

## CLAIMING INTELLECTUAL PROPERTY

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When Ian Fleming wrote his series of James Bond novels, to receive American copyright protection, he had to comply with a number of copyright formalities, at which point any substantially similar works published by others without license would generally be considered to be infringements of the copyright. Imagine instead that to receive protection, Fleming would have had to draft a claim setting out the essential features of his novels, such as “a story featuring a suave male British spy, who frequently wears a tuxedo and has a strong sensual appetite, detailing his adventures in international intrigue, in which he prevails through use of his quick wit and his high-technology gadgets.”<sup>1</sup> Dependent claims might further note that the spy introduces himself by his last name followed by his full name (“Bond, James Bond”) and that he orders his martinis “shaken, not stirred.” Copyright protection would then be premised on the bounds delineated by these claims. Infringement litigation might then need to address how much is “frequently” or whether a film featuring a similar female British character (“Bond, Jane Bond”) infringes the copyright.

This hypothetical claiming system looks very much like that of the current patent system, under which the bounds of an invention must be demarcated in a patent application as a prerequisite to being accorded patent protection. But envision for a moment that, in terms of claiming, patent law would look more like copyright law now does. Alexander Graham Bell would register a patent in his invention of the telephone after having fixed (or, perhaps commercialized) it in some form. Assuming the invention complies with the threshold requirements of patent law, the set of protected embodiments would extend to all substantially similar implementations—a cordless telephone? a fax machine? Internet telephony?—a set that would be enumerated on a case-by-case basis in any future infringement litigation, rather than at the time of patent registration, by questioning whether the potential member was sufficiently similar to the registered exemplar. This determination would require courts to ascertain the essential properties of a patented invention.

This thought experiment would seem to indicate that the claiming of the set of protected embodiments under patent law looks very different from that of copyright law. And in a sense, they do. Patent law has expressly adopted a peripheral-claiming system,<sup>2</sup> requiring patentees to articulate by the time of the granting of the patent the bounds of

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<sup>1</sup> This claim somewhat conflates the treatment of James Bond in Fleming’s novels and later in film. *See* Metro-Goldwyn-Mayer, Inc. v. Am. Honda Motor Co., 900 F. Supp. 1287, 1294-97 (C.D. Cal. 1995) (adjudging James Bond to be a copyrightable character).

<sup>2</sup> E.g., 1 ANTHONY W. DELLER, PATENT CLAIMS § 5 (2d ed. 1971).

their invention.<sup>3</sup> Peripheral claims in patent law are thought to give notice to the public of the extent of the set of embodiments protected by a particular patent so as to encourage efficient investment in innovation, thereby stimulating patent law's overarching goal of stimulating useful innovation by maintaining "the delicate balance ... between inventors, who rely on the promise of the law to bring the invention forth, and the public, which should be encouraged to pursue innovations, creations, and new ideas beyond the inventor's exclusive rights."<sup>4</sup>

By contrast, copyright law has implicitly adopted a central-claiming system,<sup>5</sup> requiring the articulation only of an exemplar of the set of original<sup>6</sup> works protected by a copyright—the copyrightable work fixed in a tangible form<sup>7</sup>—whereas the right extends beyond that literal member to substantially similar works,<sup>8</sup> a set of works to be enumerated only down the road in case-by-case copyright-infringement litigation after ascertaining each work's essential characteristics. Carved out from this set are those works that are substantially similar but are nonetheless deemed to be a defensible fair use of the copyrighted work,<sup>9</sup> a standard-based test commonly thought to have "infinite elasticity,"<sup>10</sup> as with the substantial-similarity test.

In practice, however, the patent and copyright claiming systems are somewhat more similar than the foregoing summary might suggest. Patent law, which until 1870 operated under a form of central claiming,<sup>11</sup> retains some vestiges of central claiming through the doctrine of equivalents, statutory means-plus-function claiming, and dependent claims. The first two rules allow patent protection to extend beyond the literal bounds of the peripheral claims to certain equivalent variations. In particular, the doctrine of equivalents permits a patentee to "claim those insubstantial alterations that

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<sup>3</sup> 35 U.S.C. § 112, ¶ 2; *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 26 (1997). These peripheral claims tend to list the necessary and sufficient characteristics of members of the set of protected embodiments, rather than enumerate each member of the set.

