

Equivalency and Patent Law’s Possession Paradox

Timothy R. Holbrook<sup>†</sup>

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I. INTRODUCTION

The ordinary view of a patent is that an inventor is awarded a patent for her particular discovery. Necessarily there is a correlation between what the inventor discovered and the scope of the patent – one should only get protection for what the person actually invented. For example, if I discovered a vaccine for cervical cancer does not mean I am entitled to a patent on

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<sup>†</sup> Visiting Professor, Stanford Law School, Fall 2007; Associate Professor of Law and Associate Director of the Program in Intellectual Property Law, Chicago-Kent College of Law. An earlier version of this paper was presented at II High Technology Conference, Gdansk University, Gdansk, Poland. Thanks to Namon Huddleston for his support in this endeavor. © Timothy R. Holbrook 2007.

vaccines for all forms of cancer. I was not in possession of those other vaccines. In other words, the patent should bear some relationship to what the inventor possessed as her invention.<sup>1</sup>

This is generally the case in patent law, although it is somewhat inaccurate. The idea of what the inventor possessed as her invention is determined by the patent disclosure. An inventor is required under the patent laws to provide a written description of the invention in a manner so as to enable others to practice the invention.<sup>2</sup> The basic idea behind the disclosure obligation is that, in exchange for the patent rights, the inventor must disclose the invention to the public, who is free to copy the invention after the patent expires and who can hopefully learn from the patent disclosure itself during the patent term.<sup>3</sup>

The disclosure also provides a means for limiting the scope of the patent rights. A patent ends with various paragraphs known as claims, which define the “metes and bounds” of the exclusive rights of the patent.<sup>4</sup> These limits are assessed objectively, from the viewpoint of patent law’s analog to the “reasonable person” of tort law – the person having ordinary skill in the art (PHOSITA).<sup>5</sup> It is through the eyes of the PHOSTIA, and not the subjective viewpoint of the inventor, that the PTO and the courts determine the appropriate breadth to give a patent. Thus, even if the inventor views her contribution to the art as narrow, the PHOSITA may recognize that, in fact, the innovation represents a considerable advance in the art. At times, the inventor may be entitled to protection beyond what she individually invented, so long as that

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<sup>1</sup> See generally Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123 (2006) [hereinafter Holbrook, *Possession*].

<sup>2</sup> 35 U.S.C. § 112, ¶ 1. The inventor must also disclose the best mode of practicing her invention. *Id.*

<sup>3</sup> This view of the disclosure obligation is known as the *quid pro quo* theory of patent protection. There are reasons to doubt how successful this disclosure function operates, however. See Jeanne C. Fromer, *Invigorating the Disclosure Function of the Patent System*; Holbrook, *supra* note 1, at ---.

<sup>4</sup> Lemley “Liability Rules” article.

<sup>5</sup> PHOSITA article.

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protection would have been apparent to the PHOSITA.<sup>6</sup> In other words, if the PHOSITA would have possessed an embodiment of the invention, based on the patent’s disclosure, than it is appropriate to reward the inventor for that advance through patent protection, even if the inventor herself did not invent that embodiment. Thus, the concept of “possessing” the invention is an objective one.

Affording such protection is important to provide appropriate incentives to innovate in the patent system. A patent affords its owner the right to exclude others from practicing the invention, allowing the patentee to recoup the sunk costs of developing the invention. The patent can also provide incentives for others to invest in the patent holder’s business or in the commercialization of the invention. As a result, the breadth of protection afforded by a patent can be crucial to giving an appropriate incentive to innovate or commercialize. The broader the rights, the greater the ability of the patentee to exclude others and therefore the ability to profit from the invention.

Given the centrality of claim scope, one would think that this area of patent law would be fairly settled and that assessing the scope of a patent’s right to exclude would be fairly routine. Nothing could be farther from the truth. On multiple levels, the courts struggle to assess the meaning of claim terms and consequent scope of the right to exclude. The construction of the literal meaning of a claim is rife with ambiguity, and reversal rates at the U.S. Court of Appeals for the Federal Circuit, the court with exclusive appellate jurisdiction over all cases arises under the U.S. patent laws, run at around forty percent.

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<sup>6</sup> These types of embodiments are referred to as “prophetic” embodiments. The justification is that a patent application should not be required to list every possible permutation of an invention, so long as the PHOSITA would be able to construct all of those variations.

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As if that state of affairs was not bad enough, patent law compounds that problem by affording protection not only for the literal scope of the patent claim but also for things that are “close enough” to be considered infringement. This “doctrine of equivalents” affords greater protection for the patentee beyond the scope of his actual claim language. Of course, determining what is equivalent and what is not is a fact-intensive inquiry that is difficult if not impossible to assess *ex ante*.<sup>7</sup>

Compounding this problem even further is the fact that patentees’ are afforded greater protection for technologies that emerge after their patent. In other words, their patents are considered to cover devices that by definition they did not and could not have invented. Under the law, the limit on the scope of the patent – what the inventor objectively possessed – has been divested in the context of the doctrine of equivalents. The patent holder gets rights over something beyond the reach of not only herself but the PHOSITA as well.

Thus arises a troubling paradox – the patent holder is given control over something that by definition she did not possess at the time of her application.<sup>8</sup> She can exclude others from practicing a technology that she did not create and that would not have been within the grasp of the PHOSITA. The patent holder can therefore control improvements and advances not objectively in her possession. Under the current state of the law, in fact, the inventor is given *more* protection for things that she could not have created than for those that should have been within her grasp. The patent system is arguably providing a windfall – “sure, you didn’t invent this, nor could you have...but we will give you protection any way!”

