February 24, 2009

A Case for Internationally Adopting a Modified US-Style Approach to Claim Construction

Ronald S Fernando
A Case for Internationally Adopting a Modified US-Style Approach to Claim Construction

Ronald Fernando *

TABLE OF CONTENTS

I. Introduction .....................................................................................................................2

II. The Analytical Framework .............................................................................................4
   A. Policy Objectives Underlying Claim Construction...................................................4
   B. Broad Approaches to Claim Construction .................................................................7
   C. Deficiencies in the Previous Research .......................................................................9

III. The United States & The Doctrine of Equivalents .......................................................10
   A. The Procedural Framework of The Doctrine of Equivalents ..................................11
   B. Limitations on the Doctrine of Equivalents ............................................................16
   C. Outstanding Issue: The Factual Component .............................................................19

IV. Europe, the United Kingdom & the Commonwealth....................................................21
   A. Article 69 of the European Patent Convention .......................................................22
   B. Britain's Compromise: Purposive Construction ......................................................24
   C. In Australia Claim Elements Do Not Really Matter ................................................35
   D. Confusion in Canada ...............................................................................................37

V. China: Lessons from a Developing Patent Regime ....................................................42

VI. Conclusion ....................................................................................................................46

I. Introduction

Along with the rise of global commerce the patent bargain has evolved into a bargain between the patentee and the collection of market economy countries\textsuperscript{1}. In order to meaningfully protect an invention, the patentee bears the burden of securing patent rights in multiple countries for her invention. The concerns this has created for the patentee include the complexity and cost of obtaining and enforcing patent rights in multiple countries; and, that the public to which inventions are disclosed is the global public unconstrained by the territoriality of a patent right conferred by one country. These concerns create a need for a method for predictably determining the scope of concurrent patent rights for the same invention from multiple countries.

There are two challenges related to predictably determining the respective scope of concurrent patent rights for the same invention from multiple countries. These challenges arise from varying public policies and judicial practices in the aggregation of national and regional patent systems\textsuperscript{2}. The first challenge is that the standards for patentability can vary between jurisdictions, which in turn may cause the possible scope of patent protection to vary from one jurisdiction to the next for the same invention. Variation in the standards for patentability is sanctioned by Article 27 of the TRIPS\textsuperscript{3} agreement that affirms the inherent right of a country to determine policies with respect to technologies that affect the public good within its borders\textsuperscript{4}. So long as the various standards for patentability are clearly articulated in respective national and regional instruments reasonable predictability between patent systems is ensured.

\begin{itemize}
\end{itemize}
The second challenge – the focus of this paper – stems from a lack of international conformity in judicial practices relating to how patent claims are construed\(^5\). That is, how the scope of an exclusive right conferred in a patent claim is determined often varies from one country to the next, which in turn may cause the realizable scope of protection to vary from one country to the next. Consequently, even if a patentee obtains concurrent patent protection, there is nothing in the world trade regime to guarantee that identically worded patent claims granted in different countries will be construed to provide the same scope of protection in each country\(^6\).

This paper provides a case for internationally adopting a modified US-style approach to claim construction. To that end, this paper provides a comparative analysis of the patent claim construction principles, from various jurisdictions, that extend the scope of the exclusive right beyond a purely literal interpretation of patent claims. This paper also offers insight into how the lack of international conformity in this area causes uncertainty that adversely affects patentees and the global public good – a question that has not been specifically addressed by others\(^7\).

The remainder of this paper is structured as follows. Section II outlines the policy goals underlying claim construction and introduces the broad approaches to the task. Section III focuses on the doctrine of equivalents developed in the United States. Section IV compares the US approach with the purposive construction approach developing in the Anglo-Commonwealth. Section V discusses the shift in the Chinese approach towards US-style claim construction. And


\(^6\) The obvious corollary is that a defendant sued in two or more countries, for allegedly infringing identically worded claims, may be liable in one country but not the other(s). See: David Vaver, “Canada’s Intellectual Property Framework: A Comparative Overview” (2004) 17 I.P.J. 125 at 166 [Vaver].

finally, Section VI provides concluding remarks and suggestions for future work.

II. The Analytical Framework

A. Policy Objectives Underlying Claim Construction

“There is a high economic cost attached to uncertainty and it is the proper policy of patent law to keep it to a minimum.”

A patent system is a staple to a market economy country, and the primary justification for its existence espoused is an economic one. By offering the patent bargain a State is hoping to foster innovation and encourage economic activity said to stem from the disclosure of useful information. Notwithstanding this presumption, economists generally accept little about how competition actually affects consumer welfare and the rate of innovation, or how to distinguish economically efficient from wasteful R&D spending. However, economists have collected empirical evidence that suggests that corporations respond to changes in patent policy.

Proponents have argued that a patent system enhances consumer welfare by fostering innovation in two ways. First, a patentee is encouraged to invest in R&D because investments...
can be recovered from early-adopters of technology through supra-competitive pricing made possible by the patent right\textsuperscript{15}. Second, consumer welfare is enhanced by auxiliary innovation in the form of imitations by competitors who “design around” existing patent rights\textsuperscript{16}. In fact, innovations from “designing around” and improving upon disclosed inventions are considerably more common than the creation of entirely new inventions\textsuperscript{17}. The imitations are also economic substitutes that serve to limit the supra-competitive price charged for the original by the patentee.

Auxiliary innovation is “chilled” and the patentee gains more than was bargained for if competitors fear to tread in the vicinity of the patent right because its scope cannot be ascertained with reasonable certainty\textsuperscript{18}. Uncertainty increases the cost of capital for innovation because litigation is required to determine the scope of the patent right\textsuperscript{19}. The harm is compounded when competitors avoid litigation by avoiding attempts at “designing around” a patent right altogether. As such, the patentee's right to exclude potentially becomes a nuisance by growing to include past and future developments.

The judicial process of determining the scope of an exclusive right conferred in patent claims is referred to as claim construction\textsuperscript{20}. In many jurisdictions – including the United States\textsuperscript{21} and within the Anglo-Commonwealth\textsuperscript{22} – claim construction is currently considered a pure a question of law for the court. The implication is that the scope of a patent right cannot be

\begin{thebibliography}{9}
\bibitem{Quillen2003} Quillen, Jr., \textit{supra} note 14 at 191.
\bibitem{Stiroh2004} Stiroh, \textit{supra} note 11 at 8. Also see: Nathan Rosenberg, “Uncertainty and Technological Change,” in J.C. Fuhrer & J.S. Little eds., \textit{Technology and Growth} (Boston: Federal Reserve Bank of Boston, 1996) 96. Approximately 80\% percent of patents granted are for “designing around” or improvements to inventions already in existence.
\bibitem{FreeWorldTrust2003} \textit{Free World Trust, supra} note 8 at para 42.
\bibitem{Quillen2003} Quillen, Jr., \textit{supra} note 14 at 197-198.
\bibitem{KirinAmgenInc1994} For example, see: \textit{Kirin-Amgen Inc v. Transkaryotic Therapies Inc.} (No. 2) (2004), 331 N.R. 1 (U.K. H.L.).
\end{thebibliography}
known with certainty until patent claims are subject to litigation. This contradicts the public notice function of patent law, which is considered necessary to encourage competition. Despite the apparent contradiction between policy and judicial reasoning common to many countries, it is generally accepted that a patent system should inform those affected by it of their rights and duties\textsuperscript{23}. To that end, the judiciary must ensure that the outcomes of disputes or possible disputes are reasonably predictable in order to reduce uncertainty and unnecessary litigation.

At a national level, informing those affected of their rights and duties requires an explicit analytical approach to claim construction that can be applied outside a courtroom. A patent is an inherently public instrument directed to people of ordinary skill in a particular area\textsuperscript{24}, so the approach should be intuitive and not require a detailed knowledge of patent law.

Additionally, efforts should be made to internationally standardize how patent claims are construed so that one can predict the scope of protection of concurrent patent rights for the same invention in different countries with reasonable certainty. This will reduce the uncertainty of determining areas of risk between jurisdictions, by encouraging the construction of identically worded patent claims to result in substantially the same scope of protection in each country.

Standardization would not affect a country's right (under Article 27 of TRIPS) to tailor standards for patentability in view of the public good within its borders. When two countries have different standards for patentability the respective sets of patent claims, for the same invention, would necessarily be worded differently for each country\textsuperscript{25}. The result is that each

\textsuperscript{23} Quillen, Jr., \textit{supra} note 14 at 191.
\textsuperscript{24} The courts in most countries have indicated that a patent is written for persons of ordinary skill in a particular technical field. And that patents are not written for lawyers or judges, which as discussed below contradicts how patent claims are actually construed in to determine the scope of the exclusive right conferred.
\textsuperscript{25} For example, in Canada, for public policy reasons (sanctioned by Article 27 of TRIPS) methods of medical treatment are not considered patentable, while such methods are patentable in the US. Subsequently, in Canada patentees are encouraged to reformulate claims to methods of medical treatment as diagnostic method claims or
country provides a correspondingly different possible scope of protection for the same invention, if protection for that type of subject matter is offered at all. However, when the respective standards for patentability permit identically worded claims for the same invention in two or more countries, the realizable scope for those claims should be the same in each country.

B. Broad Approaches to Claim Construction

Methods of claim construction are particularly important and contentious when a defendant's allegedly infringing product or process does not literally infringe patent claims, yet may constitute “fraud on the patent” in US judicial parlance. Common sense suggests that the only patent disputes that should make it to trial are those where literal infringement cannot be established and an equitable question is raised as to whether or not the scope of the patent claims can be fairly and predictably extended to establish substantial infringement. The issue raised is how to best resolve the tension between literal and substantive infringement in a broadly applicable way that is fair and predictable. This sub-section discusses the objective of achieving a balance between minimizing uncertainty and protecting the patentee from the effects of excessive literalism in the context of the broad approaches to claim construction.

