

THEORIES OF PATENT CLAIM INTERPRETATION

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DECLARATION

I hereby declare that the thesis is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in the thesis.

This thesis has also not been submitted for any degree in any university previously.

Huang Yan
Oct. 20th, 2014

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SUMMARY

The primary goal of this thesis is to examine patent claim interpretation from a new perspective of interpretive legal theory. Patent claim interpretation is fundamental to delineating the scope of patent rights, which is central to the determination of validity and infringement. However, the patent law literature often overlooks the importance of theories of legal interpretation underpinning different claim interpretation approaches. The current interpretive legal rules for patent claims widely use the concepts of “ordinary meaning”, “purpose” and “content.” These concepts may provide bases for the general interpretation of meaning, but whether they are fit for patent claim construction is seldom assessed.

This thesis distinguishes three contemporary claim interpretation approaches, namely, the ordinary meaning approach, the purposive approach and the constructive approach. Each approach privileges one factor that is relevant to the interpretation of patent claims, be it the ordinary meaning of the claim text, the patentee’s purpose or the subject matter of the claim text. A theory of meaning gives an account of how language works. As we will see, three theories of meaning that underlie these approaches are, respectively, the ordinary use-based theory, the intention-based theory and the content-based theory.

The meaning of a patent claim term is highly context-sensitive, that is, it is understood by a skilled person in the relevant art. Current theories of claim

interpretation have emphasized the contextual use of claim language, but still have not resolved the tension between preserving the certainty of claim scope and adapting the claim text to technological development. The thesis introduces philosophical hermeneutics to shed light on how interpretation works. This theory pays attention to the interpretive gap between the original text or author “there and then” and the interpreter “here and now”. According to philosophical hermeneutics, a dynamic link between past and present is captured in the idea that two horizons merge into a new understanding. In recent years, there has been a significant increase in attempts to make a connection between the original meaning and the living documents in legal interpretation, particularly in the field of constitutional and statutory interpretation.

By exploring the relation between a pair of crucial concepts –“*meaning*” and “*application*”, this thesis proposes a dynamic principle for patent claim construction. The dynamic approach applies the connotation-denotation technique as a practical middle-ground solution to ascertain the meaning of claim terms. The connotation remains constant, but the denotation changes. This thesis further proposes implementation guides for dynamic claim construction in infringement cases. The dynamic approach has its own theoretical and practical limitations, however, it reflects the need for a balance between certainty and flexibility in claim construction, and encourages interpreters to justify the decisions they make by articulating the reasons for the choice of meaning.

So far, some of the work from this thesis has been presented in academic

conference and published in law journal as the following articles: a) Huang Yan, *Eclectic Approach in China: Seeking a Third Way to Patent Claim Construction*, 6th Asian Law Institute Conference (2009), University of Hong Kong, HK; b) Huang Yan, *A Dynamic Framework For Patent Claim Construction: Insights from a Philosophical Hermeneutic Study*, Texas Intellectual Property Law Journal, Volume 21:1(2012-2013), University of Texas, U.S.

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INTRODUCTION: PATENT CLAIM CONSTRUCTION FROM A THEORETICAL PERSPECTIVE

In modern patent practice, it is a fundamental notion that patent claims delimit the scope of patent monopoly and determine crucial issues such as patent validity and infringement.¹ Each claim is in a very concise single-sentence format. The reason for this formality requirement is that a patent holder should know what he owns, and the public should know what he does not.² Judges decide issues such as patent validity or infringement by extracting meaning from the patent claims. The process of construing the terms of patent claims to give them meaning is the process of patent claim interpretation, also known as patent claim construction.³ Interpretation of patent claims is the very core of patent protection and the key to legal decisions.

Virtually every word in a claim is important. The words of a patent claim

¹ Patent claims are written statements located at the end of the patent document that recite and define the boundaries of an invention. Article 69 of the European Patents Convention 1973 (“the extent of protection ... shall be determined by the terms of the claim.”); Section 125(1) of the UK Patents Act 1977 (providing that an invention for which a patent has been granted is “specified in a claim.”); 35 U.S.C. § 112 (2000) (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”) Article 59 of the Patent Law of the People’s Republic of China (as Amended 2008) (“the scope of protection in the patent right for an invention or a utility model shall be determined by the terms of the patent claim.”); Singapore Patents Act (Chapter 221) (“an invention for a patent ... shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent.” For the evolution of the role of patent claims in defining the scope of protection *see, e.g.* Donald S. Chisum, *Patents*, Vol.4, 18-78 (1993); Robert C. Kahrl, *Patent Claim Construction* 1.01(2001); David J. Brennan, *The Evolution of English Patent Claims as Property Definers*, I.P.Q. , Vol. 4, 361-399 (2005).

² *Festo Corp. v. Shoketsu Kinzoku Kogyokabushiki Co., Ltd., et al*, 535 U.S. 122 S. Ct. 1837(2002) (“Festo VIII”).

³ To establish meaning of a claim text, courts often use the terms “interpretation” and “construction” interchangeably. Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 Wm. & Mary L. Rev. 49 (2005). (“The question of proper interpretation methodology has been at the forefront since the Supreme Court held in *Markman v. Westview Instruments, Inc.* that claim interpretation, also known as claim construction, is a matter exclusively for the courts.”) This thesis will discuss the differences between claim interpretation and claim construction. For the convenience of reasoning, without specific mention, the term “interpretation” is used broadly. Jerzy Wroblewski & Neil MacCormick, *On justification and Interpretation*, published in *Law and Legal Interpretation* 258 (Fernando Atria & D. Neil MacCormick ed., 2003) (“Interpretation...is the work of thought which consists in deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning.”)

might be interpreted as having either a broad or a narrow meaning, which would affect the scope of legal protection and determine the outcome of the dispute. According to an economic survey in 2011, the average cost of a patent litigation in the United States for a low-stakes case (*i.e.*, \$1 million to \$25 million at stake) is about \$ 3 million and for a higher-stakes case (*i.e.*, more than \$25 million at stake) is \$6 million.⁴ It is not surprising that the doctrines of patent claim interpretation have received enormous attention in many jurisdictions during the last two decades.⁵ There has been much debate in patent literature on the difficulties of patent claim interpretation, and the problems have become intensified in recent years. In 1990, Judge Giles Rich coined the famous phrase, “the name of the game is the claim.”⁶ It would not be an exaggeration to say that the name of the game today and tomorrow is claim interpretation.

WHY DO WE NEED THEORIES IN CLAIM INTERPRETATION?

The subject examined in this thesis is the process of claim interpretation in

⁴ American Intellectual Property Law Association (AIPLA), *Report of the Economic Survey*, 153 (2011). The relevant question in the AIPLA survey asked: “What is your estimate of the total cost of a patent infringement suit (i) through the end of discovery, and (ii) inclusive of discovery, motions, pretrial, trial, post-trial, and appeal?”

⁵ See e.g. Brad Sherman, *Patent Claim Interpretation: The Impact of the Protocol on Interpretation*, 54 *Modern Law Review* 499 (1991); Wendy Lim, *Towards Developing A Natural Law Jurisprudence in the U.S. Patent System*, 19 *Santa Clara Computer & High Tech. L.J.* 559 (2003); Nicholas Fox, *Divided By a Common Language: A Comparison of Patent Claim Interpretation in the English and American Courts*, 26 *E.I.P.R.*528 (2004); Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 *Wm. & Mary L. Rev.* 49 (2005); David Sanker, *Phillips v. AWH Corp.: No Miracles in Claim Construction*, 21 *Berkeley Tech. L.J.* 101 (2006); Andrew B. Dzeguze, *Did Markman and Phillips Answer the Right Question? A Review of the Fractured State of Claim Construction Law and the Potential Use of Equity to Unify It*, 15 *Tex. Intell. Prop. L.J.* 457, 487 (2007); Lee Petherbridge, *The Claim Construction Effect*, 15 *Mich. Telecomm. Tech. L. Rev.* 215(2008); Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*,157 *U. Pa. L. Rev.* 1743 (2009); Jonathan L. Moore, *A Patent Panacea the Promise Of Corbinized Claim Construction*, 9 *Chi.-Kent J. Intell. Prop.* 1 (2010); Peter S. Menell et al., *Patent Claim Construction: A Modern Synthesis and Structured Framework*, 25 *Berkeley Tech. L.J.* 711 (2010); Emily Michiko Morris, *Res or Rules? Patents and the (Uncertain) Rules of the Game*,18 *Mich. Telecomm. Tech. L. Rev.*481 (2012).

⁶ Giles S. Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 *Int’l Rev. Indus. Prop. & Copyright L.* 497, 499 (1990) (“To coin a phrase, the name of the game is the claim.”).

patent litigations. In patent claim interpretation, statements such as the following are commonly encountered: “the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention”,⁷ “the claims are to be construed purposively – the inventor’s purpose being ascertained from the description and drawings”,⁸ and “the specification and appended drawings may be used to interpret the contents of the patent claim.”⁹ However, several important questions remain poorly understood: how should the ordinary meaning of a key word be determined? How should the intent of the patentee be defined? How should the content of claims be specified?

⁷ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed.Cir.2005) (“Words of the claim are generally given their ordinary and customary meaning”); *Innova Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004) (“The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.”) For the selection of the time of interpretation, see Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 Mich. L. Rev. 101 (2005). (“determining the meaning of claims as of the time of invention or the time of filing... Both are focused at or about the time the invention is made.”) The United States used to have the first-to-invent rule that granted rights to the first inventor who conceived and reduced the technology or invention to practice. Leahy-Smith America Invents Act (AIA) enacted on September 16, 2011[H.R. 1249], takes effect March 16, 2013. The first-inventor-to-file provision in AIA converts the United States patent system from a “first to invent” system to a “first-inventor-to-file” system. Section 3 (a) (i) “effective filing date” means the actual filing date of the patent or the application for the patent containing a claim to the invention. <http://www.uspto.gov/news/pr/2012/12-44.jsp> (last visited Nov 30, 2012).

⁸ *Mayne Pharma Pty Limited v. Pharmacia Italia SpA* [2005] EWCA Civ 137. *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9 (Lord Hoffmann) (“And he reads the specification on the assumption that its purpose is to both to describe and to demarcate an invention - a practical idea which the patentee has had for a new product or process - and not to be a textbook in mathematics or chemistry or a shopping list of chemicals or hardware. It is this insight which lies at the heart of "purposive construction".) *Catnic Components Ltd v Hill & Smith Ltd* [1982] RPC 183, 243 (Lord Diplock) (“the reader is entitled to assume 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.”) *Cephalon Inc & Ors v. Orchid Europe Ltd & Ors* [2011] EWHC 1591. (“The task for the court is to determine what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean. The principles were summarized by Jacob LJ in *Mayne Pharma v Pharmacia Italia* [2005] EWCA Civ 137 and refined by Pumfrey J in *Halliburton v Smith International* [2005] EWHC 1623 (Pat) following their general approval by the House of Lords in *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9.”)

⁹ Patent Law of the People’s Republic of China (adopted at the Fourth Meeting of the Standing Committee of the Sixth National People’s Congress and promulgated by order No. 11 of the President of the People’s Republic of China on March 12, 1984, and effective as of April 1, 1985, revised Dec 27, 2008), Art. 59, translated in LawInfoChina (last visited July 31, 2011) (P.R.C.). According to Article 2 of the CPL, “inventions-creations” include inventions, utility models and designs. The revised Article 59 of the CPL specifies that specifications and drawings can be used to “interpret the *contents* of the patent claim”, which is different from the original provision: “interpret the patent claim.”

As languages are by nature imprecise,¹⁰ and the claims of a patent are considered to “constitute one of the most difficult legal instruments to draw with accuracy”,¹¹ short-hand concepts such as “ordinary meaning”, “objective intent” and “content” are likely to obscure the correct analysis. A recent study has shown that between the “initial understanding” of claim language and the ultimate “proper construction”, there is a “black-box” process that lacks consistency and transparency.¹² Since patent claim construction serves as the basis for infringement and validity decisions,¹³ such a process will give interpreters an overly broad discretion in determining the scope of protection.¹⁴ Professor William Twining has warned in the general field of legal interpretation that the use of the terms like “ordinary meaning” and “purpose” should not be taken too much for granted. While they “may be helpful in

¹⁰ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002). (“Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application... The language in the patent claims may not capture every nuance of the invention or describe with complete precision the range of its novelty. If patents were always interpreted by their literal terms, their value would be greatly diminished. Unimportant and insubstantial substitutes for certain elements could defeat the patent, and its value to inventors could be destroyed by simple acts of copying.”)

¹¹ *Topliff v. Topliff*, 145 US 156 (1892). (“The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy; and, in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention.”)

¹² *Menell et al.*, *supra* note 5 (Arriving at the proper construction requires filtering the claim language at issue through a number of rules of claim construction, taking into consideration the pertinent statements in the intrinsic and extrinsic evidence. The various rules that the court must take into analysis are sometimes contradictory, and typically involve a balancing of considerations.)

¹³ *Typhoon Touch Tech. v. Dell, Lenovo, Toshiba, Fujitsu, Sand Dune Ventures, Panasonic, Apple, HTC, and Palm*, No. 09-1589 (Fed. Cir. 2011) (“The district court construed the claim as requiring that a device, to be covered by the claim, actually performs, or is configured or programmed to perform, each of the functions stated in the claim... This aspect is the basis of the judgment of non-infringement.”) Paul M. Janicke & Li Lan Ren, *Who Wins Patent Infringement Cases?* 34 *AIPLA Q. J.* 1, 40 n.75 (2006). (Summary judgment or settlement occurs over 80% of the time based upon the claim construction ruling, suggesting claim construction is dispositive about 83% of the time.)

¹⁴ Robert Merges & Richard Nelson, *On the Complex Economics of Patent Scope*, 90 *Colum. L. Rev.* 839 (1990) (“After a patent has been issued, a patentee will often allege that her invention has been copied by competitors. In arguing the case, she will try to demonstrate that the accused infringer’s product falls within the boundaries of her invention, as defined in her patent claims, or that any differences between the infringer’s device and her invention are insignificant... the legal principles and objective evidence often leave considerable room for discretion. There has been surprisingly little theoretical discussion of how to exercise this discretion.”)

giving a general sense of direction, they are often not very helpful in drawing precise boundaries.”¹⁵

So when judges use legal terminologies such as “ordinary meaning,” “purpose” and “content” in claim construction, the first logical stage is to understand what they mean.¹⁶ Interpreters give meaning to a text based on such factors as their interpretation of words, perception of the author’s purpose and the familiarity with the subject matter.¹⁷ The words, the intent of the author, and the subject matter carry various weight in different interpretive theories, which makes different outcomes more or less plausible,¹⁸ particularly when one factor conflicts with another. Even if the outcomes are the same, the reasoning can be very different.¹⁹

Although it has been long recognized that interpretive theory plays an important role in almost all areas of law, for example, legal literature is replete

¹⁵ William Twining & David Miers, *How to Do Things with Rules: A Primer of Interpretation* 206 (3d ed., 1991) (“A good deal of confusion attends these notions both in the literature and in practice, perhaps for two main reasons: first, terms like “legislative intent”, “the aim of the rule”, “the purpose of the statute” and “the reason of/for the rule” are commonly used to cover a wide range of situations and factors that need to be differentiated. There is a tendency to use such terms too simply or too confidently or in ways which take too much for granted.”)

¹⁶ Craig Allen Nard, *A Theory of Claim Interpretation*, 14 Harv. J. Law & Tec 2 (2000). The author studied the theories of claim interpretation in the United States courts. The author gave three reasons of the importance of studying theories of interpretation in claim interpretation: first, theories can inform our understanding of how the court interprets patent claims; second, claim interpretation is often dispositive of such crucial issues as patent validity and infringement; third, the manner in which the court interprets patent claims reflects the court’s view of the proper scope of judicial power.

¹⁷ William Blackstone, *Commentaries on the Laws of England* 59 (1765) (“And these signs are either the words, the context, the subject-matter, the effects and consequence, or the spirit and reason of the law.”) Subject matter is what the text is about or what is actually in the text. See Diane P. Michelfelder & Richard E. Palmer, *Dialogue and Deconstruction: The Gadamer-Derrida Encounter* 181, 182 (1989) (“In order to understand at all, a reader presuppose that the subject matter of a text has a perfected unity of meaning... It is the subject matter of the text and not the text itself that is the point of concern.”)

¹⁸ Alexander Volokh, *Choosing Interpretive Methods: A Positive Theory of Judges and Everyone Else*, 83 NYU L. Rev. 769 (2008).

¹⁹ Daniel A. Farber, *Do Theories of Statutory Interpretation Matter? A Case Study*. 94 Nw. U.L. Rev. 1409 (2000) (“In a formalist world, opinions tell us that judges are faithful servants of the statutory text, whose actions have no legitimacy without legislative warrant. In a pragmatist world, opinions tell us that judges are trying to do justice and improve society within the boundaries of governing legal directives. Even if the results are the same, the rhetoric is very different. Perhaps the rhetoric matters for its own sake, because of the message it sends about our system of governance.”)

with theoretical studies on the interpretation of constitutions, statutes, treaties and contracts, it is interesting to note that the theoretical underpinnings of different claim construction approaches remain underdeveloped.²⁰ The lack of theory development may be due to the unique techno-legal nature of patent claims.²¹ A patent claim is a legal instrument that contains technical information describing new advances, discoveries and applications of principles.²² Patent law is by nature closely connected to the scientific and technological community.²³ On the one hand, legal theorists regard patent law as highly technical in nature, “accessible mainly to those who also have training in the hard sciences.”²⁴ On the other hand, practitioners in this field tend to focus on practical ideas and applications, and the notion of theory is often ignored as irrelevant, unimportant or impractical.

²⁰ Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 Lewis & Clark L. Rev. 29 (2005) (“Although claim interpretation is fundamental to patent law, both the theory and doctrine of the practice remain astonishingly underdeveloped, limited mostly to squabbles over the proper or improper application of ‘ordinary meaning’”) Kelly Casey Mullally, *Legal (Un)certainty, Legal Process, and Patent Law*, 43 Loy. L. A L. REV 1109 (2010); (“Despite the importance of claim interpretation, theoretical scholarship has largely neglected its methodology.”) Cotropia, *supra* note 5 (“One area of patent law that has not been addressed in the discussion on patent scope and theories is patent claim interpretation. This omission is particularly noteworthy because of the substantive role patent claims and the interpretation thereof play in the patent system, namely the framing of questions of patent infringement and validity.”)

²¹ Timothy Holbrook, *Patents, Presumptions, and Public Notice*, 86 Indiana Law Journal 779 (2011) (“Patents are peculiar legal instruments in that they contain both technical and legal information. This Janus-like nature of the document is important because they serve the legal purpose of affording the owner the right to exclude others from practicing the invention, and third parties need to be able to assess the scope of that right. At the same time, through the patent’s disclosure, the document is intended to contribute to the storehouse of technical knowledge.”)

²² Peter K. Yu, *Intellectual Property and Information Wealth: Copyright and Related Rights* 429 (2007) (“An issued patent is a legal instrument. It contains technical information describing the claimed invention.”); *see also*, Richard D. Walker, *Patent as Scientific and Technical Literature* 41 (1995). A patent is a legal document as well as a technical document. It is prepared by an attorney using legal terminology to lay claim to as much protection as possible for the inventor represented, while at the same time disclosing no more than required to describe the invention.

²³ *Id.*, Walker. The author stated the tight relationship between the patent documents and the development of science and technology: “As pure science increases, so increases technology; as technology grows, so grows the amount of invention; as invention discloses an operational way of doing something new and discloses the ‘something new’ in the form of a patent application leading to grant of a patent, the documents created in the final step record the culmination of the entire process.”

²⁴ Christian Mammen, *Patent Claim Construction as a Form of Legal Interpretation*, 12 J. Marshall Rev. Intell. Prop. L. 40 (2012). “As someone who has spent significant time in both the silos of legal philosophy and patent law, the lack of attention on this connection strikes me as both incomprehensible and completely unsurprising. I believe that this intersection is fertile ground.”

In patent claim interpretation, studying interpretive theories is an illuminative way to know how judges justify their choice of meaning.²⁵ Literary and legal theorists have “joined forces” in discussing the questions such as whether meaning is implanted by the authors or constructed by readers.²⁶ In patent law, once the claim is interpreted, all subsequent determinations of whether the patent is infringed or whether the invention is patentable are governed by that meaning.²⁷ Therefore, a sound basis for justifying the best path between competing plausible interpretations is of utmost importance.²⁸ Theoretical studies also help us to understand what the modern challenges and opportunities are facing other areas of legal interpretation, and what lessons we can learn from them to improve the principles of patent claim interpretation. Legal theories perform explanatory and normative functions,²⁹ they not only explain what the law *is*, but also are concerned with what the law *ought to be*. Therefore, studying interpretive theories can help to explain the complex process of patent claim construction, and at the same time, help to argue for a better interpretive framework that provides rules that one should follow.³⁰

²⁵ Anthony D'Amato, *The Effect of Legal Theories on Judicial Decisions*, 74 Chi.-Kent L. Rev. 517(1999). (“To persuade a judge, we should try to discover what her theories are.”) White, James Boyd, *Justice as Translation: An Essay in Cultural and Legal Criticism* 214(1990) (“judicial excellence lies less in the choice of doctrine than in what the doctrine chosen is made to mean.”)

²⁶ Dennis Patterson, *A Companion to Philosophy of Law and Legal Theory* 448 (2010).

²⁷ Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretive Regimes*, 61 U. Miami L. Rev. 1033(2007).

²⁸ Richard S. Gruner, *How High Is Too High? Reflections on the Sources and Meaning of Claim Construction Reversal Rates at the Federal Circuit*, 43 Loy. L.A. L. Rev. 981 (2010) (“...cases in which claim constructions are both material and indeterminate—that is cases in which there are several plausible claim interpretations, each with substantial support in the case record, but each leading to a very different case result.”)

²⁹ Raymond Wacks, *Understanding Jurisprudence: An Introduction to Legal Theory* 5 (2012).

³⁰ Roger B. M. Cotterrell, *English Conceptions of the Role of Theory in Legal Analysis*, 46 Modern Law Review 681 (1983). In legal interpretation, “what theory can do is to aid in showing the place of such rationalizations in a broader understanding of the law in modern conditions. It can and should help to alert

THE CONTRIBUTIONS AND STRUCTURE OF THIS THESIS

In the past decade, there has been scarce literature on the theories of legal interpretation underpinning different claim construction approaches. The earlier relevant works are Craig Allen Nard's *A Theory of Claim Interpretation*³¹ and Kelly Casey Mullally's *Patent Hermeneutics: Form and Substance in Claim Construction*.³² Both of the articles focused solely on the U.S. jurisdiction. Both promoted the "context-dependent inquiry" or the "fact-intensive inquiry" that favors the extrinsic/contextual evidence over the text to be interpreted.³³ However, when most existing approaches already interpret patent claims in context rather than in isolation, a more important question is not "context or no context" but "which context" and "how much context."³⁴ Their research invites us to critically examine the theoretical basis for the legal rules of claim interpretation.

Only recently has scholarship begun to pay serious attention to the intersection of patent law and the theory of legal interpretation, such as Peter Lee's *Substantive Claim Construction as a Patent Scope Lever*³⁵ in 2011, Christian E. Mammen's *Patent Claim Construction as a Form of Legal*

the lawyer to fundamental change in the overall shape of law and legal institutions, not merely by describing, but by guiding explanation of, legal change in relation to social change."

³¹ Craig Allen Nard, *supra* note 16.

³² Kelly Casey Mullally, *Patent Hermeneutics: Form and Substance in Claim Construction*, 59 Fla. L. Rev. 333 (2007)

³³ The extrinsic evidence refers to all evidence external to patent and prosecution history. For example, Kelly believes that "a substantive approach allows a decision maker to consider broader information set to determine meaning...A substantive interpreter approaches her task with the view that it is necessary to look at context to attain meaning of a word. Context is less important, if not unimportant together, to a formalist." *Id.* Nard emphasizes "the relevance of extrinsic context and industry custom...a pragmatic textualist approach would consider extrinsic evidence without a threshold determination of intrinsic ambiguity." *Supra* note 16.

³⁴ Steven D. Smith, *The Pursuit of Pragmatism*, 100 Yale L.J. 409 (1990).

³⁵ Peter Lee, *Substantive Claim Construction as a Patent Scope Lever*, 1 IP Theory 100 (2011).