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<sup>7</sup> *Graver language on fact, not prisoner to formula; Warner-Jenkinson*

<sup>8</sup> At times in this article, I will refer generally to what the inventor possessed. This use of terms is fairly inexact, as what I mean is that the invention would not have been within the possession of the PHOSITA. Given the awkwardness of this phrasing, I will, for ease, refer to what the inventor possessed, recognizing that “possession” is defined objectively.

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Such scope of exclusion has serious implications for a system of innovation.

Unfortunately, the courts and commentators have offered a number of explanations for the doctrine of equivalents, but few if any have recognized this paradox and rarely have they attempted to . The courts and commentators have not explored this inconsistency.

This Article offers two bases for reconciliation of the paradox. The narrower form is that protection for later-developed technologies is appropriate when the advance took place outside of the inventor’s field of technology or those fields for which the inventor should have been aware. In the broader version, instead of focusing on the issue of later-developed technology alone, I posit that the equivalency question should ask whether the patent’s disclosure would have enabled the accused device at the time of infringement. Over time, as technology and knowledge improve, a person skilled in the art may be able to understand broader implications from the inventor’s original discovery, implications not apparent at the time the inventor filed her patent application. In this way, the question in equivalency is tied to the inventor’s contribution to the state of the art.

Part II of this Article explores the current methods of assessing the scope of a patent’s right to exclude both under literal infringement and the doctrine of equivalents. It identifies the current possession paradox that the doctrine of equivalents creates. In Part II, it explores the current theories justifying the doctrine of equivalents and shows how they do not answer satisfactorily the paradox. In Part III, I explore the two mentioned reconciliations of the possession paradox in a way that hopefully provides an appropriate balance and some guidance to issues of Patent claim scope.

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## II. POSSESSION, DISCLOSURE, AND LITERAL CLAIM SCOPE

A patent is granted to an inventor for creating a new and non-obvious, useful invention. The grant of a patent does not allow the inventor to control all possible variations of that invention. For example, the Samuel Morse’s patent did not give him the right to exclude others from using “motive power of the electric or galvanic current, which I call electromagnetism, however developed for making or printing intelligible characters, signs or letters at any distances.”<sup>9</sup> The Supreme Court concluded that such a patent claim was “too broad” and “not warranted by law” because “he claims an exclusive right to use a manner and process which he has not described and indeed had not invented, and therefore could not describe when he obtained his patent.”<sup>10</sup> Similarly, the first person to create a vaccine for a particular retrovirus (one that infects chickens) did not afford the inventor coverage for all vaccines for retroviruses, which would have included a vaccine on the AIDS viruses.<sup>11</sup> The scope of patent protection is tethered to the inventor’s creation.

In other words, the scope of the right to exclude is tied to what the inventor objectively possessed. The analysis is an objective one, however, because it is what one of ordinary skill in the technological field – patent law’s reasonable person, the person having ordinary skill in the art (PHOSITA) – would recognize was the inventor’s contribution to the field. The patent document is central in assessing that contribution; reliance on that disclosure, and not the subjective belief or intent of the inventor, facilitates the public notice function that patents can perform in determining how others assess what the inventor possessed. This objectivity can create some unique scenarios. For example, the inventor could be a fortunate fool – in his mind, his invention is fairly trivial but, objectively within the scope of his field, it is actually an

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<sup>9</sup> O’Reilly v. Morse, 56 U.S. 62, 112 (1854).

<sup>10</sup> *Id.* at 113.

<sup>11</sup> *In re Wright*, 999 F.2d 1557, 1562-64 (Fed. Cir. 1993).

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incredible breakthrough. The patent system would provide some fairly strong protection, so long as the patent document is drafted accordingly. Similarly, the inventor might believe his invention is the most amazing thing since the wheel, but the reality is it is a nominal improvement. The scope of the right to exclude is anchored not to that subjective belief but instead how the contribution is measured objectively within the field as assessed by the PHOSITA.

The tailoring of the scope of patent protection with the scope of the patent’s disclosure can occur in two, interrelated ways. At the furthest extreme, the disclosure within the patent document does not adequately support the scope of the relevant claim. The primary disclosure doctrine is enablement, which requires an applicant to disclose her invention in enough detail so as to enable the PHOSITA to practice it without undue experimentation.<sup>12</sup> If the breadth of a claim is so broad that one could not readily practice it based on the patent’s disclosure alone, the claim is invalid.

Disclosure operates in a subtler way in claim construction as well. If there are a variety of plausible interpretations of a claim, some of which would be enabling and others that would not be, the court should choose from those that would be enabling. This analysis is reflected in

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<sup>12</sup> The Federal Circuit has also elevated the written description requirement of 35 U.S.C. § 112, ¶ 1 as a separate grounds for testing the adequacy of disclosure. Traditionally, the use of the written description was used to police new matter from entering the patent, preventing patentees from updating the patent application to ensnare later technological advances for which protection under that application would be inappropriate. Now, however, the court uses the test even when there is no concern of new matter. **Cite**. Originally the doctrine appeared to be limited to inventions relating to biotechnology and genetics, but the court has since expanded it to other areas. **Cite Lizardtech**. I and others, including Federal Circuit judges, have sharply criticized this doctrine. **Cites**. My view is that the best way to assess the “possession” of an invention is through the enablement standard, not written description. Holbrook, Possession, *supra* note [x] at [x]. This debate is not central to the main premise of this article – that the doctrine of equivalents provides protection for that which by definition that the inventor did not objectively possess.