Approaches to claim construction are classified metaphorically as fence-post methods and guidepost methods. According to fence-post methods patent claims define the legal

---

“Swiss-style” claims (i.e. use of a compound for preparing a medicament) when possible.


27 Derek Walter, “Prosecution History Estoppel in the Post-Festo Era” (2005) 20 Berkeley Tech. L. J. 123 at 125

boundary of the exclusive right conferred, analogous to a fence around a plot of land. In order to define the legal boundary fence-post methods are firmly anchored in the language of the patent claims and lean towards literal interpretation. By contrast, according to guidepost methods patent claims are meant to capture the substance or underlying technical idea of an invention. Pursuant to these approaches, features or elements recited in a patent claim are not always considered material and the specification is heavily relied upon to determine the scope of the exclusive right conferred.

US jurisprudence favors a fence-post approach combined with the doctrine of equivalents to protect the patentee from the effects excessive literalism. Generally, the civil law countries of continental Europe and Japan favor guidepost approaches. Commentators and the judiciaries in the Anglo-Commonwealth prefer to describe the doctrine of purposive construction stemming from the United Kingdom as bridging the chasm between American-style literalism and the patentee-friendly guidepost approach of continental Europe. However, the analysis provided in Section IV reveals that purposive construction has failed to bridge that chasm and is merely a guidepost approach to claim construction, which creates substantial uncertainty.

Possibly because the two approaches are based on diametrically opposite perspectives regarding the role of patent claims, the discussion relating to balancing uncertainty versus fairness with respect to each is very different. On the one hand, the discussion relating to

---

29 In Electrical & Musical Industries Ltd. v. Lissen Ltd. (1938), 56 R.P.C. 23 (U.K.H.L.), Lord Russell stated at p. 39: “A patentee who describes an invention in the body of a specification obtains no monopoly unless it is claimed in the claims ... there is no such thing as infringement of the equity of a patent.”
30 Supra note 28.
31 Clark v. Aide (1873), L.R. 10 Ch. 667 (Eng. Ch.): “an essence or substance of the invention underlying the mere accident of form; and that invention may be pirated by a theft in a disguised or mutilated form.”
34 See: i) Pendleton, supra note 5; ii) Kirin-Amgen, supra note 22; and, iii) Free World Trust, supra note 8.
guidepost construction methods tends to ignore uncertainty issues, and focuses on fairness to the patentee. In particular, as discussed in Section IV, Anglo-Commonwealth literature and jurisprudence has been moving away from the fence-post approaches established by earlier English cases in an effort to harmonize claim construction principles with continental Europe.

On the other hand, criticism of the US approach largely focuses on the role of the doctrine of equivalents and critics fall into one of three camps. First, there are those, including the House of Lords, that appear to not have actually evaluated the doctrine at all and have glibly dismissed it as “born of despair”\textsuperscript{35}. Second, others suggest that the doctrine of equivalents is unfair to the patentee because the interpretation is too deeply rooted in the actual language of the claims and the burden on the patentee required to expand the scope of the claims is too onerous\textsuperscript{36}. Third, there are those who strongly favor strict literalism and suggest the doctrine of equivalents is too patentee friendly because it permits broad allowances in the determination of the scope of the exclusive right, which in turn creates too much uncertainty for competitors\textsuperscript{37}.

C. Deficiencies in the Previous Research

There have been previous attempts to compare the US doctrine of equivalents to the approaches originating from continental Europe and the United Kingdom, the most recent of which is by Micheal D. Pendleton\textsuperscript{38}. Pendleton does provide a thorough review of jurisprudence from the United Kingdom. However, deficiencies in Pendleton's analysis, which are common to previous other attempts, and which this paper aims to address.

\textsuperscript{35} Kirin-Amgen, supra note 22.
\textsuperscript{36} Walter, supra note 27.
\textsuperscript{38} Pendleton, supra note 5.
First, the US doctrine of equivalents and purposive construction have not been compared fairly or rigorously. The doctrine of equivalents is criticized for creating too much uncertainty\textsuperscript{39}, but the issue of uncertainty with respect to purposive construction has not even been addressed.

Second, the previous analysis does not consider Canadian jurisprudence\textsuperscript{40}. This omission is troubling on at least two grounds. First, more patent applications are filed in Canada than in any other country in the Anglo-Commonwealth\textsuperscript{41}, which makes determining the scope of Canadian patents a significant concern. Second, the Supreme Court of Canada has provided guidance on the use of purposive construction\textsuperscript{42}, while the High Court of Australia has not yet considered the doctrine\textsuperscript{43}. And significantly, the Canadian decisions have sterilized the central tenets of purposive construction employed throughout the rest of the Anglo-Commonwealth.

Finally, several contradictions between purposive construction and simultaneously affirmed fundamental principles of claim construction have not been explained. The following sections aim to address these deficiencies and provide a fair and rigorous comparative analysis of purposive construction and the doctrine of equivalents with respect to the issue of uncertainty.

\textbf{III. The United States & The Doctrine of Equivalents}

In construing patent claims, the primary goal for the US courts has been to enable competitors to ascertain the scope of a patent right with reasonable certainty. To that end, the US courts have recognized the practical limits of what competitors can be presumed to

\textsuperscript{39} Sarnoff, \textit{supra} note 7.
\textsuperscript{40} Vaver, \textit{supra} note 6. Vaver merely notes that there may be an issue but does not make any effort to analyze it.
\textsuperscript{41} WIPO statistics. Online: <http://www.wipo.org>.
\textsuperscript{42} See: i) \textit{Free World Trust}, \textit{supra} note 8; and, ii) \textit{Whirlpool Corp. v. Camco Inc.}, 2000 2 SCC 67.
\textsuperscript{43} \textit{Root Quality Pty Ltd. v. Root Control Technologies Pty Ltd.} [2000] FCA 980 (1 August 2000).
understand about patent law and the substantive intent of the patentee. Thus, the general rule is that patent claims should be construed from the perspective of a person having ordinary skill in the art (the “PHOSITA”). While this has generally been interpreted to mean that the court should attempt to understand a technology in question through the eyes of the PHOSITA, there is also an understanding that the PHOSITA is presumed to be ignorant of the intricacies of patent law. The net effect is a tendency towards literal interpretation of patent claims.

A. The Procedural Framework of The Doctrine of Equivalents

As early as 1853 in Winans v. Denmead, the United States Supreme Court recognized that excessive literalism would be unfair to the patentee and established the basis for the doctrine of equivalents. The modern formulation of the doctrine is based on judicial guidance found in Graver Tank (1950) and Warner-Jenkinson (1997). In particular, Warner-Jenkinson provides much of the procedural framework that ties together earlier and later cases.

The doctrine has been criticized for its procedural complexity in light of the list of limitations that define its applicability. Arguably, however, the procedural complexity is justified given that the doctrine must be broadly applicable for evaluating inherently new

44 Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317, 1324 (Fed. Cir. 2001): “[O]ur objective is to interpret the claims from the perspective of one of ordinary skill in the art, ... not from the viewpoint of counsel or expert witness retained to offer creative arguments... If an argument offered in support of a particular claim construction is so convoluted and artificial that it would not be apparent to a skilled artisan reading the patent and the prosecution history, the argument is simply unhelpful to the performance of our task.”
45 See: Phillips v. AWH Corp., 415 F.3d 1303, 1328 (Fed. Cir. 2005) (en banc) on intrinsic evidence. The patent documents include the patent specification and the prosecution history.
46 Dayco, supra 44. Also see: Merck & Co., Inc. v. Teva Pharmaceuticals USA Inc., 347 F.3d 1367 (Fed. Cir. 2003): Patents are not written for laymen, but for and by persons experienced in the field of invention.
48 Sarnoff, supra note 7.
advances in a wide spectrum of scientific and technical areas\textsuperscript{49}. In contrast, procedurally simpler methods, such as purposive construction (discussed in Section IV), discount the need for predictability determining the scope of a patent right with reasonable clarity and certainty, and impute an understanding of patent law on the PHOSITA in an effort that favors patentees.

Thus, despite the criticism, the US approach to expanding a patent right beyond the literal scope of the patent claims is conceptually easier to understand compared to guidepost approaches because it remains strictly anchored to the language of the claims\textsuperscript{50}. This is so because the US courts have consistently put clarity and certainty before procedural simplicity by never failing to emphasize the importance of the public notice function of patent claims\textsuperscript{51}.

For example, early on, the United States Supreme Court per Bradley J. indoctrinated the importance of the public notice function of patent claims in US patent law in the \textit{Nose of Wax Case} (1886), stating:

\begin{quote}
Some persons seem to suppose that a claim in a patent is like a nose of wax which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express... . The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of law, to construe it in a manner different from the plain import of its terms [emphasis added].\textsuperscript{52}
\end{quote}

With respect to the application of the doctrine of equivalents, the heavily emphasized public notice function helps to define limits that prevents a patentee from completely vacating limitations of her claims in search of equivalence. In turn, the procedural framework for

\textsuperscript{49} 35 USC ss. 102-103.
\textsuperscript{50} \textit{Warner-Jenkinson}, \textit{supra} note 32 at p. 29: “Each element contained in a patent claim is deemed material to defining the scope of the patented invention.”
\textsuperscript{51} For example: \textit{In re Nelson}, 47 C.C.P.A. 1031, 280 F.2d 172, 181 (1960): “The descriptions in patents are not addressed to the public generally, to lawyers or to judges, but, as section 112 says, to those skilled in the art to which the invention pertains or with which it is most nearly connected.”
\textsuperscript{52} \textit{White v. Dunbar}, 119 US 47 (U.S.S.C. 1886) at pp 51-52.
applying the doctrine of equivalents is informed by broader policy concerns and is limited by narrower evidentiary concerns. In a broader context, the doctrine evolved to correct for the perceived limitations of language to fully embrace the subject matter of inherently new and unique technical advances, and balance conflicting goals in a competitive market where technology can create market advantages.\(^53\)

With respect to the latter, the Court in *Graver Tank* understood that if patent claims are interpreted too strictly, competitors are provided with the incentive to pirate a patentee's invention by making immaterial changes in order to escape the patent right.\(^54\) Essentially then, because the patent provides competitors with the seeds (i.e. the “how to”) of the patentee's innovation, *Graver Tank* puts the onus on the competition to “design around” in an innovative manner or use available prior art to escape the patent right.

