn’t let us understand what the problems are, and create a solution where it could be ten times better than we propose. . . . [T]o me, it’s the design process, what is the intention? What is the meaning? How did you get there? Where do you plan on going to next? I think that is the substance, and that’s what’s so important, [more so] than just creating something beautiful.<sup>209</sup>

For Kathleen, meaning comes from the process of exploration and the qualitative, iterative, and collaborative investigation of the problem and solutions. But what is its impact and significance? Jay, from Jump Associates, explained that “the questions that design often brings are ones of meaning-making, form-giving, or intent, and how

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<sup>206</sup> Interview with “Kate,” *supra* note 97.

<sup>207</sup> Design literature describes these dimensions as “sending a message” or as “semiotic.” See, e.g., Ansgar Ohly, *Buy Me Because I’m Cool: The ‘Marketing Approach’ and the Overlap Between Design, Trademark and Unfair Competition Law*, in *THE EU DESIGN APPROACH* (Annette Kur et al. eds., 2018) (describing how “successful design sends out a strong message, which is not only about beauty, but also, perhaps even predominantly, about lifestyle”); Christian Homburg et al., *New Product Design: Concept, Measurement and Consequences*, 79 *J. MKTG.*, May 2015, at 41 (describing three dimensions of design as “utilitarian, hedonic, and semiotic”).

<sup>208</sup> Interview with Felicia Ferrone, *supra* note 180.

<sup>209</sup> Zoom Interview with Kathleen Low, Senior Design Manager, Impossible, in Menlo Park, N.J. (Oct. 20, 2020).

do you make something real and useable.”<sup>210</sup> We heard answers like this and scratched our head, asking for more clarification.

What meaning or whose meaning? We heard lots of different answers at varying levels of generality. But most answers connect to fundamental values of human well-being and social progress broadly construed. For example, Jay describes his company’s approach as “conscious capitalism,” which entails working with clients on growth along at least two dimensions:

[W]e happen to love the fact that like growth has two meanings in our world, there’s deep economic growth that is interconnected to the growth that comes at the individual level, and certainly like a billion dollars of value might mean like big returns, but it also might mean a billion dollars of impact on a local community, right? Or, you know, a billion people lifted out of poverty. So, these things are all interconnected into each other, I think. That’s the place we start . . . with that bigger why for the organization, like who are you and why do you exist? And we often hope to bring our clients along the same types of questions.<sup>211</sup>

Landscape architects Michelle Crowley and Naomi Cottrell, who own their own firm, describe their “bigger why” as having

to do with love, accessibility, and getting people in the front door equitably, right? Like forever it was, “You can go around the back, and there’s a ramp in the back to the loading dock, and you can take some freight elevator up,” right? I mean everything now is changing, which is great—we want everybody going in the front door. So, we integrate all of our accessibility as best as we can into the landscape so that anyone who is disabled feels like . . . they belong in there, or everybody’s just using the same way. . . . So that’s a real positive, and that’s really tricky, because so many architects are just like, “We’ll just put the ramp on here,” and we integrate it so that it’s not a ramp. Or if there is a ramp, you don’t feel like it’s off to the side, or whatever. So that’s one of the things I really enjoy, because it’s tricky. . . . [I]f it’s a brand-new building, sure, we can all figure out something. But if it’s a historic building, we want to do it really tastefully.<sup>212</sup>

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<sup>210</sup> Interview with Jay Newman, *supra* note 126.

<sup>211</sup> *Id.*

<sup>212</sup> Interview with Michelle Crowley and Naomi Cottrell, Co-Partners, Crowley and Cottrell, in Bos., Mass. (Apr. 11, 2019).

Michelle and Naomi were not the least bit shy about calling out their “meaning” and “intent” as achieving love and belonging within the constraints of existing landscapes and building design. The problem to be solved each time for them was how “to get people in the front door equitably” and the impact was inclusion and elegance. This is the value they believe they bring in their design process and to their designed landscapes. To them, it is what it means to “design” landscape. These are intangible values, to be sure, but they are not typically represented or appreciated by intangible property regimes like IP. In fact, much of IP law eschews values-based assessments as criteria for exclusivity and protection.<sup>213</sup>

These are deeply normative goals that may seem like justifications for the prices designers charge for their expertise and output or the profits their clients make from the designed processes and products. But designers’ insistence on defining the human needs that design practice addresses and their emphasis on the emotional and experiential values that design practice elevates emphasize the importance to the designers of the purpose the object or service plays in the life of its users. Interrogating that function as a feature of design exposes design practice as values-driven and seeking meaningful coherence in purpose and practice. Designers strive for their designs to have “reasons,” and one way they accomplish this is to assure that all features have purpose and nothing is wasted. As Michael Rock of 2 x 4 said:

[d]esign is a way of organizing the world, right? As a basic way you could say what design is, [laughs] is a way of creating coherence around things. . . . [C]oherence can change in scale, but, you know, a brand is a coherence. A typeface is a coherence. A book is a coherence. . . . [I]t’s in voice, it’s in materiality, it is in context, there’s lots of different ways of thinking about coherence. . . . [T]he job of a designer is to figure out how to achieve those coherences, which are usually fictional.<sup>214</sup>

The next and final part investigates this “coherence” as a feature of design practice that is rooted in normative values not only of social progress like inclusivity and wealth equity, but also of identity distinctiveness, formal simplicity, and human

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<sup>213</sup> See generally SILBEY, AGAINST PROGRESS, *supra* note 188 (identifying trends within IP law that emphasize fundamental values instead of market-based justifications); cf. Peter Lee, *Toward a Distributive Agenda for U.S. Patent Law*, 55 HOUS. L. REV. 321 (2017) (describing non-utilitarian aspects of the U.S. patent system, including issues such as access, equity, and distributive justice in conferring and enforcing exclusive rights).

<sup>214</sup> Interview with Michael Rock, *supra* note 128.



sustainability. These are not values IP law explicitly champions. And regarding features of simplicity and sustainability, in particular, IP law may be antagonistic towards them.

### C. Coherence

When we asked designers what makes good design or how they evaluate the output of design, many used phrases like “timeless, iconic, and powerful” or “elegant and delightful.” These are emotional or affective traits that designers consider as important as others.<sup>215</sup> To be sure, designers discuss aesthetic and functional aspects in terms of predictable binaries of beauty and useability, or form and function. But more often they spoke in terms of triads, such as “desirable, viable, and feasible” (Lee Moreau) or “social research, design, and business” (Jay Newman). To the importance of form and function, these triads add the critical aspects of emotionality, sociality, and attachment in their qualitative evaluation. Coherent design, a gold-standard for designers, includes the seamless melding of these critical characteristics. What does coherence achieve? How do we know it when we see it? Here are three answers from the interviews that further explain how the holistic standard for excellence in design fits uncomfortably with IP standards of protection.