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the canon of claim construction that courts should interpret patent claims to maintain their validity if reasonably possible to do so.<sup>13</sup> Such a link between disclosure and claim scope is appropriate – the patent claim should not cover more than what the inventor has contributed objectively to the technological field. The patent in such cases should be construed as limited to what the inventor objectively possessed as her invention.<sup>14</sup> In this way, the scope of the claim is closely linked to the extent of the patent’s disclosure, limiting the patent to that which the inventor objectively possessed.

One could take this tailoring of claim scope with the inventor’s possession one step further by requiring that the patent enable the *accused device* in order for there to be literal infringement. Thus, by reading the patent, one should have been able to make the accused device without undue experimentation. This approach to literal infringement would truly link the extent of the patent’s disclosure to the scope of the patent: if one could not practice the accused device based on the patent’s teaching, then the patent would not be able to cover the accused device. By definition, the accused device was outside the possession of the inventor.

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<sup>13</sup> *Modine Mfg. Co. v. United States Int’l Trade Comm’n*, 75 F.3d 1545, 1557 (Fed. Cir. 1996.); *see also* Timothy R. Holbrook, *Substantive versus Process-based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 144 (2005). *But see* *Phillips v. AWH Corp.*, 415 F.3d 1303, 1326 (Fed. Cir. 2005) (en banc) (“While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction. Instead, we have limited the maxim to cases in which “the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.” In such cases, we have looked to whether it is reasonable to infer that the PTO would not have issued an invalid patent, and that the ambiguity in the claim language should therefore be resolved in a manner that would preserve the patent’s validity.” (citations omitted).

<sup>14</sup> *See* *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed.Cir.2001) (“Although the specification need not present every embodiment or permutation of the invention and the claims are not limited to the preferred embodiment of the invention, neither do the claims enlarge what is patented beyond what the inventor has described as the invention.”) *Cf. Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 815 (Fed. Cir. 2007) (Moore, J., dissenting) (“Patent scope should be coextensive with what the inventor invented as evidenced by what is disclosed in the patent specification.”).

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To be clear, this is *not* currently the state of the law. The focus of enablement law currently is the scope and validity of the claim. Infringement only involves the comparison of the accused device to the construed patent claim and does not further inquire as to the sufficiency of the disclosure vis-à-vis the accused device. The current law implicitly uses a transitive-type analysis: if the claim is enabled and covers the accused device, then the patent must enable the accused device.

In reality, it is quite possible for a patent to literally cover a device that the patentee did not enable. There may even be a patent covering the accused device, suggesting that there are significant differences between the two, but there still may be infringement. For example, assume that the original patent covers a method of making a drug Hypnophan, which helps induce a hypnotic state. The patent claims a method comprising steps A, B, C, and D. A competitor subsequently discovers a catalyst for the reaction that improves the efficiency of Hypnophan produced in the process, so that he can get more Hypnophan using fewer initial chemicals. The competitor performs the same steps – A, B, C, and D, but also uses the catalyst. The competitor even obtains a patent for the use of the catalyst in the method. The original patent could not enable the use of the method with the catalyst – no one at that time knew that the catalyst would have such an affect. But, under current law, the competitor would still be literally infringing the patent because he is performing all of the claimed steps. The addition of the catalyst would not remove the accused infringer’s activities from the literal scope of the original patent.

Patents in this situation – on covering the initial discovery and a subsequent one covering a significantly useful improvement – are known as blocking patents.<sup>15</sup> The original inventor

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<sup>15</sup> See Merges, *On the Complex Economics of Patent Scope*, [cite]

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cannot use the improved process without getting approval; similarly, the improver cannot even practice his invention – notwithstanding his improvement – without getting the approval of the original inventor. The solution to this problem is to cross-license the patents, allowing both to use the patented methods. A strict requirement that, to infringe, the patent must enable the accused device could eliminate the blocking patent problem because, likely if the improvement is a non-obvious one, the original patent could not have enabled it.<sup>16</sup> Thus a strict “possession” viewpoint would eliminate blocking patents.

While this approach is not *technically* the law, a strand of doctrine does exist that comes quite close to implementing this view of patent scope. Patent law has a defense to literal patent infringement which states that “where 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>17</sup> This doctrine, known as the “reverse doctrine of equivalents,”<sup>18</sup> notes that there are times that, even when the literal terms of a patent’s claim is met, there may be occasions when it is inappropriate to allow protection. The Federal Circuit has expressly tied this doctrine to the extent of the patent’s disclosure:

The reverse doctrine of equivalents is invoked when claims are written more broadly than the disclosure warrants. The purpose of restricting the scope of such

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<sup>16</sup> See Holbrook, *Possession*, *supra* note [x], at [x] (discussing link between obviousness and enablement).

<sup>17</sup> *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608-09 (1950); *see also* *Boyden Power-Brake Co. v. Westinghouse*, 170 U.S. 537, 568 (1898) (“The patentee may bring the defendant within the letter of his claims, but if the latter has so far changed the principle of the device that the claims of the patent, literally construed, have ceased to represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted, when he has done nothing in conflict with its spirit and intent.”).