*Interpretation*³⁶ and Dan Burk's *Dynamic Claim Interpretation*³⁷ in 2012, and Tun-Jen Chiang & Lawrence B Solum's *The Interpretation-Construction Distinction in Patent Law*³⁸ in 2013. In summary, these studies have explored two fundamental pairs of concepts on the meaning of claim terms: (1) "interpretation" versus "construction"³⁹ (sometimes referred to as "thing construction" versus "word construction"⁴⁰); (2) "static meaning" versus "dynamic meaning."⁴¹ These studies help to introduce the important long-established concepts in legal interpretation into patent claim construction,⁴² and they all raise an essential question: what do we mean by the "meaning" of a claim term? Apparently, there is a growing need for a deeper theoretical understanding and further practical applications in the field of patent claim construction.

This thesis will further explore another pair of critical concepts:

³⁶ Mammen, *supra* note 24.

³⁷ Dan Burk, *Dynamic Claim Interpretation*, in *Intellectual Property and the Common Law* (Shyam Balganesh, ed.) (2012), available at SSRN: <http://ssrn.com/abstract=2005251>

³⁸ Tun-Jen Chiang & Lawrence B Solum, *The Interpretation-Construction Distinction in Patent Law* 123 Yale L.J. 530-614 (2013).

³⁹ *Id.* ("Rather, the payoff of drawing the interpretation-construction distinction is antecedent: it tells us which issues are problems of linguistic meaning, and which issues are problems of legal effect. This is important because the two types of problems call for different solutions.")

⁴⁰ Kevin Emerson Collins, *The Reach of Literal Claim Scope into After-Arising Technology: On Thing Construction and the Meaning of Meaning*, 41 Conn. L. Rev. 493 (2008) ("courts can sanction play between thing-scope and meaning-scope.")

⁴¹ Burk, *supra* note 37. ("Dynamic claim interpretation, like dynamic statutory interpretation, is not a call to abandon the text under consideration, but it is a call to recognize that meaning is not manifest, immutable, or hermetic. While there is some superficial appeal to the certainty promised by originalism, reliance on the "plain" or "ordinary" or otherwise purportedly self-evident meanings of claims is more apt to deter innovation than is transparent, dynamic interpretation.")

⁴² Jack M. Balkin, *Framework Originalism and the Living Constitution*, 103 Nw. U. L. Rev. 549 (2009). ("One type of activity, which we might call interpretation proper, is the ascertainment of meaning. Another, which constitutes a far larger task, is constitutional construction—implementing and applying the Constitution in practice, and building out institutions to perform constitutional functions.") *See also*, Jiri Janko, *Linguistically Integrated Contractual Interpretation: Incorporating Semiotic Theory of Meaning-Making into Legal Interpretation*, 38 Rutgers L.J. 601 (2007). ("interpretation is the process of determining the meaning that parties attached to their bargained-for language. Construction, on the other hand, is the application of public policy and various canons of construction to give a contract its meaning.")

“meaning (or *connotation*)” versus “applications (or *denotation*)”⁴³ in patent claim interpretation. The concept of *application* lies at the core of philosophical hermeneutics.⁴⁴ “That branch of science which establishes principles and rules of interpretation and construction is called hermeneutics.”⁴⁵ The term “philosophical hermeneutics”⁴⁶ is often associated with Hans-Georg Gadamer and his book *Truth and Method*, which is regarded as one of the two or three most important works of this century on the philosophy of humanistic studies.⁴⁷ The philosophical hermeneutics regards interpretation as a dialectical play between the interpreter’s own horizon and the horizon of the text formed in the past.⁴⁸ According to Gadamer, all understanding involves a “fusion of horizons” in which the legal text acquires meaning only in its application to the case at hand.⁴⁹

In legal interpretation, the dynamic approaches derived from philosophical

⁴³ Sanford Levinson & Steven Mailloux (ed.), *Interpreting Law and Literature: A Hermeneutic Reader* 441 (1988) (“This distinction [meaning/application] parallels the philosopher’s related distinctions between connotation and denotation, and intention and extension... This distinction also parallels those between sense and reference.”); *See also*, E. E. C. Jones, *Mr. Russell’s Objections to Frege’s Analysis of Propositions*, 19 *Mind* 75, 379-386 (1910) (“According to Frege what a Categorical Affirmative Proposition asserts is: identity of denotation (or application—Bedeutung) with difference of intension (or connotation or ‘meaning’—Sinn).”); Christopher R. Green, *Originalism and the Sense-Reference Distinction*, 50 *St. Louis University Law Journal*, 555 (2006), quoting John Stuart Mill, who introduced “connotation” and “denotation” in his *A System of Logic* (“[W]henver the names given to objects convey any information, that is, whenever they properly have any meaning, the meaning resides not in what they denote, but in what they connote.”)

⁴⁴ Russell Weaver, *Questioning Keats: an Introduction to Applied Hermeneutics* 55 (2006). Russell Weaver was also aware of the central position of application in discussing the applied hermeneutics: “The priority given to application is parallel to the priority of existence in Heidegger’s ontology”

⁴⁵ Francis Lieber, *Legal and Political Hermeneutics, or Principles of Interpretation and Construction in Law and Politics, with Remarks on Precedents and Authorities* 64 (1839).

⁴⁶ Hans-Georg Gadamer, *Truth and Method* 175 (Joel Weinsheimer & Donald G. Marshall trans., 2nd ed., 2004). Hermeneutics is “the art or technique of understanding and interpretation.” *See also*, Paul Ricoeur, *The Conflict of Interpretations: Essays In Hermeneutics* xiv (2004). “Interpretation...is the work of thought which consists in deciphering the hidden meaning in the apparent meaning, in unfolding the levels of meaning implied in the literal meaning.” Robert J. Dostal, *The Cambridge Companion to Gadamer* 118 (2002) (“Thus, every word, writes Gadamer ‘carries with it the unsaid’; every speech ‘brings a totality of meaning into play without being able to express it totally.’”).

⁴⁷ Gadamer, *Id.*, Translator’s Preface.

⁴⁸ Gadamer, *supra* note 46, 301. To have a horizon means that one’s vision is always limited to what can be seen in a given time from a particular vantage point.

⁴⁹ Francis J. Mootz, *Law Hermeneutics and Rhetoric*, 228 (2010).

hermeneutics in interpretation of constitutions, statutes and treaties recognize the interplay between historical and contemporary contexts.⁵⁰ For instance, in the field of constitutional interpretation, according to Professor Herman Philipse, Gadamer's theory of "fusion of cultural horizons" is considered as the philosophical counterpart to the conception of the "living" or "evolving" Constitution,⁵¹ *i.e.* the meaning of the Constitution may evolve in light of current circumstances.⁵² Such "living-force"⁵³ vision has also been implemented by Australian courts,⁵⁴ distinguishing between the meaning of the words (*connotation*) and their intended applications (*denotation*) in constitutional interpretation.⁵⁵ The meaning of a constitutional term is its

⁵⁰ William N. Eskridge, Jr., *Dynamic Statutory Interpretation*, 135 Univ Penn LR. 1479.(1989)(Theoretically, my model of dynamic statutory interpretation offers quite a different focus from traditional theories of statutory interpretation because it treats the evolutive context as a persuasive source of statutory meaning which should be considered in addition to the statute's text and legislative history.) Randal N.M. Graham, *Right Theory, Wrong Reasons: Dynamic Interpretation, the Charter and "Fundamental Laws"*, 34 SCLR (2006) 169.(“As time passes and the text is applied to unforeseen situations, the statute's meaning evolves to become something more than what the drafters intended...Because dynamism explicitly recognizes the evolutive nature of language...”) The leading “dynamist” scholars are Alexander Aleinikoff, William Eskridge, Daniel Farber, and Philip Frickey. *See* generally, T. Alexander Aleinikoff, *Updating Statutory Interpretation*, 87 Mich. L. Rev. 20 (1988).

⁵¹ Herman Philipse, *Antonin Scalia's Textualism in philosophy, theology, and judicial interpretation of the Constitution*, 3 Utrecht Law Review 169-192 (2007). (“Let me therefore turn to my own field and discuss briefly how Textualism fares in philosophy. Its main opponent is still Gadamer's theory of interpretation. It is illuminating to dissect this theory because it is the paradigmatic philosophical counterpart of Justice Scalia's main scapegoat, the doctrine of The Living Constitution.”) Adam Winkler et al. (ed.), *Encyclopedia of the American Constitution*, Vol. 6, 2712 (2000) (“Over the past two hundred years, American constitutional interpretation has undergone a transformation from its early static and TEXTUALIST tradition to a modern, dynamic approach wherein a ‘living constitution’ changes to accommodate the needs of the times.”) Louis J. Virelli III, *Constitutional Traditionalism in the Roberts Court*, 73 U. Pitt. L. Rev. 1 (2011) (“Living constitutionalism advocates a dynamic approach to constitutional interpretation, where contemporary notions of justice and societal needs drive constitutional meaning.”) Jack L. Landau, *Some Thoughts about State Constitutional Interpretation*, 115 Penn St. L. Rev. 837 (2011) (“A third approach to constitutional interpretation is one that advocates for a “living” constitution. According to proponents, the meaning of a constitution is not static or fixed in time, as the originalists contend. Rather, the meaning of the constitution is dynamic, capable of changing in response to changing conditions in society.”)

⁵² Miguel Schor, *Contextualizing the Debate between Originalism and the Living Constitution*, 59 Drake Law Review 961-72 (2011)

⁵³ Michael Kirby, *Constitutional Interpretation and Original Intent: A Form of Ancestor Worship?*, 24 Melb. U. L. Rev. 1, 11 (2000) (approving of Andrew Inglis Clark's argument that the Australian Constitution must be "made a living force" and arguing that present understandings of the Constitution's meaning should control interpretation today).

⁵⁴ Greg Craven, *Heresy as Orthodoxy: Were the Founders Progressivists?* (2003) 31 Federal Law Review 87; *See also*, Robert Shenton French et.al (ed.), *Reflections on the Australian Constitution* 20 (2003). (“A constitution is sometimes described as a ‘living instrument’ or as having ‘living force’.”)

⁵⁵ Tom Ginsburg & Rosalind Dixon (ed.), *Comparative Constitutional Law* 602 (2011).

connotation,⁵⁶ and connotations have usually been understood to consist of “the *essential qualities or characteristics* of the concept referred to.”⁵⁷ The basic theme is that whilst the connotation remains constant, the denotation may vary over time.⁵⁸ A search for connotation, or, a search for the “essential differentia”,⁵⁹ has been considered as a “middle ground”⁶⁰ or “moderate form”⁶¹ of interpretation.

Patent claim interpretation is often outcome dispositive in delineating the legal limits of the right to exclude.⁶² The minimum TRIPS patent term ends twenty years after filing.⁶³ As time progresses in the patent term, there are more ideas, insights and knowledge for innovation.⁶⁴ On one hand, the words must be assigned the meaning which they bore at the time of filing in order to enforce the public notice function;⁶⁵ on the other hand, the courts must respond to effects of technological changes so as to provide sufficient

⁵⁶ Leslie Zines, *The High Court and the Constitution* 25 (2008) (“All the judges accepted that one had to look to the meaning ... and that “meaning” referred to the connotation rather than the denotation of the expression.”)

⁵⁷ H. P. Lee & Peter A. Gerangelos (ed.), *Constitutional Advancement in a Frozen Continent: Essays in Honour of George Winterton* 266 (2009)

⁵⁸ H. P. Lee & George Winterton (ed.), *Australian Constitutional Landmarks* 94 (2003).

⁵⁹ Simon Evans, *The Meaning of Constitutional Terms: Essential Features, Family Resemblance and Theory-Based Approaches*, 29 UNSWLAWJ 207 (2006).

⁶⁰ Ginsburg & Dixon, *supra* note 55. (“Some jurists find a middle ground, in which the original commitments of the constitution are understood at a fairly general level. This practice is embodied in the Australian doctrine distinguishing between the unchanging “connotation” of a constitution provision and its “denotation”, a distinction explained by Jeffrey Goldsworthy as the distinction between the meaning of the “words” and their intended applications (denotation).”)

⁶¹ Brendan Lim, *Review Essay: An Australian Reads ‘Living Originalism’* 34 Syd. Law Rev. 809 (2012).

⁶² Timothy R. Holbrook, *Patents, Presumptions, and Public Notice*, 86 Ind. L.J. 779 (2010). (“The act of interpreting the claims therefore delineates the legal limits of the right to exclude.”)

⁶³ TRIPS Article 33 “Term of Protection” “The term of protection available shall not end before the expiration of a period of twenty years counted from the filing date.”

⁶⁴ Tun-Jen Chiang, *Ex Post Claiming*, 108 Mich. L. Rev. 523 (2010) (“As time progresses in the life of a patent, the likelihood of capturing later insights increases because there are more later insights to capture.”)

⁶⁵ *Permutit Co. v. Graver Corp.*, 284 U.S. 52, 60 (1931) (Patent claims “inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.”); see *PSC Computer Prods., Inc. v. Foxconn Int’l*, 355 F.3d 1353, 1359 (Fed. Cir. 2004); *Ortho Pharmaceutical Corp. v. Smith*, 959 F.2d 936, 943 (Fed. Cir. 1992).

incentives for inventors.⁶⁶ Therefore, how to preserve meaning over time and across changing technological environment is one of the most difficult issues that judges face in claim construction. Based on a theoretical refinement of existing approaches, this thesis proposes the dynamic patent claim interpretation. Under the proposed dynamic claim construction principle, the meaning of a claim term is its connotation: *what a person having ordinary skill in the art* (a “PHOSITA”) would have understood the essential attributes of the technical solution referred to by the term at the time of filing. The connotation-denotation analysis has the capacity to accommodate technological changes by assessing whether the new item possesses all the essential attributes determined at the time of filing.⁶⁷ Philosophical hermeneutics can hopefully bring fresh insights into the ongoing issues in claim interpretation.

This thesis has three major goals: to enhance our understanding on how courts perform claim construction to establish the meaning of patent claims, to critically evaluate the theories underpinning the different existing claim interpretation approaches, and to introduce an alternative theory and propose a dynamic claim construction principle as well as a practical formula in the context of infringement.⁶⁸

⁶⁶ Cotropia, *supra* note 5.

⁶⁷ Jeremy Kirk, *Constitutional Interpretation and Evolutionary Originalism* 27 Fed L. Rev. 323 (1999) (“with some potential for evolution”)

⁶⁸ Claim construction is also used to determine whether the patent is invalid for failing to meet the conditions and requirements of patentability. *i.e.*, the invention is “novel”, involves “inventive step”, and is “industrially applicable” compared to the prior art. *See*, U.S. Patent and Trademark Office, Basic Patent Cooperation Treaty (PCT) Principles, http://www.uspto.gov/web/offices/pac/mpep/documents/1800_1801.htm (last visited Feb 08, 2012). Due to the volume of work that will be required as well as the time involved, this Thesis will focus on the claim

The Thesis proceeds as follows. Part I of the Thesis describes the prevailing claim interpretation approaches in different jurisdictions. Although the ordinary meaning approach (Chapter 1), the purposive approach (Chapter 2) and the constructive approach (Chapter 3) have their own advantages, they all have limitations in ascertaining the meaning of the patent claims, which cause confusions and debates in the claim construction process. Part II gives a brief introduction of the general interpretive theories and unveils the underlying theoretical justifications of the above approaches in patent claim interpretation (Chapter 4). It then exhibits the deficiencies of these theories in guiding claim interpretation (Chapter 5).

Part III introduces an alternative theory of philosophical hermeneutics and its application in legal interpretation, and examines the implications for claim interpretation (Chapter 6). It proposes the general principle of the dynamic approach based on philosophical hermeneutics, and attempts to offer a practical formula for applying the principle (Chapter 7). Part IV of the Thesis responds to possible criticisms from different standpoints. It also addresses several concerns about applying the proposed approach and defends the proposed dynamic approach (Chapter 8). Finally, the dynamic claim interpretation is used to analyze three test cases (Chapter 9).

construction in resolving the infringement issue, that is, whether the allegedly infringing product or process falls within the scope of protection of the patent. World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use* 212 (2nd ed., 2004) (“As already stated, the task of the court in the determination of infringement is the assessment of the scope of protection defined by the patent and whether the alleged infringement falls within that assessed scope.”)

PART I: THE CURRENT INTERPRETIVE APPROACHES IN PATENT CLAIM CONSTRUCTION

CHAPTER 1 THE ORDINARY MEANING APPROACH

This Chapter begins with introduction of the ordinary meaning approach adopted by courts in claim interpretation. The so-called “ordinary meaning” is not that ordinary. A PHOSITA is introduced to provide an objective basis of ordinariness, which suggests that a claim term has a generally known and commonly accepted meaning in a technological field, and such meaning is independent of the patentee’s intent. This approach is favored by interpreters who attempt to promote public notice function of the patent claims, minimize the decision costs and ensure that certainty in patent law is not undermined. Although a well-established ordinary meaning of a claim term can be found in some cases, sometimes there is more than one meaning of the term at the time of filing, and sometimes the ordinary meaning does not resolve the ambiguity in the claim texts. Under these circumstances, the notion that a claim term has an “ordinary meaning” is not a helpful one. The ordinary meaning approach is currently taken by courts in the United States. This Chapter shows how this approach works and the difficulties involved in its implementation. This Chapter further examines the current role played by ordinary meaning in the determination of patent infringement. Under the ordinary meaning approach, more explanation is needed in demarcating the patent scope in the context of after-arising technology.

Section 1 What makes ordinary meaning ordinary?

To interpret the terms of patent claims, one approach begins with their ordinary and accustomed meaning from the view of an ordinary artisan. The general assumption is that since the words have been carefully chosen by the patentee in order to convey a clear meaning to a PHOSITA at the time of filing, general usage should prevail with the words unless a different intention is manifested.⁶⁹ This interpretive method is named as the “ordinary meaning approach” in the thesis.

The ordinary meaning approach is popular in several jurisdictions. For example, it was held in the leading U.S. case *Phillips v. AWH. Corporation*⁷⁰ that, “the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” In a series of Australian cases, it has been held that “when interpreting the claims, the court considers the ordinary meaning which a person skilled in the art would have understood at the priority date.”⁷¹ Deeply

⁶⁹ *York Prods., Inc. v. Central Tractor Farm & Family Cent.*, 99 F.3d 1568, 1572 (Fed. Cir. 1996) (“Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.”). *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed. Cir. 2003) (“In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art”).

⁷⁰ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc); *Markman v. Westview* 52 F.3d 967 (Fed. Cir. 1995) (en banc) (“The focus in construing disputed terms in claim language is ... on the objective test of what one of ordinary skill in the art at the time of invention would have understood the term to mean.”); *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985 (Fed. Cir. 1999) (“Courts must presume that the terms in a claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms.”); *Sunrace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1302 (Fed. Cir. 2003); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1298 (Fed. Cir. 2003) (“In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art”).

⁷¹ *D'acor Corp Pty Ltd v. Dart Industries Inc.* (1988) 13 IPR 385; *Flexible Steel Lacing Company v.*

influenced by the U.S. patent law, the Japanese courts require that the scope of patent protection be decided on the basis of claim language.⁷² It is believed that “the scope of the exclusive right of a patent is measured according to the language of the claims. The terms in the claims must be interpreted in light of the ordinary meanings of the terms, the contents of the specification and drawings, the prosecution history, the state-of-the-arts at the time of filing, and the comprehension of the skilled-in-the-arts.”⁷³

Several typical rules of finding ordinary meaning were summarized by Sheppard J in the Australian case of *Decor Corporation Pty Ltd v. Dart Industries Inc.*⁷⁴ His Honor stated:

In summary, the relevant rules of construction which may be distilled from the authorities referred to are as follows:

Beltreco Ltd (2000) 49 IPR 331 at 350 (“As a general rule, the terms of a specification should be accorded their ordinary English meaning.”); *Baygol Pty Ltd v. Foamex Polystyrene Pty Ltd* (2005) 64 IPR 437 (In constructing a patent claim, the ordinary meaning of the language selected to define the claim is of prime importance); see also James Lahore, *Patents, Trade Marks & Related Rights* 18 (2001). Priority date is the date that is assumed to be the date of invention for patent law purposes. Article 4 of the Paris Convention for the Protection of Industrial Property established the system of priority rights. Under the priority rights, applicants have up to 12 months from first filing their patent application in which to make further applications in member countries and claim the original priority date. Article 2 paragraph 1 of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement) in conjunction with the Paris Convention provides a “derived” Convention priority right. Some priority rights are defined by multilateral conventions such as the European Patent Convention (EPC) or the Patent Cooperation Treaty (PCT) and domestic laws.

⁷² Toshiko Takenaka, *Harmonizing the Japanese patent System with its U.S. Counterpart through Judge-Made Law: Interaction between Japanese and U.S. Case Law Developments*, 7 Pac Rim L. & Pol’y J. 249 (1998). See also, Stephen Lesavich, *The New Japan-U.S. Patent Agreements: Will They Really Protect U.S. Patent Interests in Japan?* 14 Wis. Int’l L.J. 155(1995) (“The Japanese courts adhere more strictly to the literal interpretation of the patent claims.”) Nancy J. Linck & John E. McGarry, *Patent Procurement and Enforcement in Japan—A Trade Barrier*, 27 GW J. Int’l L. & Econ. 411 (1993-1994) (“The historic purpose of the Japanese patent system, to infuse technology into the Japanese economy and to share technology among manufacturing firms, has led courts to follow a policy of narrowly interpreting claims.”)

⁷³ UEDA Takuya, Judge, Intellectual Property High Court of Japan. *A Japanese View on Questions raised by Phillips v. AWH Corp.*, http://www.ip.courts.go.jp/documents/pdf/thesis/050722_23_1.pdf (Last visited March 7, 2010). Paragraph 1, Section 70 of the Japanese Patent Law provides that “Basically, claim should be interpreted on the basis of the claim language.” Paragraph 2 reads: “The meaning of a term or terms of the patent claims shall be interpreted in the light of the specification and the drawings.”

⁷⁴ *Decor Corporation Pty Ltd v. Dart Industries Inc* (1988) 13 IPR 385.

(1) The claims define the invention which is the subject of the patent. These must be construed according to their terms upon ordinary principles. Any purely verbal or grammatical question that can be answered according to ordinary rules for the construction of written documents is to be resolved accordingly.

...

(5) If a claim be clear, it is not to be made obscure because obscurities can be found in particular sentences in other parts of the document. But if an expression is not clear or is ambiguous, it is permissible to resort to the body of the specification to define or clarify the meaning of words used in the claim.⁷⁵

The term “ordinary meaning” is most often encountered in legal interpretation. Ordinary meaning does not entail that words and phrases are always to be interpreted in a purely literal way. Generally speaking, ordinary meaning is the meaning that would be understood by a competent language user upon reading the words.⁷⁶ Unlike other forms of legal interpretation, the claim language is not addressed to an ordinary speaker of English,⁷⁷ but to an ordinary artisan (who is presumed to know all of the relevant art within the field of invention and any analogous technical fields).⁷⁸ It is also an objective meaning of the term which is independent of the patentee's intent or purpose.

⁷⁵ *Id.* Although a claim must be understood in the light and context of the whole specification, as a general rule, the words of a claim are not to be altered by a gloss taken from the body of the specification and essential integers are determined by a common sense assessment of what the words of the claim convey in the context of the existing published knowledge at the time: *see also Rehm Pty Ltd v Websters Securities Systems (International) Pty Ltd* (1988) 81 ALR 79 at 92; *Kimberley-Clark Australia Pty Ltd v Arico Trading International Pty Ltd* (2001) 207 CLR 1. It is not legitimate to narrow or expand the boundaries of an anomaly as fixed by the words of a claim by adding words drawn from other parts of the specification: *see Flexible Steel Lacing Co v Beltreco Ltd* (2000) 49 IPR 331.

⁷⁶ Ruth Sullivan, *Statutory Interpretation* 50 (2d ed. 2007).

⁷⁷ *Chisom v. Roemer*, 501 U.S. 380, 405 (1991) (Scalia, J., dissenting). Judges should give the statute the meaning that would be attached to the textual language by an ordinary speaker of English.

⁷⁸ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed.Cir.2005). The “‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan after reading the entire patent.”

In patent law, the introduction of the concept of ordinary meaning by the courts raises a fundamental question: How to define “ordinary” in the specific context of patent claim interpretation?