#### 1. Coherence as Identity Declaration

In interviews, designers often described the value of coherence in terms of seeking visual clarity of identity. An OXO designer explains that a design

toolkit ensures clarity from a strategy standpoint, like idea-wise, and messaging-wise, and then it creates visual consistency and clarity. . . . [Y]our toolkit of parts and pieces that will then ensure you to seamlessly deploy this across the brand journey. And we’re all playing off the same song sheet.<sup>216</sup>

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<sup>215</sup> “Human-centered design has established empathy as a baseline in design education and gives credence to having enough humility that the designer might not have all the answers.” George Aye, *Design Education’s Big Gap: Understanding the Role of Power*, MEDIUM (June 2, 2017), <https://medium.com/greater-good-studio/design-educations-big-gap-understanding-the-role-of-power-1ee1756b7f08> [https://perma.cc/J85T-UF46].

<sup>216</sup> Interview with “Kate,” *supra* note 97.

This toolkit helps justify and constrain design choices to amplify distinctiveness in the market.<sup>217</sup> She continues:

[T]here needs to be a real rationale, especially for a brand like ours, as to why everything exists. It needs to be purposeful; it needs to be doing something different or have a slightly different point of view within the world of the brand, otherwise you'll just make multiples, you know, it's like you're actually adding complexity to the design equation.<sup>218</sup>

To be clear, complexity is bad; simplicity and clarity of message and identity is good. Good design is both simple and clear.

Some designers described this coherence of identity as helping to anchor the company's values and solidify its relationship with consumers. Michael Rock of the design firm 2 x 4 in New York asks of his clients that they be able to answer these questions as the first step to help them with design problems:

What are we? Why do we exist? What makes us great? What are we against? What are our core values? What's our ethos? What's our tone of voice? And how do we act in the world? . . . [It's] surprisingly difficult . . . to answer those questions actually, and to really get down to something that everyone can agree on that doesn't become so anodyne [so] that it's not useful. Like you have to keep it somehow useful.<sup>219</sup>

Identity coherence is not only about visual clarity and distinctiveness but about values the company shares with people and other communities. In the next quote, Michael compared Apple and Nike, two companies with strong, identifiable, and simple brand identities and core values, with Hyundai, whose identity was unknown, both to itself and others.

"Declaration" is kind of an important calling into being, right? Like a declaration is a way of saying that it exists, somehow. And if you make that declaration, and . . . you get people to adopt it, then it becomes real, right? And then it becomes a driver of coherence, right? . . . Like Apple, and Nike, companies we work with all the time, they're companies that have very strong ideas about what their core

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<sup>217</sup> Nixon, *supra* note 133, at 825 (describing how design "is the primary differentiator in crowded market segments").

<sup>218</sup> Interview with "Kate," *supra* note 97.

<sup>219</sup> Interview with Michael Rock, *supra* note 128.

is, and therefore they can have very coherent ways of presenting themselves in the world because they're going back to these very simple core principles they have, right? . . . Nike's maybe even a better example. I can be very Nike-like talking to kids in Brazil who love football, and kids in Manchester, England, who love football, and I can talk in very different languages to them, but it would both have this kind of Nike-like quality to it. So, it's not about templating, but it's about keeping this core value, and saying, you know, "we believe in certain things. We believe in the individual athlete. We believe in the everyday person."<sup>220</sup>

And then he explains that:

[T]o love a brand you need to know what the edges of it are, like what it's not, right? So, I need to know these things. Hyundai is different. It wasn't that its image was blurry, I think that it didn't have very much of an image at all. It was almost that it had this totally generic image, like people bought it because it was cheap, and people didn't buy it because they loved Hyundai and they wanted like, "I can't wait to see what Hyundai's [going to] come out with next. . . ."<sup>221</sup>

This talk of identity coherence is about being seen and understood as distinctive, visually and in terms of specific values; good design achieves that coherence.<sup>222</sup> Consistency of identity has some relationship to trademark law, which aims to protect distinctiveness in the marketplace and goodwill of the trademark owner. But the designers' standards of coherence exceed the semiotic function trademarks and their value to brand owners.<sup>223</sup> Coherence entails specific hierarchies of values—professional ethics—that designers appear still to be developing as part of their evolving professional identity in the twenty-first century.

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<sup>220</sup> *Id.*

<sup>221</sup> *Id.*

<sup>222</sup> The role of design in generating product distinctiveness is confirmed in the marketing and business literature. See, e.g., Homburg et al., *supra* note 207, at 41 (explaining how "design has become a principle means of making products differentiable"); Ohly, *supra* note 207, at 116–17 (explaining how successful design sends out a strong message, which is not only about beauty but predominantly about lifestyle, building distinctiveness).

<sup>223</sup> Barton Beebe, *The Semiotic Analysis of Trademark Law*, 51 UCLA L. REV. 621 (2004) (describing the role of source distinctiveness relevant to subject matter protection of trademarks and differential distinctiveness as relevant to confusion analysis).

Great designers translate simple, clear identity and substantive values into a combination of visual forms and useful features. We heard repeatedly that designers are “interpreters” or “translators” crossing aesthetic and technical fields to produce a new experience for consumers.<sup>224</sup>

## 2. Coherence as Merging Desire and Utility

Clarity of identity and values is an achievable and useful goal for a company. But when we consider the value of consumer goods or services, most of us consider their value on a spectrum of usefulness and pleasure. This is another way of understanding the goal of “coherence” for excellent design: the merging of utility and desire.

Maggie Waller, a young designer with experience in fashion, industrial design, and user-experience web-design, said:

[I]n industrial design, we talk about the two Fs, Form and Function, and, you know, sometimes when you’re focused on something that’s more like art studio, you might think like, “oh, well that looks really pretty,” but like what is the function of it? And sometimes it’s trying to marry form and function together, sometimes designers don’t quite think about the functionality of something that they’re designing. It looks really cool, but in the long run, is it working the way that you need it to work?”<sup>225</sup>

Designers insist on the simultaneity of working toward beautiful form and useful functionality and defend inseparability of these features as ideational goals for producing physical objects or new processes. We asked designers whether, for them or their field, form was more important than function, or vice versa. They routinely refused to answer those questions and resisted the premise. This is how a designer at Smart Design in New York answered the question:

I have no problem to say that beauty is extremely important. I mean, one of the most important things for me is that we build beauty around us. I don’t think it’s superficial. I think it’s, on the contrary, very deep and important. I think that beauty can be two different things. It can be just aesthetically the emotion coming out of it, but it can be the beauty of how well it works, you know. The beauty of

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<sup>224</sup> Zoom Interview with Kathleen Low, *supra* note 209 (“I feel like designers are translators and communicators.”).