<sup>18</sup> *SRI Intern. v. Matsushita Elec. Corp. of America*, 775 F.2d 1107, 1123 (Fed. Cir. 1985).

claims is not only to avoid a holding of infringement when a court deems it appropriate, but often is to preserve the validity of claims with respect to their original intended scope.<sup>19</sup>

The reverse doctrine of equivalents thus acts as a check on claim overbreadth—if the claim is broader than is warranted by the patent’s disclosures, then there is no infringement even if the claims would literally read on the accused device.<sup>20</sup> In this way, the scope of the patent was reigned in without necessarily invalidating the claim as being unenabled.

Regardless, claim construction doctrine clearly links the permissible literal scope of the patent to what the inventor objectively possessed as assessed by the disclosures in the specification. This approach is consistent with the view that the scope of protection afforded by the patent should be commensurate with her contribution to the state of the art; she should not be given a windfall.

### III. EQUIVALENCY FOR LATER-DEVELOPED TECHNOLOGIES, FORESEEABILITY, AND THE POSSESSION PARADOX

Literal claim scope and the idea of “possession” are intimately interconnected.

Seemingly, if one is to be rewarded by a patent for her invention, then scope under the doctrine of equivalents should similarly be connected. But, somewhat bizarrely, the Federal Circuit

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<sup>19</sup> *Texas Instruments, Inc. v. U.S. Intern. Trade Com'n*, 846 F.2d 1369, 1372 (Fed. Cir. 1988). *See also* Charles F. Pigott, Jr., *Equivalents in Reverse*, 48 J. Pat. Off. Soc’y 291, 292 (1966) (“[N]o matter how broad the claims may be when taken literally, and even though they may avoid the prior art when given the broadest interpretation, nevertheless the claims can cover only the particular embodiment the patentee has disclosed and equivalents thereof.”).

<sup>20</sup> Notwithstanding this seemingly appropriate use of the doctrine, the Federal Circuit has never applied it and indeed has questioned its continued viability. *See Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*,

279 F.3d 1357, 1368 (Fed. Cir. 2002) (“Not once has this court affirmed a decision finding noninfringement based on the reverse doctrine of equivalents....Even were this court likely ever to affirm a defense to literal infringement based on the reverse doctrine of equivalents, the presence of one anachronistic exception, long mentioned but rarely applied, is hardly reason to create another.”).

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generally has precluded access to the doctrine of equivalents if the asserted equivalent is one that should have been in the inventor’s possession during the application process. This phenomenon can be seen through the court’s preference for affording protection for later-developed technologies and by the legal limitations on the doctrine of equivalents, which essentially preclude equivalency if the patentee should have been able to claim the asserted equivalent.

*A. Equivalency and Protection for “Later-Developed Technology”*

Patent law does not limit patent scope to the literal terms of the claim. Patentees are also given coverage of devices or methods that are equivalent to what is claimed. More particularly, the limitation that is not literally met must be met equivalently for there to be infringement under the doctrine of equivalents. In assessing the equivalency of the relevant element in the device or method accused of infringing, courts have used a variety of factors, noting that equivalency is not a “prisoner to formula.”<sup>21</sup> One test is the tripartite, “function-way-result” test: to be equivalent, the element of the accused device must perform substantially the same function in substantially the same way to yield substantially the same result.<sup>22</sup> Courts have elsewhere articulated that the key analysis is whether the element in the accused device is insubstantially different from what is claimed.<sup>23</sup> Finally, courts have concluded that the known interchangeability of the relevant element with the feature in the claim also supports a finding of equivalency.<sup>24</sup>

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<sup>21</sup> *Graver Tank*

<sup>22</sup> *Grave Tank; Warner-Jenkinson*.

<sup>23</sup> *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1357 (Fed. Cir. 2004). *But see Warner-Jenkinson*, 520 U.S. at 40 (“the insubstantial differences test offers little additional guidance as to what might render any given difference ‘insubstantial.’”)

<sup>24</sup> *See Graver Tank*, 339 U.S. at 609 (“An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.”)

The Supreme Court also made clear that the determination of whether there is infringement under the doctrine of equivalents is to be made at the time of infringement. Thus, in determining whether the accused device contains an equivalent element under the above tests, it is permissible to consider advances in technology that may have occurred between the time the inventor filed the relevant patent application and the time of infringement.<sup>25</sup> What may be viewed as an equivalent later in time may not have been an equivalent when the patent was filed because technology may not have been as evolved at the time of the application.

This temporal shift has played into the Federal Circuit’s analysis of equivalency by noting that the doctrine is available to cover later-developed technology. For example, in *Pennwalt Corp. v. Durand-Wayland, Inc.*, the Federal Circuit noted in finding no equivalency that “the facts here do not involve later-developed computer technology which should be deemed within the scope of the claims to avoid the pirating of an invention.”<sup>26</sup> Implicitly, then, if the case *did* involve later-developed technology, the case for equivalency would have been *stronger*.

Subsequent Federal Circuit panels have drawn on this language to suggest that the application of the doctrine of equivalents is most appropriate when the accused device is later-developed technology.<sup>27</sup> For example, the court noted in *Sage Products, Inc. v. Devon Industries, Inc.* that application of the doctrine was inappropriate because “[n]o subtlety of language or complexity of the technology, nor any subsequent change in the state of the art, such as later-developed technology, obfuscated the significance of this limitation at the time of its

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<sup>25</sup> *Warner-Jenkinson*.