In contractual interpretation or statutory interpretation, the rules of interpretation require that common and everyday words are given their “ordinary meaning” and technical terms are given their “specialized meaning”.⁷⁹ The distinction between ordinary meaning and non-ordinary meaning here is dependent upon different types of audience, that is, whether it is the non-technical community or the technical community.⁸⁰ Patent claim consists of a written statement composed in both everyday words and words of art.⁸¹ However, one important feature of claim interpretation is that claims must be construed from the perspective of a PHOSITA, who is presumed to know all of the relevant art within the field of invention and any analogous technical fields.⁸² That means claim terms are not to be given their meaning to a layman but rather are given meaning known to those in the particular art. For example, words such as “expression” and “control” have specialized meaning in pharmacology in addition to their commonly known meanings that will be familiar to the layperson.⁸³ If the same criterion (non-technical/technical

⁷⁹ Kenneth W. Clarkson, *West's Business Law: Text and Cases : Legal, Ethical, International, and E-commerce Environment* 219 (2006).

⁸⁰ Lawrence M. Solan, *The Language of Statutes: Laws and Their Interpretation* 79 (2010) (“the distinction between ordinary meaning and technical meaning is dependent upon the audience and its relation to the speaker.”)

⁸¹ Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 Rutgers L.J. 61. (2006). (“there are still a significant number of common, everyday words being defined on a regular basis by the Federal Circuit that provide value to the notion of a lexicon.”)

⁸² *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed.Cir.1985). *See also*, Guidelines for examination in the EPO, 11.3 Person skilled in the art: The hypothetical person is an “ordinary practitioner in a field of technology aware of what was common general knowledge in the art.” http://www.epo.org/patents/law/legal-texts/html/guiex/e/c_iv_11_3.htm (last visited Oct 30, 2010).

⁸³ Simon Fraser, *Breaking Down the Divisions between General, Academic, and Technical Vocabulary: The Establishment of a Single, Discipline-based Word List for ESP Learners*, 12 Hiroshima Studies in

audience) is applied, the claim meaning would be better regarded as “specialized” instead of “ordinary”.

Then, why is it called “ordinary meaning”? It is the customary use of words in the context of the written description by those skilled in the art that accurately reflects the “ordinary” meaning of the terms in the claims.⁸⁴ Hence, the criterion for the distinction between ordinary and non-ordinary meaning in claim interpretation is dependent upon the average knowledge and skill level of the artisans --the hypothetical legal personage is neither a genius nor a layperson.⁸⁵ It is a conceptual device like the reasonable person in tort law,⁸⁶ which emphasizes an objective standard of ordinariness:⁸⁷ first, the ordinary

Language and Language Education 151 (2009). The author differentiated the “lay-technical” words, which had a technical flavor, but likely to be known by the layperson and the “cryptotechnical” words, which have an additional, more specialized meaning. More examples of cryptotechnical words were given, such as “value”, “control”, “activity”, “base” etc.

⁸⁴ Manual of Patent Examining Procedure (MPEP) (8th Edition), August 2001, Latest Revision 2010, 2111.01 Plain Meaning http://www.uspto.gov/web/offices/pac/mpep/documents/2100_2111_01.htm (last visited 19/06/2012).

⁸⁵ *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 697 (Fed. Cir. 1983) (both laymen and geniuses are excluded from the PHOSITA standard). *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 454 (Fed.Cir.1985). (“[a] person of ordinary skill in the art is ... presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive, systematic research, or by extraordinary insights ...”) See also, Osenga, *supra* note 81 (arguing that “the community whose understanding and shared reaction should be the focus of interpretation is that collectively represented by the [ordinary artisan]” (emphasis added)).

⁸⁶ Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law's Mysterious Personage*, 77 Wash. L. Rev. 267 (2002) (“Patent law’s “person having ordinary skill in the art” has been likened to the reasonable person of tort law.”); Stephen C. Mouritsen, *Hard Cases and Hard Data: Assessing Corpus Linguistics as an Empirical Path to Plain Meaning*, 13 Colum. Sci. & Tech. L. Rev. 156 (2012) (“Such reasonableness standards are thought to be objective because they exclude personal idiosyncrasies from the analysis.”) See, e.g., The Restatement of Torts (2d) § 283 (“In dealing with this problem the law has made use of the standard of a hypothetical reasonable man. Sometimes this person is called a reasonable man of ordinary prudence, or an ordinarily prudent man, or a man of average prudence, or a man of reasonable sense exercising ordinary care. It is evident that all such phrases are intended to mean very much the same thing.”)

⁸⁷ Mayo Moran, *Rethinking the Reasonable Person: An Egalitarian Reconstruction of the Objective Standard* 219 (2003) (“to invoke the ordinary person as a way of retaining an objective element in the standard...”). Steven P. Smith & Kurt R. Van Thomme, *Bridge Over Troubled Water: The Supreme Court's New Patent Obviousness Standard in KSR Should Be Readily Apparent and Benefit the Public*, 17 Alb. L.J. Sci. & Tech. 127 (2007) (“Basing the level of ordinary skill in the art on these prior art-centric metrics has some appeal as it appears more objective than examining the level of skill from a “human” perspective - i.e., based on the perspective of either the inventor or some member of the industry.”) Jonathan J. Darrow, *The Neglected Dimension of Patent Law's PHOSITA Standard*, 23 Harv. J. of L. and Tech. 227 (2009) (“A disciplined approach that conceives of the PHOSITA’s art as competent production rather than innovation ensures that the goods and services available today will remain available while simultaneously preserving patent incentives for those actively seeking to advance the useful arts.”) *Phillips v. AWH Corp.*, 415 F.3d

meaning approach suggests the existence of objective meaning independent of patentee's intent or purpose; second, the ordinary meaning of patent claims is the generally known, well-understood and commonly accepted meaning by the scientific and technological community at the time of the invention.⁸⁸

Under the ordinary meaning approach, the commonly accepted meaning by a PHOSITA is thought to better serve the notice function of patent claims in order to enhance legal certainty,⁸⁹ because in some cases the ordinary meaning is readily apparent or discernable to interpreters.⁹⁰ It is also believed that the search for an ordinary meaning can substantially reduce decision cost and burdens of acquiring and processing information.⁹¹ The ordinary meaning approach is frequently applied in the U.S. courts. To gain a deeper understanding of the operation of this approach, the following paragraphs will take its application in the U.S. courts as an example for analysis.

1303, 1311(Fed. Cir. 2005) (en banc). The purpose of this standard is to “provide an objective basis from which to begin claim interpretation.”

⁸⁸ *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1299 (Fed. Cir. 1999)(“[W]ords in patent claims are given their ordinary meaning in the usage of the field of the invention, unless the text of the patent makes clear that a word was used with a special meaning.”). *Microsoft Corp. v. Multi-Tech Sys, Inc.*, 357 F.3d 1340, 1347 (Fed. Cir. 2004) (en banc) (“Claim language generally carries the ordinary meaning of the words in their normal usage in the field of invention.”).

⁸⁹ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996) (a “zone of uncertainty...would discourage invention only a little less than unequivocal foreclosure of the field”) (quoting *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942)). *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 33 (1997) (“Claims do indeed serve both a definitional and a notice function.”). *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 575 (Fed. Cir. 2000) (en banc) (the notice function “has become paramount and the need for certainty as to the scope of patent protection has been emphasized”).

⁹⁰ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (“In some cases, the ordinary meaning of claim language . . . may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.”)

⁹¹ David A. Strauss, *Why Plain Meaning?* 72 Notre Dame L. Rev. 1565 (1997) (“the ordinary meaning is an obvious point of agreement in circumstances in which disagreement is too costly. Sometimes it is more important that things be settled than that they be settled right: ordinary meaning provides a way to settle things.”) See also, Adrian Vermeule, *Interpretive Choice*, 75 N.Y.U. L. Rev. 74 (2000) (“courts’ foremost concern should be to minimize the costs of judicial decision making and of legal uncertainty.”) Ruoyu R. Wang, *Texas Digital Systems v. Telegenix, Inc.: Toward a More Formalistic Patent Claim Construction Model*, 19 Berkeley Tech. L.J.153 (2004) (claiming “[formalism] gradually reduces courts’ interpretive burdens and mistakes, increases interpretive accuracy and predictability, and encourages a norm formation for patent drafting.”).

Section 2 The ordinary meaning approach in the U.S. courts

A. A brief introduction

The right of individuals to patent their inventions is derived from the U.S. Constitution in Article I, Section 8, Clause 8, which gives Congress the authority to “promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”⁹² The US Congress enacted The First United States Patent Statute in the year 1790, which was a short act of seven sections.⁹³ In 1870 the legislation relating to patents was revised and consolidated into a single act,⁹⁴ and the basic structure of the present law was adopted in 1952 when congress passed a new patent act codified under Title 35 of the United States Code. 35 U.S.C §112 sets forth the following requirement:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.⁹⁵

Since its establishment in 1982, the Federal Circuit has developed comprehensive case law concerning the critical issue of patent claim

⁹² Article I, Section 8, Clause 8 of the United States Constitution.

⁹³ Patent Act of 1790, Ch. 7, 1 Stat. 109-112 (April 10, 1790). The First United States Patent Statute, CHAP. VII. --An Act to promote the progress of useful Arts.

⁹⁴ Patent Act of 1870, Ch. 230, 16 Stat. 198-217 (July 8, 1870) CHAP.CCXXX --An Act to revise, consolidate, and amend the Statutes relating to Patents and Copyrights.

⁹⁵ 35 U.S.C §112 Specification. (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.”)

interpretation.⁹⁶ The 1995 Federal Circuit *Markman I* decision (*Markman I*) explicitly held that claim construction must determine the objective meaning of the disputed terms at the time of the invention, from the eyes of those of ordinary skill in the art.⁹⁷ The 1996 Supreme Court *Markman* decision (*Markman II*) established that the claim construction is a question of law, and it is for the Court, and not for the jury, to construe patent claims.⁹⁸ The 1998 Federal Circuit *Cybor Corp. v. Fas Technologies* decision⁹⁹ confirmed that claim construction is a question of law, which shall be reviewed non-deferentially on appeal.¹⁰⁰ As a result, claim interpretation of patents is

⁹⁶ The Federal Circuit was created by the Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.) The great influence of the Federal Circuit decisions on patent law has been widely recognized. See e.g., Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. Ill. L. Rev. 387 (“The Court of Appeals for the Federal Circuit . . . has become the de facto supreme court of patents.”). Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. Rev. Vol. 1105 (2004) (“The United States Court of Appeals for the Federal Circuit has become, by far, the most powerful and influential force in the U.S. patent system.”)

⁹⁷ *Markman I*, 52 F.3d at 986 (holding “Thus, the focus in construing disputed terms in claim language is not the subjective intent of the parties to the patent contract when they used a particular term. Rather the focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean.”)

⁹⁸ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (“*Markman I*”). The Federal Circuit held that “[I]n a case tried to a jury, the court has the power and obligation to construe as a matter of law the meaning of language used in the patent claims.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996). The Supreme Court affirmed the Federal Circuit’s *Markman I* decision, agreeing that judges, not juries, should construe a patent’s claims. For previous cases, see e.g. *Specialty Composites v. Cabot Corp.*, 845 F.2d 981,986 (Fed. Cir. 1988) (finding that claim interpretation is a matter of law and the reviewing court need not defer to the district court); *Read*, 970 F.2d at 822 (determining that claim construction is a matter of law for the court); *Intellicall, Inc. v. Phonometrie, Inc.*, 952 F.2d 1384, 1387 (Fed. Cir. 1992) (finding that claim construction is a matter of law and disagreement over the meaning of a claim term does not necessarily create a factual dispute precluding summary judgment); *Senmed, Inc. v. Richard-Allen Med. Indus., Inc.*, 888 F.2d 815, 818 (Fed. Cir. 1989) (stating that claim construction is a matter of law that may be submitted to the jury if the judge insures that the law is correctly applied); *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) (holding that claim construction is a matter of law with de novo review); *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1569 (Fed. Cir. 1983) (holding that the determination of what is patented is a matter of law); *SSIH Equip. v. United States Int’l Trade Conim’n*, 718 F.2d 365, 376 (Fed. Cir.1983) (stating that the scope of what is patented is a question of law).

⁹⁹ *Cybor Corp. v. Fas Technologies, Inc.*, 138 F.3d 1448 (Fed. Cir. 1998) (holding “we review claim construction *de novo* on appeal”).

¹⁰⁰ *Trading Technologies International, Inc. v. eSpeed, Inc.*, Nos. 08-1392, -1393, -1422 (Fed. Cir. 2010). On appeal, the Federal Circuit, when considering claim construction, found itself “stranded between the language” in the Supreme Court’s decision in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), and the language in the Federal Circuit’s decision in *Cybor Corp. v. FAS Technologies, Inc.*, 138 F.3d 1448 (Fed. Cir. 1998) (en banc). Specifically, the Court found that the ruling in *Markman* makes multiple references to factual components of claim construction, while in *Cybor* the Federal Circuit interpreted *Markman* as holding that claim construction was solely a question of law, which the Federal Circuit should review without deference. (“In sum, claim construction involves many technical, scientific,

now normally done in a separate hearing in the absence of the jury, known as a “Markman hearing.”

In 2005, the Federal Circuit’s *en banc* decision in *Phillips* stands as the most authoritative decision on claim construction doctrine.¹⁰¹ Under the ordinary meaning approach, if no novel uses of claim words are expressly disclosed by the patent,¹⁰² an inventor’s claim terms should take on their plain meaning from the perspective of a PHOSITA at the time of the invention.¹⁰³ This approach describes a “heavy presumption” in favor of the meaning that would be ordinarily attributed by a PHOSITA to the terms,¹⁰⁴ rather than a heavy presumption of dictionary definitions. The “heavy presumption” is that the ordinary meaning of a claim term may be overcome only:¹⁰⁵

and timing issues that require full examination of the evidence and factual resolution of any disputes before setting the meaning of the disputed terms.”)

¹⁰¹ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

¹⁰² *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) (“The patentee may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”); *See also Merck & Co. v. Teva Pharmaceuticals USA, Inc.*, 395 F.3d 1364, 1370 (Fed. Cir. 2005) (“When a patentee acts as his own lexicographer in redefining the meaning of particular claim terms away from their ordinary meaning, he must clearly express that intent in the written description.”).

¹⁰³ *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004); *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002); *Elekta Instrument, S.A. v. O.U.R. Scientific Int’l, Inc.*, 214 F.3d 1302 (Fed. Cir. 2000), *Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 951 (Fed. Cir. 1993); *Smithkline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 882 (Fed. Cir. 1988); *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1579 (Fed. Cir. 1988).

¹⁰⁴ *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202 (Fed. Cir. 2002) (stating that although claim construction analysis must focus on the language of the claims, the terms used bear a “heavy presumption” that they have the meaning a PHOSITA would ordinarily attribute to the terms); *see also*, James R. Barney, *In Search of “Ordinary Meaning”*, 85 J. Pat. & Trademark Off. Soc’y 101 (2003).

¹⁰⁵ *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359 (Fed. Cir. 2002) (“Generally speaking, we indulge a “heavy presumption” that a claim term carries its ordinary and customary meaning”, quoting *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 988 (Fed. Cir. 1999)). *See also*, Barney, *id.*, providing a detailed evolution of the “heavy presumption” in favor of the ordinary and accustomed meaning. Robert C. Weiss & Todd R. Miller, *Practical Tips to Enforcing and Defending Patents*, 85 J. Pat Trademark Off. Soc’y 791 (2003). The authors listed the following canons used by US courts:

- Where intrinsic evidence unambiguously sets out claim scope, it controls;
- There is a heavy presumption in favor of the ordinary meaning of claim language;
- General and technical dictionaries can be used to determine ordinary meaning;
- A claim term may be read with reference to the specification but a limitation/expansion from the specification should not be read into the claim;
- If possible, a claim should be construed to encompass a disclosed embodiment of the invention;
- Claims should be construed to uphold their validity unless their clear language shows otherwise;

a. When “the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.”

b. When “the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.”

c. When “the term ‘chosen by the patentee so deprive[s] the claim of clarity’ as to require resort to the other intrinsic evidence for a definite meaning.”

d. When the patentee phrased the claim in step- or means-plus-function format, “a claim term will cover nothing more than the corresponding structure or step disclosed in the specification, as well as equivalents thereto.”

The meaning of a patent claim has been recently explained by Judge Moore in *Thorner v. Sony Computer Entertainment America LLC*.¹⁰⁶ Applying this ordinary meaning presumption in that case, the phrase “attached to said pad” was defined as “affixing an item to either an exterior or an interior

-Where a claim is susceptible to a broad and narrow construction, the narrow should be adopted;

-The presumption of claim differentiation may be overcome by intrinsic and relevant extrinsic evidence.

¹⁰⁶ *Thorner v. Sony Computer Entertainment*, Case No. 11-1114 (Fed. Cir., Feb. 1, 2012) (Moore, J.) (“To act as its own lexicographer, a patentee must “clearly set forth a definition of the disputed claim term” other than its plain and ordinary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must “clearly express an intent” to redefine the term. *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008); see also *Kara Tech. Inc. v. Stamps.com*, 582 F.3d 1341, 1347-48 (Fed. Cir. 2009)...The standard for disavowal of claim scope is similarly exacting.”) See also, *Trading Technologies International, Inc. v. eSpeed, Inc.*, Nos. 08-1392, -1393, -1422 (Fed. Cir. 2010), (“Because an inventor must evince a “clear intention” to limit the claim terms to a specification embodiment, this court examines other claims to detect any contrary intentions.”)

surface”.¹⁰⁷ The district court improperly limited the term “attached to said pad” to mean attachment only to an external surface.¹⁰⁸ The Appellate Court allowed the presumption to be rebutted only when clear and convincing evidence demonstrated that a PHOSITA in the pertinent art would give that term a different meaning in context:

The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history. There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.... The patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or dis-avows its full scope.

For example, in *Allergan, Inc. v. Barr Laboratories, Inc.*,¹⁰⁹ although the plain and ordinary meaning of the disputed term “-N(R₄)₂” required identical R₄ moieties, the court held that the plaintiff Allergan had acted as its own lexicographer and redefined the term away from its ordinary meaning to encompass compounds in which the R₄ moieties were non-identical. As the Court pointed out, “[t]he inventor’s lexicography governs when the specification reveals a special definition given to a claim term by the patentee

¹⁰⁷ *Id.* (“The plain meaning of the term “attached” encompasses either an external or internal attachment.”)

¹⁰⁸ *Id.* (“Because the parties based the stipulation of non-infringement on the district court’s erroneous construction of this claim term, we vacate and remand. The district court held that “the specification redefines ‘attached’ by implication.”) The court held that the word attached was limited to attached to the outside of an object because the embodiments in the specification consistently use the term “attached” to indicate affixing an actuator to the outer surface of an object and use the word “embedded” when referring to an actuator inside an object. For additional support for the notion that at-tached and embedded have different meanings, the court pointed to claim 1 which uses the word “attached” and dependent claim 10 which uses the word “embedded.”

¹⁰⁹ *Allergan, Inc. v. Barr Lab., Inc.*, No. 2012-1040 (Fed. Cir., 2013)

that differs from the meaning it would otherwise possess.”¹¹⁰

As a default, a judge should assume that the words have their ordinary meaning. The preference for the ordinary meaning, *i.e.*, the common usage of a term in a pertinent art, is easily understandable. “The advantages of this presumption are its formality, ease of application, and predictability, all of which should reduce judicial discretion.”¹¹¹ The Federal Circuit has long recognized the need for certainty and public notice.¹¹² The post-*Markman II* empirical statistics show that the U.S. courts predominantly adopt the “hyper-textualism”¹¹³ and the “procedural approach”¹¹⁴, which both have a strong preference for the intrinsic evidence.¹¹⁵ It is believed that “in most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term.”¹¹⁶ Since *Phillips*, the law makes it clear that the

¹¹⁰ *Id.* As a result, the defendants' drugs infringed the asserted claim.

¹¹¹ Miranda McGowan, *Do As I Do, Not As I Say: An Empirical Investigation of Justice Scalia's Ordinary Meaning Method of Statutory Construction*, 78 Miss. L. J. 129 (2008).

¹¹² *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 586 (Fed. Cir.2000) (en banc) (discussing reliance on public record to effect public notice); Timothy Holbrook, *supra* note 21.

¹¹³ Nard, *supra* note 16. Professor Craig Allen Nard characterized two approaches of the Federal Circuit's claim interpretation as “hyper-textualism” and “pragmatic textualism.” In Professor Nard's view, the former stresses textual fidelity and internal textual coherence, but eschews extrinsic evidence as an interpretive tool. A hyper-textualist judge “rarely finds ambiguity. If ambiguity is found, expert testimony may be used to educate the judge in the relevant technology—not for the purpose of interpreting the ambiguous claim language.” Professor Nard concluded that the “hyper-textualism remains the predominant interpretive approach to claim interpretation.”

¹¹⁴ Wagner & Petherbridge, *supra* note 96 . Professor Polk Wagner and Lee Petherbridge categorized two distinct methodological approaches in the Federal Circuit as “procedural approach” and “holistic approach”. They observed that the procedural approach is featured by adherence to a relatively strict rules-based hierarchy of interpretive sources, with a particular emphasis on the ordinary meaning of disputed patent claim language, while the holistic approach is a far less structured analysis, utilizing the array of possible interpretive information in a flexible, case-specific fashion. Based on their empirical research on the Federal Circuit's methodological approaches to claim construction in all written opinions since *Markman II*, Professor Polk Wagner and Lee Petherbridge found that the Court utilized the procedural approach in 63% of the cases and the holistic approach in the remaining 37%.

¹¹⁵ It must be pointed out that the above two studies both acknowledge that various claim construction methodologies consult essentially the same sources of meaning, including the intrinsic evidence (claim language itself, specification and prosecution history files) and extrinsic evidence (dictionaries and expert testimony). Wagner & Petherbridge, *supra* note 96. But as they argued, the critical difference lies “in the process (or absence thereof) by which such information is used.” The authors were aware that the distinction drawn in the article obviously invoked some debate between the textualist and pragmatist schools of interpretive method.

¹¹⁶ *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

intrinsic evidence serves as the principal source for claim construction, as the Federal Circuit pointed out, “the ordinary meaning of a term must be considered in view of the intrinsic evidence: the claims, the specification, and the prosecution history.”¹¹⁷ It is believed that the public notice function of claims is best served when the meaning of claim language is readily apparent to patent readers.¹¹⁸

B. Circumstances where “ordinary meaning” would be inappropriate.

Under the ordinary meaning approach, the words of the claim are to be given their ordinary and customary meaning as understood by a PHOSITA at the time of invention.¹¹⁹ While ordinary meaning interpretation may be useful in some cases, sometimes claim terms lack a well-established ordinary meaning at the time of filing, and sometimes the ordinary meaning does not resolve the parties’ dispute.¹²⁰ Under these circumstances, the notion of a claim term having an ordinary meaning is not a helpful one.

Firstly, in some cases, the dispute over the meaning of a particular claim

¹¹⁷ *Phillips v. AWH Corp.*, 376 F.3d 1382, 1383 (Fed. Cir. 2004). *See also Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1552 (Fed. Cir. 1997) (The specification “teaches about the problems solved by the claimed invention, the way the claimed invention solves those problems, and the prior art that relates to the invention.”) *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996). (“The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.”)

¹¹⁸ R. Polk Wagner & Joseph Scott, *Brief of Amicus Curiae for the Federal Circuit in Edward H. Phillips v. AWH Corporation* (2004), http://patentlaw.typepad.com/patent/files/Phillips_Amicus_Wagner_Miller.pdf (last visited 21/06/2012). (“Conversely, the public notice function is worst served when litigation is required to interpret even the most banal of claim terms.”) Karen C. Mitch, Comment, *Pondering a “Baffling” Situation: The “Reconstruction of Claim Construction*, 4 J. Marshall Rev. Intell. Prop. L. 623 (2005). (“Through an iterative use of the ordinary dictionary, claim construction would be more simple, cost effective and efficient in serving the public notice function of the claim.”)

¹¹⁹ *Phillips III*, 415 F.3d at 1312. (citing *Innova*, 381 F.3d at 1116).