<sup>225</sup> Interview with Maggie Waller, Designer, Hypebeast, in N.Y.C., N.Y. (Dec. 12, 2018).

how it clicks together, it fits perfectly well, in those pieces, that's beautiful for me, too.<sup>226</sup>

Beauty and functionality are interrelated, and maybe one and the same. Even in the automotive industry, which one might think focuses on the technical and useful, the designers we interviewed insisted on the value of sculptural beauty and emotional attachment to the car as essential to its design excellence. Patrick Schiavone, who worked at Ford for decades and is the person credited with designing the iconic Ford F-150, said:

[I]t's more sculptural. There's a real physicality to it. That's why I always maintain it's closer to figure sculpting than it is to product design, for example. Even though it's one of the most technical products that you can buy. We had an army of engineers, electrical engineers, mechanical engineers, you name 'em, chemical engineers. We had armies and armies and armies of 'em. And we were a very small organization, but we didn't have to worry about a lot of the technical side of it all. All we had to worry about was sculpin' that clay. So, the real thing was the emotional connection that a customer would make with the vehicle that you're doing. And the beauty of the vehicle that you're doing.<sup>227</sup>

Patrick celebrates and praises the engineers responsible for functionality, explaining that the car's reliability, durability, and ride quality all matter to customers. But the sculptural aspect of car design was equally if not more important to consumers in producing the "emotional connection" they seek with their car. Technical success without the beauty of the car would be a design failure. And, in the end, it was not clear that these features were distinguishable to designers or to their consumers.

John Traub, a young designer who has worked for Pepsi and Smart Design, and who teaches design at Parsons, described the feeling of the unity of form and function in a manner that resembled erotic attraction. In the following quote, he talks about a designed houseware—a pitcher:

[F]irst, so you're like looking at it on-shelf, and it's far away, it's like the first thing . . . you haven't been able to touch it yet, so you don't even know if it works

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<sup>226</sup> Interview with "Frank," Designer, Intuitive, in N.Y.C., N.Y. (May 15, 2019).

<sup>227</sup> Zoom Interview with Patrick Schiavone, Chair for Prod. Design, Coll. for Creative Studies, in Watervliet, Mich. (June 11, 2020).

well, but you see it there and it's like, like a really beautiful object, I think that's a huge one. . . . And then you go up to it and you can see some of the details, and you can touch it. The interface makes sense, hopefully. And then, yeah, you get into more practical functionality, like oh, this fits well, or they thought about, say it's a pitcher, does it fit into your refrigerator well, like those little things.<sup>228</sup>

Coherence along these dimensions of form and function produces a magnetism, a forceful desire among consumers.

Some trademarks help to imbue that magnetism, especially those that contribute to famous brands like Nike and Apple. But designers seek broader coherence that demarcates brands from everything else, and that includes many design artifacts that are not recognizably trademark subject matter. As Michael Rock explained in the context of designing signage for a university campus, this coherence produces elite identities and also defends against chaos:

[A]nd it is reinforcing the idea of private property, it's reinforcing privilege, all these things like that, like how do I know when I'm on campus, you know. If you think of those blue security lights, right? There's a kind of network that says, "I'm within this network now." You can think basically about ways you move through the world. You move through all these different kinds of coherences all the time, like, "I'm on the federal highway system, now I'm off the federal highway system," how do I know? Because of the green signs, right? So, you always have a kind of graphic representation of invisible systems. . . . [I]t's an absolutely natural way that we try to organize the world in a way that makes us all understand it, right? Otherwise, it's chaos.<sup>229</sup>

Designers further emphasized coherence when explaining that excellent design has no extra features, when unity of form and function seems complete. Designers describe this ideal eventuality as deeply satisfying, like they have solved a particular puzzle. Alissa, working for the medical device company Insight, said:

[O]ne of the most satisfying projects I worked on was one similar to the insulin pen example. I could explain why it was the way that it was, down to every detail.

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<sup>228</sup> Interview with John Traub, Designer, in N.Y.C., N.Y. (Dec. 10, 2018).

<sup>229</sup> Interview with Michael Rock, *supra* note 128.

There was a rational logic, reason, behind every decision that we made. . . .  
Nothing is “just because.” Which . . . mean[s] that there’s nothing extra.<sup>230</sup>

This echoes the OXO executive’s explanation that for good design “there needs to be a real rationale . . . as to why everything exists. It needs to be purposeful.”<sup>231</sup>

Designers with decades of experience were emphatic about knowing when they achieve that unity, when nothing needs to be added or taken away. In the interviews, these declarations of design superiority resembled “aha” moments, except they did not come from a unique inventor or author and were instead culminations of many contributions over time that eventually unified beauty with functionality. Here are two such examples, one about the design of the smart phone, and another about car design.

An IDEO executive provides the smart phone example:

[W]e’ve been having a conversation with iPhones and phones in general . . . they’re sort of all converging to the same thing, it’s a flat screen, it’s probably almost no interactions, there are subtle differences on the radius of the corner, and on the thickness and the shape of the camera, but in the end a lot of these things reduce down to their fundamental instantiation, if you will. And a lot of that happens especially in design of . . . objects, it’s like you’re trying to create a simplicity, and we’re firm believers in not creating unnecessary complexity, right? Like why are we adding features, whether it’s functional features, or design

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<sup>230</sup> Interview with Alissa Rantanen, *supra* note 160.

<sup>231</sup> Interview with “Kate,” *supra* note 97. Here’s another example:

[T]here’s different values to it. I think one first value is probably emotional. When you look at something, and it triggers a[n] emotion, good emotion, it’s a good sign of a good design. . . . Then there’s obviously the functional value. If that works, that delivers the purpose. These two are important. I think that for me, personally, when I did something, and I feel like it makes sense, it seems simple, but if it makes sense, it’s actually a very strong way [to know good design]. . . . So, it makes sense [laughs], I feel like it makes sense for us to produce these kind of objects now. If it’s something that I feel is not necessary, or is not finished, or could have been way better, it’s not gonna be satisfying. One thing that I see sometimes, on some projects, that I did and I like, is when I cannot remove anything from it. . . . So if I look at it, and everything’s there for a reason, that’s why it makes sense. Like everything is there for a reason. It’s not random. It serves a purpose, inside and out.