On the other hand, the doctrine of equivalents is limited by a highly structured procedural framework so that the patentee cannot extend the scope of their patent claims without limitation by claiming equivalence in an *ad hoc* and unfair manner. To that end, the doctrine extends from fundamental principles used to determine literal infringement. For literal infringement the allegedly infringing product or process must contain all the elements recited in a patent claim. If any one of the claim elements is missing, the court cannot find literal infringement. In other words, literal infringement analysis is strictly an element-by-element comparative process.

However, an allegedly infringing product or process may contain variants of particular claim elements that place it just outside the literal scope of the claims. Or alternatively, an allegedly infringing product or process may be equivalent overall to what is recited in a patent

\(^{53}\) Walter,* supra* note 27 at 125. “The doctrine of equivalents is perhaps best viewed as a limited protective measure that stretches the scope of a patent's literal claim terms just enough to prevent “fraud on the patent”.”

\(^{54}\) *Graver Tank,* *supra* note 26 at 607.
claim, but not on an element-by-element basis. As a starting point in the procedural framework for applying the doctrine of equivalents, the Court in Warner-Jenkinson deemed that overall equivalence is not enough, and determining equivalence is fundamentally linked to literal infringement analysis in accordance with the “all elements rule”. Pursuant to the “all elements rule”, patent infringement only occurs when every element of the claim is found in the accused product or process either literally or equivalently. That is, equivalence must be determined on an element-by-element basis and not for the invention as a whole. The inclusion of the “all elements rule” affirms the principle that the “doctrine is not a license to ignore claim limitations” and that “courts may not redraft claims” – which is a critical distinguishing point compared to the purposive construction approach discussed in the next section.

The next tier in the procedural framework established in Warner-Jenkinson includes two methods for determining equivalence. The first is referred to as the Insubstantial Differences test, and the second is the three-pronged Function-Way-Result test. The Court suggested that the Insubstantial Differences test may be better suited for processes and products, while the Function-Way-Result test may be better for mechanical devices. However, because equivalence is considered a question of fact, there is no bright line rule that governs which test

55 Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1574 (Fed. Cir. 1995): The dissenting comments of Judge Nies from the court below were cited with approval by the Supreme Court (1997): “While a ballpoint and fountain pen may be equivalent overall, they are not equivalent in the sense of the doctrine because there components are not equivalent.”
57 Dolly, Inc. v. Spalding & Evenflo Co’s, 16 F.3d 394, 398 (Fed. Cir. 1994).
58 Chef America, Inc. v. Lamb-Weston, Inc. 358 F.3d 1371 (Fed. Cir. 2004).
60 Graver Tank, supra note 26 at 609: “What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum.”
to use, and the tests can be used interchangeably depending on the facts of a case. Irrespective of which test is used the evidentiary burden is on the patentee.

The Insubstantial Differences test is primarily concerned with the interchangeability of a substitute with a claim element. The first question is whether one skilled in the art would know about the interchangeability of elements. The court then considers when and how that knowledge was established. However, establishing interchangeability is not enough if the patentee used narrow descriptive language when broader language was available. For example, in Toro Co. v. Deere & Co., the Federal Circuit found no infringement when a cam, recited in the claims, was replaced with a solenoid in the allegedly infringing device. The patentee restricted the scope by specifically reciting “a cam” and not using a broader claim term to cover cams and solenoids (devices that can be used for the same mechanical effect).

With respect to the Function-Way-Result test, equivalence exists only if all three prongs (“function”, “way” and “result”) of the test are satisfied in the comparison of a claim element and a corresponding element in the allegedly infringing product or process. Judicial guidance has been provided for each prong of the test in cases following Warner-Jenkinson which will not be summarized here for brevity. However, continuing the example from Toro Co. v. Deere & Co., the Federal Circuit also noted that cams and solenoids operate in different ways and are not

61 Also see: Warner-Jenkinson, supra note 32 at 40: An analysis of the role played by each element in the context of the specific patent claim will thus inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claim element.
63 Graver Tank, supra note 26 at 609.
65 Toro Co. v. Deere & Co. 355 F.3d 1313 (Fed. Cir. 2004).
66 Graver Tank, supra note 26 at 608.
equivalent under the Function-Way-Result test despite their interchangeability.

The time at which equivalence is determined is also an important aspect in the procedural framework irrespective of which test it applied. Equivalence is determined at the date of an alleged infringement\textsuperscript{68} even though the claims are construed as of the invention date\textsuperscript{69}. At first glance it appears that the patent right is able to grow to include equivalents created after the invention date. This anomaly can be explained by noting that there is a subtle policy balance between the public notice function of patent claims and the desire to encourage auxiliary innovation at play here. Recall that the onus is on competitors to “design around” in a manner that is innovative in order to escape the patent right because the patentee has shared technical know-how. The date of an alleged infringement is a floating-bar that allows a competitor's attempt at “designing around” to be evaluated to determine whether or not the competitor has truly innovated out of the patent right. A fixed date is simply an arbitrary bar that would give competitors the incentive to create non-material equivalents after the fixed date in order to escape the patent right.

B. Limitations on the Doctrine of Equivalents

The early criticism of the doctrine of equivalents was based on a concern that the doctrine permitted broad allowances in the interpretation of the claims, because it had few limitations and lacked a procedural framework\textsuperscript{70}. Much of the early criticism was addressed by guidance in \textit{Warner-Jenkinson} and in subsequent cases that provided limits on the doctrine's application.

The contemporary criticism of the doctrine of equivalents is somewhat confused. In

\textsuperscript{68} \textit{Warner-Jenkinson}, supra note 32 at 37.  
\textsuperscript{69} \textit{Phillips}, supra note 45 at 1312, 1313.  
\textsuperscript{70} Quillen, Jr., \textit{supra} note 14 at 198-199.
particular, there are simultaneous allegations that the doctrine is both too complex and creates too much uncertainty. These critiques and the brief evaluations by judiciaries outside of the United States tend to gloss over the role of the substantial list of limitations that govern the applicability of the doctrine. For example, judiciaries outside the United States, including the House of Lords and the Supreme Court of Canada, have not considered limitations other than the “all elements rule” in their written decisions. Derek Walter, a proponent, only cites the “all elements rule” and file wrapper estoppel as significant limits. Joshua Sarnoff, a critic, only notes the rule of clear disavowal and the “all elements rule”, and vaguely points to the purposive construction approach as a better alternative. Yet, the question of how much uncertainty the purposive construction approach actually creates, due its inherent lack of limitations, has not been addressed by Sarnoff or others – but will be addressed in the next section.

There are six limitations beyond the “all elements rule” and the inherent limitations of the procedural framework discussed above that significantly limit the applicability of the doctrine of equivalents. To begin, the doctrine of equivalents does not apply when it would deprive a recited claim element of vital content. In other words, there are some situations where equivalents do not exist. Second, as in *Toro Co. v. Deere & Co.*, the doctrine of equivalents does not apply when the language of the claims constitutes a “self-inflicted wound”, such as when a claim element is described narrowly even though the element has a broad range of equivalents. The scope of a claim term cannot be expanded by recourse to the spirit of the invention or by making

71 See: i) *Kirin-Amgen, supra* note 22; and, ii) *Free World Trust, supra* note 8.
72 For example, see: i) *Pendleton, supra* note 5; ii) *Sarnoff, supra* note 7; and, iii) *Walter, supra* note 27.
73 *Supra* note 71.
74 Walter. *supra* note 27 at 125.
75 Sarnoff, *supra* note 7 at 55.
76 *PC Connector Solutions LLC v. Smart disk Corp.*, 406 F.3d 1359, 1364-65 (Fed. Cir. 2005).
77 *Moore USA, Inc. v. Std. Register Co.*, 229 F.3d 1091, 1106 (Fed. Cir. 2000).
inferences about the intent of the patentee given the general knowledge in the art.

Third, the doctrine of equivalents does not apply when it would cause the claim to cover the prior art\textsuperscript{78}. If the claim were construed so as to cover the prior art it would create a paradox because such a claim could not satisfy the US tests for patentability\textsuperscript{79}. In other words, the claim so construed could not be a \textit{bona fide} invention, which would mean that the patent claim is invalid and the patentee is unable to sue for infringement of it.

The fourth limitation on the applicability of the doctrine of equivalents is the principle of clear disavowal or disclaimer of equivalents by the patentee\textsuperscript{80}. When the claim language or patent specification affirmatively excludes subject matter, that subject matter cannot be reclaimed under the doctrine of equivalents, even if it was not excluded in the prior art.

Fifth, the doctrine of equivalents is also limited by the principle of disclosure disclaimer\textsuperscript{81}. According to disclosure disclaimer, what is revealed in the patent specification, but not claimed, is disclaimed. With respect to equivalence, if an embodiment of the invention is described in the specification, but is not affirmatively covered by the claims, the patentee cannot later claim that embodiment as an equivalent. Disclosure disclaimer is considered a fundamental principle of patent law even in the United Kingdom\textsuperscript{82}, which makes aspects of purposive construction troubling when trying to reconcile past precedents with contemporary cases.