¹²⁰ *O2 Micro International Ltd. v. Beyond Innovation Technology Co.*, 521 F.3d 1351 (Fed.Cir.2008). The O2 Micro district court had refused to interpret the terms “only if” and instead allowed the terms to go to the jury without any instruction from the court. The jury found that the defendant had infringed, and the judge issued an injunction. The Federal Circuit held that the district court erred because a court is required to construe terms when either: 1) the terms have more than one ordinary meaning; or 2) failure to define the terms does not settle the parties’ dispute.

term is not settled by appeal to its ordinary meaning.¹²¹ The reason is that patent claim interpretation is highly sensitive to a particular context of the invention (*i.e.*, a new process, machine, manufacture, composition of matter, or improvement thereof)¹²². Because of the uniqueness of the subject matter of a patent claim, claim construction requires a detailed understanding and analysis of particular facts more than common knowledge in the art. It has been pointed out that the ordinary meaning may not be so ordinary at all: the so-called “ordinary meaning” is often formulated through a synthesis of various textual and contextual considerations.¹²³

A potential defense is that the ordinary meaning is determined in the rich and complex context of the invention, and a PHOSITA needs to consult an eclectic set of intrinsic materials (claims, specifications and prosecution history files) and extrinsic materials (such as dictionaries¹²⁴ and expert testimony¹²⁵)

¹²¹ Menell et al. *supra* note 5.

¹²² 2107 Guidelines for Examination of Applications for Compliance with the Utility Requirement, defining statutory subject matter in the patent claim. Manual of Patent Examining Procedure (MPEP) (8th Edition) (2001) Latest Revision July 2010, http://www.uspto.gov/web/offices/pac/mpep/documents/2100_2107.htm (last visited 22/06/12).

¹²³ Menell, *et.al*, *supra* note 5. The authors pointed out that identification of ordinary meaning as the “objective baseline” puts tremendous emphasis on this term, which can create unfortunate confusion and error. The authors proposed that the claim construction process started with the “initial understanding” of claim language, which focused on a particular claim term of interest, and the endpoint of the analysis was the “proper construction.” *See also*, Michael Livingston, *Practical Reason, “Purposivism,” and the Interpretation of Tax Statutes*, 51 Tax L. Rev. 677 (1996).

¹²⁴ *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002) (“It has been long recognized in our precedent and in the precedent of our predecessor court, the Court of Customs and Patent Appeals, that dictionaries, encyclopedias and treatises are particularly useful resources to assist the court in determining the ordinary and customary meanings of claim terms.”). The Court quoted a series of cases where the dictionary meanings were emphasized. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325, 1380 (Fed. Cir. 2002) (“The ordinary meaning of a claim term may be determined by reviewing a variety of sources, including . . . dictionaries and treatises”); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d at 1366 (Fed. Cir. 2002) (“[O]ur precedents show that dictionary definitions may establish a claim term’s ordinary meaning.”); *Optical Disk Corp. v. Del Mar Avionics*, 208 F.3d 1324, 1334-35 (Fed. Cir. 2000) (“For such ordinary meaning, we turn to the dictionary definition of the term.”); *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1581 (Fed. Cir. 1995) (“[W]e see no error in the district court’s use of dictionary definitions to ascertain the ordinary meaning of the relevant claim limitation.”); *Pfizer, Inc. vs. Teva Pharms.USA, Inc.*, 429 F.3d 1364, 1374-75 (Fed. Cir. 2005) (The court agreed with the district court’s determination that “one of skill in the art would understand ‘saccharides’ to encompass more than sugars,” and would include “polysaccharides”. Extrinsic evidence in the form of technical dictionaries, treatises, and expert testimony were used to support this conclusion drawn from the '450 patent.) *See also*, Scott A.

when construing claim terms. However, there has been concern that with everything taken into consideration, “claim language must be given varying meanings according to nonspecific inferences drawn from the case-specific ‘context’ surrounding a given dispute, eviscerates the concept of public notice by shifting the relevant analytic framework from the objective understanding of the relevant public to the necessarily subjective understanding of the particular (judicial) decision-maker.”¹²⁶ Then the notion of “ordinary meaning” has limited descriptive or instructional value.¹²⁷

Secondly, in some cases, the ordinary meaning of a term is apparent, but in other cases, there may be several meanings to choose from.¹²⁸ In fact, the invention may cover a range of levels of abstraction,¹²⁹ and the disputed term

Turk, *The Proper Method for Using Dictionaries to Construe Patent Claims*, 6 Chi.-Kent J. Intell. Prop. 43 (2006); Daniel S. Matthews, *Baffled: Phillips v. AWH Corp. and the Reexamination of Dictionary Use in Patent Claim Interpretation*, 6 N.C.J.L. & TECH. 153, 163 (2004).

¹²⁵ *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002) (“Unfortunately, on the record before us, we are unable to say with certainty whether or not one of skill in the art would understand that a power supply is designed to provide a constant voltage to a circuit. Given the complex technology involved in this case, we think that this matter can only be resolved by further evidentiary hearings, including expert testimony, before the district court.”) See *NeoMagic Corp. v. Trident Microsystems, Inc.*, No. 98-699-KAJ, 2003 U.S. Dist. LEXIS 8054, at44–46 (D. Del. May 9, 2003) (finding that the expert testimony was ultimately unhelpful, and that the use of “power supply” in the specification rendered the construction adequately clear), *aff’d*, 110 F. App’x 103 (Fed. Cir. 2004). However, the potential utility of expert testimony in claim construction, and the concomitant need for credibility determinations, is apparent. See also, *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999) In *Pitney Bowes*, the Federal Circuit held that the district court had properly taken and considered expert testimony on the way that persons of ordinary skill in the art. Karl Koster, *Extrinsic Evidence in Patent Claim Interpretation: Understanding Post-Markman Confusion*, 8 J. Intell. Prop. L. 113 (2000); Breton A. Bocchieri, *When is Extrinsic Evidence Really “Extrinsic”?* 48 IDEA 523(2008). Howard G. Pollack, *The Admissibility and Utility of Expert Legal Testimony in Patent Litigation*, 32 IDEA 361 (1992). David H. Binney & Toussaint L. Myricks, *Patent Claim Interpretation After Markman - How Have the Trial Courts Adapted?* 38 IDEA 155, 184 (1997). Dennis Crouch et al., *Defining Your Terms*, 168 *Pat. World* 10 (2004) (“The use of scientific expert testimony has been proposed as a way to uncover the “ordinary meaning” of claim terms.”)

¹²⁶ Wagner & Scott, *supra* note 118. The authors suggest that the court hold that: “1. The presumptive-ordinary-meaning (POM) framework for interpreting claim language outlined above and established in the court’s recent jurisprudence is mandatory and binding; and, 2. that dictionaries or similar objective reference sources will be used to determine the ordinary meaning of claim language.”

¹²⁷ John M. Golden, *Construing Patent Claims According to Their Interpretive Community: A Call for an Attorney-Plus-Artisan Perspective*, 21 Harv. J.L. & Tech. 321–386 (2008). (“...the result is a claim construction jurisprudence that seems rootless and unusually vulnerable to methodological swings.”)

¹²⁸ James R. Barney, *supra* note 108.

¹²⁹ Burk & Lemley, *supra* note 20; See also, Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, http://ssrn.com/abstract_id=1434465 (last visited November 28, 2011)

may have a spectrum of meanings, and that the ordinary meaning rule does not help us choose among those meanings. One seemingly simple claim term may implicate contradictory canons of construction.¹³⁰ Take the famous *Nystrom v. Trex Co* case¹³¹ for example. The main claim construction issue was related to the claim term “board”. Based on the statements in the specification and the prosecution history, the district court found that Nystrom had limited the scope of the claim term “board” to mean a “piece of elongated construction material made from wood cut from a log.”¹³² On appeal, the Federal Circuit cited the definitions of the term “board” in several dictionaries, such as the *Webster’s Third International Dictionary* (2002) and the *American Heritage Dictionary of the English Language* (4th ed. 2000), accepting a broader construction: “the ordinary meaning of the word “board” encompasses both a piece of cut wood or sawn timber and a similarly-shaped item made of a rigid material.”¹³³ However, in view of *Phillips*, the Federal Circuit reheard the case and withdrew its decision, resulting in a totally different outcome. The same panel ruled that the term “board” should be interpreted in the context of the specification and the prosecution history of the patent.¹³⁴

¹³⁰ David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223. (2008). (“As Nystrom exemplifies, there are clear problems with claim construction. Despite the fact that the canons of claim construction seem to be useful and practical tools for district court judges, in many cases at least one claim term will implicate contradictory canons of construction.”) Mitch, *supra* note 118. (“These include confusion when there are multiple definitions for a single term, misinterpretation if the incorrect dictionary is used and a possible change away from intended meaning of the term that would be illustrated if the specification were referenced first.”)

¹³¹ *Nystrom v. Trex Co.*, 424 F.3d (Fed. Cir. 2005).

¹³² *Nystrom v. Trex Co.*, No. 2:01cv905 (E.D. Va. Aug. 19, 2002).

¹³³ *Nystrom v. Trex Co.*, 374 F.3d (Fed. Cir. 2004). After reviewing these references, the court found the word “board” to encompass both a piece of wood and a similarly shaped piece of a rigid material. The court found this because “Nystrom did not disclaim boards made from materials other than logs.”

¹³⁴ *Nystrom v. Trex Co.*, 424 F.3d (Fed. Cir. 2005) (“What Phillips now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public—i.e., those of ordinary skill in the art—that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to

Various courts are “unduly wedded to what they perceive to be the ‘ordinary meaning’ of a claim term.”¹³⁵ The understandings of “ordinary meaning” are not unified and occasionally even conflict with one another,¹³⁶ which have caused much confusion and inconsistency in the patent claim interpretation process.¹³⁷ Although the Phillips Court attempted to provide a unified claim construction approach in search of the “ordinary meaning” from the perspective of a skilled person,¹³⁸ the everlasting high reversal rates frustratingly suggest that “the promises of pre-trial predictability and expedient patent litigation seem to remain a tantalizing dream.”¹³⁹ Federal Circuit has been divided and reached contradictory decisions on the issue as to how to reconcile claim language with the description in the specification.¹⁴⁰ The

read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source.)

¹³⁵ Menell et al., *supra* note 5. The authors believe that it is unfortunate that the Federal Circuit has failed to expressly disavow the “heavy presumption of ordinary meaning.” Lawyers have persisted in citing pre-Phillips case law to argue this standard, and district courts have all-too-frequently adopted this obsolete rule.

¹³⁶ Tom Brody, *Claim Construction Using Contexts of Implication*, 13 Va. J. L. & Tech. 3 (2008).

¹³⁷ *American Piledriving Equipment, Inc., v. Geoquip, Inc.* No. 2010-1283; *American Piledriving Equipment, Inc. v. Bay Machinery Corporation* No. 2010-1314 (Fed. Cir. 2011) (Linn, Circuit Judge). This appeal concerns claim construction and infringement issues common to seven separate law-suits filed by American Piledriving in different district courts across the United States. Whether the accused devices infringe the '964 Patent largely turns in each action on the construction of three claim terms. “Of the district courts that have considered those terms, no two have construed all three terms the same way.”

¹³⁸ Ehab M. Samuel, *Phillips v. AWH Corp., Inc.: A Baffling Claim Construction Methodology*, 16 Fordham Intell. Prop. Media & Ent. L.J. 519 (2006).

¹³⁹ Christian A. Chu, *Empirical Analysis of the Federal Circuit's Claim Construction Trends*, 16 Berkeley Tech. L.J. 1075 (2001); See also Jeffrey A. Lefstin, *The Measure of the Doubt: Dissent, Indeterminacy, and Interpretation at the Federal Circuit*, 58 Hastings L.J. 1025(2007) (From the results of the logistic regression model, this study finds that patent infringement cases arising from the district courts are significantly more indeterminate than most other categories of cases reviewed by the Federal Circuit.) David L. Schwartz, *Courting Specialization: An Empirical Study of Claim Construction Comparing Patent Litigation Before Federal District Courts and The International Trade Commission*, 50 Wm. & Mary L. Rev. 1699 (2009).

¹⁴⁰ *Markem-Imaje Corp. v. Zipher Ltd.*, 657 F.3d 1293 (Fed. Cir. 2011); *Arlington Industries Inc. v. Bridgeport Fittings Inc.*, 632 F.3d 1246 (Fed. Cir. 2011), and *Retractable Technologies Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296 (Fed. Cir. 2011). Judges were on opposite sides of the issue in these cases, each in turn penning the majority opinion in one and the dissenting opinion in the other. See also, *SRI International v. Matsushita Electric Corp.* 775 F.2d 1107 (Fed. Cir. 1985). (“If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims.”); *Liebel-Flarsheim Co. v. Medrad, Inc.* 358 F.3d 898 (Fed. Cir. 2004). (“Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’”) *Intervet Inc. v. Merial Limited*, No. 2009-1568 (Fed. Cir.,

Federal Circuit expressed a general preference for intrinsic evidence over extrinsic evidence,¹⁴¹ but the court did not articulate an absolutely fixed evidence hierarchy for future claim construction cases, holding that: “There is no magic formula or catechism for conducting claim construction.”¹⁴² According to a post-*Phillips* empirical survey from July 13, 2005, immediately after the *Phillips* decision until September 2006, claim construction reversal rates remain high. “The overall reversal rate for these cases was 53.5%. Additionally, the Federal Circuit changed 33.3% of the district courts’ claim constructions, resulting in 39.5% of these cases having one or more terms reversed.”¹⁴³ An empirical study also shows that Post-*Phillips* claim construction cases hide the analysis of evidence under the guise of ordinary meaning. “Many Federal Circuit decisions now cite directly to the claims as a source of authority to establish that the ordinary meaning of the claim term controls.”¹⁴⁴

2010)(“Construing the claims in light of the specification does not, however, imply that limitations discussed in the specification may be read into the claims.”)

¹⁴¹ *Markman I*, 52 F.3d at 981; See also *Vitronics Corporation v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed.Cir.1996) (establishing that the court must look first to the intrinsic evidence, the patent claims, the specification (the written description and drawings), and the prosecution history (the record of the patent application process in the Patent and Trademark Office) before relying on extrinsic evidence, i.e. evidence other than the intrinsic evidence, such as dictionaries, treatises, expert and inventor testimony); *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (clarifying that Vitronics does not prohibit courts from examining extrinsic evidence, even when the patent document is clear; rather, Vitronics warned courts not to rely on extrinsic evidence to contradict the clear meaning discernible from the intrinsic evidence); *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (confirming the order of preference of claim construction evidence). *Goldenberg v. Cytogen Inc*, 373 F.3d 1158 (Fed. Cir. 2004) (holding “Extrinsic evidence, although not part of the intrinsic evidence, may be used to aid a court in construing claim terms as they would be understood in the relevant art, but may not be used to vary the meaning disclosed by the patent itself.”)

¹⁴² *Phillips v. AWH Corp.*, 376 F.3d 1382, 1324(Fed. Cir. 2004).

¹⁴³ Michael Saunders, *A Survey of Post-Phillips Claim Construction Cases*, 22 Berkeley Tech. L.J. 215 (2007). See also, *Amgen Inc. v. Hoechst Marion Roussel, Inc. (Amgen V)*, 469 F.3d 1040 (Fed. Cir. 2006). Chief Judge Michel has identified four problems with patent claim construction: (1) a steadily high reversal rate; (2) a lack of predictability about appellate outcomes; (3) loss of the comparative advantage of district court judges; and (4) inundation of the federal circuit with “the minutia of construing numerous disputed claim terms”.

¹⁴⁴ *Id.*, Saunders. As the empirical study shows, although there seems to be “only 6% of cases explicitly based on dictionary definitions and 45% based on the specification”, the methodology of claim

The search for an ordinary meaning is to promote the public notice function of the claim and protects the public's reliance on definitive statements made during the process of patent prosecution.¹⁴⁵ However, because of the confusion in understanding the concept of ordinary meaning, claim construction seems to be easily molded in any way desired by the courts.¹⁴⁶ As Justice Bradley wisely stated in 1886:

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.¹⁴⁷

Section 3 Ordinary meaning serving as a basis for infringement decision

The determination of whether a patent claim has been infringed requires a two-step analysis: (1) construction of the claims; and (2) comparison of the construed claim to the accused product.¹⁴⁸ In the second step, the court can find literal infringement or infringement under the doctrine of equivalent.

construction is actually less clear. Joseph See also, Miller & James Hilsenteger, *The Proven Key: Roles and Rules for Dictionaries in the Patent Office and the Courts*, 54 AM. U. L. Rev 829 (2005). From 1995 to 2004, the nine years have seen more than a ten-fold increase in the number of times per year that the Federal Circuit, in its majority opinions, expressly relies on publicly available reference sources such as dictionaries, encyclopedias, and learned treatises.

¹⁴⁵ *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003).

¹⁴⁶ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330 (Fed. Cir. 2005) (Mayer, Circuit Judge, with whom Newman Circuit Judge, joins, dissenting). (“ Again today we vainly attempt to establish standards by which this court will interpret claims. But after proposing no fewer than seven questions, receiving more than 30 amici curiae briefs, and whipping the bar into a frenzy of expectation, we say nothing new, but merely restate what has become the practice over the last ten years—that we will decide cases according to whatever mode or method results in the outcome we desire...”)

¹⁴⁷ *White v. Dunbar*, 119 U.S. 47, 7 Sup. Ct. 72 (1886).

¹⁴⁸ Terence P. Ross, *Intellectual Property Law: Damages and Remedies* 160 (2000). “Specifically, the patent infringement analysis is conducted in two steps: (1) construction of the claims; and (2) comparison of the construed claim to the accused product.” *Amgen, Inc. v. Hoescht Marion Roussel, Inc.*, 314 F.3d 313, 1324 (Fed. Cir. 2003). *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (Mayer, J., concurring) (“to decide what the claims mean is nearly always to decide the case.”)

Literal infringement is present only when each and every element set forth in the patent claims is found in the accused product.¹⁴⁹ The line between claim construction and the determination of infringement is often not so sharply drawn in patent litigations. “Where there is no genuine dispute over any relevant facts regarding the accused product, but only disagreement over possible claim interpretation,”¹⁵⁰ the claim construction and infringement inquiries collapse into one.¹⁵¹

This Section studies the relationships between the ordinary meaning construction and the infringement analysis. When courts speak of a claim term’s ordinary meaning, they do not mean its literal meaning. Literal meaning is determined by “the grammatical and lexical elements, unaffected by the context or what the speaker ‘meant’ to say.”¹⁵² It was observed that the U.S. courts put more and more effort into construing the ordinary meaning of the claims, rather than mitigating the harshness of literal construction by the

¹⁴⁹ *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575-76 (Fed. Cir. 1995).

¹⁵⁰ *See Gen. Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 983 (Fed. Cir. 1997) (“Where the parties do not dispute any relevant facts regarding the accused product . . . but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment.”) *MyMail, Ltd. v. America Online, Inc.*, Nos. 06-1147, -1172 (Fed. Cir. Feb. 20, 2007) (“Because there is no dispute regarding the operation of the accused systems, that issue reduces to a question of claim interpretation and is amenable to summary judgment.”) *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (“When the parties raise an actual dispute regarding the proper scope of the [] claims, the court, not the jury, must resolve the dispute.”).

¹⁵¹ Jason R. Mudd, *To Construe or Not to Construe: At the Interface Between Claim Construction and Infringement In Patent Cases*, 76 Mo. L. Rev. 709 (2011). (“the structure and operation of an accused device is often undisputed, so that determination of infringement will collapse into a question of claim construction.”) Where the relevant aspects of the accused products’ structure and operation are undisputed, the question of whether those products infringe on the claims of a patent turns solely on the interpretation of those claims. *Johnson Worldwide Assocs., Inc. v. Zebeo Corp.*, 175 F.3d 985, 988 (Fed. Cir. 1999). Because World Wide and Bensons do not dispute any relevant fact regarding the accused products, but rather disagree over claim interpretation, “the question of literal infringement collapses to one of claim construction and is thus amenable to summary judgment.” *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1578 (Fed. Cir. 1996).

¹⁵² Thomas Burns McArthur & Roshan McArthur (ed.), *Concise Oxford Companion to the English Language*, “Semantics and Grammar” (2005). Dominiek Sandra et al., *Cognition and Pragmatics*, 68 (2009) (“Granted, the purely linguistic-semantic meaning of a sentence may sometimes be vague and need amplification from the context in which it is uttered. But the sentence still has a default semantic meaning, however imprecise...in fact, literal meaning is widely assumed.”) *See also*, François Recanati, *Literal Meaning*, 70 (2003) (“Non-literal meaning is secondary meaning.”)

doctrine of equivalents.¹⁵³ As a result, the interpretation of the ordinary meaning of patent claim has emerged as a central question in infringement disputes, and therefore, it is crucial to clarify what ordinary meaning is.

A. A brief introduction of the “literal/ equivalents” infringement analysis

The U.S. Patent Act of 1952, like the 1870 Patent Act, favors a peripheral system of patent protection requiring that an applicant “particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”¹⁵⁴ In 1876, the U.S. Supreme Court stated in *Merrill v. Yeomans*¹⁵⁵ that “The public should not be deprived of rights supposed to belong to it without being clearly told what it is that limits these rights.” Therefore, a strict literal interpretation of the language of the claim, using the exact meaning of the words, could be used to define the protection afforded by the patent claim.¹⁵⁶ To ask what is the literal meaning is to simply look at the term in question and find meaning in virtue of linguistic properties of the term, such as its dictionary

¹⁵³ John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 Stan. L. Rev. 955 (2007). The study refers to the three time periods in either of two ways: (1) “pre-*Festo*, Fed. Cir. *Festo*, and post-Supreme Court *Festo*”; or (2) “pre-*Festo*, mid-*Festo*, and post-*Festo*.” It was found that in the doctrine of equivalents cases decided in 1993 through 1995, before the Federal Circuit or Supreme Court decisions in *Markman*, patentees won 40.0% of the doctrine of equivalents cases, compared with only 24% in the last eight years. See also, Lee Petherbridge, *On the Decline of the Doctrine of Equivalents*, 31 Cardozo. L. REV. 1371, 1378–79 (2010); David L. Schwartz, *Explaining the Demise of the Doctrine of Equivalents*, 25 Berkeley Technology Law Journal 1157 (2011). (“...distinguished academics have studied the so-called “demise” of the doctrine of equivalents. Professors John Allison, Mark Lemley, and Lee Petherbridge have each empirically analyzed this doctrine. All of their studies conclude that successful use of the doctrine has substantially diminished over time.”)

¹⁵⁴ 35 U.S.C. § 112, Specification. See also Anthony. W. Deller, *Patent Claims* §5 (1971) (2d ed.) (stating peripheral definition involves “marking out the periphery or boundary of the area covered by the claim and holding as infringements only such constructions as lie within that area,” and central definition involves “drafting of a narrow claim setting forth a typical embodiment coupled with broad interpretation by the courts to include all equivalents constructions.”)

¹⁵⁵ *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876).

¹⁵⁶ Richard T. Holzmann, *Infringement of the United States Patent Right: A Guide for Executives and Attorneys* 73 (1995) (“In general, if the words of a claim read on an allegedly infringing device or method, then there is said to be literal infringement of that claim.”)

meaning and rules of grammar.¹⁵⁷

However, to limit a claim by its literal language is not realistic because “outright and forthright duplication is ... very rare.”¹⁵⁸ A claim which is limited to its literal language would be easily avoided by a copyist, because “the ways of tangibly implementing a described structure or process are many, and there is usually no need to copy literally every element of an invention.”¹⁵⁹ The U.S. Supreme Court acknowledged that limiting the scope of protection to the literal wordings of a claim would reduce a patent’s value to virtually nothing.¹⁶⁰ “For this reason, the clearest rule of patent interpretation, literalism, may conserve judicial resources but is not necessarily the most efficient rule.”¹⁶¹

It is a popular legal theory that a general term in language has a central core of determinate meaning and a surrounding penumbra of indeterminate meaning.¹⁶² That is, the literal meaning of patent claims is supposed to be generally clear and distinct, but in a minority of cases the judge must of

¹⁵⁷ François Recanati, *Literal Meaning*, 98 (2004). (Differentiation between in virtue of features of the context or in virtue of linguistic properties of the expression-type.)

¹⁵⁸ *Graver Tank Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950).

¹⁵⁹ Gregory J. Battersby & Charles W. Grimes, *Patent Disputes: Litigation Forms and Analysis* 6-27 (2003).