Interview with “Frank,” *supra* note 226.

elements or features, with no reason? So, if you start to think that way, then a lot of aesthetically pure and beautiful designs have a logical conclusion, and many times those conclusions are actually shared by others, designers doing good design, looking at similar problem[s], right? And it's not that you're copying their design, you're maybe arriving at a similar place, because, and there're some examples out there in the world, the phone being one of them, but I can think of others, where companies arrive at a similar-looking thing and it's not because anyone had access to the other person's designs, it's because it's kind of a logical one.<sup>232</sup>

Designers are adamant this is not a subjective evaluation but an objective one. The IDEO executive describes it as “logical.” Patrick, the automotive designer, says responses to design, like standards of physical beauty, are constrained by cultivated expectation and responses to form that are not really up for debate.

You know, everybody talks a lot about art and design being subjective, and I actually don't believe that at all. I mean, if you look at another person or a person's body, you know what a beautiful body is, you know what a beautiful person looks like, there's not really a hell of a lot of debate about it. Right? And I believe the same thing in design. [C]ar design, even more so than product design, is that there's a certain way that a fender flows, and curves as it's going around the corner, and the way the light dances on the surfaces and things like that. There's that physicality to it.<sup>233</sup>

We can contest universal standards of human beauty especially in terms of the systematic harm of hierarchy and exclusion that the imposition of universal beauty standards produce. But the designers continually insisted that there are logically derivative or inevitable forms that are objectively desirable because of how they look and function. Many designers described these idealized forms in terms of “balance,” “elegance,” and “serenity,” or as mentioned above in terms of “delight” and “joy.”

Michael Kahwaji connects these experiences and describes coherence being achieved when the product is intuitive, “simplifies people's lives,” and “doesn't need instructions.”

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<sup>232</sup> Interview with “Allen,” *supra* note 135.

<sup>233</sup> Zoom Interview with Patrick Schiavone, *supra* note 227. Patrick's explanation, comparing cars to people, resonates with research by sociologists that explains incidents of road rage and violence. Car accidents and near misses are experienced as personal affronts, with intentionality and malice aimed at the driver individually and specifically, despite the anonymity of the situations. JACK KATZ, *HOW EMOTIONS WORK* (1999).



Designers that are really in it because of the form and the aesthetics . . . are really, really important. . . because that originally was the crux of our discipline. We need them because pretty things are desirable. Like we want to be surrounded by balance and serenity and I think that aesthetically pleasing items help enhance life, and good design products also give you the semantics of how a product is supposed to be used. You know what I mean? Like a well-designed product doesn't need instructions. So, there's a lot of things like that. . . [A] well-designed product doesn't require instructions. How do we simplify people's lives?<sup>234</sup>

Desire and utility merge when the designed object or experience becomes like an extension of the person, when its use and value is so intuitive it needs no instructions. This makes the designed object's role in one's life seem inevitable, or at least so obvious and simple that it needs no justification for its creation or continuing existence. "You're trying to create simplicity, and we're firm believers in not creating unnecessary complexity. . . a lot of aesthetically pure and beautiful designs have logical conclusions," said the IDEO manager. We might think of smart phones that way, or search engines, but to designers, the same ideas of design excellence can apply to almost anything. Precisely because of the inevitability of coherent forms, first movers who seek IP protection may exclude others from the intuitive or "logical conclusion" that is the design. Many designers we interviewed considered exclusivity over this kind of inevitable balance of form and function—be it in a smart phone or car—counterproductive, although not all did. Most just did not consider the IP issues at all, motivated as they were by the professional standards of coherence and not the property rights that could attach to the designed object or process.<sup>235</sup>

### 3. Coherence as Aligning with Human Needs

A third way of understanding the goal of "coherence" is in terms of satisfaction of an identifiable human need. This concept repeatedly arose in the interviews, especially when discussing "human-centered design practice" that includes

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<sup>234</sup> Interview with Michael Kahwaji, *supra* note 149.

<sup>235</sup> This is not to say that designers with corporate clients did not care about IP. *See* Interview with Lee Moreau, *supra* note 163 (describing some clients as expecting billion-dollar products). We did not interview clients of the design consultancies, although we did interview in-house designers and designers who designed for themselves. Felicia Ferrone, who is an independent designer, spoke about IP in ambivalent terms in part because of her frustration with the inability to receive effective copyright protection for a vase she designed. Interview with Felicia Ferrone, *supra* note 180. Jonathan Adler, who has his own housewares firm, also dismissed intellectual property protection as fairly useless to him. Interview with Jonathan Adler, *supra* note 201.

interviews and observations with focus groups and relevant users. But this kind of coherence also came up in the context of more artisanal products, such as glassware, decorative objects, and even cars. It did so despite the fact that “need” is contestable in those contexts because predecessor objects work as well or are good enough. Designers talked about this form of coherence in terms of “alignment” and “connecting the dots” in ways that both identify the problem and open up the situation to new solutions.

Determining alignment requires developing an understanding of users before the project begins and updating that understanding as the project develops and prototypes are iterated. Alissa, working with medical devices, says:

[T]he goal for us, the way we like to work, is to actually bring those visions [of the design] back out into research. Put them in front of pharmacy directors, nurses, and hospital C-suite, or whatever, to verify that the value we are trying to deliver aligns with the needs, or actually really does meet the needs that we identified early on.<sup>236</sup>

Denise, the designer now at Salesforce who has been a web-designer and information architect most of her career, explains that what she “live[s] for” as a designer are the

mental gymnastics of actually coming up with an elegant solution to a brand-new problem. For me it’s about the novelty of making sure the people involved in the problem that I’m solving, with all of their unique nuances, are on-board with it, right? I love aligning people. I love inspiring people toward a new direction, and coming up with something new in the world.<sup>237</sup>

The return to user experiences to check whether the design makes sense to users and suits their needs is one way alignment is achieved.

Ann-Marie Conrado, who teaches design and consults as part of her on-going practice, describes alignment of needs and new designs as “connecting the dots” to produce a new “ways of seeing the world” and of “understanding and comprehending the world. It’s not about right or wrong. It’s about the productivity of that

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<sup>236</sup> Interview with Alissa Rantanen, *supra* note 160.