<sup>4</sup> *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 741 (2002).

<sup>5</sup> See 1 DELLER, *supra* note 2, at § 5 (discussing central claiming generally).

<sup>6</sup> A work is original so long as it is independently created, regardless of how novel it is, and has at least a minimal amount of creativity. *Feist Pubs., Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991).

<sup>7</sup> 17 U.S.C. § 102(a).

<sup>8</sup> E.g., *Corwin v. Walt Disney Co.*, 475 F.3d 1239, 1253 (11<sup>th</sup> Cir. 2007). Since 1870, the set of protected works also includes derivative works, 17 U.S.C. §§ 103(a), 106(2), currently defined as "a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted," *id.* § 101. Though just about every work derives in some sense from preexisting works, *Emerson v. Davies*, 8 F. Cas. 615, 619 (C.C.D. Mass. 1845) (Story, J.), only those works that are substantially derived from a preexisting work are classified as derivative works, a restriction equating to the "substantially similar" standard used to ascertain copyright infringement, *Well-Made Toy Mfg. Corp. v. Goffa Int'l Corp.*, 354 F.3d 112, 117 (2d Cir. 2003). Therefore, the set of derivative works and works that would be adjudged substantially similar—but for the fact that the first is permissibly created (such as with the consent of the holder of the preexisting copyright) and the second is not—are thus identical. See also 1 MELVILLE B. NIMMER & DAVID NIMMER, *NIMMER ON COPYRIGHT* § 3.01 (2006) [hereinafter NIMMER ON COPYRIGHT].

<sup>9</sup> See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 574 (1994).

<sup>10</sup> 4 NIMMER ON COPYRIGHT, *supra* note 8, at § 13.05[A][5].

<sup>11</sup> Patent Act of 1836, ch. 357, § 6, 5 Stat. 117; *Winans v. Denmead*, 56 U.S. (15 How.) 330, 342-43 (1853).

were not captured in drafting the original patent claim but which could be created through trivial changes,”<sup>12</sup> so long as they do not intrude on the prior art.<sup>13</sup> Means-plus-function claiming<sup>14</sup> permits a patentee to describe his invention in terms of the functions it does rather than describing the bounds of the actions or objects that carry out those functions.<sup>15</sup> Protection is then extended to the means for carrying out the function described in the patent’s specification and any equivalents of those means.<sup>16</sup> And dependent claims permit patentees to express claims for prototypical members (a proper subset) of the set of protected embodiments already literally included within the bounds of other independent claims in the patent. Dependent claims have no relevant legal effect<sup>17</sup> but are similar expressively to central claiming in articulating prototypical members of the protected set.

By contrast, copyright law, through the approved use of licenses to permit others to make substantially similar works, encourages the delineation of characteristic features or exemplars of the set of works protected by the copyright to express the bounds of works permissibly created under such licenses. The expression of these bounds in legally binding contracts brings a form of peripheral claiming (or sometimes central claiming by characteristic rather than copyright’s central claiming by exemplar) into copyright law. (And, by virtue of recordation, these agreements—or forms of them—might be available to the public through the Copyright Office.<sup>18</sup>)

A striking example is NBC Universal’s recent license to a French television company to create a French version of the criminal procedural television series, “Law & Order: Criminal Intent.”<sup>19</sup> Rather than just directly translate the English scripts—and owing to a burgeoning market in acquiring formats of American television series to make a local version—the French producers wanted to Frenchify the show’s details, be it the appearance of police stations or the different contours of the criminal law.<sup>20</sup> To maintain the “Law & Order” brand in the face of these changes and loss of production control, Dick Wolf, the creator of the American series, composed a one-thousand-page manual

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<sup>12</sup> Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 733 (2002).

<sup>13</sup> See Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 1214 (Fed. Cir. 1991).

<sup>14</sup> 35 U.S.C. § 112, ¶ 6.

<sup>15</sup> Mark D. Janis, *Who’s Afraid of Functional Claims?: Reforming the Patent Law’s § 112, ¶ 6 Jurisprudence*, 15 SANTA CLARA COMPUTER & HIGH TECH. L.J. 231, 233 n.1 (1999).

<sup>16</sup> See Hewlett-Packard Co. v. Mustek Sys., Inc., 340 F.3d 1314, 1321 (Fed. Cir. 2003).