¹⁶⁰ *Graver Tank & Mfg Co v. Linde Air Prods Co*, 339 US 605, 607 (1950). (“Such a limitation would leave room for—indeed encourage – the unscrupulous copyist to make unimportant and insubstantial changes.”) See also Tanuja V. Garde, *Legal Certainty, Stare Decisis and the Doctrine of Equivalents*, 27 E.I.P.R. 365-370 (2005).

¹⁶¹ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 731-32.(2002) (The language in the patent claims may not capture every nuance of the invention or describe with complete precision the range of its novelty.

¹⁶² Timothy A. O. Endicott, *Linguistic Indeterminacy*, 16 Oxford Journal of Legal Studies 667-697 (1996). See also H. Hart, *The Concept of Law* 119 (1961) (“Nothing can eliminate this duality of a core of certainty and a penumbra of doubt when we are engaged in bringing particular situations under general rules.”) Burr Henly, *Penumbra: The Roots of a Legal Metaphor*, 15 Hastings Const. L.Q. 91 (1987-1988) (“The penumbra metaphor illustrates instead the problem of law. It expresses, as much as anything, the distance judges have to travel between fact and law and how poorly equipped they are to bridge this gap.”) Jeremy Waldron, *Vagueness in Law and Language: Some Philosophical Issues*, 82 CAL. L. REV. 509 (1994) (The image of borderlines suggests a circle with a centre, where everything is clear, and a circumference where things become uncertain. It suggests that some cases just are core cases—in law, perhaps, “easy cases”—and others just are penumbral cases—in law, “hard cases”.)

necessity go outside the strict terms of the claims.¹⁶³ The doctrine of equivalents was introduced to extend patent protection beyond the scope of literal claim language in *Winans v. Denmead*.¹⁶⁴ The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described. In *Graver Tank & Mfg Co v. Linde Air Prods Co*,¹⁶⁵ the Supreme Court established the triple-identity test indicating that “the doctrine of equivalents is founded on the theory that, if two devices do the same work in substantially the same way and accomplish substantially the same result, they are the same, even though they differ in name, form or shape.”¹⁶⁶ Even if the claim term is a fuzzy quantitative limitation (such as “substantially all”)¹⁶⁷ or an absolute limitation (such as “at least”),¹⁶⁸ the triple-identity test can still be applied.

The triple-identity test was not the sole means of determining equivalence.¹⁶⁹ In *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*,¹⁷⁰ the

¹⁶³ *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991) (“application of the doctrine of equivalents is the exception, however, not the rule.”)

¹⁶⁴ *Winans v. Denmead*, 56 U.S. 15 How. 330 (1853) (holding “the law so interprets the claim without the addition of these words. The exclusive right to the thing patented is not secured, if the public are at liberty to make substantial copies of it, varying its form or proportions.”)

¹⁶⁵ *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 608 (1950).

¹⁶⁶ *Id.*

¹⁶⁷ *Pozen Inc. vs. Par Pharmaceutical, Inc.* 2011-1584, -1585, -1586 (Fed. Cir. 2012) (“the multilayer tablet claimed in the ’183 patent requires ‘substantially all of the naproxen and triptan [to be] segregated and separated for the purpose of independent dissolution.’”) The court applied the triple-identity doctrine and found that “substantially all the triptan is segregated and separated into the equivalent of a first distinct layer, in an equivalent side-by-side arrangement, and this achieves the result of independent dissolution.”

¹⁶⁸ *Adams Respiratory Therapeutics, Inc. vs. Perrigo Company* 2010-1246 (Fed. Cir., August 5, 2010) (“We thus concluded that the doctrine of equivalents was not foreclosed with respect to the claimed range.”) The district court stated that the term “at least” indicates an absolute lower limit of the range, however, on appeal, the Federal Circuit held that “the mere existence of a numerical value or range in a claim, absent more limiting language in the intrinsic record, does not preclude application of the doctrine of equivalents.”

¹⁶⁹ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997). In this case, a patent process included the claim limitation of a pH range “from approximately 6 to approximately 9”. The accused process incorporated a pH of only 5, which the patentee conceded did not literally infringe its patent. However, both the Federal Circuit and the Supreme Court agreed that the accused process infringed under the doctrine of equivalents.

Federal Circuit rejected the triple-identity test and held that the “substantial difference” test should be the touchstone for the doctrine of equivalents. The application of the doctrine rests on the substantiality of the differences between the claimed and accused products or processes, assessed according to an objective standard. The court stated that evidence of interchangeability, designing around or copying was relevant to determining what was insubstantial. The Supreme Court did not devise a bright-line rule for the application of the doctrine.¹⁷¹ Instead, it compared the two tests and found that different “linguistic frameworks” may be more suitable to different cases:

There seems to be substantial agreement that, while the triple identity test may be suitable for analyzing mechanical devices, it often provides a poor framework for analyzing other products or processes. On the other hand, the insubstantial differences test offers little additional guidance as to what might render any given difference “insubstantial.”¹⁷²

The Supreme Court also expressed the fear that the doctrine of equivalents had “taken on a life of its own, unbounded by the patent claims,” thereby “conflict[ing] with the definitional and public-notice functions of the statutory

¹⁷⁰ *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1519-20 (Fed. Cir. 1995). Known interchangeability between the accused and claimed elements is evidence of an insubstantial change. Evidence of copying indicates that there are only insubstantial differences between the accused and claimed elements. To “design around” is to use the teachings from a patent to design a new invention that does not infringe upon and improves over the prior art. It carries a presumption of substantial differences and weighs against finding equivalence.

¹⁷¹ *Id.* (“With these limiting principles as a backdrop, we see no purpose in going further and micro managing the Federal Circuit’s particular word choice for analyzing equivalence. We expect that the Federal Circuit will refine the formulation of the test for equivalence in the orderly course of case by case determinations, and we leave such refinement to that court’s sound judgment in this area of its special expertise.”)

¹⁷² *Id.* (“In our view, the particular linguistic framework used is less important than whether the test is probative of the essential inquiry: Does the accused product or process contain elements identical or equivalent to each claimed element of the patented invention? Different linguistic frameworks may be more suitable to different cases, depending on their particular facts.”)

claiming requirement.”¹⁷³ Though the doctrine of equivalents serves the equitable purpose of preventing an infringer “from stealing the benefit of an invention,”¹⁷⁴ it has been blamed for contradicting the peripheral patent system.¹⁷⁵ The doctrine of equivalents extends the patentee’s rights beyond the linguistic limits of a claim,¹⁷⁶ which places the public in the “unenviable position of having little or no notice as to where the claim erosion might end.”¹⁷⁷

In response to the uncertainty created by the doctrine of equivalents, courts have imposed various limitations upon its application, such as the all elements rule,¹⁷⁸ the prosecution history estoppel,¹⁷⁹ the rule of prior art,¹⁸⁰ the rule of dedication¹⁸¹ and limiting equivalents in the “means-plus-function” claims to

¹⁷³ *Id.*

¹⁷⁴ *Texas Instruments Inc v. US International Trade Commission*, 805 F.2d 1558, 1572 (Fed. Cir. 1986).

¹⁷⁵ See e.g. Burk & Lemley, *supra* note 5; see also Rudolph P. Hofmann, Jr., *The Doctrine of Equivalents: Twelve Years of Federal Circuit Precedent Still Leaves Practitioners Wondering*, 20 Wm. Mitchell L. Rev. 1033 (1994); Paul M. Janicke, *Heat of Passion: What Really Happened in Graver Tank*, 24 AM. Intell. Prop. L. Ass’n Q.J. 1 (1996); John McDermott, *Hilton Davis and the Doctrine of Equivalents: A Little Change, A Little Mischief*, 37 IDEA 755 (1997); Joshua D. Sarnoff, *Abolishing the Doctrine of Equivalents and Claiming the Future After Festo*, 19 Berkeley Tech. L.J. 1157 (2004).

¹⁷⁶ Timothy R. Holbrook, *Equivalency and Patent Law’s Possession Paradox*, 23 Harvard Journal of Law and Technology 1 (2009) (“the patent holder is given control over something that by definition she did not possess at the time of her application.”)

¹⁷⁷ Jeffrey R. Kuester, *Peripheral Claiming System Erosion: Why Draft Claims Anymore? The Federal Circuit’s Continued Assault on Claim Breadth*, Intell. Prop. Today, Vol. 8, No. 11, 58 (2001).

¹⁷⁸ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997) (holding that the determination of equivalence in an infringement action should proceed on an element-by-element basis). Thus, each element of the claimed invention must be present literally or equivalently in the accused device. See also *Pennwalt Corp v Durand-Wayland Inc.*, 833 F.2d 931 (Fed. Cir. 1987).

¹⁷⁹ A judicially-crafted principle limiting the enforceable scope of patents based on acts occurring during their application process. Prosecution history estoppel applies when an applicant during patent prosecution narrows a claim “to avoid the prior art, or otherwise to address a specific concern . . . that arguably would have rendered the claimed subject matter unpatentable. *Warner-Jenkinson Co v Hilton Davis Chemical Co.*, 520 US 17, 30–31 (1997); See also *Festo Corp v Shoketsu Kinzoku Kogyo Kabushiki Co (Festo VIII)*, 535 US at 735–36 (2002)

¹⁸⁰ *Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*, 279 F.3d at 1367 (Fed. Cir. 2002) (holding “The doctrine of equivalents expands the reach of claims beyond their literal language. That this expansion is guided and constrained by the prior art is no surprise, for the doctrine of equivalents is an equitable doctrine and it would not be equitable to allow a patentee to claim a scope of equivalents encompassing material that had been previously disclosed by someone else, or that would have been obvious in light of others’ earlier disclosures.”)

¹⁸¹ *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098 (Fed. Cir. 1996) the Federal Circuit held that where a patent application discloses unclaimed subject matter, that subject matter must be deemed to have been dedicated to the public. Therefore the doctrine of equivalents can not apply to such subject matter.

later-developed technologies.¹⁸² The Supreme Court decision in *Festo* set a further “foreseeability” limitation to the doctrine.¹⁸³ Under the new foreseeability bar, the patentee must show that at the time of the amendment, one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.¹⁸⁴ The new bar places considerable burdens on the patentee, including the requirement to prove the negative proposition that the asserted equivalent was not foreseeable at the time of amendment.¹⁸⁵ The Federal Circuit assessed the scope of foreseeability for rebutting prosecution history estoppel in a recent case *Duramed Pharmaceuticals, Inc. v. Paddock Laboratories, Inc.*¹⁸⁶ The Court found the amendment was substantially related to patentability and triggered the presumption under *Festo*. Hence, the prosecution history estoppel barred Duramed Pharmaceuticals, Inc.’s allegations of infringement under the doctrine of equivalents.¹⁸⁷ Even in the case where the doctrine of equivalents was

¹⁸² *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc.*, 145 F.3d 1303, (Fed. Cir. 1998) the Federal Circuit expressed that such claims limit equivalence to later-developed technologies (those “developed after the patent is granted”). See also *Al-Site Corp. v. VSI International, Inc.*, 174 F.3d 1308 (Fed. Cir. 1999). The Federal Circuit further stated that “[in other words, an equivalent structure or act under § 112 for literal infringement must have been available at the time of patent issuance, while an equivalent under the doctrine of equivalents may arise after patent issuance and before the time of infringement.”

¹⁸³ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002).

¹⁸⁴ *Id.* An amendment did not raise a complete bar to the doctrine of equivalents, and there were three exceptions, namely that (1) the equivalent was “unforeseeable at the time of the application,” (2) “the rationale underlying the amendment [bears] no more than a tangential relation to the equivalent in question,” or (3) that “some other reason suggest[s] that the patentee could not reasonably be expected to have described the insubstantial substitute in question.”

¹⁸⁵ David B. Walker, *The Imperfection of Language: Festo Sets a Foreseeability Bar for Prosecution History Estoppel*, The Federalist Society for Law and Public Policy studies, http://www.fed-soc.org/publications/pubID.545/pub_detail.asp (last visited, Jan 1, 2010).

¹⁸⁶ *Duramed Pharmaceuticals, Inc. v. Paddock Laboratories, Inc.*, No. 10-1419 (Fed. Cir. July 21, 2011). See also, *Energy Transp. Group, Inc. v. William Demant Holdings A/S*, No. 2011-1487, -1488, -1489 (Fed. Cir. Oct 12, 2012). (“ETG has not overcome the presumption that the narrowing amendment was made to secure the patent. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 739 (2002). The prosecution history in this case shows that the claim limitation at issue was added in response to a rejection of closely related claims, and provides no other explanation for the limitation.”)

¹⁸⁷ *Id.* The district court granted Paddock’s motion, finding that (1) Duramed’s amendment was substantially related to patentability and, because it narrowed the scope of the asserted claims, it triggered the presumption under *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1366-67 (Fed. Cir. 2003) (en banc), that Duramed surrendered all territory between the original and

applied, the court cautioned that “it is the role of the court, however, to ensure that the doctrine of equivalents is not permitted to overtake the statutory function of the claims in defining the scope of the patentee’s exclusive rights.”¹⁸⁸

B. Ordinary meaning construction in determining patent scope

The doctrine of equivalents is a judge-made law driven by the desperation of being trapped by literal interpretation.¹⁸⁹ In recent years, there has been a growing tendency to question the literal/functional distinction. The following paragraphs will discuss this trend and the elevating role of “ordinary meaning” in substantively determining patent scope.

Modern courts are concerned with finding the ordinary meaning instead of the literal meaning of the word found in the dictionaries and encyclopedia.¹⁹⁰ Ordinary meaning is the meaning that is more commonly used or more commonly understood in the pertinent technology field¹⁹¹— even the plainest

amended claim scope; and (2) Duramed’s argument—that the use of PVA as an MBC in a pharmaceutical formulation was unforeseeable at the time of the amendment—did not rebut the Festo presumption.

¹⁸⁸ *Deere & Co. v. Bush Hog, LLC*, Nos. 11-1629, -1630, -1631 (Fed. Cir. Dec. 4, 2012). *See also, Sage Prods., Inc. v. Devon Indus., Inc.*, 126F.3d 1420, 1423 (Fed. Cir. 1997).

¹⁸⁹ In *Kirin-Amgen Inc. and Others v. Hoechst Marion Roussel and Others* [2004] UKHL 46, Lord Hoffman discussed the issue of whether Europe should have a doctrine of equivalents. “It seems to me that both the doctrine of equivalents in the United States and the pith and marrow doctrine in the United Kingdom were born of despair. 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.”

¹⁹⁰ The leading case in this line is *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002). While previous decisions had recognized that dictionaries could be used to construe claims, *Texas Digital* went much further. In particular, it rejected the view that dictionaries should be characterized as mere extrinsic evidence, indicated a presumption in favor of using a dictionary to discern the ordinary meaning of claim terms, and suggested that consulting intrinsic evidence prior to consulting a dictionary “invites a violation of our precedent counseling against importing limitations into the claims.”

¹⁹¹ Stephen C. Mouritsen, *Hard Cases and Hard Data: Assessing Corpus Linguistics as an Empirical Path to Plain Meaning*, 13 Colum. Sci. & Tech. L. Rev. 97 (2012) (“The sense of a term that is more commonly used in a given context may be referred to as the term’s ordinary or most frequent meaning.”)

words such as “a”¹⁹² or “only if”¹⁹³ need to be read through the eyes of a PHOSITA.¹⁹⁴ Compared with looking at literal meaning, construing claim terms according to their common usage in the pertinent art at the time of filing is more contextual.

Recent empirical studies show that a “doctrine reallocation” and “doctrine replacement” have occurred in the Federal Circuit.¹⁹⁵ It has been noticed that the growth of claim construction hearings practically “killed the doctrine of equivalents in the 1990s.”¹⁹⁶ Three major reasons have been given for this “doctrine reallocation” and “doctrine replacement”.¹⁹⁷ First, since claim construction and the doctrine of equivalents serve similar functions—“both are directed to the scope of protection for a patentee”¹⁹⁸ — the rise in the

¹⁹² *Free Motion Fitness, Inc. v. Cybex International, Inc.* 423 F.3d 1343 (Fed. Cir. 2005) The majority found the term “a” to be prima facie lacking in ambiguity, based on established case law holding that the word “a” means one or more. In contrast, the dissent argued that “a” means only one, based on the specification’s repeated and consistent disclosure that the term “a,” in the context of “a cable,” was associated with only one cable.

¹⁹³ *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351 (Fed.Cir.2008). (“A determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.”)

¹⁹⁴ Christopher Hutton, *Language, Meaning and Law* 85 (2009) (“In law, there is a profusion of terminology in this area, which reflects both its centrality and its difficulty: ‘clear’, ‘plain’, ‘literal’, ‘natural’, ‘meaning on its face’, etc. ...One strong piece of evidence for the difficulty of these concepts is the quite startling silence of academic linguistics on the definition and nature of literal meaning.”)

¹⁹⁵ David L. Schwartz, *Explaining the Demise of the Doctrine of Equivalents*, 25 Berkeley Tech. L.J. 1157, 1158 (2011). Petherbridge, *supra* note 5. (“There has been an increase in the rate that the court uses claim construction in connection with decisions on the doctrine of equivalents and an apparent increase in the impact of claim construction decision-making on equivalents decisions.”) It finds that an increase in unpredictability developed around the year 2000, and that it associates well with the strengthening of distinctly different judicial approaches to the task of construing claims.

¹⁹⁶ Allison & Lemley, *supra* note 153. The study refers to the three time periods in either of two ways: (1) “pre-*Festo*, Fed. Cir. *Festo*, and post-Supreme Court *Festo*”; or (2) “pre-*Festo*, mid-*Festo*, and post-*Festo*.” It was found that in the doctrine of equivalents cases decided in 1993 through 1995, before the Federal Circuit or Supreme Court decisions in *Markman*, patentees won 40.0% of the doctrine of equivalents cases, compared with only 24% in the last eight years. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 493 F.3d 1368, 1382 (Fed. Cir. 2007) (Newman, Circuit Judge, dissenting) (“today’s new rule further erodes the residue of the doctrine of equivalents, for its foreseeable result is to deprive amended claims of access to the doctrine of equivalents.”)

¹⁹⁷ Schwartz, *supra* note 195.

¹⁹⁸ *Id.* (“When construing claims, the judge often knows the structure of the accused products. Using this knowledge, the judge may provide a broader construction to ambiguous claim language so as to avoid confronting the doctrine of equivalents. In other words, courts may have found these doctrines to be substitutes for each other.”)

importance of claim construction has subsumed the doctrine of equivalents. Second, during the process of interpretation, judges can use functional definitions to define the claim terms, therefore claim construction “has arguably expanded to encompass the doctrine of equivalents.”¹⁹⁹ Third, when the judge has construed the claims, he was less inclined to submit the case to a jury. “Since the doctrine of equivalents exists only as a backstop for patentees who lose on literal infringement, lumping them together makes it much more likely that a fact-finder that rejects one claim will reject them both.”²⁰⁰

The literal/functional distinction has been abandoned in other jurisdictions. The UK House of Lords said in the *Catnic* case²⁰¹:

Both parties to this appeal have tended to treat ‘textual infringement’ (i.e. literal) and infringement of the ‘pith and marrow’ of an invention as if they were separate causes of action, the existence of the former to be determined as a matter of construction only and of the latter upon some broader principle of colourable evasion. There is, in my view, no such dichotomy; there is but a single cause of action and to treat it otherwise ...is liable to lead to confusion.

Patent claims not only inform patent observers about the patented invention,²⁰² but also substantively define patent scope,²⁰³ i.e., whether the

¹⁹⁹ *Id.* (Consequently, the need for the doctrine of equivalents was effectively eliminated)

²⁰⁰ Allison & Lemley, *supra* note 153. To test this hypothesis, the authors constructed four datasets. The fourth dataset bears out the hypothesis. The doctrine of equivalents was alive and well before *Markman*, but has been in decline ever since.

²⁰¹ *Catnic Components Ltd. v. Hill & Smith Ltd.* (1982) R.P.C. 183.

²⁰² *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994) (“It is the claims which define the metes and bounds of the invention entitled to the protection of the patent system.”); *Zenith Labs., Inc. v. Bristol-Myers Squibb Co.*, 19 F.3d 1418, 1424 (Fed. Cir. 1994) (“It is the claim that sets the metes and bounds of the invention entitled to the protection of the patent system.”); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 622 (Fed. Cir. 2000) (“In drafting an original claim of a patent application, the writer sets out the metes and bounds of the invention.”).

²⁰³ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (Fed. Cir. 1995) (en banc) (Mayer, J., concurring) (“to decide what the claims mean is nearly always to decide the case”). *See also*, Cotropia,

patent should be given a broad scope or narrow scope. The parties often “dispute not the meaning of the words themselves, but the scope that should be encompassed by this claim language.”²⁰⁴ The “literal/ equivalents” infringement analysis allows the scope of equivalents to expand with time and evaluates equivalency at the time of infringement.²⁰⁵ The patent protection is extended over unforeseen or after-arising developments in technology.²⁰⁶

By comparison, ordinary meaning approach rests on the idea that the commonly-understood meaning of a claim term in the pertinent art at the time of filing represents a basis for determining patent scope.²⁰⁷ Therefore, judges look to the *meaning* that the term *would have* to a PHOSITA as of the effective

supra note 5; Lee, *supra* note 35. (“‘substantive’ claim construction can serve as a lever for optimizing patent scope.”) Lee Petherbridge, *The Claim Construction Effect*, 15 Mich. Telecomm. Tech. L. Rev. 215 (2008) (“Because nearly everything in a patent case turns on claim construction (e.g., whether infringement has occurred, or whether the patent meets the requirements for patentability), it is thought to be a key and dispositive issue most patent cases.”)

²⁰⁴ *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351 (Fed.Cir.2008). Gretchen A. Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time is Ripe for a Consistent Claim Construction Methodology*, 8 J. Intell. Prop. L. 175,175-76 (2001) (“a patentee will advocate a broad interpretation of the claim in order to pursue an easier infringement proof. In contrast, the accused will typically advance a more narrow view of the claim.”)

²⁰⁵ *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 37 (1997) (“Insofar as the question under the doctrine of equivalents is whether an accused element is equivalent to a claimed element, the proper time for evaluating equivalency – and thus knowledge of interchangeability between elements – is at the time of infringement, not at the time the patent issued”). Ray D. Weston, Jr., *A Comparative Analysis of the Doctrine of Equivalents: Can European Approaches Solve an American Dilemma?*, 39 IDEA: J. Law & Tech. 35 (1998) (“Equivalence arises from identity between a claimed invention and an accused device.”) William T. Ralston, *Foreign Equivalents to the U.S. Doctrine of Equivalents: We’re Playing in the Same Key But It’s Not Quite. Harmony*, 6 Chi.-Kent J. Intell. Prop. 177 (2007) (“the scope of equivalent elements may increase as new equivalent elements are developed or discovered after the filing of the patent.”) Timothy Chen Saulsbury, *Pioneers versus Improvers: Enabling Optimal Patent Claim Scope*, 16 Mich. Telecomm. & Tech. L. Rev. 439 (2010). For example, an inventor claimed the incandescent light bulb. One court may treat all types of incandescent bulbs, regardless of their filament material, as a single genus; A second court may see things differently and consider the property of having a specific filament material in constructing thing-types. Accordingly, this court would treat incandescent bulbs with different filament materials as discrete thing-types.

²⁰⁶ Christopher A. Cotropia, *“After-Arising” Technologies and Tailoring Patent Scope*, 61 N.Y.U. Ann. Surv. Am. L. 151, 159-160 (2005) (after-arising equivalents protection extends effective patent life by providing the patentee with control over these later-developed improvements.)

²⁰⁷ John R. Thomas, *Claim Re-Construction: The Doctrine of Equivalents in the Post-Markman Era*, 9 Lewis & Clark L. Rev. (2005) (“The rapid decline of the doctrine of equivalents was perhaps the least predictable consequence of the seminal Markman opinion. Elevation of the public notice function of claims and emphasis upon the duties of the drafter have left little room for a nontextual theory of patent infringement.”)

filing date.²⁰⁸ If such approach is strictly followed, judges would simply try to apply *what would have been covered in the past* to the new circumstances, even those that were not in existence at the time of filing. However, as time passes, advances in technology may “undermine the relevance”²⁰⁹ of original understandings or practice to contemporary circumstances. A PHOSITA reading the term “means of exchange” in 1980s could not possibly have contemplated the “e-money” (a digital equivalent of cash) that emerged in early 1990s.²¹⁰ The adherence to the fixed understanding of how a PHOSITA *would have* interpreted a disputed claim term is necessarily hypothetical but still narrow.²¹¹ Judges have to accommodate new technologies by invoking the doctrine of equivalents,²¹² which has been long criticized to undermine legal certainty. In practice, judges sometimes resort to the short-hand expressions such as the “plain meaning” or “ordinary meaning” of claim terms to provide a broadest possible scope, which may “obscure the correct analysis”.²¹³ Due to developments in scientific knowledge, new problems are always arising, justification and persuasion will be better achieved by claim interpretation that is responsive to advances in technology.