Finally, \textit{Festo}\textsuperscript{83} underscored the central purposes of the prosecution history estoppel doctrine in relation to the proper policy of US patent law and as a limit on the doctrine of

\textsuperscript{79} See: 35 USC 102 and 103.
\textsuperscript{80} \textit{Wang Laboratories Inc. v. Toshiba Corp.}, 993 F.2d 858 (Fed. Cir. 1993) at 867-868.
\textsuperscript{81} \textit{Johnson & Johnston Assoc., Inc. v. R.E. Service Co.}, 285 F.3d 1046 (Fed. Cir. 2002).
\textsuperscript{82} \textit{EMI v. Lissen}, (1938) 56 R.P.C. 23, 39, 41 (H.L.) (Eng.).
equivalents. Specifically, the Court noted that prosecution history estoppel serves to: (1) prevent over-expansive use of the doctrine of equivalents; (2) promote the public notice function of patent claims; (3) preclude the patentee from relying on a narrow claim interpretation to obtain a patent and later disavowing that interpretation; and, (4) reduce uncertainty for competitors.84

The aforementioned limitations in aggregate provide three benefits. First, the limitations add structure, and therefore predictability, to the process of extending the scope of a patent right beyond a literal interpretation of the claims. Second, the limitations eliminate the strategic incentive for patentees to draft patent specifications that would make it difficult for others to ascertain with certainty the scope of the patent right. Finally, since the onus is on the patentee to prove equivalence, patentees are encouraged to articulate known alternatives to claim elements in the patent application and clearly delineate the patent right in the patent claims.

Admittedly, some uncertainty is created because, as a practical matter, a competitor must have knowledge of all the limitations on the doctrine of equivalents to feel completely secure. However, this uncertainty must be compared with the uncertainty created by “guidepost” approaches that permit claim elements to be ignored if the court is satisfied that such elements are not essential to the substantive intent of the patentee as found in the patent specification.

C. Outstanding Issue: The Factual Component

The one issue that may be hindering the development of US patent law and creating more uncertainty than any other is the factual component of claim construction. As it currently stands, claim construction in the United States is purely a question of law for the court and not a mixed question of fact and law. This judicial policy has significantly detracted from the goal of

84 Ibid.
enabling all concerned to predictably determine the scope of patent claims with reasonable certainty. The uncertainty can be relieved by recasting claim construction as a mixed question of fact and law in order to tie together three points related to the doctrine of equivalents.

First, recasting claim construction as a mixed question of fact and law, would effectively end the Markman-Cybor regime in which a claim construction is reviewed de novo on appeal, disregarding all of the factual determinations made by the trial judge. De novo review has resulted in high reversal rates of claim constructions on appeal that, in turn, discourages settlements and drives up the cost of capital needed for innovation. Specifically, litigants relying on uncertainty can treat the district court trial as a “trial run” before appealing to the Federal Circuit. Justice Mayer, who provided a strong dissent in Phillips, noted that this creates tremendous waste in the form of squandered judicial resources and litigation costs. In 2007, the Court of Appeals in Amgen V expressed a willingness to reconsider de novo review with a view to giving more deference to factual determinations made by a trial judge for construing claims, but did not in Amgen V because reliance on extrinsic evidence had been disavowed.

Second, determining equivalence is considered a question of fact. Claim construction is the process of determining the scope of patent claims, and applying the doctrine of equivalents extends that scope to the broadest possible limits on the facts. In other words, the doctrine of equivalents becomes a part of the claim construction process when it is applied, and it not

---

86 See: i) Markman, supra note 21; and, ii) Cybor Corp. v. Fas Techs, Inc., 138 F.3d 1448 (Fed. Cir. 1998).
87 Brown, supra note 85 at 490.
89 Phillips, supra note 45 (Mayer J., dissenting).
90 Amgen Inc. v. Hoechst Marion Roussel, Inc. (Amgen V), 469 F.3d 1039(Fed. Cir. 2006).
91 Amgen V, supra note 90 at 1045.
92 Graver Tank, supra note 26 at 609.
possible to determine that broadest possible scope under the doctrine without engaging in a factual inquiry into the scope of disputed claim elements. As such, claim construction becomes a mixed question of fact and law when the doctrine is invoked. From this perspective, it is wholly artificial to maintain that deference is not owed to the factual determinations made in a district court trial, since they form a necessary part of a claim construction.

Finally, the 2006 cases of *Lava Trading*\(^9\) and *Wilson Sporting Goods*\(^4\), which outline the role of the allegedly infringing product (or process) in construing patent claims, support the argument for making claim construction a mixed question of fact and law. In both cases the Court indicated that knowledge of the allegedly infringing product provides meaningful context for construing the claims. An allegedly infringing product is a piece of the factual record, and using it to establish context helps to reinforce the policy that the onus is on the competition to “design around” in an innovative way and discourages attempts to use immaterial changes in order to escape the patent right. However, the patentee is prevented from overreaching the patent right by the procedural framework and strict limitations of the doctrine of equivalents.

**IV. Europe, the United Kingdom & the Commonwealth**

The previous section discussed the US concern with how patent claims are interpreted by competitors so that they may ascertain with reasonable certainty the boundary of a respective patent right. Pursuant to the *European Patent Convention* (EPC), the courts in continental Europe and the United Kingdom are concerned with how a patentee's substantive intentions communicated in a patent specification are understood by competitors using the claims as

---

guideposts. Other countries of the Commonwealth, not bound by the EPC, but influenced by the House of Lords, have followed suit demonstrating the impact of the EPC beyond Europe.

Insight into the respective sources of uncertainty can be easily identified with reference to the metaphoric differences between the two approaches. Recall, fence-post approaches characterize patent claims as defining a closed legal boundary, and guidepost approaches characterize patent claims as helping to signal the substance of an invention. Extending the metaphor, consider a field in which there are land-mines in some areas and none in other areas. Safe passage through the field is far more certain if there are closed fences around the areas where the land-mines are, than if there are guideposts signaling the presence of land-mines. If the extraordinary costs of contemporary patent litigation to both the patentee and competitors are akin to economic land-mines, intuitively a fence-post approach should be preferred by both because there is less uncertainty in determining the areas of risk.

The question thus raised is whether the US doctrine of equivalents is actually better than the guidepost approaches originating from Europe. To answer the question, in this section the guidepost approaches from Europe and the Anglo-Commonwealth are compared to the US doctrine of equivalents in order to gauge the respective sources of uncertainty for each.

A. Article 69 of the European Patent Convention

The courts in continental Europe and the United Kingdom are bound to follow Article 69 of the EPC and the associated Protocol on the Interpretation of Article 69 adopted at the Munich

---

95 See, for example: 1) *PLG Research Ltd. v. Ardon International Ltd.* (1995) R.P.C. 287 (Eng.) at 310; and, 2) *Kirin-Amgen*, supra note 22.

96 For example: i) in Canada: *Free World Trust, supra* note 8; and, ii) in Australia: *Root Quality, supra* note 43.

Diplomatic Conference in 1973 (“the Protocol”) when construing the scope of patent claims.

Article 69(1) of the EPC reads:

The extent of the protection conferred by a European patent or a European patent application shall be determined by the terms of the claims. Nevertheless, the description and drawings shall be used to interpret the claims.98

The Protocol reads:

Article 69 should not be interpreted in the sense that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Neither should it be interpreted in the sense that the claims serve only as a guideline and that the actual protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patentee has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties [emphasis added].99

As can be seen from the underlined portion of the excerpts above, Article 69 and the Protocol were not intended to establish a purely guidepost approach to claim construction. Instead, they were aimed at encouraging a median position that ensured a reasonable degree of certainty for the competition. The problem is that it is impossible to establish a median position because there is no common ground between fence-post and guidepost approaches to claim construction. Extending a patent right beyond a purely literal interpretation of the claims using a fence-post approach increases the entire enclosed area subject to protection. The underlying problem common to all guidepost approaches is the absence of a clear procedural framework needed to determine the precise scope of a patent right. Combining the two approaches requires a closed legal boundary to be opened up, after which it is difficult to determine how the patent right is precisely contained without the discretion of a judge.

Article 69 and the Protocol are also questionable on three other grounds. First, the

98 Article 69(1), EPC.
99 Protocol
Protocol is outdated because it does not take into account developments in patent law elsewhere in the world in the last 30 years. Second, the Protocol cannot be tested or modified in litigation based on real facts because it is subsumed in a treaty that cannot be modified without a multi-state renegotiation\textsuperscript{100}. Third, the Protocol pre-dates the creation and subsequent evolution of the modern information economy that has created new legal issues not contemplated when the Protocol was first negotiated. In particular, the Protocol does not account for the increased importance of patent rights as a business tool and does not take into consideration the increased global interest in patent protection prompted by and remaining after the high-tech bubble\textsuperscript{101}.

\textbf{B. Britain's Compromise: Purposive Claim Construction Corrupted}

In 1981, the House of Lords provided the original formulation of the purposive construction approach to claim construction in \textit{Catnic}\textsuperscript{102}. The approach was distilled into a three-part test by the Court of Appeal in \textit{Improver}\textsuperscript{103}. The primary objective of the approach was to fairly protect the patentee from the effects of excessive literalism by softening the effect of adjectives and qualifiers used in relation to elements recited in a claim. Nevertheless, the original formulation was a fence-post approach incorporating clear long-standing principles that were established by the House of Lords and adopted throughout the Anglo-Commonwealth. Then, in \textit{Kirin-Amgen}\textsuperscript{104}, the House of Lords abandoned these principles and succumbed to pressure\textsuperscript{105} to reformulate the United Kingdom's approach to adhere to the Protocol.

\textsuperscript{100} Brownlie, \textit{supra} note 4.
\textsuperscript{101} \textit{Supra} note 97.
\textsuperscript{104} \textit{Kirin-Amgen, supra} note 22.
It is useful to review UK jurisprudence in order to identify how the House of Lords deviated from the long-standing principles common to the original formulation of the purposive construction approach and the US doctrine of equivalents.