<sup>17</sup> Under the Federal Circuit’s theory of claim differentiation, independent claims are presumptively interpreted to cover a broader set of embodiments than associated dependent claims. *RF Del., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003). As narrower claims, they tend to be upheld as valid more readily than the independent claims on which they are based. *Zip Dee, Inc. v. Dometic Corp.*, 931 F. Supp. 602, 615 (N.D. Ill. 1996).

<sup>18</sup> 17 U.S.C. §§ 205, 705(c), 708(a)(9).

<sup>19</sup> Brooks Barnes, *NBC Faces Trials Bringing ‘Law & Order’ to France*, WALL ST. J., Mar. 1, 2007, at A1. Though it is far from certain that American copyright law (alone) would have prohibited the television company in France from making this television series, e.g., Melissa Feeney Wasserman, Note, *Divided Infringement: Expanding the Extraterritorial Scope of Patent Law*, 82 N.Y.U. L. REV. 281, 297-98 (2007) (discussing the current status of the extraterritorial application of American copyright law), this example is useful to show how a copyright holder envisions the bounds of his copyrighted work.

<sup>20</sup> Barnes, *supra* note 19, at A1.

detailing essential characteristics of a “Law & Order” production that must be followed.<sup>21</sup> Among them are regulating the use of the show’s characteristic “ca-ching” sound to no more than two times per act and to indicate a change in the storytelling and how to make blood and police offices look realistic.<sup>22</sup> In fact, according to the president of the French production company, “Absolutely nothing has been left to interpretation.”<sup>23</sup>

This example shows that copyright holders are thinking about their take on the essential elements of their work and are sometimes documenting them in licensing arrangements. In any subsequent judicial proceedings alleging copyright infringement of “Law & Order,” however, the manual will not be the baseline for determining whether an alleged infringing work is substantially similar to the NBC series. That said, it will provide considerable input into determining copyright infringement in two senses. First, to the extent that substantial similarity is measured beyond the views of a lay audience by objective criteria,<sup>24</sup> the manual would prove to be relevant evidence (though how weighty it is would likely vary by circumstance). Second, as James Gibson suggests, when an allegedly infringing work is determined to be substantially similar to a copyrighted work, it will not be deemed to be a permissible fair use when licenses like those based on the manual cover the allegedly infringing work.<sup>25</sup>

That patent law incorporates not insignificant elements of central claiming and that copyright law encourages forms of peripheral claiming suggests that the pure claiming forms might not be ideal for either type of intellectual property. I suggest that peripheral claims are similar to legal rules, in that they specify the relevant legal content at an *ex ante* stage, and that central claims are similar to legal standards, in that they leave the articulation of the relevant legal content for *ex post* determination, typically on a case-by-case basis.<sup>26</sup> In light of this formulation, I consider how each sort of claiming affects the costs of drafting claims, efficacy of notice to the public of the set of protected embodiments, ascertainment of protectability, breadth of the set of works protected by the intellectual-property right, and ability to defer to the future decision of whether certain works (typically those that are technologically, commercially, or intellectually unforeseeable) fall within the set of protected works.

As Michael Meurer and Craig Nard observe, in a peripheral-claiming system, “the applicant has to enumerate and claim all the possible ways of practicing the [creation],

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<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> E.g., *Shaw v. Lindheim*, 919 F.2d 1353, 1357 (9<sup>th</sup> Cir. 1990).

<sup>25</sup> James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882, 884, 895-98 (2007) (reasoning that the licenses indicate that the allegedly infringing work impinges on “the potential market for or value of the copyrighted work,” 17 U.S.C. § 107(4), a significant factor in assessing fair use). Gibson argues that it is dangerous for contractual delineations of the right to be used to determine the extent of the right doctrinally because it is often uncertainty in the law about the extent of a copyright and thus aversion to the risk of infringement liability that lead others to enter into a licensing arrangement with a copyright holder. *Id.* at 887-906.