²⁰⁸ Menell at el., *supra* note 5.

²⁰⁹ Lawrence Rosenthal, *Originalism in Practice*, 87 Ind. L.J. 1183, 1244 (2012).

²¹⁰ A. Vasudevan, *Central Banking for Emerging Market Economies* 55 (2003) (“electronic money, or e-money, or e-cash has been in existence in many industrialized economies since about early 1990s.”)

²¹¹ Cotropia, *supra* note 206.

²¹² Lemley, *supra* note 7.

²¹³ *Superguide Corp v. DirectTV Enterprises*, 358 F.3d 870 (2004) (Michel, Circuit Judge, concurring in the result.)

CHAPTER 2 THE PURPOSIVE APPROACH

This Chapter discusses another widely used claim interpretation method called the purposive approach. The purposive approach focuses on what the patentee was aiming at when he chose the words he used. A PHOSITA is employed as a construction tool to work out what the patentee was intending to mean by the words of his claim at the time of filing. To define the purpose or intent is to decide what a PHOSITA similarly situated would understand the patentee to have in demarcating the invention. The PHOSITA would possess the common general knowledge of technology, the knowledge about patent drafting conventions and patent application practices, as well as the potential use of the invention. The purposive construction advances the goal that claim construction should be reasonable and fair to both the patentee and the public. This Chapter then takes the modern UK purposive construction as an example to show the strengths and limitations of this approach. It outlines the evolution of the UK purposive approach in three phases: the Protocol Questions, Lord Hoffmann's one compulsory question, and the Technip principles. Through these phases, the UK courts gradually acquire a mature sense of purposive construction. The purposive construction is more situational and flexible than the ordinary meaning approach, but has its own problems. For example, sometimes the intent was not clear, sometimes there are technological changes that patentee did not originally contemplate and therefore have developed meanings which he did not intend. Under these circumstances, judges might fail to offer explicit reasons for selection of meaning.

Section 1 Patentee's intent in purposive construction

The purposive approach has been widely used across different fields of legal interpretation, such as statutory interpretation and contractual interpretation.²¹⁴ In patent law, the claim language was chosen by the patentee at the date of filing to describe something which he regarded as an invention.²¹⁵ The essence of this approach is what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean.²¹⁶ A PHOSITA is employed “as a purposive construction tool through which courts attempt to correctly determine the boundaries that dictate the scope of a patent.”²¹⁷ A PHOSITA would read the patent claim on the assumption that “its purpose is both to describe and to demarcate an invention—a practical idea which the patentee has had for a new product or process.... It is this insight which lies at the heart of ‘purposive construction.’”²¹⁸

The purposive approach was established in the seminal decision of the

²¹⁴ William L. Hayhurst, *The Art of Claiming and Reading a Claim*, in *Patent Law of Canada* 193 (G. F. Henderson ed., 1994) (“purposive construction is nothing new, though Lord Diplock is credited with first using the expression in patent cases.”) For instance, in the most cited English contract law case *Investors Compensation Scheme Ltd v. West Bromwich Building Society* [1997] UKHL 28, it laid down that a purposive approach must be taken to interpretation of contracts. Lord Hoffmann set out five principles for interpreting contracts: The right meaning is what the document conveys to a reasonable person; this includes everything in the “matrix of fact”, or relevant background circumstances; prior negotiations are excluded from this (a point which has been much criticized since); the meaning of words is not a literal meaning, but the one reasonably understood from the context the meaning should not contradict a common sense view of what a contract required.

²¹⁵ *Catnic Components Ltd. v. Hill & Smith Ltd.*, [1982] R.P.C. 183 (H.L.) Lord Diplock explained that “...a patent specification is a unilateral statement by the patentee, in words of his own choosing, addressed to those likely to have a practical interest in the subject matter of his invention (i.e. “skilled in the art”), by which he informs them what he claims to be the essential features of the new product or process for which the letters patent grant him a monopoly.”

²¹⁶ *Virgin Atlantic Airways Ltd vs. Premium Aircraft Interiors Group Ltd and Premium Aircraft Interiors UK Ltd* [2009] EWHC 26; Andrew Rich & Will James, *Patents: Claim Construction*, 27 E.I.P.R. 2005 N42-44 (2005).

²¹⁷ Richard Gold & Karen Lynne Durell, *Innovating the Skilled Reader: Tailoring Patents to New Technologies*, 19(1) Intellectual Property Journal 189 (2005).

²¹⁸ *Kirin-Amgen Inc and Others v. Hoechst Marion Roussel Limited and Others* [2004] UKHL 46.

House of Lords in *Catnic Components Ltd v Hill & Smith Ltd*²¹⁹ in 1982. Lord Diplock mandated a “purposive approach” to claim interpretation:

A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge.²²⁰

It has become increasingly common for courts to use the purposive approach to construe the meaning of patent claims. For instance, in *Genelabs Diagnostics Pte Ltd v. Institut Pasteur and Another*²²¹ and a series of cases²²², the Singapore Court of Appeal held that it is settled law that a patent claim should be construed purposively which would accord fair protection to the patentee and yet provide a reasonable degree of certainty for third parties. The application of the purposive construction approach was also applied in the Supreme Court of Canada in *Whirlpool Corp*²²³ and *Free World Trust*,²²⁴ where the Court made it clear that a claim is to be construed through an objective determination of the meaning intended by the inventor, as interpreted through the eyes of one skilled in the art. “[P]atent claims are to be construed in an informed and purposive fashion and that excessive literalism is to be

²¹⁹ *Catnic Components Ltd and another v. Hill and Smith Ltd* [1982] RPC 183.

²²⁰ *Id.*

²²¹ *Genelabs Diagnostics Pte Ltd v. Institut Pasteur and Another* [2000] SGCA 60.

²²² See e.g., *FE Global Electronics Pte Ltd and Others v. Trek Technology (Singapore) Pte Ltd and Another* [2005] SGCA 55. The Court restated that the Catnic purposive approach endorsed by the UK House of Lords was “consonant with the Protocol on the Interpretation of Art 69 of the European Patent Convention, which provides, inter alia, that a patent should be interpreted “as defining a position ... which combines a fair protection for the patentee with a reasonable degree of certainty for third parties”. *First Currency Choice Pte Ltd v. Main-line Corporate Holdings Limited* [2007] SGCA 50. (“Clearly then, the starting point in patent construction is to ask the threshold question: What would the notional skilled person have understood the patentee to mean by the use of the language of the claims? In this endeavor, the language that the patentee has adopted is more often than not of utmost importance (see *Kirin-Amgen* at [34])”)

²²³ *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067; 2000 SCC 67.

²²⁴ *Free World Trust v. Électro Sant é Inc. et al.* [2000] 2 S.C.R. 1024, 2000 SCC 66.

avoided.”²²⁵ The purposive approach has also received the authoritative endorsement of the courts in South Africa in the Supreme Court of Appeal of Africa in *Triomed*²²⁶ and reaffirmed in the *Flag and Flagpole* case.²²⁷

It should be noted that, the purposive approach concerns with the patentee’s objective intent, that is, “what would the skilled reader think was the inventors’ purpose,”²²⁸ rather than what the patentee actually intended. As Lord Hoffmann pointed out in his *Kirin-Amgen* judgment, “there is no window into the mind of the patentee or the author of any other document.”²²⁹ It may be that the patentee never anticipated that effect of restriction, but if a skilled person could consider that he intended so, then he will be bound by the narrow wording. By employing the method of purposive construction in interpreting claims, the courts seldom distinguish the terms of “intent” or “purpose.”²³⁰ To avoid confusion, this thesis also uses the term “intent” to mean purpose for the

²²⁵ *Wenzel Downhole Tools Ltd v National-Oilwell Canada Ltd* [2011] FC 1323, 98 CPR(4th).

²²⁶ *Aktiebolaget Hässle and Another v. Triomed (Pty) Ltd* 2003 (1) SA 155 (SCA) (Nugent JA) (“...the claim must be construed to ascertain the intention of the inventor as conveyed by the language he has used.”)

²²⁷ *Vari-Deals 101 (Pty) Ltd v. Sunsmart Products (Pty) Ltd* [2007] SCA 123. (“Nowhere, in the relevant passage, did the learned Judge disapprove of the Catnic approach – he simply cautioned that it should be applied with care.”)

²²⁸ *Convatec Ltd. & Ors v. Smith & Nephew Healthcare Ltd & Ors* [2011] EWHC 2039 (Pat) (“it is always important to bear in mind that the skilled person reads the specification in light of the common general knowledge and appreciating that its purpose is to describe and demarcate an invention, that is to say a practical idea for a new product or process”); *Glaverbel SA v. British Coal Corp. and Another* [1995] R.P.C. 255, 268, 269: (“A patent is construed objectively, through the eyes of a skilled addressee.”)

²²⁹ *Kirin-Amgen Inc and Others v. Hoechst Marion Roussel Limited and Others* [2004] UKHL 46, reported as [2005] RPC 169.

²³⁰ Hereinafter, the terms “intent” or “purpose” in the quotations are underlined by the author. *Generics [uk] Ltd (t/a Mylan) v. Yeda Research and Development Co Ltd & Anor*, EWHC 1848 (Pat) [2012] (“Binnie J delivering the judgment of the Supreme Court of Canada added in *Whirpool Corp v Camco Inc* [2001] FSR 46 at [49(c)] that “a ‘mind willing to understand’ necessarily pays close attention to the purpose and intent of the author.”) *Virgin Atlantic Airways Ltd v Jet Airways (India) Ltd & Ors*, EWHC 2153 (Pat) [2012] (“The purposive construction would lead to a construction of a claim which did not cover that acknowledged prior art: it can hardly have been the inventor’s purpose to cover that which he expressly recognises was old. ... The fact that the skilled person is faced with a conundrum, that the patentee cannot have intended to cover BA First...”) *Datacard Corporation v. Eagle Technologies Ltd*, EWHC 244 (Pat) [2011] (“It is trite law that a patent is addressed to ... those with practical knowledge and experience of the kind of work in which the invention is intended to be used. The addressee comes to a reading of the specification with the common general knowledge of persons skilled in the relevant art, and he or she reads it knowing that its purpose is to describe and demarcate an invention.”)

consistency of discussion.

Both the ordinary meaning approach and the purposive approach interpret the language of the claim from the perspective of a PHOSITA in the pertinent art at the time of invention or filing. Under the purposive approach, if a patentee had chosen to define his claim in narrow terms, the court should not rewrite it in broader language simply because it thought a wider form of wording would have been easy to formulate.²³¹ In *Soci é Technique de Pulverisation STEP v. Emson Europe Ltd*,²³² Hoffmann LJ in the UK Court of Appeal explained that:

The well known principle that patent claims are given purposive construction does not mean that an integer in a claim can be treated as struck out if it does not appear to make any difference to the inventive concept. It may have some other purpose buried in the prior art and even if this is not discernible, the patentee may have some reason of his own for introducing it.

The Australian court also warned in *Australian Mud Company Pty Ltd v. Coretell Pty Ltd* that purposive construction does not necessarily mean the expansion of patent scope:²³³

To give a purposive construction to a patent specification, and in particular its claims, is not to engage in a process of reasoning that extends the patentee's

²³¹ *Brugger v. Medicaid Ltd* [1996] R.P.C. 635 (“No doubt it could be said that a limitation to an insert which is cylindrical is very narrow. It could be avoided by having the inlet flue and insert with square cross-section. But that is how the patentee has chosen to define his monopoly. Similarly it is not appropriate to ignore the requirement of an insert.”)

²³² *Soci é Technique de Pulverisation STEP v. Emson Europe Ltd* [1993] RPC 513. “Integer” is a well known term of art. It means a feature called for by a claim. It might be a physical component; or it might be some other definite limitation, e.g. a requirement that a value fall within a specified numerical range.

²³³ *Australian Mud Company Pty Ltd v Coretell Pty Ltd* [2011] FCAFC 121 (15 September 2011); *See also*, Peng Lian Trading Co. v. Contour OPTIK Inc. and others [2003] 2SLR 560; [2003]SGCA 25.

monopoly to the 'ideas' disclosed in the specification. Nor does it extend the patentee's monopoly to products or processes that the patentee did not, by the claims, define as the invention, even if those products or processes can be seen to perform the same function as the invention or to be based on the patentee's "ideas".

Therefore, the two approaches of claim interpretation are very likely to produce the same result, but there are clear differences between them. First, under the purposive approach, purpose is vital to the construction of claims,²³⁴ whereas the ordinary meaning approach seldom looks for the patentee's purpose or intent.²³⁵ Under the purposive approach, interpreters will infer the patentee's intention from the claim language and the teaching in the patent, as well as "any commercial or technical reason" for thinking that the patentee would or would not have wanted to exclude an infringing technology.²³⁶ Under the ordinary meaning approach, "unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of

²³⁴ *Ancon Ltd. v. ACS Stainless Steel Fixings Ltd.*, [2009] EWCA Civ 498; *See also, Virgin Atlantic v Premium Aircraft* [2009] EWCA Civ 1062; [2010] FSR 10 at paragraph 5. ("The approach is termed "purposive construction" because it has regard to the inventor's purpose.") *Wheatley & Anor v Drillsafe Ltd & Ors* [2000] EWCA Civ 209. ("This involves examining the words of the claim through the eyes of a person to whom the specification is directed, in the context of the specification as a whole.") *Ranbaxy (UK) Ltd v Astrazeneca AB* [2011] EWHC 1831 ("The question is what the skilled person would have understood the patentee to be using the language of the claim to mean. This is sensitive to context. The skilled person reads the specification in light of the common general knowledge and appreciating that its purpose is to describe and demarcate an invention, that is to say a practical idea for a new product or process.")

²³⁵ Colleen Murphy, *Are Humans Animals? Patent Claim Construction in Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363 (Fed. Cir. 2009), 79 University of Cincinnati Law Review 1213 (2011). ("By interpreting "animals" to include humans, the Federal Circuit did not consider what Martek intended to be its invention at the time the patent application was filed. As the dissenting judges stated, reading the specification as a whole leads to the conclusion that the DHA supplements were meant only for non-human animals.")

²³⁶ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* EWCA Civ 252[2009] ("The point here is whether, as r/S contend, claim 1 of 246 and claim 6 of 730 do not extend to a form of dosage in which some of the oxycodone is on the outside of the coating... There is nothing in the language of claim 6 of 730 which excludes a tablet which has all the characteristics it sets out, but with the additional feature of an external application of oxycodone. There is also nothing in the teaching in the patent to suggest that such a tablet was intended to be excluded. Nor is there any commercial or technical reason for thinking that the patentee would have wanted to exclude an otherwise infringing article with such an additional feature.")

manifest exclusion or restriction,” it is improper to read a “purpose” requirement into a patent claim.²³⁷ For example, in *Martek* case,²³⁸ one disputed issue was whether the claim term “*animal*” included a human being. If the term is read purposively with the specification as a whole—in this case, the specification demonstrated the references to economic and food-producing animals, the intent of the patentee was to exclude humans,²³⁹ and a narrow definition would be more likely to be adopted: “animal” would encompass only those animals raised for production of food and milk products, thereby not including humans.²⁴⁰ However, the Federal Circuit of the United States held that the statements did not “rise to the level of a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.”²⁴¹ Hence the term “animal” should be broadly construed to mean “any organism belonging to the kingdom Animalia.”

Second, the purposive approach recognizes that “there may be no

²³⁷ *Toshiba Corp. v. Imation Corp.*, No. 11-1204 (Fed. Cir. June 11, 2012). (“We agree with Toshiba that the district court improperly read a “purpose” requirement into claim 1. The plain language of the claim requires that the number-of-recording planes identifying information “represents the number of recording planes of the recording medium.” ’966 patent cl.1 (emphasis added).”) In dissenting opinion, Judge Dyk took the view that “the specification and the prosecution history of the ’966 patent make clear that the central objective of the patent was to identify whether an optical disc was a one-sided disc or a two-sided disc.” Given this construction, he would have affirmed the district court’s grant of summary judgment of non-infringement.

²³⁸ *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363 (Fed. Cir. 2009).

²³⁹ *Id.* (Lourie, Circuit Judge, with whom Circuit Judge Rader joins, dissenting in part.) The dissenters argued that the intent of the patentee was only to include humans and animals in the food product of the supplemented animals, not to include humans to make food products for humans. (“It is true that the specification states, in one sentence, “The term ‘animal’ means any organism belonging to the kingdom Animalia.” It is also true that humans belong to the kingdom Animalia. However, the lines in the specification directly following that sentence list a host of *non-human* animals from which one derives food or milk:...”)

²⁴⁰ Murphy, *supra* note 235. (“The narrow approach of claim construction would include the patentee’s intent of what the invention covered... The narrow approach closely follows this intent by establishing the baseline of the claim terms from the claim language and specification that the inventor set forth.”)

²⁴¹ *Id.* In a Markman hearing, the district court held that the claim term “animal” meant “any member of the kingdom Animalia, except humans.” However, the Court of Appeal reasoned that the isolated statements cited by the dissent do not rise to the level of “a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.”

generally accepted definition.”²⁴² Therefore, to give effect to the purpose of the patentee requires more complex contextual information than the ordinary usage of the technical term.²⁴³ In order to ascertain what the patentee was intending to mean, the PHOSITA is supposed to have in mind not only the common knowledge of the relevant technology,²⁴⁴ but also the patent practice such as the patent applications,²⁴⁵ and the generalised drafting conventions by which the patent and its claims were framed.²⁴⁶ For example, in *Virgin Atlantic Airways Ltd v Premium Aircraft*,²⁴⁷ one construction issue is whether

²⁴² *Ancon Ltd. v. ACS Stainless Steel Fixings Ltd.*, [2009] EWCA Civ 498 (Court of Appeal, 2009) (Jacob, J.) Patentees are often faced with the problem “to describe something which, at any rate ... is new; which has not existed before and of which there may be no generally accepted definition.”

²⁴³ *Whirlpool Corp. v. Camco Inc.*, 2000 SCC 67 [2000] 2 S.C.R. 1067. The Supreme Court of Canada stated that: “Intention is manifested in words, whose meaning should be respected, but words themselves occur in a context that generally provides clues to their interpretation and a safeguard against their misinterpretation.”

²⁴⁴ *Cephalon Inc, Cephalon France SAS and Cephalon (UK) Ltd v Orchid Europe Ltd and Generics (UK) Ltd (t/a Mylan)* [2011] EWHC 1591 (Pat). (This construction was based on the general teaching of the patents as well as the common general knowledge of the skilled person, a drug formulation scientist)

²⁴⁵ *Virgin Atlantic Airways Ltd vs. Premium Aircraft Interiors Group* [2009] EWCA Civ 1062, [2010] RPC 8 (“...Finally there is a somewhat more general question (because there is no express rule about drafting or construction involved) of whether the skilled reader will know about the practice of divisional applications. It arises because the Patent is a divisional and says so... Likewise when there is a reference to the patent being a divisional application, it would be perverse to work on the basis that the skilled man would not know what that means. A real skilled man reading a patent which, as in the case of the Patent, refers to ‘the parent application’ would surely say ‘what’s a parent application?’ – and he would go on to ask a man who knows, probably a patent agent.”) *Ranbaxy (UK) Ltd vs. Astrazeneca AB* ([2011] EWHC 1831 (Pat); [2011] F.S.R. 45) (“The skilled person must therefore be taken to know the basic drafting conventions used to frame a patent and its claims. This has a particular relevance to Ranbaxy’s submission that the skilled person would recognise that claim 1 has been drafted in the Swiss form...”) *Datacard Corporation v. Eagle Technologies Ltd* [2011] EWHC 244 (Pat) (“More recently, in *Virgin Atlantic Airways Ltd v Premium Aircraft Interiors UK Ltd* [2009] EWCA Civ 1062, [2010] RPC 8 the Court of Appeal held that the skilled reader is to be taken to know the purpose of (i) including reference numerals in patent claims, (ii) dividing claims into pre-characterising and characterising portions and (iii) filing of divisional applications, and to bring that knowledge to bear when he considers the scope of the claim.”) See also, Jonathon D. C. Turner, *Purposive Construction: Seven Reasons Why Catnic is Wrong*, [1999] E.I.P.R. 531. (“it appears to him to be there for some legal or other non-technical reason, as of course it is... Thus the skilled person can only interpret the claims purposively when he has been told what is their purpose in patent law.”)

²⁴⁶ *Schenck Rotec GmbH v. Universal Balancing Limited* [2012] EWHC 1920 (Pat) (“There is a clear drafting convention in European patents. In a product claim the words “apparatus for achieving a result” almost always means “suitable for”. The skilled reader would be aware of that convention. In this context “suitable for” means “capable of” or “not incapable of” performing the function.”)

²⁴⁷ *Virgin Atlantic Airways Ltd vs. Premium Aircraft Interiors UK Ltd* [2009] EWCA Civ 1062. The judge posed the following questions: Does the skilled reader take into account that the patentee, when putting numerals into his claim, knew that they would not be used by the skilled reader to limit his claim? (Rule 29 (7) of the Implementing Regulations to the EPC. “... These reference signs shall not be construed as limiting the claim.”); Does the skilled reader when he sees such a two-part claim take this rule into account so that he at least expects the pre-characterizing portion to describe matter which is part of the prior art? (Rule 29(1) of the Implementing Regulations: the pre-characterising portion to describe matter which is part of the prior art); Does the skilled reader know about the practice of divisional applications? (Art. 76 of

claim 1 for a passenger seating system should be limited to “flip-over seats”, which is the only one specific embodiment. In this case, the court reasoned that because the PHOSITA knows the facts that (1) the patentee has divided out what is in this patent from a parent application in the practice of divisional applications; (2) the pre-characterizing portion is about something the patentee considered old; (3) the patentee could not have intended his use of the reference numeral to be used against him. So the PHOSITA would not expect the language used to be limited to flip-over seats.²⁴⁸ In order to gain a better understanding of the claim text, the PHOSITA has to relate it to the concerns of the patentee at a particular time.

Third, under the ordinary meaning approach, courts indulge a heavy presumption that a claim term carries its ordinary and customary meaning;²⁴⁹ in comparison, under the purposive approach, the PHOSITA is more willing to understand the implication of the patent. The courts have pointed out that purposive construction “can lead to the conclusion that a technically trivial or minor difference between an element of a claim and the corresponding

the EPC , implemented by Art 25 of the Implementing Regulations) The judge answered that “the notional skilled reader is to be taken as knowing these matters and bringing them to bear when he considers the scope of the claim.” See also, *Schenk Rotec GmbH v Universal Balancing Limited* [2012] EWHC 1920 (Pat) (“Professional representatives who draft patents know that part of the job of patent examiners is to apply the various rules and guidelines relating to novelty. They have a profound influence on claim drafting.”) Citing the judgments of Floyd J in *Qualcomm v. Nokia* [2008] EWHC 329 (Pat), Peter Prescott QC in *Folding Attic Stairs v Loft Stairs Co Ltd* [2009] EWHC 1221 (Pat), Arnold J in *FNM v Drammock International* [2009] EWHC 1294 (Pat), and Lewison J (as he then was) in *Zeno Corporation v BSM-Bionic Solutions Management GmbH* [2009] EWHC 1829 (Pat). (“The phrase in question does not use the word “for” but nevertheless the phrase is clearly a definition of an object by reference to its function or properties.”)

²⁴⁸ *Id.* (“On the conclusion we reach, namely that the claim is not limited to flip-over, it is now accepted that the Contour bed falls within claim 1.”)