<sup>26</sup> *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 938 (Fed. Cir. 1987) (in banc).

<sup>27</sup> *See Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 1475 (Fed. Cir. 1998) (citing *Warner-Jenkinson*’s timing issue to support view that the doctrine of equivalents affords protection for later-developed technologies).

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incorporation into the claim.”<sup>28</sup> More particularly the court noted that, “as between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.”<sup>29</sup> The court seemingly is saying if the asserted equivalent was foreseeable, then the patentee *should* have claimed it and will be unable to use the doctrine to capture that variation. Thus, if the applicant should have been in possession of that embodiment, it generally will be precluded from asserting equivalency over it. Necessarily, if the accused device represents an advance in technology, then the applicant could not have claimed it and thus should be afforded protection under the doctrine of equivalents.

Application of this reasoning appears in *Hughes Aircraft Co. v. United States*, where the court noted that “[t]his is a case in which a ‘subsequent change in the state of the art, such as later-developed technology, obfuscated the significance of [the] limitation at the time of its incorporation into the claim.’”<sup>30</sup>

The requirement for later-developed technology is poignantly apparent in the application of the doctrine of equivalents to limitations drafted in means-plus-function form pursuant to 35 U.S.C. § 112, ¶ 6. Under § 112, ¶ 6, the applicant may write a claim limitation in terms of the function to be performed, but the limitation will be construed as covering the structure disclosed in the specification that performs that function and the equivalents to that structure.<sup>31</sup>

“Equivalents” under this provision, however, represents the *literal* scope of the claim.<sup>32</sup> As a result, the patentee is still entitled to the application of the doctrine of equivalents as to this

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<sup>28</sup> *Sage Products, Inc. v. Devon Industries, Inc.*, 126 F.3d 1420, 1425 (Fed. Cir. 1997).

<sup>29</sup> *Id.*

<sup>30</sup> *Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 1475 (Fed. Cir. 1998) (quoting *Sage Prods.*, 126 F.3d at 1425

<sup>31</sup> 35 U.S.C. § 112, ¶ 6.

<sup>32</sup> *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) (in banc).

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limitation.<sup>33</sup> Needless to say, this “equivalent to an equivalent” has caused confusion and consternation, even at the Federal Circuit.<sup>34</sup>

The Federal Circuit has recognized that equivalency under § 112 and the doctrine of equivalents are related.<sup>35</sup> Although § 112, ¶ 6 requires the *identical* function be performed – not substantially the same<sup>36</sup> – the analysis of general insubstantial differences between the way the claimed and accused devices operate is common to both forms of equivalency.<sup>37</sup>

Due to the relatedness of the two forms of equivalency, the Federal Circuit has concluded that “a finding that the element in the accused device is not an equivalent under § 112, ¶ 6 usually precludes a finding of infringement under the doctrine of equivalents.”<sup>38</sup> The rationale for this preclusion is that

a finding of non-equivalence for § 112, ¶ 6, purposes should preclude a contrary finding under the doctrine of equivalents. This is because . . . the structure of the accused device differs substantially from the disclosed structure, and given the prior knowledge of the technology asserted to be equivalent, it could readily have been disclosed in the patent. There is no policy-based reason why a patentee should get two bites at the apple. If he or she could have included in the patent what is now alleged to be equivalent, and did not, leading to a conclusion that an accused device lacks an equivalent to the disclosed structure, why should the issue of equivalence have to be litigated a second time?<sup>39</sup>

The ability to assert the doctrine of equivalents is, therefore, precluded because the patent applicant could have claimed the asserted equivalent and, thus, was in possession of the

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<sup>33</sup> WMS Gaming; Hughes Aircraft; Cybor

<sup>34</sup> Dawn Equip. (three “additional views,” particularly Judge Plager’s).

<sup>35</sup> *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc.*, 145 F.3d 1303, 1310 (Fed. Cir. 1998).

<sup>36</sup> *Id.*; WMS Gaming.

<sup>37</sup> *Chiuminatta*, 145 F.3d at 1310.

<sup>38</sup> *Id.*; see also *Nomos Corp. v. Brainlab USA, Inc.*, 357 F.3d 1364, 1369 (Fed. Cir. 2004) (“The technology . . . predates the ’026 patent and, therefore, does not qualify as after-developed. Consequently, the finding of no literal infringement in this case is dispositive as to infringement under the doctrine of equivalents as well.”).

<sup>39</sup> *Chiuminatta*, 145 F.3d. at 1311.

invention. If at the time of the application, the inventor possessed a variant of the invention, she is precluded from using the doctrine of equivalents from covering that embodiment.