<sup>26</sup> See generally Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 560 (1992).

but the competitor only has to find one unclaimed way to practice [it].”<sup>27</sup> For this reason, a peripheral-claiming system leads to a significant *ex ante* expenditure in drafting claims to capture—thereby protecting—as much of this essence as possible. (This cost is unsurprising, given that peripheral claims are like rules and there is typically greater cost in promulgating rules than standards.<sup>28</sup>) A claimant must think globally and abstractly about the range of applications that are similar enough to his particular creation and that might be profitable enough to include them within the scope of the protected right. The imprecision of language<sup>29</sup> compounds these costs and has led patentees to include in each patent a great number of peripheral claims<sup>30</sup>—sometimes more than one hundred—to obtain maximum protection by extending the periphery of the set of embodiments protected by the patent right,<sup>31</sup> as the patent right covers the union of the sets delineated by each of the patent’s claims.<sup>32</sup> Finally, ensuring that the claims comport with the threshold requirements of the requisite intellectual-property system compounds the cost of *ex ante* peripheral-claim drafting. Conversely, postponement of delineation of the extent of the set of protected works under a central-claiming regime until adjudication—as with standards in general<sup>33</sup>—typically means less expenditure on drafting multiple claims,<sup>34</sup> or for that matter, in thinking through all of the implications of word choice in a particular claim.<sup>35</sup>

Another way in which peripheral and central claiming differ is in how well they provide notice to the public of the set of embodiments protected by the intellectual-property right. Perfect notice to the public of the set of protected embodiments for a particular right is considered valuable so that the public can know to avoid impinging on the right by wrongly using members of the set.<sup>36</sup> And third parties that wish to transact with a subset of the protected set will understand the extent of their negotiation with the rightsholder, ensuring that they bargain for the precise coverage they need.<sup>37</sup> Despite the assertion that peripheral claims lead to more complete *ex ante* notice to the public, there is a robust stream of criticism undermining the ability of peripheral claims to provide useful notice. For one thing, the ambiguities inherent in language can render claim construction unpredictable.<sup>38</sup> Additionally, notice is undermined in peripheral claiming

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<sup>27</sup> Michael J. Meurer & Craig Allen Nard, *Invention, Refinement and Patent Claim Scope*, 93 GEO. L.J. 1947, 1975 (2005).

<sup>28</sup> Kaplow, *supra* note 26, at 562-63.

<sup>29</sup> Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 535 U.S. 722, 731 (2002).

<sup>30</sup> See 1 DELLER, *supra* note 2, at § 7.

<sup>31</sup> See William Redin Woodward, *Definiteness and Particularity in Patent Claims*, 46 MICH. L. REV. 755, 757 (1948).

<sup>32</sup> See Jones v. Hardy, 727 F.2d 1524, 1528 (Fed. Cir. 1984).

<sup>33</sup> See Kaplow, *supra* note 26, at 562-63.

<sup>34</sup> See 1 DELLER, *supra* note 2, at § 7

<sup>35</sup> See J. Dennis Malone & Richard L. Schmalz, *Peripheral Definition Theory v. Central Definition Theory in Patent Claim Interpretation: A Survey of the Federal Circuits*, 32 GEO. WASH. L. REV. 609, 634 (1963-64). That said, innovators in a central-claiming system might nonetheless expend more resources than the legal minimum to enumerate the very best or very many of their creation’s “prototypes” to provide greater assurance of broader protection in the future by courts and the public.

<sup>36</sup> Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 489-95 (2004).

<sup>37</sup> *Id.*

<sup>38</sup> See Karl B. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. OFF. SOC’Y 134, 134 (1938); see also Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 31-32,

by the typically large number of claims with abstract, rather than colloquial, formulations.<sup>39</sup> But central claiming, at least in copyright law, is also thought to provide poor notice because infringement can, by definition, be found even when the infringing creation is not literally within the bounds of the claims.<sup>40</sup>

I suggest that the traditional view of imprecision that central claiming brings might be misplaced due to our cognitive processing of categories. Research in cognitive science has shown that most of our categories are neither formed nor comprehended with a list of necessary and sufficient criteria to test for membership but rather with prototypical examples against which we compare potential category members for sufficient similarity.<sup>41</sup> Such radial categorization is indicated by studies showing that certain members of a category seem more central, or prototypical, than others. One classic study showed that people consistently thought robins were better examples of the “bird” category than penguins or ducks, though all are judged to be birds.<sup>42</sup> People even are found to comprehend prototypical examples of artificial or ad-hoc categories more easily than other category members.<sup>43</sup> That would indicate that central claiming is better aligned with our cognitive capacity for forming categories and thus for effectuating notice.