<sup>237</sup> Interview with Denise Burchell, *supra* note 145.

framework.”<sup>238</sup> How does she know when she and her team have arrived at coherence of understanding or “alignment” of needs and a solution?

[T]he reframing is in your gut. You know that this is an issue. You’ve done the research, you’ve immersed yourself in the challenge, . . . I tell students, “a great insight is one that is both novel, like surprising, and familiar.” It’s surprising because you hadn’t looked at it that way before, but it’s familiar in that you knew as soon as you realized that, you knew that’s what was going on. . . . [T]hat reframing is key. And like I said, you’ll know it, you just know it. I mean . . . you’ve immersed yourself so far along the way that by the time you’ve settled on that, you just know it’s right, because you’ve learned enough about people. It’s compelling because it connects the dots in a way that really opens up, like this is what’s going on.<sup>239</sup>

For designers producing new physical objects—for example glassware or housewares—alignment as a form of problem solving comes from finding identifiable gaps in the existing forms. We have already heard Felicia Ferrone describe this alignment in the context of designing her stemware. She needs to be “pushing the boundary of our expectations of what a stem is, what a wineglass is . . . there needs to be something that’s really kind of adding to the discourse and history timeline.”<sup>240</sup> Finding that gap and filling it, but making sense within the trajectory of the form, creates both alignment and coherence—identifying a need and filling it—in her practice.

We were conscious of the possibility that designers are creating new desires rather than addressing existing needs, and that designers’ conflation of need and desire justifies (to them) their practice as both a business and moral matter.<sup>241</sup> When

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<sup>238</sup> Interview with Ann-Marie Conrado, *supra* note 154.

<sup>239</sup> *Id.*

<sup>240</sup> Interview with Felicia Ferrone, *supra* note 180.

<sup>241</sup> As described in Appendix A (Methods), part of the benefit of qualitative empirical work based in long-form interviews (as opposed to surveys or certain quantitative metrics that assume the meaning or significance of words or values) is that we could probe and “cross-examine” the interviewee on their statements and descriptions, asking follow-up questions and asking for illuminating examples and evidence from practice and behavior that aligns (or does not) with stated descriptions. For a further explanation of the benefit of qualitative methods to probe meaning and interpretation of statements as compared with the ambiguity of quantitative empirical analysis, see Jessica Silbey, *Intellectual Property and Ethnography: A Qualitative Research Approach*, in *HANDBOOK OF INTELLECTUAL PROPERTY RESEARCH: LENSES, METHODS, AND PERSPECTIVES* (Irene Calboli & Maria Lilla Montagnani eds., 2021).

we asked about this dynamic, many designers responded as Lee Moreau does below, indicating that designers have to make self-conscious and ethical choices about moving forward. This resonates with the theme of not wanting to just make “more stuff” in the world. Lee explains:

[A]fter a sixteen-week engagement, in a perfect world, we would've identified what the ideal vision [for the project] is [on behalf of the client]. . . . It's an experience, and oftentimes represented as consumer behaviors, which is, “This is what your consumer's doing now. We did this qualitative research. This is what they value, and what they aspire to, and this is a new behavior that we believe they will have in the future. Nobody else is giving them this behavior. Nobody else is forcing them to do this, but if they do it, they're gonna want it more and more.” And so that's where the ethics come in, is this actually something that's good for the world?”<sup>242</sup>

In answering that question (“is it something that's good for the world?”) designers who work in consultancies or for companies can pursue the work, or they can choose not to. That, too, appears to be part of the ethics of design that strives for coherence in multiple dimensions. Recall Jay Newman and others asking clients to determine “their big why.” Aligning specific goals with bigger human needs and social purpose was a theme throughout the interviews. George Aye, a designer with decades of experience working in-house and at global consultancies such as IDEO, started his own design firm called Greater Good Studio. He described the process of achieving alignment and coherence in the relationship between designer and client in addition to the alignment and coherence between design output and human need:

So, we have done thirty breakup emails in the nine years we've been around. I teach classes on how to do this, on how to gently and respectfully break up with [a client]. And the last one was from Pepsi. They had some slightly flawed idea of what they wanted to do around community engagement, and really all they wanted was a logo and a story. So, when we asked them, like, this was the key question: “The users that we think about, we drive our work based on their needs. Can you tell me who the users are for this project?” They're like, “[t]here aren't any.” I

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<sup>242</sup> Interview with Lee Moreau, *supra* note 163; *see generally supra* note 187 and associated text (regarding difference between ideals and practice among designers).

said, “[y]eah, I thought so. I don’t think we can do a project together. But I do know people who will be happy to help you. . . .”<sup>243</sup>

Michelle Crowley, a landscape architect, explained more plainly her goals of alignment and connection in design: “I believe that designed landscapes, especially in the urban or suburban environment, where we’ve lost our connection to nature, is an essential part of humanity. . . . And will save the world. Quote me on that.”<sup>244</sup>

Coherence as addressing human needs arises both as an ideal goal and a process of doing the work. There are ethical and normative valences to this dimension of “good design,” which may be debated between professional designers. But we heard no dissent on this issue, only variations on this theme. We were left with many questions about how these ethics and norms are routinized or standardized beyond the constraints of human-centered research, business-based considerations, and technological affordances. When we asked designers if there was a code of ethics or professional responsibility—as there is in medicine or law, for example—most designers tilted their head and paused, eventually saying something like “no, but it feels like there should be” or “one may be evolving.” We think that perhaps the importance of coherence in design practice along these dimensions reflects nascent thinking about a code of ethical design and a possible way for legal regulation of design to support that endeavor.<sup>245</sup>

At present, intellectual property has no ethics, per se. Its vision of the “good” or the “just” is only vaguely baked into the legal standards, particularly as expressed in a balance within each regime between the rights and limitations intended to promote competition and preserve a public domain. Whether IP law must or should align better with design practice is a different question than the data explores. What is unambiguous based on our empirical findings is that existing IP law does not capture—and in some cases may be in fundamental tension with—designers’ descriptions of the values of good design.

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<sup>243</sup> Interview with George Aye, *supra* note 147.

<sup>244</sup> Interview with Michelle Crowley and Naomi Cottrell, *supra* note 212.

<sup>245</sup> As we explain in the conclusion, this is one of our hypotheses worth pursuing in further research and contemplating for appropriate law reform. It resembles, to us, the reform movement among software engineers and internet platform companies with respect to algorithmic discrimination and content moderation, and the ongoing conversation about whether professional self-regulation or legal regulation (or some combination) is the right way forward to address the identified harms.