In 1915, shortly after claims became mandatory in UK patents\(^\text{106}\), Lord Loreburn in *Natural Colour Kinematograph*\(^\text{107}\) underscored the importance of the public notice function of patent claims. Lord Loreburn also insightfully observed that, unless the judiciary enforces patent policy discipline, some of the skilled professionals who draft patents will be motivated to distinguish themselves in a manner that has a negative impact on the patent bargain, stating:

> Some of those who draft Specifications and Claims are apt to treat this industry as a trial of skill, in which the object is to make the Claim very wide upon one interpretation of it, in order to prevent as many people as possible from competing with the patentee's business and then to rely upon carefully prepared sentences in the Specification which, it is hoped will be just enough to limit the Claim within safe dimensions if it is attacked in Court. This leads to litigation as to the construction of Specifications, which could be generally avoided if at the outset a sincere attempt were made to state exactly what was meant in plain language. The fear of costly law suit is apt to deter any but wealthy competitors from contesting a Patent. This is all wrong. It is an abuse which a Court can prevent ... because it affects the public by practically enlarging the monopoly, and does so by a kind of pressure which is very objectionable.\(^\text{108}\) [emphasis added]

Lord Loreburn's sentiment is reflective of the attitude of US courts in the same period and the concern behind early criticism of the doctrine of equivalents (see Section III). His fundamental concern was that if patent claims are not construed in a predictable manner the broader economic activity the patent system is trying to foster will be chilled. Surely his concerns and observations on this issue are as applicable today as they were when the decision was first written.

Lord Russel, in *EMI v. Lissen* (1938), affirmed that patent claims define a closed legal

---


\(^{108}\) Ibid., at 266.
boundary and affirmed the doctrine of disclosure disclaimer, which was not openly overturned in *Kirin-Amgen*. Specifically, Lord Russel stated:

*The function of the claims is to define clearly and with precision the monopoly claimed, so that others may know the exact boundaries of the area within which they will be trespassers. There primary object is to limit and not extend the monopoly. What is not claimed is disclaimed. The claims must undoubtedly be read as part of the entire document and not as a separate document; but the forbidden field must be found in the language of the claims and not elsewhere*.\(^\text{109}\)[emphasis added]

On the basis of these foundations there was a concern that the courts in the UK may have been punishing patentees with excessive literalism and allowing competitors to make non-material changes to escape the patent right. The judicial response was the creation of the “pith and marrow” doctrine, which required the Court to reach back to the 1873 Chancery Court decision of *Clark v. Adie*\(^\text{110}\) in the search for a precedent. In *Clark v. Aide*, James L.J. described the “pith and marrow” as “an essence or substance” of an invention that “may be pirated by theft in a disguised or mutilated form”.

The object of the “pith and marrow” doctrine was to prevent competitors from escaping the patent right by colorable evasion of the elements recited in the patent claims\(^\text{111}\). It operated in addition to the established literal approach, in the same way the doctrine of equivalents extends literal construction of the claims in the United States. This created a level of procedural complexity that was frowned upon in *Catnic* as being too confusing\(^\text{112}\). Lord Diplock speaking for a unanimous House of Lords declared that trying to show “textual infringement”, and failing that, relying on infringement of the “pith and marrow” of an invention treated the matter as if there were two causes of action, when there was only one cause of action. The prescribed

\(^{109}\) *EMI*, supra note 92.

\(^{110}\) *Clark v. Adie* (1873), L.R. 10 Ch. 667 (Eng. Ch.) at 672.

\(^{111}\) *Catnic*, supra note 102 at 187.

\(^{112}\) *Catnic*, supra note 102 at 242.
solution was the creation of the purposive construction approach to claim construction.

The House of Lords erred when they confused the approaches for establishing infringement with causes of action. The only cause of action is that of alleged infringement, and it is not split into a multiplicity of actions in accordance with the number of ways it may be demonstrated. Notwithstanding that error, the original formulation of the purposive construction approach was not completely ill-conceived and did reasonably balance competing interests.

In creating the original formulation of the approach the House of Lords drew the applicable law from Van der Lely\textsuperscript{113} (1963) and Rodi\textsuperscript{114} (1963). From Van der Lely, the Court identified the “all-elements-rule”\textsuperscript{115} as a necessary limit on extending the scope of a patent claims beyond a literal interpretation. Lord Diplock specifically affirmed this rule in Catnic, stating:

\begin{quote}
[\text{The reader is entitled to presume that the patentee thought at the time of the specification that he had good reason for limiting his monopoly so strictly and had intended to do so, even though subsequent work by him or others in the field of the invention might show the limitation to have been unnecessary.}\textsuperscript{116}
\end{quote}

Beyond affirming the “all-elements-rule” Lord Diplock also invoked three other principles. First, is the “self-inflicted wound” principle, pursuant to which patentees are held to words they choose, even if those words create unnecessary limitations. Second, since the patent system is designed to encourage competition, it is unfair to punish competitors for their insight or a patentee's misunderstanding when the competition recognizes that an invention can be implemented without a particular element recited in the claims. Finally, given how and by whom patents are actually drafted, it is unfair to force competitors to parse the specification in an

\begin{flushleft}
\textsuperscript{113} Van der Lely N.V. v. Bamfords Ltd (1963) R.P.C. 61 (H.L.) (Eng.).
\textsuperscript{115} Van der Lely N.V. v. Bamfords Ltd (1961) R.P.C. 296 (C.A.) (Eng.), Lord Upjohn at 313: "Why they [the patentees] so confined the claim is not for us to speculate".
\textsuperscript{116} Catnic, supra note 102 at 243.
\end{flushleft}
attempt to infer what the patentee's substantive intentions might be. To hold otherwise would run counter to the guidance provided by Lord Loreburn in *Natural Colour Kinematograph*.

From the dissent in *Rodi*, the House of Lords found the basis for softening the effect of adjectives and qualifiers used in relation to claim elements. Specifically, Lord Pearce held that an “essential feature” is defined as the primary function of an element recited in a claim. Lord Pearce was not suggesting that the primary function of a claim element had to be necessary for a workable embodiment of the invention as whole. That is, the inquiry into what is an “essential feature” is not an inquiry into what are the essential features of the invention as a whole. At no point did any member of the Court in *Rodi* abdicate from the “all-elements-rule”. Accordingly, a determination of “essential features” is restricted to the “essential function” of each claim element, and all recited claim elements remain vital to defining the scope of the claim, even if a broader claim without a particular element could have been allowed by the patent office.

Accordingly, the question at the heart of the purposive construction approach is a determination of whether an adjective or qualifier would be understood to require strict adherence to a precise definition and totally exclude all variants, or by contrast, also encompass non-material variants. In *Catnic*, Lord Diplock phrased the test as follows:

> It [the question of essentiality] is to be answered in the negative only when it would be apparent to any reader skilled in the art that a particular word or phrase used in a claim cannot have been intended by the patentee, who was also skilled in the art, to exclude minor variants which, to the knowledge of both him and the reader to whom the patent was addressed, could have no material effect on the way in which the invention worked.

This excerpt must be interpreted in the factual context of the case to fully appreciate its meaning.

The Court was concerned with how ordinary skilled persons in the field would interpret the term

---

117 *Rodi, supra* note 114, Lord Pearce at 389: “For the question is whether the essential part of the essential integer is taken although the unessential parts of it have been omitted.”

118 *Catnic, supra* note 102 at 243.
“vertical”, which was used to describe the orientation of a backplate in relation to a baseplate in the patent claim at issue\textsuperscript{119}. Should “vertical” be understood to mean “precisely vertical” or “substantially vertical”? What interpretation would be fair to all concerned in view of the specification and common knowledge in the art? In the defendant’s variants, the backplate was 6 to 8 degrees off a 90 degree (precise) vertical. The claim at issue only recited the term “vertical” to describe the backplate. The House of Lords determined that the patentee had not strictly restricted the meaning of the term “vertical” to mean “precisely vertical” in the patent specification. In other words, the patentee had not clearly disavowed or disclaimed equivalents to “precisely vertical” through the general use the term “vertical” in the claims and the specification. As such, the Court found infringement since the backplates in the defendant’s variants were “substantially vertical”, and “precisely vertical” was not essential to the claim.

Moreover, following the example of Lord Pearce in \textit{Rodi}, Lord Diplock’s inquiry in \textit{Catnic} never ventured into the territory of determining whether or not an entire claim element could be read out of the claims. Rather the \textit{Catnic} decision affirmed and followed the “all-elements-rule”, the “self-inflicted wound” principle, and the principle of clear disavowal in creating and applying the original formulation of the purposive construction approach.

The \textit{Catnic} approach was then distilled into a three-part test by the Court of Appeal in \textit{Improver}. The Improver Questions were framed by Justice Hoffman as follows:

1. Does the variant [of a claim element used in the allegedly infringing product or process] have a material effect upon the way the invention works? (If yes, no infringement)

2. Would the fact that the variant had no material effect have been obvious at the date of publication of the patent to a person ordinarily skilled in the art? (If no, no infringement)

\textsuperscript{119} Both the backplate and baseplate were positively recited in the claim at issue, which was to an architectural element used in building construction known as a lintel.
3. Would the person of ordinary skill in the art have nevertheless understood from the language of the claim that the patentee intended strict compliance with the primary meaning was an essential requirement of the invention? (If yes, no infringement)\(^{120}\)

There are a number of observations that can be made of the Improver Questions. First, the first Improver Question conforms to the “all-elements-rule” because the question relates to a variant of a claim element not of a variant of the invention as a whole. Second, the first and second Improver Questions are framed to encourage innovation by looking for signs of objectively discernible materiality that would free competitors from the patent right. In other words, the questions try to establish whether the accused has innovated away from the patent.

Third, in accordance with Justice Hoffman's guidance, the first and second questions are primarily questions of fact that provide context for construction\(^{121}\). These questions help to lend credibility to the argument that claim construction is not a pure question of law but a mixed question of fact and law. Additionally, the first and second questions conform to the approach taken in the United States in *Lava-Trading* and *Wilson Sporting Goods* discussed in Section III.