One exception to this general rule of preclusion, however, is the case of later developed technology. Equivalency under § 112, ¶ 6, as a form of literal infringement, is assessed at the time the patent issues.<sup>40</sup> In contrast, equivalency under the doctrine of equivalents is determined at the time of infringement, accommodating later-developed technology.<sup>41</sup> Thus, the doctrine of equivalents generally will apply to a means-plus-function limitation if the element in the accused device is the result of a technological advance, so long as the test for equivalency is still satisfied.<sup>42</sup> As the Federal Circuit explained:

There is an important difference, however, between the doctrine of equivalents and § 112, ¶ 6. The doctrine of equivalents is necessary because one cannot predict the future. Due to technological advances, a variant of an invention may be developed after the patent is granted, and that variant may constitute so insubstantial a change from what is claimed in the patent that it should be held to be an infringement. Such a variant, based on after-developed technology, could not have been disclosed in the patent. Even if such an element is found not to be a § 112, ¶ 6, equivalent because it is not equivalent to the structure disclosed in the patent, this analysis should not foreclose it from being an equivalent under the doctrine of equivalents.<sup>43</sup>

The patentee is therefore entitled to protection for something that, by definition, she could not have claimed. As the court later elaborated, “[p]atent policy supports application of the doctrine of equivalents to a claim element expressed in means-plus-function form in the case of ‘after-arising’ technology because a patent draftsman has no way to anticipate and account for later

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<sup>40</sup> *Al-Site Corp. v. VSI Intern., Inc.*, 174 F.3d 1308, 1320 (Fed. Cir. 1999) (“[A]n equivalent structure or act under § 112 for literal infringement must have been available at the time of patent issuance.”).

<sup>41</sup> *Warner-Jenkinson*.

<sup>42</sup> *Al-Site*, 174 F.3d at 1320 (“An ‘after-arising’ technology could thus infringe under the doctrine of equivalents without infringing literally as a § 112, ¶ 6 equivalent.”).

<sup>43</sup> *Chiuminatta*, 145 F.3d at 1310.

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developed substitutes for a claim element. Therefore, the doctrine of equivalents appropriately allows marginally broader coverage than § 112, ¶ 6.”<sup>44</sup>

The possession paradox can be readily seen in this line of reasoning. The doctrine of equivalents applies primarily for later-developed technology that the patentee could not have claimed in his patent application. While this seems to effect fairness for the patentee, the court’s reasoning fails to explain why a patentee is entitled for protection for something that was out of her possession, particularly if she could not enable it in her patent disclosure.

*B. Equivalency Precluded When Patentee Should Have Been in Possession of the Asserted Equivalent*

The preference for applying the doctrine of equivalents over devices that by definition the inventor did not possess is confirmed by the legal limitations placed on the doctrine. Specifically, the doctrines of prosecution history estoppel, public dedication, and “specification estoppel” preclude the application of the doctrine of equivalents *unless* the asserted equivalent was unforeseeable. One Federal Circuit has gone so far as to say that “foreseeability” should be *the* limit on the doctrine of equivalents, supplanting the various alternative doctrines that currently are in place. Essentially these limitations preclude the doctrine of equivalents if the patentee was or should have been in possession of the equivalent at the time of the application. Failure to claim the equivalent precludes the doctrine of equivalents. These doctrines can be viewed, in essence, as various forms of evidence that ultimately prove the same concern. The following section explores these doctrines and their implications in detail.

*1. Prior Art Preclusion*

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<sup>44</sup> *Al-Site*, 174 F.3d at 1320 n.2.

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The clearest example such limits on the doctrine of equivalents is the prior art preclusion rule. This limit precludes the doctrine of equivalents from covering devices that were already in the prior art. The rationale for this limit is that the patent holder could not have obtained claims that would have covered the asserted equivalent literally, as that device was already known in the prior art.<sup>45</sup> The patentee, therefore, cannot use the doctrine of equivalents to cover something for which she could not have obtained literal coverage. Thus, if the public (and necessarily the applicant) was in possession of the accused device already, then it cannot be considered an equivalent as a matter of law. Thus, the idea of possession limits the doctrine. The rationale of this doctrine provides the root for many of the later limitations – that if the patentee could not have claimed the accused device during the application process, then she cannot obtain coverage under the doctrine of equivalents. Later rules will evolve from this baseline, including circumstances where the patentee will be precluded from asserting equivalents not only over things she *could not claim* as a result of the prior art but also over things she *should have claimed, but failed to do*.

## 2. *Public Dedication Rule*

The “possession paradox” of the doctrine of equivalents can be seen in the Public Dedication Rule, which precludes a patentee from asserting equivalency over an embodiment of the invention that is disclosed in the patent's specification but is not claimed.<sup>46</sup> The justification for the doctrine is that the patentee could have claimed the embodiment but did not do so. In other words, if the inventor was in possession of a particular version of the invention, but failed to

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<sup>45</sup> *Wilson Sporting Goods*.

<sup>46</sup> *Johnson & Johnston* (en banc).

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claim it, that variation falls into the public domain.<sup>47</sup> Possession by the inventor is central to the dedication rule.

This rule, however, demonstrates the paradox: if the asserted equivalent was not disclosed (and thus not in the possession of the invention), then equivalency is available. The rule fails to provide an normative explanation for why equivalency should be available for embodiments of the invention that were outside the possession of the patent holder.

### 3. *Prosecution History Estoppel*

Another limitation on the doctrine of equivalents is prosecution history estoppel, which precludes infringement under the doctrine if the patent holder surrendered the relevant equivalent over the course of the application process at the PTO. Such surrender of the claim scope can occur when the applicant amends a claim that, before the amendment, literally covered the asserted equivalent but, after the amendment, does not. Surrender can also occur if the applicant makes arguments that evince a clear surrender of that subject matter.

Prosecution history estoppel, when examined through the lens of possession, is more appropriately viewed as dealing with assessing whether the patentee possessed the relevant equivalent during the prosecution of the patent.