## CONCLUSION

Design has been an enduring puzzle for IP law. Congress created the design patent system because it regarded design as different from the traditional subject matter of utility patent, copyright, and trademark law. But design patent law has always struggled with the need to conceive of features as *either* functional or aesthetic. Copyright and trademark law, both of which later expanded to accommodate design, have had the same difficulty, perhaps even to a greater degree. Each of our IP systems demands that we choose a side of functional/nonfunctional binary, because utility patent is supposed to be the only system that provides protection for the functional dimensions.

Our research helps explain why that approach has been so difficult and largely unsuccessful. Whatever IP law's reasons for insisting on separating out the "functional" aspects of design, that aim is in direct conflict with designers' explicit goals of coherence and integration. Designers typically do not conceive of particular aspects of designs as separate or separable; good design makes form and function inseparable. Designers also understand function and usability much more broadly than IP doctrine. Because the impulse to separate comes from an intention to channel protection for functional features to the utility patent system, the various functionality doctrines prioritize a particular kind of utilitarian function and denigrate the value of and role for the aesthetic, emotional, and the formal. But designers aim to solve a much more diverse set of problems, integrating the experience of objects with their look and feel, so the "functions" of various features resist being categorized along the dimensions on which IP doctrines insist, if even for good public policy purposes.

IP doctrine, of course, does not necessarily need to pursue the same goals as designers. It might, for example, prioritize certain kinds of competition even if designers themselves would conceive of the market and professional priorities differently. But it is difficult to develop legal rules intended to achieve certain policy objectives for particular subject matter when those rules require categorization along dimensions that are foreign to the relevant actors. IP may have important values that are served by separation, but our data suggests that task may be impossible as a practical matter in design practice, whose significant economic and cultural impact is today undeniable. The misalignment between IP doctrine and designers' goals tends to make designers generally ambivalent about IP law, and sometimes even to regard that law as irrelevant to their purposes.

The data for this Article also raises other questions about design practice and its regulation that are ripe for further study. What is the role of ethics and political values in intellectual property law today? Is the emergence of a professional ethics among designers indicative of a trend among other experts in the digital age, and are those ethics broadly in tension with the relevant regulatory schemes? Here we might

think of scientists and engineers who today advocate for more open access to data than IP laws contemplate. Is the aim of neutrality in IP law a worthwhile ideal or a pipe dream that law reformers should confront to lay bare the inevitable underlying normative choices? Finally, what about the choice between relying on *sui generis* regimes (such as the design patent system) and adapting legacy regimes like copyright and trademark? Does channeling to one regime rather than allowing overlap produce optimal protection or wasteful redundancy? Does studying the specificity of design practice tell us which route is better here? Our data tend in the direction of a *sui generis* regime that narrows protection to an original and precise combination of form and function, leaving copyright and trademark to their own policy goals and standards. But whether fifteen years is the optimal length of design exclusivity is an open question. The hallmark of qualitative empirical research is that it produces hypotheses for further exploration and testing. We have no shortage of such hypotheses based on this initial foray into the original data set. We invite others to join us to further explore this data and the lessons it provides for intellectual property regulation in the digital age.

## APPENDIX A

### RESEARCH METHODOLOGY: QUALITATIVE METHODOLOGY AND ITS ADVANTAGES

Qualitative research identifies the relevant variations or variants in lived experiences of individuals. The term “variation” or “variant” means one from the set of possible types of experiences people might have of a particular phenomenon. It does not connote frequency or variation from a standard or ideal. For example, one designer might describe a dominant metric of excellence in their field as simplicity of form, whereas another designer might describe emotionality as the central feature of excellent design. Under the qualitative approach used in this study, we discern when the differences in individuals’ accounts are significant enough to consider them distinct and therefore to demand separate explanations in terms of the phenomena being studied. Based on literature from the field and inductive analysis of the interview data, the researcher identifies categories of variations (e.g., metrics of design excellence) and distinctions within those categories (e.g., simplicity of form, emotionality) that are meaningful for the research questions at hand. We identify the variations by collecting, comparing, and juxtaposing accounts and observations of experiences of multiple individuals.

Qualitative work does not rely on the individual as the sole unit of analysis, however. Nor does it look for causal mechanisms. It rejects the notion that an aggregation of individual behavior should be treated as a proxy for group behavior. Instead, qualitative work investigates social structures, institutions, and relationships between people and organizations from the accounts elicited in structured interviews. This orientation toward explanation instead of causation, and toward both formal and informal institutions and systems of practice, demands data collection methods like in-depth interviews and observational field work to greatly enhance the understanding of complex social phenomena.

Qualitative research seeks to understand the complexity of institutions, social norms, and common practices that explain individual and collective behavior. Interview research gathers individual accounts of those structures and studies the way people justify and explain particular attitudes and behaviors. Identifying the possible reasons that may explain behavior and practices—for example, why a particular type of design practice might be growing or why some designers (but not others) avoid or ignore design patents as a business tool—is important to understand the actual mechanisms of the socio-economic activity, including any legal mechanisms. Interviews facilitate a broad and deep understanding of the many factors involved in the phenomenon of design practice among professional designers and its similarities and distinctions from other forms of creativity, innovation, and intellectual property regimes.



In contrast to quantitative methods, interview research does not use a random or representative sample, nor does it provide a measure of the frequency that variations appear.<sup>246</sup> Instead, the qualitative researcher aims to identify a comprehensive set of relevant variations in the studied experience or practice. To get there, the researcher identifies the population to be studied and the key dimensions that are hypothesized to generate distinctions in the experience under analysis, “stratifying” the population into relevant sub-groups within those dimensions.<sup>247</sup> Talking to people across many sub-groups increases the chances of identifying relevant variations and achieving comprehensiveness in the explanation of the phenomena. Having a complete set of variations may be impossible, but the goal is to discern as full a set as possible. The signal that a researcher has identified as full a set as possible is known as “saturation”—the point when the most recent interviewees are providing accounts that align with previous accounts.<sup>248</sup> Another major contrast between quantitative and qualitative work is that the latter will not lead to a statistical measure of correlations among variables or a mathematical test of causal inference. But a core benefit of interviews, and the key reason qualitative methods are superior for the questions we ask in this Article, is the ability to generate multifaceted and nuanced explanations for complex social phenomena.