Fourth, and the only significant criticism, as per the second question the critical date is the publication date. As a fixed date, the publication date simply adds an arbitrary bar into the analysis that gives competitors the incentive to create non-material variants after the fixed date. Recall, in accordance with the US approach, the critical date is the date of the alleged infringement, which forces competitors to innovate away from the patent during the entire patent term in order to escape the exclusive right. Additionally, if the publication date bar is removed the second question loses its substance and can be subsumed into the first question.

Fifth, the third Improver Question keeps the analysis firmly anchored to the language of

\(^{120}\) *Improver*, supra note 103 at 182.

\(^{121}\) *Ibid.*
the claims. In so doing, the third question incorporates the “all-elements-rule”, the “self-inflicted wound” principle, and the principles of disclosure disclaimer and clear disavowal in the original formulation of the purposive construction approach. This negates the need for competitors to second guess the intentions of a patentee who included language that seemingly unnecessarily restricted the scope of his patent right. Justice Hoffman, in *Improver*, was particularly clear on this point stating:

*Even a purposive construction of the language of the patent may lead to the conclusion that although the variant made no material difference and this would have been obvious at the time, the patentee for some reason was confining his claim to the primary meaning and excluding the variant*.

Without the third question, the purposive construction approach becomes a license for courts to redraw patent claims in the heat of litigation. Taken to an extreme, as in Australia, this gives a court the ability to completely eviscerate claim elements and ignore the principle of disclosure disclaimer by reaching into the specification to define the patent right. This, in turn, undermines the public notice function of patent claims and the patent procurement process.

With respect to the patent procurement process, there is generally a period of time, between the date on which a PTO provides a notice of allowance and the actual date of issuance of the patent, during which the patentee can make changes to the claims (also known as “amendments after allowance”). If the patentee tries to make changes to the claims beyond correcting typographical errors, the entire prosecution process is restarted to ensure that the patentee has not either broadened the scope of the claims beyond what is patentable or introduced ambiguity into the language of the claims. This ensures that the public does not

---

123 *Root Quality, supra note 43.*
give up more than what was bargained for when the patent actually issues, and that the patents claims provide fair and clear public notice of the scope of the patent right. If the courts can re-draft claims in the midst of litigation, the courts undermine the steps taken by the PTO to ensure fair and clear public notice and competitors can no longer safely rely on the patent claims to clearly delineate the patent right. That is, the land-mines are no longer safely fenced in, which will in turn drive up the cost of capital for innovation and chill the competition patent systems are established to encourage\textsuperscript{125}.

One of the unfortunate aspects of the \textit{Kirin-Amgen} decision was that the House of Lords abandoned the third Improver Question\textsuperscript{126}, thereby opening up the fence. Consequently, the Court tacitly abandoned the “all-elements-rule”, the “self-inflicted wound” principle, and the principles of disclosure disclaimer and clear disavowal embedded in the original formulation of the purposive construction approach. This not only contradicted the precedents on which \textit{Catnic} was based but has also created uncertainty for both patentees and their competition.

Another unfortunate aspect of the \textit{Kirin-Amgen} decision worth reviewing is the Court's rejection of the file wrapper estoppel doctrine. In Lord Hoffman's opinion “life is too short for the limited assistance which [the file wrapper estoppel doctrine] can provide.”\textsuperscript{127} Recall, in the United States file wrapper estoppel doctrine was established to prevent a patentee from relying on a narrow interpretation of the claims during the patent procurement process, and later attempting to assert a broader interpretation on the competition once the patent was granted. The

\textsuperscript{125} Quillen, Jr., \textit{supra} note 14.
\textsuperscript{126} \textit{Kirin-Amgen, supra} note 22 at paras 65-66. To be more specific the House of Lords reformulated the third question in a manner that shifted the question's focus from the language of the claims: “The question is rather whether the person skilled in the art would understand the invention as operating at a level of generality which makes it irrelevant whether the DNA which codes for EPO is exogenous or not.”
\textsuperscript{127} \textit{Kirin-Amgen, supra} note 22 at 35.
US courts indicated that such strategic behavior is an inequitable fraud on the public. Unconvinced, Lord Hoffman argued that the doctrine was deficient because the scope of the claims could only be established after expensive investigation of the office file, and that the claim scope should not change depending on whether the competition has access to the file.

Lord Hoffman's argument neglected three very important practical points. First, the patent office file is open to the public as a matter of statutory right—so access is not a problem. Second, searching a patent office file is relatively cheap. The search can be done electronically in most cases, and the cost is small relative to other costs of litigation and potential damages awards. Third, the file wrapper estoppel doctrine is a strong behavior modification mechanism. A well advised patentee will be deterred from attempting to rely on a narrow interpretation during prosecution and later trying to assert a broader interpretation after the patent issues, because courts are apt to take into consideration inequitable conduct in their decision.

The development of the purpose construction approach in *Kirin-Amgen* has gone one step too far in an attempt to conform to the Protocol and establish a system that is friendlier to patentees. Lord Hoffman made the Court's motivations clear, stating:

The courts felt unable to escape from interpretations which “unsparing logic” appeared to require and which prevented them from according the patentee the full extent of the monopoly which the person skilled in the art would reasonably have thought he was claiming. The background was the tendency to literalism ... and the fact that patents are likely to attract the skills of lawyers seeking to exploit literalism to find loopholes in the monopoly they create. (Similar skills are devoted to revenue statutes).

It is unfair and an error of law to equate patent claim construction to anti-avoidance measures in tax law (i.e. revenue statutes). Tax laws are enforceable on an individual or a

---

128 *Festo*, supra note 83.
129 s.16 Patent Act, 1977
130 *Kirin-Amgen*, supra note 22 at 41.
corporation by a State, and are purely public law in that respect. Patent law is a hybrid of private and public law. A patent right is conferred by a State on behalf of the public for a public good, but is enforced between private parties. During litigation the courts must be wary of both competitors trying to avoid the patent right, and patentees trying to enlarge the scope of the patent right beyond what the public has bargain for. Yet the primary benefit is gained by the patentee, and if that benefit is used inequitably it can undermine the broader objectives of the patent system. Thus, it seems only proper, and is required by statute in the United Kingdom\textsuperscript{131}, that the patentee clearly demarcate the boundaries of that exclusive right so that competitors can determine where they can and cannot go during the term of the patent.

The decision in \textit{Kirin-Amgen} undermines statutory requirements that require a clear articulation of what a patentee is claiming as exclusive territory by prescribing a less predictable approach to claim construction. While patents currently in existence cannot be re-worked by lawyers, there is the issue of future patents. On the one hand, the Court in \textit{Kirin-Amgen} acknowledged that patents are most often drafted by skilled professionals and are not documents \textit{inter rusticos} for which broad allowances should be made\textsuperscript{132}. Yet, on the other hand, the Court has removed the constraints that prevent those broad allowances from being made by abandoning the third Improver Question. This new formulation of the purposive construction approach will undoubtedly attract the skills of patent agents and lawyers seeking to discount elements as being non-essential to the claims in which they are recited. Thus, the scope of patent claims may become more detached from the actual language of the claims, and the Court will have to develop more detailed methods for parsing the language of the specification in order to

\textsuperscript{132} \textit{Kirin-Amgen, supra} note 22 at 34.
reestablish predictability. In turn, deciphering the scope of the claims will require more legal knowledge than is required for methods that remain anchored in the language of the claims – the latter being a more intuitively obvious starting point.

C. In Australia Claim Elements Do Not Really Matter

The true status of the purposive construction approach in Australia is unclear because the High Court of Australia has not considered it\textsuperscript{133} in view of \textit{Catnic} or \textit{Kirin-Amgen}. However, prior to \textit{Kirin-Amgen} the Federal Court of Australia in \textit{Root Quality}\textsuperscript{134} (2000) adopted a formulation of the purposive construction approach that closely resembles the new formulation of the approach prescribed in \textit{Kirin-Amgen}. More importantly, in view of its relatively simple technical facts, \textit{Root Quality} ably demonstrates how far purposive construction can be taken from the long-standing principles of patent law in contradiction to proper patent policy.

Recall, in \textit{Catnic}, the primary objective of the original formulation of the purposive construction approach was to soften the effects of adjectives and qualifiers in order to protect a patentee from the effects of excessive literalism. In contrast, Finkelstein J. in \textit{Root Quality} re-framed the question, stating:

The question to be determined under this approach is whether the patentee intended strict compliance with an element of the invention to be an essential requirement of the invention. On this basis the former approach, that is, whether the "pith and marrow" or substance of a claim has been taken, is no longer necessary [emphasis added].\textsuperscript{135}

The consequence of re-framing the question, as Finkelstein J. has, allows courts to completely read-out an element from a claim, and thus abandoning the “all-elements-rule”. By giving the

\textsuperscript{133} Pendleton, supra note 5 at 94.
\textsuperscript{134} Root Quality, supra note 43.
\textsuperscript{135} Root Quality, supra note 43 at 44.
courts the ability to read-out a recited claim element the metaphoric closed legal boundary is opened, and a competitor having relied on all of the elements in a claim to ascertain the scope of the claim may find himself in the forbidden field. This is exactly what happened on the facts in *Root Quality*\textsuperscript{136}.

Briefly, the claims in suit were to a planting device. The planting device as originally claimed included recesses that each optionally converged to a respective hole. The claims were amended during the prosecution process so that *all* of the recesses converged to respective holes. With reference to the specification, Finkelstein held that the amendment, irrespective of its clear literal meaning, did not mean that all of the recesses converged to respective holes.

A closer inspection of how Finkelstein J. arrived at this decision reveals how dramatically he misinterpreted and misapplied, or maybe simply changed, the original formulation of the purposive construction approach. After re-framing the general *Catnic* question, Finkelstein J. then re-formulated the Improver Questions, which transformed of the original approach into a method for determining overall equivalence between the accused device and the claims.

On the first Improver Question, Finkelstein J. held that the absence of the holes did not have a material effect on the way the invention worked despite acknowledging that it provided the accused device with an advantage that the device as claimed did not have\textsuperscript{137}. The problem with this is that, by not including the holes, the competitors produced a variant of the device as a whole, whereas the first Improver Question focuses on variants of individual claim elements.