The claiming systems differ as well in how easy they make it for government actors to assess whether the claimed set of embodiments is protectable. Whatever the period for ascertaining protectability, peripheral claims are thought to enable the examiner to assess the novel or original features of the claimed set because the features are expressly set out by the creator. Contrast that with central claims. If central claims are characteristic rather than by exemplar, they will also set out a list of features, including the novel or original features of the described prototype. But the central claim will not necessarily contain a complete explication of novelty or originality, as this prototypical list of features will not inevitably be equivalent to a list of the necessary and sufficient features that identify all members of the set of protected embodiments. This characteristic central claim will, of course, be very useful—perhaps almost as much as a characteristic peripheral claim—to an examiner for much the same reason as a characteristic peripheral claim. Of course, on the back end, embodiments not characterized by the central claim that fall within the set of protected embodiments will be determined separately down the line for protectability, if at all. Less useful than characteristic claims in ascertaining protectability are claims by exemplar, as the

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49-52 (2005) (maintaining that because courts can give broader or narrower meaning to patent claims depending on how large a chunk of the claim the court decides to interpret as a single element, notice at the outset is undermined by the indeterminacy of how broadly or narrowly the claim will be construed down the judicial road).

<sup>39</sup> See Doug Lichtman, *Substitutes for the Doctrine of Equivalents*, 93 GEO. L.J. 2013, 2015 (2005).

<sup>40</sup> That said, in the American precedent-based judicial system, each adjudication of a copyright infringement claim gives increasingly better notice as to the extent of the set of works protected by a particular copyright by providing one or more new data points adjudged either to be in or out of this set.

<sup>41</sup> GEORGE LAKOFF, WOMEN, FIRE, AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL ABOUT THE MIND (1987); LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS § 66 (G.E.M. Anscombe trans., 1953) (discussing the category of games).

<sup>42</sup> Eleanor Rosch, *Cognitive Reference Points*, 7 COGNITIVE PSYCHOL. 532 (1975).

<sup>43</sup> Lawrence W. Barsalou, *Ad-Hoc Categories*, 11 MEMORY & COGNITION 211 (1983).

examiner must deduce the essential features of the exemplar (and perhaps other similar embodiments likely to be protected by the right).

In enumerating the set of protected embodiments, one asks very different questions under central- and peripheral-claiming systems. To enumerate the set of protected embodiments under a peripheral-claiming system, one must interpret the words of the relevant claim. To do so under a central-claiming system, one determines the essentiality of the central claim and determines whether particular works are sufficiently similar to the prototype. Asking these different questions does not, however, mean that the decisionmaker necessarily arrives at vastly different breadths (with at least one exception—how the breadth is expanded or constricted based on future technological, commercial, or intellectual development). For instance, in construing peripheral claims, one can assign claim terms either narrow or broad meaning.<sup>44</sup> As an example, Dan Burk and Mark Lemley state that one “can read a term abstractly, so that a ‘fastener’ becomes anything that attaches two other things together, or [one] can read the same term more concretely, defining a fastener to be a particular type of connector such as a nail or a U-bolt.”<sup>45</sup> One will presumably not construe “fastener” to include bananas or shoes, so there are limits on the expansive breadth of peripheral claims. Much will depend on how broadly or narrowly they have been written and then further on the interpretive theology deployed. In construing central claims, one can limit or broaden the set of embodiments that are sufficiently similar to the centrally claimed prototype, just as one can expand or contract the essential attributes of the prototype. There is perhaps some more indeterminacy in the breadth of the set—at least at the fringes—under central claiming than under peripheral claiming because there are fewer nonsensical results.<sup>46</sup> Still, there are outer bounds on similarity results. In just about all contexts, books, say, will not be found to be sufficiently similar to, say, airplanes.

Of course, concern lies not only with the breadth of the set, as determined by government officials, but with its operational breadth. Many patents and copyrights are never adjudicated and thus the breadth of the set remains somewhat indeterminate. Given that there will be some uncertainty under any claiming system of the extent of the associated set of protected embodiments, aversion to the risk of liability and other costs will attract licensees (should the risk not deter any action whatsoever).<sup>47</sup> Licenses will be taken sometimes even they are not necessary, principally when a patent is actually invalid or the valid patent or copyright claims do not cover the licensed activity. Operationally, this licensing will lead to a broader set of protected embodiments, except should the right be truncated in litigation.<sup>48</sup> Therefore, the better the notice provided by the claiming system, the less broad the set of protected embodiments will tend to be.