Although our interviewing and field observations are as broad and open-ended as possible, we nonetheless started this project with certain hypotheses. These hypotheses are based on trends in the design field, including its rapid expansion into business consultancies and educational programs. We started with the hypothesis that the ascendancy of design can be explained in part by the rise of digital technologies and the “democratizing” of tools of the creative and innovative industries that encourages sharing and celebrates interdisciplinary borrowing. We further presumed that digitization, internet connectivity, and the platform economy has made design in its diverse manifestations more relevant and more accessible for social and economic activities. Pre-internet, we understood graphic design to be an essential part of advertising for businesses; today that narrow feature of design has expanded to all websites and includes user-interface, usability, and informational architecture. Witnessing the diversifying of designs dimensions, broadening of design expertise, and the proliferation of its application in the internet age, we wondered how, if at all, is intellectual property law contributing to or affecting this

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<sup>246</sup> Mario Luis Small, ‘How Many Cases Do I Need?’: On Science and the Logic of Case Selection in Field-Based Research, 10 ETHNOGRAPHY 5 (2009); see also SILBEY, THE EUREKA MYTH, *supra* note 33 (describing limitations to this approach in Appendix A).

<sup>247</sup> In the next section, we explain the stratification we used to seek out interview participants.

<sup>248</sup> See Small, *supra* note 246, at 25–28 (explaining the concept of saturation).

evolution given what we understood to be the doctrinal puzzles facing design law? In addition, the ability to produce objects—form giving—has democratized with cheap manufacturing, 3D computer software simulations, and 3D printing. Previously expensive and heavy equipment, used in factories and only for select items, are now available to more designers and now also to non-designers. Copying, modeling, and iterating—features of design practice as we will explain—has never been easier. We started from the assumption that this is changing design practice and pushing it to distinguish itself from and make itself essential to adjacent fields such as engineering, computer science, and business consultancies, which are the forbearers of the twentieth century technological revolution. Related to this, we hypothesized that post-industrial competition in the information age raises the value of design. Our economy demands churn and consumption, and companies need ways to differentiate other than on function and price.

From these trends, our interviews centered around several broad themes about the relationship between the internet age and professional design practice. (1) How does one become a designer today, how has that changed since the mid-twentieth century, what are the sub-fields of design and how have they evolved, and has the communication revolution and the internet's affordances changed design practice?; (2) what distinguishes design work from other creative and innovative businesses and expertise?; (3) what are the metrics of excellence in design practice and design professionals and how have they evolved?; (4) what are the opportunities and challenges in design practice today?; and (5) what role, if any, does legal regulation play in the success or failures of contemporary design practice? We do not ask about these topics directly but instead by eliciting grounded, particularized accounts of work and professional life through specific questions of each design professional.<sup>249</sup>

#### *Interview Data Collection*

After developing and gaining Institutional Review Board (IRB) approval for an interview protocol designed for professional designers, we sent letters to a range of potential interviewees. We targeted seven (7) groups of designers based on the history of design practice: automotive, household goods, user-interface, fashion, graphic design, medical and technological devices, and service design. Within those categories, we sought to interview designers in consultancies and in-house designers, as well as established, legacy designers and younger, emerging design professionals. Some designers work across these sub-groups or have developed expertise in more than one area. As explained in the Article, many designers consider interdisciplinary and boundary-blurring essential to excellence in design and thus, despite expertise

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<sup>249</sup> Our template for interview questions is available for those interested in more detail about how we broached these subjects.

in a particular sub-field (in medical devices, for example, or user-interface design), many reject categorization. This is not true of all designers, as we note. Some automotive and graphic designers we interviewed described sticking to their specialization as both a preference and a field characteristic.

Most interviews lasted about one hour in length, and most were in-person.<sup>250</sup> We used the approved IRB protocol for the semi-structured interview, which allowed us to standardize all the interviews. But the protocol also allowed us to deviate and follow up when necessary to clarify potential contradictions or dig deeper into apparent idiosyncrasies or parallels. Our interviewees could elect to be on or off the record. Most interviews were not confidential, which means we could attribute quotes and accounts to the particular designers. Some interviews are off the record, which means the interviewees agreed to the interview on the condition that we make their responses anonymous by providing them with pseudonyms. And some interviews were a combination of both. All of the interviews were recorded and transcribed by a professional transcriber.<sup>251</sup>

As we conducted interviews and read transcripts, then reread and analyzed them, we revised our understandings and interpretations of the phenomenon on which we were focused. We analyzed the interviews in various steps. First, after each interview, we wrote a memo summarizing it in two to three pages. This included any notes made during the interview, description of the offices we visited and other people we met, a description of notable stories related by or quotations from the interviewee, and a list of overarching themes from the interview. Memos were co-drafted and shared to produce a common framework of the ongoing analysis.

Second, after the interviews were completed, we read the transcripts closely. We studied the interviews at the level of language (word choice, narrative structure, and content) and conceptual themes, which are drawn from reading across the transcripts and from the literature on design practice. We then generated a list of code words developed deductively from preliminary findings and inductively from the emergent language, repetitions, narrative structure, and conceptual themes contained in the interviews.

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<sup>250</sup> Some of our last interviews were conducted over videoconference after the COVID-19 pandemic halted all travel.

<sup>251</sup> For biographies of the designers we interviewed, properly made anonymous where required, please see Appendix B.

Third, we read the transcripts again to code them, first by hand and then using a system developed as a team using Excel.<sup>252</sup> Coding allows us to search and sort the data by code or any other category we establish. Coding together and interpreting the interviews as a research group enhances intercoder reliability, which is critical to the descriptive and interpretive validity of qualitative empirical analysis.<sup>253</sup> By its nature, working with qualitative data is an interpretive process. But strong consensus can be achieved by regularly sharing coding on a common text and collectively developing common parameters for interpretation.

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<sup>252</sup> We worked with a research assistant, Brittany Von Reuden, to whom we are enormously grateful. Brittany was an integral part of the data analysis team, developing the Excel spread sheets and enabling pivot tables to search the coded transcripts and combine and contrast transcript excerpts with coded portions for both more granular and more general thematic analyses.

<sup>253</sup> For a discussion of intercoder reliability and coding practices, see SILBEY, THE EUREKA MYTH, *supra* note 33, at 287–95 (2015). For a discussion of validity in qualitative research, see Joseph A. Maxwell, *Understanding and Validity in Qualitative Research*, 62 HARV. EDUC. REV. 279, 287–91 (1992).