²⁴⁹ *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). See also, *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1362 (Fed. Cir. 1999). (“[T]he ordinary and accustomed meaning of a disputed claim term is presumed to be the correct one...”) *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 989, (Fed. Cir. 1999). (The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning.)

element of the alleged infringement nonetheless falls within the meaning of the element when read purposively. This is not because there is a doctrine of equivalents: it is because that is the fair way to read the claim in context.”²⁵⁰ The patentee’s purpose is collected not only from the use of express terms,²⁵¹ but also from the necessary implications arising from the patent documents, such as the potential use of the invention”.²⁵² Necessary implications are implications needed to prevent defeating obvious purposes of the legal text.²⁵³ If any clear indication of patentee’s intent is to be found, effect must be given to it. In patent claims, the choice of words could create an implication that they are essential to the invention, though not expressly stated.²⁵⁴ For example, the Supreme Court of Canada pointed out that the identification of essential elements is made according to the intent of the inventor, “expressed or inferred from the claims.”²⁵⁵ The Court emphasized that a patent must be read by a “mind willing to understand”, which “necessarily pays close attention to the purpose and intent of the author.”²⁵⁶ In the *Flag and Flagpole* case, the

²⁵⁰ *Ancon Ltd. v. ACS Stainless Steel Fixings Ltd.*, [2009] EWCA Civ 498.

²⁵¹ *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367 (Fed. Cir. 2005) at 1374 (“words or expressions of manifest exclusion or explicit disclaimers in the specification are necessary to disavow claim scope.”) (quoting *Housey Pharms., Inc. v. Astrazeneca UK Ltd.*, 366 F.3d 1348, 1352 (Fed. Cir. 2004); *Liebel-Flarsheim v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)).

²⁵² Gold & Durell, *supra* note 217. Using the purposive approach via the skilled reader allows an evolution of patents’ version of the reasonable person; there is “no one better placed than a skilled reader to truly understand the implication of a patent and to be able to assess its scope.”

²⁵³ Morell E. Mullins, *Coming to Terms with Strict and Liberal Construction*, 64 Alb. L. Rev. 9 (2000).

²⁵⁴ Catherine Colston & Kirsty Middleton, *Modern Intellectual Property Law* 185 (2005). The authors summarized that purposive construction of a claim allows a court to “interpret a word in it in the light of the function it was intended to serve...concentrating on the essentiality of the language chosen by the patentee to achieving the function of that integer as part of the invention.” E.g., *Free World Trust v. Électro Sant éInc. et al.*(2001) 9 C.P.R. (4th) 168 (Canada).

²⁵⁵ *Free World Trust v. Électro Sant éInc. et al.*(2001) 9 C.P.R. (4th) 168 (Canada). See also, *Easton Sports Canada Inc. v. Bauer Hockey Corp.*, (2011) FCA 83, the Court reproduced the summary of claim construction propositions set out at para. 31 of *Free World Trust*. (“(iv) according to the intent of the inventor, expressed or inferred from the claims, that a particular element is essential irrespective of its practical effect.”)

²⁵⁶ *Generics [UK] Ltd (t/a Mylan) vs. Yeda Research and Development Co Ltd & Anor* [2012] EWHC 1848 (Pat), quoting Binnie J’s judgment of the Supreme Court of Canada in *Whirpool Corp vs. Camco Inc* [2001] FSR 46 at [49(c)]

Supreme Court of Appeal of Africa also used the context of implication in the discussion of claim construction:

It is plain from a consideration of claim 3, read with the claims preceding it, that claim 1 is not confined to what counsel referred to as a ‘unitary pole’. Claim 2 can only be construed as referring to a pole with at least two constituents - a non-flexible base and a tapered, flexible, fibreglass top. Moreover, claim 3 contemplates a pole in which the tapered section is ‘integral with the pole’. The *necessary implication* is that claim 1 includes, within its scope, a multi-component pole.²⁵⁷

The ultimate question of the purposive approach is “what does the word or phrase actually mean, when construed purposively?”²⁵⁸ In *Rockwater Ltd v. Technip France SA*,²⁵⁹ Jacob LJ in the UK Court of Appeal followed the purposive approach to ascertain the inventor’s purpose from the description and drawings. Jacob LJ reemphasized the use of “purpose” in *Tickner v. Honda*:²⁶⁰

You learn the inventor’s purpose by understanding his technical contribution from the specification and drawings. You keep that purpose in mind when considering what the terms of the claim mean. You choose a meaning consistent with that purpose – even if that involves a meaning which, acontextually, you

²⁵⁷ *Vari-Deals 101 (Pty) Ltd v. Sunsmart Products (Pty) Ltd* [2007] SCA 123. “It is plain from a consideration of claim 3, read with the claims preceding it, that claim 1 is not confined to what counsel referred to as a ‘unitary pole’. Claim 2 can only be construed as referring to a pole with at least two constituents - a non-flexible base and a tapered, flexible, fibreglass top. Moreover, claim 3 contemplates a pole in which the tapered section is ‘integral with the pole’.”

²⁵⁸ *Ancon Ltd. v. ACS Stainless Steel Fixings Ltd.*, [2009] EWCA Civ 498 (Court of Appeal June 16, 2009) (Jacob, J.)

²⁵⁹ *Rockwater Ltd v. Coflexip SA* [2004] R.P.C. 46. Claim 1 of the patent defined a process by stating that the tensioning means comprised “the last means for guiding the conduit at the level of the floating support”. Claim 3 defined a device for operating the process claimed in claim 1, similarly with “the said tensioning means comprising the last means for guiding the flexible conduit on board the floating support.”

²⁶⁰ *Tickner v. Honda Motor Co Ltd*, [2002] EWHC 8 (Pat) .

would not ascribe to the word or phrase.

To gain a deeper understanding of the purposive approach to claim interpretation, the following section will discuss the purposive approach in the UK courts as an example.

Section 2 The evolvement of purposive claim interpretation in U.K. courts

The current English patent system is mainly governed by the U.K. Patent Act 1977. The Act establishes a law of patents applicable to future patents and applications for patents, and gives effect to certain international conventions on patents, such as the European Patent Convention (EPC).²⁶¹ Section 125 of the Patent Act 1977 provides that the Protocol on the interpretation of Article 69 of the Convention shall apply for the purposes of §125(1), stating that “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.”²⁶² The intact General Principles of Protocol on the Interpretation of Article 69 EPC are as follows:

Article 69 should not be interpreted as meaning that the extent of the protection conferred by a European patent is to be understood as that defined by the strict,

²⁶¹ The preamble of the 1977 Act declares that it was passed to “establish a new law of patents applicable to future patents and applications for patents; to amend the law of patents applicable to existing patents and applications for patents; to give effect to certain international conventions on patents; and for connected purposes.” The European Patent Convention (EPC) provides the legal backbone for its patenting practice. The European Patent Office (EPO) offers a uniform application procedure leading to patent protection in up to 40 European countries. European Patent Convention (EPC 1973) <http://www.epo.org/patents/law/legal-texts/html/epc/1973/e/contents.html> (last visited, March 3, 2010).

²⁶² Section 125 (1), The Patents Act 1977, <http://www.ipo.gov.uk/patentsact1977.pdf> (last visited, Nov.28, 2009).

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. Nor should it be taken to mean 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 patent proprietor has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties.²⁶³

The English patent legislation explicitly provided that claims performed the role of determining the scope of patent protection.²⁶⁴ The UK Court is clearly mindful of the desirability of consistency of practice across Europe, and takes due account of the way that the courts of other EPC Contracting States and the Boards of Appeal of the European Patent Office (EPO) interpret these provisions.²⁶⁵ Under the previous British Patent Act 1949, a test called “pith and marrow” was developed, which favored a literal and narrow claim construction.²⁶⁶ The old rule for claim construction under previous law was outlined by Lord Porter in *Electric and Musical Industries Ltd v. Lissen Ltd*:²⁶⁷

If the claims have a plain meaning *in themselves* [emphasis supplied], then

²⁶³ Article 1, General Principles, Protocol on the Interpretation of Article 69 of the Convention, adopted at the Munich Diplomatic Conference for the setting up of a European System for the Grant of Patents on 5 October 1973 (as revised by the Act revising the EPC of 29 November 2000).

²⁶⁴ David J. Brennan, *The Evolution of English Patent Claims as Property Definers*, 4 Intellectual Property Quarterly, 361(2005).

²⁶⁵ UK Patent Act 1977, Practice notices, <http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-subjectmatter.htm> (last visited, Nov.28, 2009).

²⁶⁶ “Pith and marrow” is a phrase invented by Lord Cairns in *Clark v. Adie* (1877) 2 App Cas 315, 320; According to the House of Lords rulings of *Kirin-Amgen*: “The pith and marrow doctrine was always a bit vague (“necessary to prevent sharp practice” said Lord Reid in *C Van Der Lely NV v Bamfords Ltd* [1963] RPC 61, 77) and it was unclear whether the courts regarded it as a principle of construction or an extension of protection outside the claims.” See also Anna Zavagnin, *The Patent Scope in the U.S. and in the U.K.: Doctrine of Equivalents versus Catnic/ Improver Test*, 1 Erasmus Law and Economics Review 165-205(2004).

²⁶⁷ *Electric and Musical Industries Ltd v Lissen Ltd* [1938]56 RPC, 23, 57.

advantage cannot be taken of the language used in the body of the Specification to make them mean something different.

The court using this test looks at the literal wording of the claim, which is generally regarded as “fence post” interpretation.²⁶⁸ This fence-post approach regards words of a claim as a sort of conceptual “fence” that marks the edge of the patentee’s rights, and whatever is not claimed is considered “disclaimed”.²⁶⁹ To become more consistent with the Article 69 of the EPC and its Protocol, the UK courts abandoned the old test, and began to replace pure literal interpretation with purposive construction of claims, which involves some departure from the literal reading of words in the claims.

The purposive approach was established in the seminal decision of the House of Lords in *Catnic Components Ltd v Hill & Smith Ltd*²⁷⁰ in 1982. In this case, the defendant’s lintel involved a rear support member extending six degrees off “vertically”—the limiting word used in the claim by the patentee. Lord Diplock found that it would be obvious to a skilled person in the art that the patentee did not intend to make exact verticality.

The question in each case is: whether persons with practical knowledge and experience of the kind of work in which the invention was intended to be used, would understand that strict compliance with a particular descriptive word or

²⁶⁸ *Electrical and Musical Industries v. Lissen* [1939] 56 RPC 23.(Lord Russell) (“what is not claimed is disclaimed”)Thomas K. McBride, Jr., *Patent Practice in London - Local Internationalism: How Patent Law Magnifies the Relationship of the United Kingdom with Europe, the United States, and the Rest of the World*, 2 Loy. Int'l L. Rev. 31 (2005). Matthew Fisher, *New Protocol, Same Old Story? Patent Claim Construction in 2007; Looking Back with a View to the Future*, 2 I. P. Q., 133-162 (2008). The author concluded that the UK courts have a natural predilection to according the wording of the claim its literal meaning.

²⁶⁹ Burk & Lemley, *supra* note 5.

²⁷⁰ *Catnic Components Ltd and another v. Hill and Smith Ltd* [1982] RPC 183.

phrase appearing in a claim was intended by the patentee to be an essential requirement of the invention so that any variant would fall outside the monopoly claimed, even though it could have no material effect upon the way the invention worked.²⁷¹

In *Improver v. Remington*,²⁷² Hoffmann J formulated Lord Diplock's approach in *Catnic* into three questions. They have subsequently become known as the "Improver Questions", which were re-named by the Court of Appeal as the "Protocol Questions" in *Wheatley v. Drillsafe*.²⁷³ The Protocol Questions are:

(i) Does the variant have a material effect upon the way the invention works? If yes, the variant falls outside the claim. If no:-

(ii) Would this fact (ie that the variant has no material effect) have been obvious to the skilled person at the date of publication of the patent? If no, the variant falls outside the claim. If yes:-

(iii) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention? If yes, the variant is outside the claim. If no, then the variant falls within the scope of the claim.

It is important to note that the answers to the first two questions are not conclusive, and the third question asks whether the skilled person might still

²⁷¹ *Catnic Components Ltd and another v. Hill and Smith Ltd* [1982] RPC 183.

²⁷² *Improver Corporation v. Remington Consumer Products Ltd* [1990] F. S. R. 181. A variant is a feature embodied in the alleged infringing product which is not within the literal or contextual meaning of a descriptive word or phrase in the claim.

²⁷³ *Wheatley v. Drillsafe Ltd* [2001] RPC 7.

exclude the variant from the scope of protection even if it works in obviously the same way as the patented invention.²⁷⁴ “The Protocol Questions have been widely applied by the English courts over 15 years as a method of patent claim construction.²⁷⁵ It has been commented that: “there ought to be little difficulty in ... construing a claim. In fact, this is not so.... At present, in the aftermath of *Catnic*, the area of uncertainty is very large.”²⁷⁶ In *PLG Research Ltd v. Ardon International*,²⁷⁷ the Court of Appeal casted the first doubt on the otherwise accepted *Catnic/Improver* approach, and stated that the construction of patent claims should be based on the Protocol on Interpretation of Article 69 of the EPC rather than the Protocol Questions.²⁷⁸ But the courts in a series of cases²⁷⁹ declared that the comments of the Court of Appeal in *PLG v. Ardon* were irrelevant to the court’s final decision and therefore *obiter dictum*. They continued to confirm that the Protocol Questions accorded with the Protocol.

²⁷⁴ *Improver Corporation v. Remington Consumer Product Limited* [1990] F.S.R. at 192. Hoffman J. added the following perspective on these questions at p. 190 [of the *Improver* decision]: “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. If this were not the case, there would be no point in asking the third question at all.”

²⁷⁵ Rich & James, *supra* note 216.

²⁷⁶ Blanco White, *Patents for Inventions* 15 (1983).

²⁷⁷ *PLG Research Ltd v. Ardon International Ltd* (1995) F.S.R. 116, [1995] R.P.C. 287. Comments see Gordon D. Harris, *Trends in U.K. Patent Litigation: The Age of Reason?* 21 E.I.P.R. 254-263 (1999); Catherine Colston, *Principles of Intellectual Property Law* 21(1999); Yu, *supra* note 22, 92.

²⁷⁸ *Canon v. GCC* [1995] 1 H.K.C.729; Judge Rogers stated: “... no more than that a sensible and proper interpretation of the claims as defining the scope of the invention claimed as part of a document which describes and claims the invention should be given. In my view, the 1977 Act, art 69 and the Protocol, when taken together, are really saying the same thing as Lord Russell said in *EMI v. Lissen Ltd* (1939) 56 RPC 23 at p 39 onwards. Although it has often been said that there was no majority of the House of Lords in favor of Lord Russell’s view, it seems to me that his approach is, in reality, the sensible approach to the question of construing a specification.” In *EMI v. Lissen*, 56 RPC 23, 39 (H.L.) (Eng.), Lord Russell said as follows: “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. Their primary object is to limit and not to extend the monopoly. What is not claimed is disclaimed... A patentee who describes an invention in the body of a specification obtains no monopoly unless it is claimed in the claims. As Lord Cairns said, there is no such thing as infringement of the equity of a patent (*Dudgeon v. Thomson* LR 3 App Cas 34).”

²⁷⁹ *Assidoman Multiplack Ltd v. Mead Corp* [1995] F.S.R. 225; *Kastner v. Rizla Limited* [1995] RPC 585; *Beloit Technologies Inc v. Valmet Paper Machinery Inc* [1995] RPC 705; *Warheit v. Olympia Tools Ltd* [2002] EWCA Civ. 1161(CA).

However, the threefold, structured questions have been criticized as inappropriate particularly in relation to fast developing technologies.²⁸⁰ Facing the difficulties, on October 21, 2004, the House of Lords issued a significant judgment in the *Kirin-Amgen v. TKT* case²⁸¹ to address the important principles of patent claim construction. Lord Hoffmann noted that the judge at the first instance had erroneously re-analyzed the question of “non-literal” infringement by applying the Protocol Questions. Affirming that the universally applicable bedrock of patent construction was the principle of purposive construction of patent claims, Lord Hoffmann held that the Protocol questions were not to be treated as legal rules, to be followed rigidly at all times:

When speaking of the ‘Catnic principle’ it is important to distinguish between, on the one hand, the principle of purposive construction which I have said gives effect to the requirements of the Protocol, and on the other hand, the guidelines for applying that principle to equivalents, which are encapsulated in the Protocol questions. The former is the bedrock of patent construction, universally applicable. The latter are only guidelines, more useful in some cases than in others.²⁸²

Lord Hoffmann further held that there was only one compulsory question that the Court must ask: “What would a person skilled in the art have understood the patentee to have used the language of the claim to mean?”²⁸³ According to Lord Hoffmann, once this question had been answered, the

²⁸⁰ P. Oliver, *Kastner v. Rizla: Too far, Too fast*, 18 E.I.P.R. 28 (1996); P. Mole, *Beauty and the Beast: The Festo Case and the New Protocol to Article 69 EPC*, 25 E. I. P. R. 40–45 (2003); H. Dunlop, *Court of Appeal Gets to Grips with the Protocol*, 25 E.I.P.R. 342 (2003); Matthew Fisher, *supra* note 268; Turner, *supra* note 245.

²⁸¹ *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Ltd and others* [2004] UKHL 46.

²⁸² *Id.*

²⁸³ *Id.*

judge's task was complete. The judgment of *Kirin-Amgen* is an impressive step in patent claim construction evolution. It clarifies that the Protocol Questions may not always be instructive, and a patent's claims should cover what the person skilled in the art would have understood the patentee to have used the language of the claims to mean.²⁸⁴

In the 2005 post-*Amgen* case *Mayne Pharma v. Pharmacia*,²⁸⁵ Lord Justice Jacob applied the new test and provided a “practical working guide”, also well known as the Technip Principles, to the construction of patents, repeating the essential principles of purposive construction laid down by Lord Hoffmann. The Technip Principles were refined by Justice Pumfrey in *Halliburton Energy Service v. Smith International*.²⁸⁶ In 2009, Lord Justice Jacob further amended the Technip Principles in *Virgin v. Premium Aircraft*²⁸⁷ by using the language of the EPC 2000.²⁸⁸ An abbreviated version of them is as follows:

²⁸⁴ Simon Thorley et al., *Terrell on the Law on Patents* (16th ed., 2006). See also, Phillip Johnson, *Publication Review: Terrell on the Law of Patents*, 29 E.I.P.R. 76 (2007).

²⁸⁵ *Mayne Pharma Pty Limited v. Pharmacia Italia SpA* [2005] EWCA Civ 137. Jacob LJ. gave the leading judgment and referred to the list of principles of patent construction he had given in *Rockwater Ltd v. Technip France SA* [2004] EWCA Civ 381., noting that his list had been approved, save for one minor matter, by the House of Lords in *Amgen*. Omitting the one minor matter from the list, he recited the principles once again, and suggested it would generally be sufficient to use his summary as a “practical working guide”.

²⁸⁶ *Halliburton Energy Services, Inc. v. Smith International (North Sea) Limited, Smith International, Inc., Smith International Italia SpA* [2006] R.P.C. 2, [2005] EWHC 1623. See also, *Cranway Ltd v. Playtech Ltd & Ors* [2009] EWHC 1588 (Pat) cite as [2010] FSR 10.

²⁸⁷ *Virgin v. Premium Aircraft* [2009] EWCA Civ 1062, [2010] RPC 8 (“One might have thought there was nothing more to say on this topic after *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9 RPC 9. The judge accurately set out the position, save that he used the old language of Art 69 EPC rather than that of the EPC 2000, a Convention now in force. The new language omits the terms of from Art. 69. No one suggested the amendment changes the meaning. We set out what the judge said, but using the language of the EPC 2000.”);

²⁸⁸ The old language of Article 69 provided that “the extent of protection conferred by a European patent or a European patent application shall be determined by the *terms* of the claims.” The new language omits the *terms* of from Article 69 of the EPC 2000, a convention that entered into force on 13 December, 2007. See, the European Patent Convention, Article 69 Extent of protection, Amended by the Act revising the European Patent Convention of 29.11.2000, <http://www.epo.org/law-practice/legal-texts/html/epc/2010/e/ar69.html> (last visited, July 29, 2011)

(i) The first overarching principle is that contained in Article 69 of the European Patent Convention;

(ii) Article 69 says that the extent of protection is determined by the claims. It goes on to say that the description and drawings shall be used to interpret the claims. In short the claims are to be construed in context.

(iii) It follows that the claims are to be construed purposively—the inventor's purpose being ascertained from the description and drawings.

(iv) It further follows that the claims must not be construed as if they stood alone—the drawings and description only being used to resolve any ambiguity. Purpose is vital to the construction of claims.

(v) When ascertaining the inventor's purpose, it must be remembered that he may have several purposes depending on the level of generality of his invention. Typically, for instance, an inventor may have one, generally more than one, specific embodiment as well as a generalised concept. But there is no presumption that the patentee necessarily intended the widest possible meaning consistent with his purpose be given to the words that he used: purpose and meaning are different.

(vi) Thus purpose is not the be-all and end-all. One is still at the end of the day concerned with the meaning of the language used. Hence the other extreme of the Protocol—a mere guideline—is also ruled out by Article 69 itself. It is the terms of the claims which delineate the patentee's territory.

(vii) It follows that if the patentee has included what is obviously a deliberate limitation in his claims, it must have a meaning. One cannot disregard obviously intentional elements.

(vii) It also follows that where a patentee has used a word or phrase which, acontextually, might have a particular meaning (narrow or wide) it does not necessarily have that meaning in context.

(vii) It further follows that there is no general "doctrine of equivalents."

(viii) On the other hand purposive construction can lead to the conclusion that a technically trivial or minor difference between an element of a claim and the corresponding element of the alleged infringement nonetheless falls within the meaning of the element when read purposively. This is not because there is a doctrine of equivalents: it is because that is the fair way to read the claim in context.

(ix) Finally purposive construction leads one to eschew the kind of meticulous verbal analysis which lawyers are too often tempted by their training to indulge.

It has been observed that the Protocol Questions are now much less used by the English courts.²⁸⁹ The one compulsory question from *Kirin-Amgen* is usually cited in combination with Lord Justice Jacob's summary of Technip Principles.²⁹⁰

²⁸⁹ Brian Whitehead et al., *Patent Construction after Amgen: Are Patent Claims Construed More Widely or Narrowly than Previously?* 1 Journal of Intellectual Property Law & Practice 332 (2006).

²⁹⁰ E.g. *Siemens Schweiz AG v. Thorn Security Limited* [2007] EWHC 2242 (Ch) ("The approach I should adopt to construction is that set out by Pumfrey J in *Halliburton v Smith* [2005] EWHC 1623"); *Intervet UK Limited v Merial & Others*, [2010] EWHC 294 (Pat) ("The task for the court when construing a patent claim is to determine what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean: see *Kirin Amgen Inc v Hoechst Marion Roussel Ltd* [2004] UKHL 46, [2005] RPC 9 at [30]-[35]. In that case the list of principles to be found in the judgment of Jacob LJ in *Technip France SA's Patent* [2004] EWCA Civ 381, [2004] RPC 46 at [41] was approved subject to one point.") *Cephalon Inc & Ors v Orchid Europe Ltd & Ors* [2011] EWHC 1591 (Pat) ("The approach to construction is not in dispute. It is as stated by Lord Hoffmann in *Kirin Amgen v TKT* [2005] RPC 9. The task for the court is to determine what a person skilled in the art would have understood the patentee to have used the language of the claim to mean. In *Virgin v Premium Aircraft* [2009] EWCA Civ 1062, [2010] RPC 8 at [5], Jacob LJ said this, approving a summary by Lewison J of the applicable principles.") *Schenck Rotec GmbH v. Universal Balancing Limited* [2012] EWHC 1920 (Pat) and *Smith & Nephew Plc v Convatec Technologies Inc* [2012] EWHC 1602 (Pat) ("The leading authority is *Kirin Amgen v TKT* [2005] RPC 9. The key point is that construction is concerned with what a reasonable person

Section 3 Problems with the purposive approach in the UK courts

The shift from a literal approach to a purposive approach is an attempt to keep in line with the provisions of the EPC, which is intended to balance the interests of the public with those of the inventors. Since *Kirin-Amgen*, all turns on what Lord Hoffmann called the compulsory question: *what would a person skilled in the art have understood the patentee to have used the language of the claim to mean?* Purposive construction is interested in discovering how the patentee's point of view (which is objectively evaluated by a PHOSITA) influences claim texts. It encourages interpreters to understand and explain how the patentee considered and communicated his ideas at the time of filing. The patent claim can also be interpreted purposively so as to avoid absurdity. For example, the Singapore High Court took the purposive approach in *Ng Kok Cheng v. Chua Say Tiong*.²⁹¹ One disputed claim of the patented invention was "a door lock comprises: ...an outer casing *enclosing* the main body." The Singapore High Court noted that "the dictionary meaning of a particular word is not necessarily its meaning when it is used in a patent," and to give such an interpretation "would lead to an absurd result because if the main body was fully enclosed, the key cylinders would be inaccessible, the shackle bar would not be able to pass through the auxiliary body and into the main body and the rod would not be disposed between the two bodies." Therefore, although the dictionary meaning indicated that the main body must be fully enclosed by the outer casing, the judge concluded that it was clear that in the context of the patent, the outer

would understand the author to be using the words to mean. Guidelines on the general approach were given by the Court of Appeal in *Virgin Atlantic v Premium Aircraft* [2010] FSR 10.")