Recalling the facts of *Catnic*, the concern was with the interpretation of the adjective “vertical” in relation to the orientation of a backplate (the element) and variants covered by it.

\textsuperscript{136} *Root Quality*, supra note 43 at 50-55.
\textsuperscript{137} *Root Quality*, supra note 43 at 61-63.
The adjective “vertical” was never completely read-out of the claims, and its meaning was merely softened to prevent colorable evasion of the patent right. Moreover, the question of whether “backplate” element could be read-out of the claims was not even entertained. In *Root Quality*, the “holes” are claim elements not adjectives or qualifiers, and ignoring this clear lack of analogous facts, Finkelstein J. read-out the holes from the claims.

On the second Improver Question, Finkelstein J. bizarrely deemed that the skilled addressee in this case was a horticulturalist or nurseryman (i.e. an end user of the device), not a skilled tool-maker. Consequently, the second question was answered in the affirmative.

Before applying the third Improver Question, Finkelstein J. first re-formulated it into an inquiry into “whether the patent specification makes it obvious to the skilled addressee that the variants could not have been intended to be excluded from what is specified in the claim.” Finkelstein J.’s reformulation permitted him to speculate about what the patentee's substantive intent might be and read-out claim elements as required, instead of looking into what the competition would have understood from the language of the claims as required by the original third Improver Question. The result of Finkelstein J.’s analysis was a finding of infringement.

**D. Confusion in Canada**

In no other country is the tension between the US and European approaches to claim construction so strongly felt as in Canada. Due to its proximity and unique trading relationship with the United States, Canadian law and business practices are heavily influenced by developments in the United States. With respect to patent protection, Canadian technology

---

138 *Root Quality*, *supra* note 43 at 72.
139 *Root Quality*, *supra* note 43 at 73.
businesses frequently seek US patent protection before seeking it at home in Canada, if at all.\textsuperscript{140} The result is that Canadian patent professionals are on a perpetual quest to harmonize their best practices with those of their US counterparts. This mindset is encouraged by the fact that Canadian patent agents are alone in the international community in their ability to represent clients directly before the USPTO without having to retain US agents or lawyers, so long as the inventors reside in Canada.\textsuperscript{141}

It should be noted, however, that the fully independent Canadian legal system is younger than the fully independent US judiciary. Up until 1949 the final court of appeal in Canada was the House of Lords in the United Kingdom.\textsuperscript{142} Accordingly, much of Canada's contemporary law is based on precedents that originate in the United Kingdom and the self conscious Canadian judiciary continues to look to jurisprudence from the United Kingdom for validation when venturing into new areas. This has been especially true with respect to how Canadian courts have approached the matter of construing patent claims, which as of late has run counter to the implicit goal of harmonizing Canadian and US practice.

Unfortunately, the most recent efforts by the Canadian courts to balance the tension between the US and European approaches have only created confusion with respect to claim construction in Canada. On the one hand, the courts are faced with an ever present practical demand, from technology businesses trying to stay globally competitive, to keep up with developments in US patent law. On the other, the Canadian judiciary is trying to manage its own

\begin{thebibliography}{99}
\bibitem{140} The statistics collected by WIPO reveal that Canadian inventors file more applications in the United States than they do at home in Canada. See online: <http://www.wipo.org>.
\bibitem{141} Pursuant to the North American Free Trade Agreement Canada and the United States have agreed to recognize the professional qualifications of patent agents in each country, so that agents of either country can represent inventors residing in their respective country before the PTO of the other country.
\bibitem{142} The Supreme Court of Canada Act was passed in 1949.
\end{thebibliography}
child-like duty to give deference to the House of Lords in recognition of Canada's Commonwealth roots. The current source of tension is a recent Federal Court decision that departed from the Supreme Court of Canada precedents that approved the original formulation of the purposive construction approach, and instead followed *Kirin-Amgen* from the United Kingdom – which is deficient for the reasons provided above.

In 2000, the Supreme Court of Canada cited with approval *Catnic*¹⁴³ and *Improver*¹⁴⁴ affirming the use of the original formulation of the purposive construction approach in *Free World Trust*¹⁴⁵ and *Whirlpool*¹⁴⁶. As noted above, the original formulation of the purposive construction approach remained anchored in long-standing principles of patent law developed and commonly held by the United Kingdom and the United States. Significantly, in *Free World Trust* and *Whirlpool*, the Supreme Court of Canada went out of its way to underscore the public notice¹⁴⁷ function of patent claims and those long-standing principles used to create the original formulation of the purposive construction approach – namely the “all-elements-rule”, the “self-inflicted wound” principle¹⁴⁸, and the principles of disclosure disclaimer and clear disavowal¹⁴⁹.

While the original formulation of the purposive construction approach is a reasonable approach for balancing fairness to patentees and fairness to their competitors, with respect to its applicability in Canada there are two significant criticisms of that can be made of *Free World Trust* and *Whirlpool*. First, as per the second Improver question, the critical date for

---

¹⁴³ *Catnic, supra* note 102.
¹⁴⁴ *Improver, supra* note 103.
¹⁴⁵ *Free World Trust, supra* note 8.
¹⁴⁶ *Whirlpool, supra* note 42.
¹⁴⁷ For example: In *Free World Trust, supra* note 8 at para 46, the Court noted that “[o]nce the inquiry is not longer anchored in the language of the claims, the Court may be heading into unknown waters without a chart.”
¹⁴⁸ *Free World Trust, supra* note 8 at para 51: “However, if the inventor has misspoken or otherwise created an unnecessary or troublesome limitation in the claims, it is a self-inflicted wound. The public is entitled to rely on the words used provided the words used are interpreted fairly and knowledgeably.”
¹⁴⁹ *Free World Trust, supra* note 8 at 39.
construction of the claims is the publication date. As a fixed date, the publication date simply adds an arbitrary bar into the analysis that gives competitors the incentive to create non-material variants after the fixed date. Recall, in accordance with the US approach, the critical date is the date of the alleged infringement, which forces competitors to innovate away from the patent during the entire patent term in order to escape the exclusive right. If the publication date bar is removed the second question loses its substance and can be subsumed into the first question.

Second, the Supreme Court of Canada continues to be willfully blind to the factual component of claim construction. In Free World Trust and Whirlpool, the Court maintained that claim construction is a matter of law for the court alone. The irony was that even though the Court cited Catnic and Improver with approval, the Court also completely ignored the guidance provided by Justice Hoffman in Improver that described the first two Improver Questions as questions of fact.

The current confusion relating to how purposive construction is to be applied in Canada is found in the lengthy Pfizer v. Mayne (2005) decision delivered by Justice Hughes of the Federal Court of Canada. In Pfizer v. Mayne Justice Hughes, a former prominent member of the Canada patent bar, carefully constructed his decision based on a detailed review jurisprudence from the United Kingdom in which he subtly introduced the new formulation of the purposive construction approach found in Kirin-Amgen into the Canadian common law.

Justice Hughes's written opinion is particularly troubling because from his perspective the

---

150 See: i) Free World Trust, supra note 8 at para 31; and, ii) Whirlpool, supra note 42 at para 56.
151 Whirlpool, supra note 42 at para 43.
153 Kirin-Amgen, supra note 22.
Canadian cases of *Free World Trust* and *Whirlpool* are “remarkably in agreement”\(^ {154} \) with *Kirin-Amgen*, which could not be further from reality. *Free World Trust* and *Whirlpool* are in agreement with *Catnic* and *Improver*, while *Kirin-Amgen* reformulated the purposive construction approach so as to change its primary focus. As originally posed, the Improver Questions were framed to provide a fail-safe that kept the inquiry firmly anchored in the language of the claims so that competitors are not scared off from working in the vicinity of the patent claims and so that the patentee is forced to clearly articulate the scope of the monopoly that is sought. However, in *Kirin-Amgen*, the Improver Questions were formulated so as to provide a very open-ended inquiry into the substantive intentions of the patentee. This open-ended inquiry abandons the “all-elements-rule”, the “self-inflicted wound” principle, and the principles of disclosure disclaimer and clear disavowal, which previously restrained the purposive construction approach from becoming a guidepost approach to claim construction.

The extent to which Justice Hughes’s decision has changed the law in Canada is unclear because the Supreme Court of Canada did not provide any guidance on that decision nor has the Court commented on *Kirin-Amgen*. However, it would seem unlikely that the Canadian position would drift too far away from the US position. From that perspective the principles underlying the original formulation of the purposive construction approach would appear to be firmly entrenched in Canada as per *Free World Trust* and *Whirlpool*.

\(^ {154} \) *Pfizer v. Mayne*, supra note 151 at para 29.
V. China: Lessons from a Developing Patent Regime

China has made remarkably positive changes to its patent enforcement system throughout the last decade\textsuperscript{155}. The rapid progress has been largely driven by integrating best practices from other countries into China's patent enforcement system. As a side effect, the integration strategy has turned China into a unique and valuable testing ground for conflicting principles in patent law from which best practices emerge and where flawed ideas are exposed. Provided as an especially pertinent example, this section discusses the results of the Chinese attempt to integrate the conflicting approaches to claim construction discussed above. Briefly, the result was a wholesale shift towards US-style claim construction (away from the European approach). It is argued, therefore, that the results of the Chinese experience further evidences adopting US-style claim construction as the international standard.

While China is traditionally thought of as a civil law system, the principles of claim construction in China originate from within the judicial system\textsuperscript{156}. The judicial system in China is highly centralized and is very restrictive about which tier of the judiciary can create law. Only the Supreme People's Court can create law, which is provided in judicial interpretations that further explain how the lower courts should interpret and apply the law\textsuperscript{157}. Notwithstanding this official position, opinions of the Higher People's Courts (one step below the Supreme People's Court) often carry implicit persuasive weight in lower courts and within the profession, as they serve as a barometer for measuring upcoming changes in judicial thinking\textsuperscript{158}. For example, the Beijing Higher People's Court is considered to be an authority on patent matters because of the

\textsuperscript{156} \textit{Ibid.}
\textsuperscript{157} Interview of Chief Justice (Retired) Zhang (25 August, 2007) with the author in Beijing [Zhang Interview].
number of patent disputes heard in its jurisdiction, including appeals from Patent Review Board (PRB) decisions. Of particular interest, a 2001 opinion from the Beijing Higher People’s Court is the basis of the current relevant working document released from the Supreme People’s Court.