## APPENDIX B

### Designers Interviewed, 2018–2020

Designers were given the option of anonymity on the consent forms that each signed to participate in this study. Where indicated, pseudonyms have been provided for those designers who elected to remain anonymous. The biographies for confidential interviews lack additional detail to honor that promise of anonymity. We aim to provide enough information for readers to evaluate the stratification of the sample but not so much that anonymity is compromised. Graduation dates are provided in the cases of younger designers. Where full names are provided, designers consented to their name being used. Interviewees are listed in alphabetical order by their first name or pseudonym. All information is current at the time of the interview and does not reflect changed circumstances since 2020.

*Alissa Rantanen.* Chicago-based designer working as a Design Manager at Insight Product Development, where she conducts ethnographic research to create design-based solutions largely for medical and health care devices. She previously worked as a freelance graphic designer. She graduated in 2013 with a BFA in Industrial Design.

*Allen (a pseudonym).* Cambridge-based designer at IDEO. Before joining IDEO, he worked in Palo Alto as a mechanical engineer and project leader.

*Ann-Marie Conrado.* Professor of Industrial Design at the University of Notre Dame and a consultant for Fortune 500 companies. Since 1993, she has been an active designer with extensive experience in industrial design.

*Denise Burchell.* San Francisco-based designer at Salesforce with over twenty-years of experience in the design industry and a specialty in user experience design. Previous work experience includes *Mother Jones*, CNET, Inc., AKQA and IDEO.

*Felicia Ferrone.* Chicago-based industrial and furniture designer. She began work in 1994 as an architect in Milan before returning to the United States to found *fferrone*, her international namesake brand, in 2010. She also serves as the Director of Graduate Studies in Industrial Design at the University of Illinois at Chicago School of Design, where she is also a Clinical Associate Professor.

*Frank (a pseudonym).* San Francisco-based designer currently working for Intuitive as an industrial designer. His previous experience in industrial design includes four years with Smart Design. He graduated with a Masters in cross-cultural design in 2012.

*George Aye.* Co-Founder and Director of Innovation at Greater Good Studio with several decades of design experience. He is an Adjunct Professor at the School of the Art Institute of Chicago. He worked for seven years at global innovation firm,

IDEO, before joining the Chicago Transit Authority as its first human-centered designer.

*Jennifer (a pseudonym)*. Bay Area-based designer working at Facebook on user interface and product design for internal and external products. Prior to working at Facebook, she worked at Yahoo on similar design projects. She graduated with a degree in human factors design and ergonomics in 2009.

*Jay Newman*. Bay Area-based designer who works as a Director at Jump Associates. He prototypes new tools for modeling businesses through financial forecasting, discovery driven planning, and human-centered design. Before joining Jump Associates, he worked at First Annapolis Consulting where he helped financial institutions and retailers evaluate markets, launch products, adopt technologies, and enter strategic partnerships.

*John Traub*. Brooklyn-based designer with multi-national brand clients. Prior to establishing his own design firm, he worked at Pepsi Co., Smart Design, and Evo Design as an industrial designer. He is also a member of the Design Faculty at the New School. Traub graduated in 2011 with a BFA in Industrial Design.

*Jonathan Adler*. Potter, designer, and author with retail stores in New York City, Miami, Dallas, Los Angeles, San Francisco, and London. In addition to the household goods for which he and his brand are famous, he also designed hotels, public art installations, and the Barbie Fiftieth Anniversary Dream House.

*Kathleen Low*. User-design strategist based in California, currently at Impossible as a Senior Design Manager. She also helped launch the educational start-up company EdgeMakers, Inc. as the Head of Design and Media, working there for four and a half years. She has degrees in human-centered healthcare design and visual communication from 2010.

*Kate (pseudonym)*. New York-based marketing and design professional currently working at OXO. Prior to OXO, she worked in various strategy positions at firms, such as Pearlfisher and The Partners.

*Kevin Lam*. California-based motion designer employed at BCG Digital Ventures. He previously worked as a motion graphics designer at Masimo Corporation. He graduated with a BFA in graphic design in 2011.

*Laura Forlano*. Chicago-based Associate Professor of Design at the Institute of Design at the Illinois Institute of Technology and Director of the Critical Futures Lab. Her research interests focus on the socio-technical systems and infrastructures at the intersection of emerging technologies, material practices, and the future of cities.

*Lee Moreau*. Boston-based founder of Other Tomorrows, a design and strategy consultancy based in Boston. He has extensive experience as a designer in cutting-

edge design firms, such as Continuum (Boston), 2 x 4 (New York), and IDEO (San Francisco). He is also a Lecturer in MIT's design program.

*Maggie Waller.* New-York based designer and former Global Design Manager at HypeBeast. Her previous experience includes working as a Graphic Designer at Levi's and PONY. She graduated with a BA in Industrial Design in 2011.

*Michael Kahwaji.* Senior design manager responsible for brand implementation and product development in the global refrigeration category at Whirlpool, where he was previously the design lead. Prior to his position at Whirlpool, he worked as an industrial designer at Zircon Corporation in California developing DIY and commercial grade tools.

*Michael Rock.* Founding partner and creative director at the graphic design studio 2 x 4 and Adjunct Professor of Graphic Design at Yale School of Art since 1991, and a Professor at the Columbia University Graduate School of Architecture. At 2 x 4, he leads both cultural and commercial projects for a variety of international and national clients.

*Michelle Crowley.* Co-partner and landscape architect at Crowley and Cottrell, a Massachusetts landscape architecture firm. She has twenty years of experience in landscape design and her projects range from private residences to land reclamation projects.

*Mike Smith.* San Francisco-based designer and director at Jump Associates. For the past twenty years, he has focused on strategy consulting from a design perspective. Prior to joining Jump Associates, he worked as an industrial designer at Flextronics and Design GmbH, and RnR Products. He also co-founded both Good Stuff Labs and Spark Factor Design.

*Naomi Cottrell.* Co-partner at Crowley and Cottrell with an extensive design practice. With fifteen years of experience, she previously worked at Reed Hilderbrand and LeBlanc Jones before joining Crowley and Cottrell.

*Patrick Schiavone.* Detroit-based designer currently serving as the Chair for Product Design at the College for Creative Studies. For more than twenty years, he worked for Ford Motor Company where he led the design of three generations of the Ford F-150. Thereafter, he worked as Vice President of Whirlpool Corporation Global Design where he led seven design studios around the globe and helped update the look and expand the usability of Whirlpool's global brands.

*Richard Gresens.* Michigan-based designer who runs his own design, strategy, and innovation consultancy. Previously, he was the Vice President of Industrial Design at Newell Brands, a Senior Director for Global Laundry Design at Whirlpool, and before that, Chief Designer of North American Trucks at Ford Motors. He was also chief designer at William M. Schmidt Associates.