As with rules generally, peripheral claiming leads to a greater expenditure at the outset to draft broad claims and leads to a great cost to the rightsholder at a later date

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<sup>44</sup> Burk & Lemley, *supra* note 38, at 31.

<sup>45</sup> *Id.*

<sup>46</sup> See Meurer & Nard, *supra* note 27, at 1961-62.

<sup>47</sup> Gibson, *supra* note 25, at 887-95.

<sup>48</sup> See generally *id.*

should technological, commercial, or intellectual circumstances not align with his predictions at the time of claim drafting. It is impossible to classify this effect monolithically as positive or negative. In situations where it encourages overall innovation to protect unclaimed future changes—say, when a creator knows there will be unpredictable obsolescence should he innovate, which then discourages innovation in the general field in the first instance—strict peripheral claiming will have a negative effect. But when the opposite is true—when the landscape has shifted so considerably due to subsequent landmark developments—strict peripheral claiming provides a useful contraction of intellectual-property rights. A central claimant, on the other hand, can defer delineation of the full set of protected embodiments at the outset, leaving that task for the future when the costs of understanding how related innovation has unfolded is, by nature, more clear.<sup>49</sup> Central claims, then, easily allow for an expansion of protection beyond the claimed core when it would benefit overall innovation.<sup>50</sup>

The fact that the choice of claiming systems implicates in different ways the foregoing factors, factors that are essential to calibrating intellectual-property law to stimulate innovation, underscores the importance of choosing a claiming approach with care. Precisely balancing these factors against each other to determine which claiming system ultimately leads to the most valuable innovation must be empirically grounded. Nevertheless, these factors can be weighed against each other qualitatively, leading to suggestions about the ideal contours of the claiming systems of patent and copyright law.

I suggest that the peripheral claims of patent law, adopted principally to provide notice of the set of embodiments protected by a patent, in fact do not provide sufficient notice but do impose a significant cost of drafting peripheral claims.<sup>51</sup> They, however, do a reasonably good job of encouraging the ascertainment of protectability. And the central-claim-like features already incorporated into patent law permit protection of certain technologically, commercially, or intellectually unforeseeable. I propose that *ex ante* patent-claim drafting be modified to resemble central claiming by characteristic, so as to claim the benefits of notice demonstrated by cognitive science and low claim-drafting costs promised by such claims. Such claiming would also preserve and perhaps improve upon many of the benefits in patent examination of ascertainment of protectability found with peripheral claims. Care must be taken, however, to prevent patentees from overreaching extremely far beyond the boundaries of the set of protected embodiments. For instance, central claims by characteristic would be supplemented by rules requiring the registration of certain exemplars claimed to be within the set of

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<sup>49</sup> See Lichtman, *supra* note 39, at 2021 (offering the Internet as a case in point); Meurer & Nard, *supra* note 27, at 1992. Or this can be deferred indefinitely should the core protected work prove to be commercially or otherwise unsuccessful.

<sup>50</sup> And it might also simply permit a constriction when warranted. *Cf. Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608-09 (1950) (“[W]here a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee’s action for infringement.”).

<sup>51</sup> But see Long, *supra* note 36, at 487 (“The functional nature of inventions helps lower the information costs of understanding patented assets. Observers can conserve on information costs by reducing the concept of an invention to its function.”).

embodiments protected by a patent, namely all commercial implementations by the patentee or a licensee that would otherwise be marked as covered by the patent. Exemplar registration, which would be available to the public, would have the benefit of sharpening the understanding of the bounds of the set of protected embodiments.<sup>52</sup> And it would occur in the situations in which exemplars are most useful, that is when the patented invention is commercialized and is therefore more likely to be valuable and notice more important. Registration would be policed, as false patent marking is, by the availability of a cause of action to protect (egregious) overstepping of patent bounds, which would have the further effect—as in infringement litigation—of providing sanctioned notice of which embodiments are members of the set of embodiments protected by the patent. These changes would make *ex post* determinations of infringement more predictable, though of course robust *ex post* rules are needed (under any claiming system) to ensure predictability.