The Supreme Court has created a rebuttable presumption of prosecution history estoppel; if an applicant makes a narrowing amendment for reasons related to the patentability of the invention, the applicant presumptively has surrendered all equivalents as to that amended limitation. Because the presumption is rebuttable, a patentee can still assert equivalency if the amendment bore only a tangential relationship to the asserted equivalent, if the asserted

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<sup>47</sup> The Federal Circuit has addressed the issue of how sufficient the disclosure must be to trigger the rule. *See Toro Co. v. White Consolidated Industries, Inc.* (rejecting enablement as standard for sufficiency of disclosure); *PSC*. *But see*, *Holbrook, Possession*, supra note [x], at [x] (arguing for enablement-based standard for public dedication rule).

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equivalent was not foreseeable to one of ordinary skill in the art at the time the applicant made the amendment, or if it would be inappropriate to limit the patentee to the literal scope of her claim.

The "foreseeability" rebuttal, when properly considered, is essentially an issue of possession. The foreseeability inquiry asks whether the PHOSITA would have recognized that the asserted equivalent was available at the time of the amendment. In other words, the test is assessing whether the patentee should have been able to draft a claim that literally covered the asserted equivalent device. In order to claim the equivalent literally, it must have necessarily been within the grasp of the PHOSITA. In other words, if the PHOSITA possessed the invention at the time the amendment was made, then the patentee is foreclosed from asserting equivalency. Thus, just as was the case with the public dedication rule, the foreseeability standard is truly about assessing whether the inventor was in possession of the asserted equivalent but failed to claim it.

The “tangential relationship” test is a bit more curious with respect to possession.<sup>48</sup> Seemingly, the inventor may have been in possession of the asserted equivalent.<sup>49</sup> Instead, the Court’s focus appeared to be on the intent of the applicant in making the relevant amendment: if the amendment only bears little to no relationship to the asserted equivalent, the surrender of subject matter cannot be considered volitional. The patent applicant cannot be said to have given up that equivalent in these circumstances. For example, the amendment and the asserted

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<sup>48</sup> One Federal Circuit judge views the tangential relationship as inappropriate basis for rebutting the presumption of prosecution history estoppel and favoring the foreseeability rebuttal. *See Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc.*, 480 F.3d 1335, 1347 (Fed. Cir. 2007) (Rader, J., concurring) (“Further, if the case permitted, any patentee would invoke the primary ‘foreseeability’ rebuttal factor. Thus, an invocation of ‘tangentiality’ often admits that the equivalent was both within the scope of the surrender and foreseeable at the time of prosecution. In other words, the patent drafter could have claimed the surrendered and foreseeable technology, but declined to do so.”). Of course, as of this writing, no patentee has been successful in rebutting the *Festo* presumption on the basis of unforeseeability, while a few have been successful using the tangential relationship test.

<sup>49</sup> *Id.*

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equivalent may relate to different aspects of the invention.<sup>50</sup> The tangential relationship test, therefore, seems to suggest that the given equivalent was not in the inventor’s possession in the sense that she did not contemplate that she had given up coverage relating to the asserted equivalent. It does provide one avenue, however, through which the paradox may not necessarily arise.

#### 4. “Specification Estoppel”

A patentee can also lose the ability to assert equivalency if she has surrendered the relevant subject matter in the specification itself.<sup>51</sup> This surrender operates in an estoppel-like fashion, although without the constraints found within prosecution history estoppel, such as requirements that the surrender be due to an argument or amendment made for reasons related to patentability.<sup>52</sup>

This doctrine appears to be the corollary to the cases that have limited the literal scope of patent claims by importing limitations from the specification into the claim itself; if the courts import such limits into the claim, generally infringement under the doctrine of equivalents is precluded on the same basis: the patentee surrendered the subject matter in the specification and cannot use the doctrine of equivalents to recapture it.

The court has articulated one exception to this rule: if the asserted equivalent is unforeseeable, then equivalency will not be precluded. This apparent exception has been articulated in one case, *Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc.*<sup>53</sup> In this case, the court limited the literal scope of the claims to exclude structural homologs of the claimed

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<sup>50</sup> See *Biagro W. Sales, Inc. v. Grow More, Inc.*, 423 F.3d 1296, 1306 (Fed.Cir.2005).

<sup>51</sup> *Vehicular Techs., SciMed, Nystrom*

<sup>52</sup> See Holbrook, *Claim Construction*, 9 Lewis & Clark L. Rev. 123, 139-144 (2005) (discussing evolution of this doctrine and describing problems with its application, particularly in contrast to prosecution history estoppel).

<sup>53</sup> 467 F.3d 1370 (Fed. Cir. 2006)

chemical as a result of the disclosures made in the specification alone. There was no discussion of the prosecution history in the construction of the claims. Accordingly, there was no literal infringement; the court determined that there was infringement under the doctrine of equivalents, however, because the accused compound’s structure was unforeseeable at the time.<sup>54</sup> Although there is discussion of the prosecution history, the argument for surrender used in the construction of the claim came exclusively from the specification. The unforeseeability of the accused device, therefore, served as an exception to language of surrender contained in the *specification*, demonstrating that the concept of unforeseeability will also come into play in these cases of specification estoppel.