Regarding patent law, the purpose of the judicial interpretations and opinions is to fill in the holes left by the Patent Law, the Implementing Regulations and the Guidelines for Examination. Judicial interpretations for patent matters are not issued by fiat. Instead they are developed by consensus with feedback collected from the Higher People's Courts and the profession. At the time of this writing, there is a working document – entitled “Provision on Hearing Cases of Infringement of Patent Right” (hereinafter “the Supreme People's Court Provision”) – circulating within the profession that is the basis for an upcoming official judicial interpretation for patent matters that is being used by the courts on a trial basis. The official judicial interpretation will be revised and released after the Supreme People’s Court has considered the feedback from the profession and the Higher People’s Courts.

A review of the Articles in the Provision reveals the shift towards US-style claim construction. Unfortunately, however, Article 1 of the Supreme People's Court Provision is merely a restatement of the Protocol related to Article 69 of the EPC, and it reads:

Where the People’s court interprets the claim of a patent in accordance with Article 56(1) of the Patent Law, the People’s court shall not interpret that the extent of protection of the patent right is strictly limited by the literal meaning of the claim, and the description and drawings are only used for illustrating ambiguous portions of the claims, nor shall the People’s court interpret that a claim only determines a general inventive core, only serving as a guidance, and the extent of protection extends to what the patentee anticipates, which

161 Provisions on Several Issues Concerning Examination of Patent Infringement Disputes (Conference Discussion Version, 2003), online: <http://www.chinaiprlaw.cn/file/200310272463.html>. The problem for English speaking observers is that it is difficult to get the latest versions of documents like this one because they are not always translated into English.
can be understood by a person skilled in the relevant field of technology by reading the description and drawings. The People’s court shall start from the middle of the above two extreme interpretations to interpret a claim such that not only is a patentee fairly protected, but the public is guaranteed with reasonable legal stability.\(^\text{162}\) [emphasis added]

As explained by Chief Justice (Retired) Zhang, the Chinese judiciary found it difficult to apply the “middle-of-the-road” approach to claim construction borrowed from the Protocol\(^\text{163}\). In practice, the Chinese judiciary discovered for themselves that a logical middle ground between the fence-post approach and the guidepost approach to claim construction does not exist. The result was a shift in Chinese judicial thinking that embraced US-style claim construction, which is reflected in the remaining Articles the Supreme People's Court Provision.

The clear shift towards US-style claim construction is provided in Article 15\(^\text{164}\), which is the first Article that describes how infringement is to be determined. Article 15, known as the rule of full coverage or all technical features doctrine, is a restatement of the US “all elements rule”\(^\text{165}\). Pursuant to Article 15, as with the US “all elements rule”, infringement analysis in China is strictly an element-by-element comparative process. Specifically Article 15, paragraph 4 stresses the Chinese equivalent to the “all element rules”, stating that:

Where an accused infringing article lacks one or several technical features or where one or several technical features of the accused article are neither identical nor equivalent compared with the corresponding technical features of the claims, the Court shall determine that the alleged infringing article does not fall within the extent of the patent right and rule that the accused infringing article does not infringe\(^\text{166}\).

By making the “all-elements rule” a necessary feature in the determination of infringement, the Supreme People's Court has effectively adopted a US-style fence-post approach to claim

\(^{162}\) Ibid. Part I, Article 1.
\(^{163}\) Zhang Interview, supra note 157.
\(^{164}\) Supra note 161, Article 15.
\(^{165}\) Meng Rui, “A Case Study on Relations between Estoppel Doctrine and All Technical Features Doctrine” (2007) China Patents & Trademarks, No. 2 52 at 54.
\(^{166}\) Supra note 161, Article 15, paragraph 4.
construction, and abandoned the goal of Article 1.

Additionally, the Chinese rule of equivalence – which is a restatement of the US doctrine of equivalents – provides further evidence that China has clearly shifted towards a US-style fence-post approach to claim construction. Article 11, paragraph 4 specifies that overall equivalence is not enough\(^\text{167}\). As in the United States, equivalence must be determined on an element-by-element basis and not for the invention as a whole. The inclusion of these principles means that the Court does not have a license to ignore claim limitations – which is a critical distinguishing point compared to the purposive construction approach discussed above.

The fence-post approach articulated in the Supreme People's Court Provision further includes the “self-inflicted wound” principle\(^\text{168}\), and the principles of disclosure disclaimer\(^\text{169}\) and clear disavowal\(^\text{170}\). Each of these principles runs counter to the false notion (provided in Article 1) that China follows a “middle-of-the-road” approach to claim construction; and instead, these principles support the argument that China employs a fence-post approach to claim construction.

Finally, the Supreme People's Court Provision also includes the file wrapper estoppel doctrine in Article 13. In accordance with Article 13, the estoppel doctrine prevents the patentee from relying on a narrow claim interpretation to obtain a patent and later disavowing that interpretation. Chief Justice (Retired) Zhang also agrees that the other reasons provided in \textit{Festo} in support of the estoppel doctrine are accepted in China. That is, the use of prosecution history estoppel serves to: (1) prevent over-expansive use of the doctrine of equivalents; (2) promote the public notice function of patent claims; and (3) reduce uncertainty for competitors.

\(^{167}\) Supra note 161, Article 11.
\(^{168}\) Supra note 161, Article 13.
\(^{169}\) Supra note 161, Article 4, paragraph 3.
\(^{170}\) Supra note 161, Article 13.
VI. Conclusion

It was noted at the outset of this paper that the lack of international conformity in the area of claim construction causes uncertainty that adversely affects patentees and the global public good. This paper aimed to provide a comparative analysis of the patent claim construction principles, from various jurisdictions, that extend the scope of the exclusive right beyond a purely literal interpretation of patent claims, in order to provide insight into how claim construction could be harmonized globally.

A significant question raised is whether the US doctrine of equivalents is actually better than the guidepost approaches originating from Europe. To answer the question, the guidepost approaches from Europe and the Anglo-Commonwealth are compared to the US doctrine of equivalents in order to gauge the respective sources of uncertainty for each.

The general conclusion is that while the US doctrine of equivalents is certainly more procedurally complex and places a higher burden on the patentee and the European guidepost approaches, the doctrine itself and the limitations are intuitively obvious in that they do not contradict the natural assumptions of someone reading the claims. Moreover, the new formulation for purposive construction provided in *Kirin-Amgen* has failed to bridge the gap between the US approach and the guidepost approach prescribed by the *European Patent Convention*. The lack of a strict procedural frame makes the formulation provided in *Kirin-Amgen* challenging for even skilled patent professionals to apply with certainty, and a final determination of whether a claim element is essential requires the sound discretion of the judge.

The way in which purposive construction has developed, culminating in *Kirin-Amgen* and *Root Quality*, has provided courts with a license to redraft patent claims in the midst of litigation
by completely eviscerating positively recited claim elements based on nothing more than mere speculation about the substantive intentions of the patentee. However, if you neutralize the ability to eviscerate claim elements in their entirety, as it appears the Supreme Court of Canada has done in accordance with the original formulation is Catnic: What is really left of the purpose claim construction doctrines? Possibly, as demonstrated in Catnic, the purposive claim construction doctrine merely allows the court the ability to soften the effect of adjective and qualifiers on the determination of claim scope. As such, two questions arise. First, does method of purposive construction provide a simple enough analytical framework that provides reasonably predictable results for those trying to determine the scope of the exclusive right, or is the sound discretion of judge required to apply the doctrine fairly. Second, even if the discretion of a judge is not required, is the doctrine of purposive construction better than the doctrine of equivalents used in the United States.

The answer to both questions is that the doctrine of equivalents is superior because it includes a structured judicial test to determine equivalents to individual claim elements that does not exist for the purposive construction doctrine as it currently stands, even if the ability to eviscerate claim elements is neutralized. Without that structured judicial test the doctrine of purposive construction is inherently less predictable than the doctrine of equivalents since application of the doctrine is not bound by bright-line limits as to how broadly one can construe the exclusive right conferred in a patent claim.

Moreover, a comparison of the Improver Questions to the insubstantial difference test subsumed in the doctrines of equivalents test show that those two questions (or at least the first) are merely a reformulation of the insubstantial differences test. The second Improver Question,
merely provides an altogether unnecessary limitation that the skilled person at the time the invention was made would have to have understood that the variant had a material effect on the way the invention worked at the date of construction. This adds another subjective element to claim construction that heavily relies on a determination of what the PHOSITA would have understood. It also contradicts the policy of encouraging auxiliary innovation via imitations, since competitors according to the policy should be trying to design around. Competitors by definition have not created something new if they have merely created a variant that satisfies the Function-Way-Result test.

The doctrines of claim construction employed should not grant the court the power to re-draft claims to the extent that they are unrecognizable from their original form. The policy should be to only permit enough flexibility to prevent fraud on the patent by making non-material changes to what is claimed. Material changes are outside the scope of the exclusive right, even if the material change can be traced to a self-inflicted wound on the part of the patentee or their counsel. In the later case, that is why there is insurance.

On a final note, it is quite clear that Catnic could have been decided by simple application of the insubstantial difference test. The feature at issue was whether or not vertical meant exactly and precisely 90 degrees from a horizontal or whether some allowance could allow the court to vertical to mean “substantially vertical”. Despite this, the House of Lords took the opportunity to create and apply an incredibly open-ended test to a simple situation in a manner that can only be described as judicial overkill.