Further refinements might attempt to effectuate different claiming rules for different sorts of inventions. For example, for industries in their infancy, to protect against too much siphoning off of early innovation from public development, one might always want to employ central claims by characteristic, making it more likely that the patent examiner will be able to assess correctly the claimed matter for patentability, while allowing for refinement later on without the presumption of patent validity hanging over unclaimed matter. By contrast, in crowded fields that have a tendency to form patent thickets, it might make more sense to employ peripheral claims more strictly without allowing many, if any, equivalents.

The comparative analysis of peripheral- and central-claiming systems also suggests that the claiming system of copyright law could be vastly improved. As it stands, copyright’s central claims by exemplar provide for little notice to the public, which leads risk-averse third parties to take licenses even as to works not protected by copyright or avoid them completely, a situation that grants too heavy a copyright reward at the expense of generating further creativity.<sup>53</sup> It would be far more productive to require—or at least provide significant incentive to—copyright claimants *ex ante* to claim their works centrally by characteristic. This claiming would merely require, at insubstantial cost, a succinctly expressed pattern of the work at issue.<sup>54</sup> Such claims

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<sup>52</sup> Research has suggested that when it comes to learning smaller, less differentiated categories, beginning early in the learning process, exemplar learning is dominant. J. David Smith & John Paul Minda, *Prototypes in the Mist: The Early Epochs of Category Learning*, 34 J. EXPERIMENTAL PSYCHOL. 1411, 1411 (1998). By contrast, in learning larger, more differentiated categories, prototypical learning is prevalent early in the learning process but slowly gives way to exemplar learning. *Id.*

<sup>53</sup> Henry Smith argues that “in copyright, uses appear to be relatively less costly to delineate. Whether or not, as some have claimed, thing-attributes are more costly to delineate in copyright than in patent, the relative ease of delineating uses can explain the ways in which copyright is more regulatory and less property-like than patent—i.e., more of a governance regime.” Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1800 (2007). While this view might hold true with regard to certain compulsory licenses, it does not explain how to assess whether a third party is infringing upon a copyright owner’s right to use derivative works, an extremely large and valuable class of works that are substantially similar to the copyrighted work.

<sup>54</sup> *But see* Long, *supra* note 36, at 469-70 (“The idiosyncrasy of copyrighted goods and the ineffable nature of much original expression make information about copyrighted goods difficult to convey: Two people are

would provide significantly better *ex ante* notice on two grounds. First, they would give a good indication as to those works that would be considered to be substantially similar to the created work and thus protected under the copyright by allowing feature-by-feature comparisons. Second, they would help explicate which substantially similar works would nonetheless be permissible uses under the doctrine of fair use, by encouraging straightforward determinations of works that borrow from the copyrighted work in ways either that do not implicate too many of the claimed features or that transform it significantly. The overall effect would be, as similarly with patent law, to increase overall production of creative works by giving the incentive to create copyrighted works and by encouraging creation by others beyond the copyright.

The Article proceeds in four parts. Part I discusses the nature of intellectual-property rights by exploring the interaction between the right at issue and the thing that is protected by the right. Part II descriptively explores the ostensibly different approaches that patent law and copyright law have taken, by outlining patent law's path from central to peripheral claiming and copyright law's reverse path from peripheral to central claiming. It then suggests that patent law nonetheless retains aspects of central claiming while copyright law encourages aspects of peripheral claiming. Part III dissects peripheral and central claiming by looking at how they are respectively like rules and standards and by analyzing the way they affect costs of drafting claims, efficacy of notice to the public of the set of protected embodiments, ascertainment of protectability, the breadth of the set of works protected by the intellectual-property right, and the ability to defer to the future decision of whether certain works (typically those that are technologically, commercially, or intellectually unforeseeable) fall within the set of protected works. It then suggests how the claiming systems of patent and copyright law can be tweaked to effectuate their underlying policies of encouraging innovation in light of this analysis. Part IV concludes.

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unlikely to agree on the meaning of the information, even if it is made public. The owner may have to spend more time describing the good than creating it. Under these circumstances, rules that required exhaustive description and disclosure of the attributes of copyrighted goods would present costs in excess of their benefits for owners and observers alike, and indeed copyright law does not have such rules.”).