The possession paradox is therefore confirmed through this limitation on the doctrine of equivalents as well. Language of surrender in the specification will be used to limit the doctrine of equivalents under the theory that the patentee could have claimed such embodiments, but instead surrendered them implicitly through the language disavowing claim scope. This disavowal can be countered, however, if the equivalent was unforeseeable, or outside the possession of the inventor. In this context, the courts will afford protection under the doctrine of equivalents for something that by definition the inventor did not and could not possess.

5. *Unforeseeability as “the” Limit on Equivalency (Rader in Johnson & Johnston)*

One judge at the Federal Circuit, Judge Rader, has expressed his view that foreseeability should be *the* limit on the doctrine of equivalents in lieu of the hodgepodge of limits previously discussed. He expressly articulated this view (joined by then-Chief Judge Mayer) in a concurrence in *Johnson & Johnston*, the en banc case that confirmed the bright-line public dedication rule. Judge Rader further advocated the primacy of foreseeability in limiting the

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doctrine of equivalents in his concurrence in *Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc.*, where he denigrated the “tangential relationship” test for rebutting the *Festo* presumption that all equivalents are surrendered if there has been a narrowing amendment to the patent claim made for a reason related to patentability. In Judge Rader’s view, all of these tests reduce to one question: was the equivalent foreseeable? If so, then the patentee could have claimed the equivalent literally and she should be precluded from doing so now.

Judge Rader, therefore, would institutionalize the paradox. Only in circumstances of later-developed, unforeseeable technology would the doctrine of equivalents apply. Judge Rader relies upon notions of public notice and lowest cost avoiders to reach this conclusion: as between the public and the patentee, the patentee should bear the burden of her failure to adequately claim known embodiments. But he fails to explain why the patentee should be entitled to protection for something that she never possessed during the patent application process.

*B. Paradoxically, Patentee Gets Coverage When She Did Not Possess the Embodiment*

The Federal Circuit’s focus on later-developed technology and foreseeability limits on the doctrine of equivalents results in a situation where the patentee receives protection for something that she did not invent, i.e. did not possess. This state of affairs is paradoxical to the underlying basis of the patent system, that patentees receive protection for their invention. It runs counter to the doctrines that tailor literal claim scope to the scope of the inventor’s contribution to the art through the patent disclosure. The Federal Circuit has yet to articulate a basis for reconciling this paradox. The following section explores various rationales and theories for the doctrine of equivalents to see if they can resolve the paradox. Ultimately, they do not.

IV. WHY SHOULD THE PATENTEE OBTAIN PROTECTION OVER SOMETHING SHE DID NOT POSSESS?

- Current Justifications for DOE are Unsatisfactory in Resolving the Paradox

A. *Claim Correction*

- Prosecution is imperfect
- Need resort to DOE to account for mistakes
- **Generally rejected** – reexamination and reissuance procedures take care of innocent mistakes
- Does not reconcile the paradox – by definition, *could not have claimed* because could not provide enabling description (later-developed; unforeseen)

B. *Fairness/Maintaining proper incentives*

- **Fairness**
  - “Unscrupulous copyist” makes minor changes
  - **Problems of language** – difficulty in drafting words to cover a “thing” with any precision
  - Particularly if truly new; vocabulary may not exist
- Nard & Meurer view these as different (language and fairness) – view as the different (fairness v. friction) → reason need fairness is limitation of language
- Fairness may come into play in explaining the paradox, but not entirely
- Suggests gaming system by tinkering at edges
- Unforeseeable technology seems far beyond fairness problems – the patentee did not invent this, so why should you get *that* much protection
- Fails to address the scope of equivalence

C. *Efficiency Grounds – Refinement Theory*

- Costly to require “getting it right” in prosecution
- Particularly since most patents are never enforced are litigated
- *Why require up front costs on useless patents?*
- Better to channel to courts
- **Presumes could claim at time of application**
- Nard and Meurer expressly “reject the popular notion that the DOE is especially appropriate in the case of unforeseeable, later-developed technology because this justification focuses on the wrong question.”
- **Problem** – that is the normative basis the Federal Circuit is using; per se, the refinement theory does not answer the paradox

V. RESOLVING THE PARADOX

A. *Later-Developed Technology – Only that From Outside the Art Field*

1. Fairness not really implicated within the field
2. Unless we take a prospect theory view of patent law, why allow patentee to occupy the entire terrain – criticize prospect theory (Mark’s article)
3. Fairness really seems implicated only when some development outside of the patentee’s field sideswipes his invention

4. *Hughes Aircraft*
  - a. Satellite control technology
  - b. Required manual firing of jets
  - c. **Along comes computers**, allowing automated control
  - d. General technique for control was same
  - e. *Change from outside of field altered his field*
  - f. Allowing equivalency seems appropriate
  
5. **Empirical analysis?** My model may not fit for those older cases, but perhaps is an appropriate way to balance fairness/incentives with public notice – this is the situation in which notice will give way to fairness
6. Doctrine already exists to measure – *analogous-art test for obviousness* -- in the field of the applicant's endeavor or is reasonably pertinent to the problem with which the inventor was concerned
7. If answer is “yes” – in field or reasonably related, then no doctrine of equivalents → avoid allowing inventor to tie up field in area that should be continuing to work and create innovation
8. If answer is “no,” then DOE allowed – supported by fairness rationale; cannot expect the inventor to see this technological innovation coming.

*B. Measuring the Inventor’s Contribution Today and the Changing Scope of Patent Scope Over Time – Is the Accused Device Enabled by the Patent at the Time of Infringement?*

VI. CONCLUSION