²⁹¹ *Ng Kok Cheng v. Chua Say Tiong* [2001] 3 SLR 487; [2001] SGHC 143; Suit 783/2000 (22 Jun 2001).

casing was not intended to fully enclose the main body.

Although the purposive approach results in many benefits, it has some conceptual difficulties in centralizing the role of patentee's purpose in determining claim meaning.

A. *Sometimes the intent is not clear.* First, it may well be that the expression of intent is not clear. Interpreters often disagree over the central question: “*Is this meaning implied or is it not?*”²⁹², reaching different outcomes. Under the purposive approach, it is necessary that a practical purpose for describing and demarcating the boundary should be found.²⁹³ However, the language used in patent claims is generally more technical and sometimes more obscure than everyday language,²⁹⁴ and claim drafters often make the definitions of the claims terms as broad as possible,²⁹⁵ which leaves it hard to precisely determine the intent of the patentees. Sometimes patentees use descriptive language to mark the outer boundary of a category of inventive things that “extends well beyond the specific embodiments of an invention that the inventor discloses”,²⁹⁶ and sometimes a patent may, for one reason or

²⁹² E.D. Hirsch, *Validity in Interpretation* 89 (1967). (“... the crucial issue—the problem of implication. Of course, this problem is not itself more important than a good many others in hermeneutic theory, but when our central concern is validity we always have to ask whether a particular meaning is or is not implied by an utterance.”)

²⁹³ Duncan Curley & Hiroshi Sheraton, *The Lords Rule in Amgen v TKT*, 27 E.I.P.R. 154-158 (2005). *See also, Convatec Ltd. and others v Smith & Nephew Healthcare Ltd and Others* [2011] EWHC 2039 (Pat) (2011) (“Finally I remind myself that it is always important to bear in mind that the skilled person reads the specification in light of the common general knowledge and appreciating that its purpose is to describe and demarcate an invention, that is to say a practical idea for a new product or process.”)

²⁹⁴ Alan L. Durham, *Patent Law Essentials: A Concise Guide* 21 (2004).

²⁹⁵ David Pressman, *Patent It Yourself: Your Step-by-Step Guide to Filing at the U.S. Patent Office* 203 (2011).

²⁹⁶ Collins, *supra* note 40.

another, claim less than it teaches or enables.²⁹⁷

Since the intent is often debatable and the use of prosecution history files as an aid to construction is prohibited in UK,²⁹⁸ the search for what the patentees would have meant may often be replaced by what seems optimal for the detached hypothetical person.²⁹⁹ Where the intent is not clear, the court has to “make its best estimate of the skilled person’s best estimate of what the patentee intended in relation to a situation which it never contemplated.”³⁰⁰ Then there is concern that whether modern interpreter’s reconstruction of the estimated, ideal and hypothetical intent in a historical context is merely a reflection of his own concerns. Lawyers and patent practitioners are concerned that “in most cases (including virtually all mechanical patents), provided the courts have agreed on the nature of the invention, the outcome will be the same irrespective of whether the *Improver* or *Amgen* approach is adopted.”³⁰¹ Lord Hoffmann also conceded in *Kirin-Amgen* that:

No doubt there will be patent lawyers who are dismayed at the notion that the Protocol questions do not provide an answer in every case. They may feel cast adrift on a sea of interpretative uncertainty. But that is the fate of all who have to

²⁹⁷ *Occlutech GmbH v. AGA Medical Corp* [2010] EWCA (Civ) 702.

²⁹⁸ *Occlutech GmbH v. AGA Medical Corp* [2010] EWCA (Civ) 702. Courts in Germany, the Netherlands and the United Kingdom prohibit the use of file wrappers as an aid to construction.

²⁹⁹ One might analogize to the objective theory of contract interpretation, which holds that “the intentions of the parties to a contract or alleged contract are to be ascertained from their words and conduct rather than their unexpressed intentions.” Joseph M. Perillo, *The Origins of the Objective Theory of Contract Formation and Interpretation*, 69 *Fordham L. Rev.* 427 (2000). The author articulated that “the reason for the persistence of objective approaches can be found in the legal profession’s distrust of the testimony of parties. This distrust resulted in court-imposed rules forbidding party testimony starting in the sixteenth century. When legislatures overturned these rules in the nineteenth century, the profession, acting through the courts, made party testimony of intention irrelevant, giving birth to the modern objective theory.” *See also*, Catherine Mitchell, *Interpretation of Contracts: Current controversies in law* 49 (2007). “Evidently the personal idiosyncrasies and motives of the parties are not a feature to be taken into account, but beyond that, it is not clear what precisely is included and excluded by the reference to “a reasonable person, circumstanced as the actual parties were.”

³⁰⁰ Turner, *supra* note 245.

³⁰¹ Whitehead et al, *supra* note 289.

understand what people mean by using language.³⁰²

B. *Sometimes there are several possible purposes found in the claims.* “A claim is an abstraction and generalization of an indefinitely large number of concrete, physical objects.”³⁰³ Depending on the level of generality of the invention, there may be more than one single purpose found in the claim text.³⁰⁴ Some interpreters employing the purposive method are willing to find the objective intent of the patentee at a more abstract level, and thereby seldom conclude that the patentee wants to confine the meaning of his claim: “Of course in this exercise you must also be fair to the patentee – and in particular must not take too narrow a view of his purpose – it is the widest purpose consistent with his teaching which should be used for purposive construction.”³⁰⁵ Some scholars advocated “broader and more comprehensive articulation” of purposive approach in the hope of inferring patentee’s intent from the underlying purposes of the patent legislation, like encouraging new and useful inventions.³⁰⁶ Such an approach is more policy-based, because the

³⁰² *Kirin-Amgen, Inc. et al. v Hoechst Marion Roussel Ltd. et al.* [2004] UKHL 46.

³⁰³ Peter D. Rosenberg, *Patent Law Fundamentals* 39 (1975); *See also*, Collins, *supra* note 40. (“In fact, courts often use scope in a fashion that makes it synonymous with word meaning. “[T]he full scope of [a term’s] ordinary meaning” is, and is nothing more than, the term’s ordinary word meaning... This concept of the scope of a peripheral claim is the claim’s meaning-scope... Thing-scope measures the size of the set of distinct things described by the claim. The larger the set is, the broader the thing-scope of the claim.”) *See also*, Chiang, *supra* note 129.

³⁰⁴ *Rockwater Ltd v. Coflexip SA* [2004] R.P.C. 46. (“The inventor might have several purposes depending on the level of generality of his invention. Typically, he might have one or more specific embodiments as well as a generalized concept. To be fair to the inventor, it was the latter which mattered when construing the claims, particularly the widest claim.”) *Smith & Nephew Plc v. Convatec Technologies Inc* [2012] EWHC 1602 (Pat) (“I remind myself that claims are not construed alone or in the abstract but in their context in the specification; that purposive construction is vital (there may be several purposes and several embodiments) and that one is in the end concerned with the meaning of the language used.”) *See also*, Twining & Miers, *supra* note 15, 256. (“One should not be misled into thinking that to adopt a purposive approach necessarily means that there is a single purpose to be found, or that different judges will agree on what purpose(s) of a disputed provision might be.”)

³⁰⁵ In *Kirin-Amgen Inc and Others v. Hoechst Marion Roussel Limited and Others* [2004] UKHL 46, Lord Hoffmann explained, “If, when speaking of the widest purpose ... I would respectfully disagree. There is no presumption about the width of the claims. A patent may, for one reason or another, claim less than it teaches or enables.”

³⁰⁶ M. Sajewycz, *Patent Claim Interpretation as It Should Be: Promoting the Objects of the Patent Act*, 13

construction of the patentee's objective intent to some extent contributes to the realization of the goals and values of patent law. However, although the patent systems in different jurisdictions serve the general purposes, for example, "the provision of a reward system for those who invest in technological and scientific progress,"³⁰⁷ there are various underlying sub-goals of the patent system.³⁰⁸ As there can be different interpretations of purposes, different interpreters may have come to contradictory interpretive results on the same patent.³⁰⁹

Some interpreters are reluctant to generalize the meanings of the claims beyond their primary meaning, and consequently often find a restricted intention.³¹⁰ Compared to the broad purposive construction, the followers of the restrictive purposive interpretation value a relatively higher degree of certainty and predictability in claim construction.³¹¹ They ask whether the patentee intended strict adherence to claim limitations. This indicates that a

C.I.P.R 173 (1996). Further discussed by Alex Wellington in *The Metes and Bounds of Purposive Claim Construction in Canadian Patent Law*, 18 I.P.J. 31(2004).

³⁰⁷ Rob J. Aerts, *The Legitimacy of Patent Law-Making in Europe and the US - A Tentative Comparison*, 38 Int'l Rev. Intell. Prop. & Comp. L. 165-182 (2007).

³⁰⁸ Christian Von Drathen, *Patent Scope in English and German Law under the European Patent Convention 1973 and 2000*, 39 International Review of Intellectual Property and Competition Law 384-419 (2008). For instance, the scope of patent protection should provide fairness to the patentee and a reasonable degree of certainty for third parties. Here "fairness" means protection of the complete inventive teaching, and "certainty" is referred to its perceptibility by an objective and benevolent third party.

³⁰⁹ Sherman, *supra* note 5. ("the interesting feature of these decisions is that with fixed subject matter - that is, the patent and the infringing article - being interpreted in the light of identical (or very similar) laws, the cases can be read like a controlled experiment in legal interpretation."); *See also*, John P. Hatter, Jr, Comment, *The Doctrine of Equivalents in Patent Litigation: An Analysis of the Epilady Controversy*, 5 Ind. Int'l & Comp. L. Rev. 461 (describing differing results obtained by British and German courts considering alleged infringement of the same product).

³¹⁰ Sherman, *supra* note 5. *See also*, Turner, *supra* note 245. The author commented that this narrow interpretation "is regarded as a rather complex way of asserting the primacy of the claim language."

³¹¹ One might analogize to the objective theory of contract interpretation, which holds that "the intentions of the parties to a contract or alleged contract are to be ascertained from their words and conduct rather than their unexpressed intentions." Joseph M. Perillo, *The Origins of the Objective Theory of Contract Formation and Interpretation*, 69 Fordham L. Rev. 427 (2000). The author articulated that "the reason for the persistence of objective approaches can be found in the legal profession's distrust of the testimony of parties. This distrust resulted in court-imposed rules forbidding party testimony starting in the sixteenth century. When legislatures overturned these rules in the nineteenth century, the profession, acting through the courts, made party testimony of intention irrelevant, giving birth to the modern objective theory."

general intention derived from the claims can seldom overcome linguistic limits.

Compared with the broad, open reading of patent claims in other jurisdictions,³¹² the UK courts were traditionally more likely to give a narrow reading.³¹³ In *Occlutech GmbH v. AGA Medical Corp*,³¹⁴ the UK Court of Appeal used the purposive construction and searched for the intent of the patentee principally by analyzing the semantics and syntax of the patent claim texts. The Court intensively discussed the use of the disputed claim term “clamps” in paragraph [0025] and paragraph [0026] of the patent. The Court found that since the patentee has made distinction between “clamps” and “alternatives to clamps” in these paragraphs, the skilled person would see that he could do this in either of the two ways described.³¹⁵ Hence, the skilled

³¹² Toshiko Takenaka, *Claim Construction and the Extent of Patent Protection: a Comparative Analysis of the Phillips en banc Federal Court Decision*, 1 J. Intell. Prop. L. & Prac. 119-130 (2006). In a series of five Supreme Court decisions of 2002 (namely *Schneidmesser I and II*, *Custodiol I and II* and *Kunststoffrohrteil*), the Federal Supreme Court has reconfirmed the above principles of claim interpretation: “The considerations to be applied by the person skilled in the art must be focused on the semantic content of the technical teaching protected in the patent claim such that the person skilled in the art takes into consideration the deviating embodiment with its modified means as the equivalent solution.” (Federal Supreme Court, Judgment of 12th March 2002, IIC 2003, 302-Kunststoffrohrteil (Plastic Tube Parts)) *Epilady* Germany II, abridged and translated in 24 I.I.C. 838, 839 (1993) (OLG 1991).

³¹³ E.g. Iain C. Baillie, *Where Goes Europe? The European Patent*, 58 J.P.O.S. 153,167(1976); Brian Turner, *The German Formstein Case: An Alternative Harmony*, 14 E.I.P.R. 181-183 (1992). Hugh Dunlop, *Harmonizing the doctrine of equivalents*, *Managing Intellectual Property*, February 2003, at 42-48; Mario Franzosi, *Equivalence in Europe*, 25 E.I.P.R. 237-240 (2003). *Improver Corp v. Remington Consumer Products Ltd* [1990] F.S.R. 181. The patent in suit was a European patent, issued by the EPO and designated valid for a considerable number of contracting states including the UK and West Germany. The claims of the *Epilady* patent described a bent spring driven by a motor contained in a hand-held housing to achieve a hair plucking effect. In the allegedly infringing device, the bent spring was replaced by a bent hollow rubber tube in which circumferential slits had been cut, so as to achieve a similar effect to the windings of the *Epilady* spring. *Improver Corp v. Remington Consumer Products Ltd* [1990] F.S.R. 181. See also, *Improver v. Raymond Industrial Ltd*. [1990]1 HKLR 33; *Improver v. Raymond Industrial Ltd*. [1991] 1 HKLR 25. Hong Kong adopted the *Catnic* Questions and ultimately reached the same conclusion as his UK counterparts did, but gave fundamentally different answers to the three *Catnic* questions. Scholar comments see Tim J. Hancock, *Hong Kong: European Patent—Law Applicable in Hong Kong*, E.I.P.R. (1990), 12(12), D234-235.

³¹⁴ *Occlutech v. AGA Medical Corp* [2010] EWCA Civ 702. The patent claim in question required the metal strands of the occluder to be “clamped with clamps at the opposed ends of the device”. The device alleged to infringe – made by *Occlutech* – did not have clamps at each end of the device. Instead it consisted of a “sock” of metal strands, with the loose ends of the strands being at only one end of the device. They were then held together by welding.

³¹⁵ *Id.* Paragraph [0025] of the description: “...One method which has proven to be useful to prevent the

person would read the reference to plural form of “clamps” as a distinctive and necessary feature of the invention.³¹⁶

C. Sometimes patentee uses a broad term encompassing variants that could not have been contemplated at the time of filing.

Under the purposive approach, judges are bound to construe a claim as a “person skilled in the art would have understood the patentee to be using the language of the claim to mean” at the time of filing.³¹⁷ This approach pays close attention to the inventor’s purpose conveyed by the claim text.³¹⁸ Therefore, claim meaning is constrained by how the patentees (from the perspective of a hypothetical person of skill in the art) *would have* applied the claim language to particular cases at the time of filing, if they had contemplated it.

braid from unravelling is to clamp the braid at two locations and cut the braid to leave a length of the braid having clamps (15 in Figure 2) at either end, thereby effectively defining an empty space within a sealed length of fabric. These clamps 15 will hold the ends of the cut braid together and prevent the braid from unravelling.” Paragraph [0026] of the description: “Alternatively, one can solder, braze, weld or otherwise affix the ends of the desired length together (e.g. with a biocompatible cementitious organic material) before cutting the braid...” *Occlutech GmbH v. AGA Medical Corp* [2009] EWHC 2013 (Ch); Mann J held that “The juxtaposition of paragraphs 0025 and 0026 demonstrate that the patentee has not provided a sort of dictionary definition of “clamp”. He has referred to clamps, and then referred to alternatives to clamps. I do not understand how this amounts to defining clamps to include those other “not clamps” (as it were).”

³¹⁶ *Id.* The Court repeated that “the risk of any ambiguities due to careless wording of the patent specification must in principle lie with the patentee.” Therefore, the allegedly infringing product secured by welding rather than by the application of external clamps did not fall within the scope of protection. *AGA Medical Corporation v. Occlutech GmbH*, German Supreme Court, 10 May 2011, Case No. X ZR 16/09. In Germany, for the same patent, the first instance court (the Düsseldorf Landgericht) and appeal court (the Düsseldorf Oberlandesgericht) reached the opposite conclusion from the UK courts. In their view the skilled person would appreciate that the function of the clamps was to hold together the ends of the metal strands. The Düsseldorf Higher Regional Court stated that although the claim “describes configurations in which one clamp each is present at the proximal and at the opposed – distal – end. Yet the average skilled person will not content himself with this mere linguistic understanding.” However, the German Supreme Court finally held that there was no infringement under the literal or the doctrine of equivalents. The German Supreme Court found that welding, which did not use clamps, were not equivalent to clamps.

³¹⁷ *Kirin-Amgen Inc and others (Respondents) v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46, [2005] RPC 9.

³¹⁸ *Mayne Pharma v. Pharmacia Italia* [2005] EWCA Civ 137; *Halliburton v Smith International* [2005] EWHC 1623 (Pat) “(c) It follows that the claims are to be construed purposively—the inventor’s purpose being ascertained from the description and drawings.”

The problem with this approach is that it does not adequately explain the effect of technological changes on the construction of meaning. Patents involve new ideas in response to changes in technology,³¹⁹ and patentees often claim the invention at a level of considerable abstraction and generality. As pointed out by Jacoba LJ in *Mayne Pharma*: “(v) When ascertaining the inventor’s purpose, it must be remembered that he may have several purposes depending on the level of generality of his invention. Typically, for instance, an inventor may have one, generally more than one, specific embodiment as well as a generalised concept.”³²⁰ There is the possibility that the patentee used a general and abstract claim term but could not have envisaged the variations at the time of filing. Under such circumstance, judges must justify the interpretive outcome in concrete cases by explaining how it can be seen as the result of a justifiable reading of a claim term—whether the claim scope should encompass after-arising technologies or not.

The UK courts acknowledge- the possibility of a patent scope covering an after-arising technology if the claim term is “sufficiently general.”³²¹ The question to be asked is whether the person skilled in the art would understand the description in a way which was sufficiently general to include the new technology. But in fact, it would be hard to argue that a claim, upon its construction at the time of filing, could cover products or processes which involve the use of technology then unknown or not in existence. The result is

³¹⁹ Lemley, *supra* note 7. (“In that case, the Court found that the meaning of the term “bridge” in a 1790 statute did not mean the same thing in 1860 after the development of railroad bridges. The term was the same, but its scope had changed over time in response to changes in technology.”)

³²⁰ *Mayne Pharma Pty Ltd v Pharmacia Italia SpA* [2005] EWCA Civ 137, “But there is no presumption that the patentee necessarily intended the widest possible meaning consistent with his purpose be given to the words that he used: purpose and meaning are different.”

³²¹ *Id.* at paras, 78-85.

that the UK courts tend to be rather “narrow-minded” when it comes to the interpretation of claim terms:

“What makes the issue of after-arising technology more difficult to cover in the English context is the fact that the skilled person is to construe the claim as on the date of the publication of the patent application. Therefore, such person does not have the benefit of the after-arising technology with which to construe such a claim and thereby to include a variant within its scope.”³²²

When faced with unforeseeable technological changes, a gap of understanding has been created between the present and the past technological contexts. The reliance on the historical application of a claim text at the time of filing may be of little help in addressing new issues raised by technological advances. General and abstract claim terms give rise to competing meanings, and the development in factual knowledge would challenge the scope of the asserted claims. A more justifiable approach is needed to explain the effect of changing circumstances on the claim text.

One will not be warranted in asserting that the purposive approach is the final answer to claim construction. The patentee’s purpose alone is not a conclusive guide. But the Technip Principles definitely get one thing right, that is, “Purpose is not the be-all and end-all. One is still at the end of the day concerned with the meaning of the language used.”³²³

³²² Nicholas Pumfrey et al., *The Doctrine Of Equivalents in Various Patent Regimes--Does Anybody Have It. Right?*, 11 Yale J.L. & Tech.261 (2009).

³²³ *Rockwater Ltd v Technip France SA* [2004] EWCA Civ 381.

CHAPTER 3 THE CONSTRUCTIVE APPROACH

The previous two chapters discuss the conceptual and practical problems presented by the ordinary meaning approach and the purposive approach. This Chapter introduces the third approach to patent claim interpretation, namely, the constructive approach to claim interpretation. The constructive approach does not focus on the ordinary meaning of the claim text or what the patentee would have intended, but identifies the content of a claim based on an analysis of the problem/solution within the teaching of the invention. The understanding of a claim term is thus highly dependent on the function which the content fulfills in the invention. The similarities and differences between this approach and the other two approaches will be discussed. Comparatively speaking, the constructive approach is a less restrictive and more liberal form of claim construction. First, it prefers a description of pragmatic function to linguistic form. Second, it elaborates the significance of the invention in light of the prior art. Third, it involves using general legal principles such as the eclectic principle and the fairness principle to choose evidence or doctrines that best suit the question at hand. The problem of the constructive approach is that the scope of the claim can be unpredictable, which may afford inadequate protection to the public interest. Despite its imperfections, this Chapter summarizes a few useful ideas from this approach that can enhance our understanding of claim interpretation, such as the understanding of technical content in different contexts, as well as the necessity for a balance between preserving legal certainty and adapting the claim text to the changes of technology.

Section 1 Identifying content in patent claim on a problem/solution basis

The constructive approach provides an alternative way of understanding claim meaning. It realizes that to obtain ordinary meaning or to grasp patentee's objective intent may be undesirable. Although these two notions are convenient when dealing with the meaning of legal language in general, they are not always helpful in resolving patent disputes because of the distinctiveness of the inventions and the rapid technological changes. Under the constructive approach, claim interpretation is to specify the *content* (opposed to linguistic expression) contained in a text³²⁴ by using the reference of a PHOSITA. The "content" or the "subject matter"³²⁵ of the patent claim is the technical feature of the invention, *i.e.*, the content of the technical solution.³²⁶ The constructive approach has taken a less restrictive stance regarding the form of words and focuses on the function of a term from analysis of problem/solution of the

³²⁴Ferenc Kovács, *Linguistic Structures and Linguistic Laws* 203 (1971) (discussing "the relation between content (meaning) and (linguistic) form"); Edoardo Zamuner & David Kennedy Levy, *Wittgenstein's Enduring Arguments* 161 (2009) ("This is in line with a more general tendency, namely to employ the terms 'content' and 'meaning' interchangeably.")

³²⁵ Duncan Bucknell, *Pharmaceutical, Biotechnology and Chemical Inventions: World Protection and Exploitation* 62 (2011) ("The technical content of the patent claims in China are treated as an integrated technical solution...it follows from the above, that in China patent claims are to be interpreted with reference to and based on the disclosure in the description and drawings as well as detailed consideration of the technical filed of the invention, including the prior art, its technical solutions, uses and effects."). See also, Uta Köster, *The Interpretation of Patent Claims in Germany Legal Development and Current Case Law* (2003) The author introduced the "triple division theory" including the immediate subject matter (literal words), the subject matter and the general inventive thought. ("the judge in the infringement proceedings had primarily to deal with the interpretation of the investigated subject matter of the invention.") <http://www.mondaq.com/article.asp?articleid=23271> (Last visited Nov 26, 2012)

³²⁶ Guidelines for Patent Examination 2010 (In accordance with the provisions of Rule 122 of the Implementing Regulations of the Patent Law of the People's Republic of China, the previous Guidelines for Examination, which were promulgated on May 24, 2006 and entered into force on July 1, 2006, are revised. The revised Guidelines for Patent Examination are promulgated and shall enter into force on February 1, 2010), translated by State Intellectual Property Office of The People's Republic of China. ("Guidelines") Article 7.8: "Examination According to Rule 19. The claims shall describe the technical features of the invention. The claims shall not contain any words or sentences that have no relation to the contents of the technical solution.")

invention.³²⁷ Its goal is to “define clearly the technical terms involved, as well as to elucidate the significance and consequence of the respective invention.”³²⁸

For example, in China, Article 59 of the 1984 Patent Law of the People’s Republic of China (hereinafter referred to as China’s Patent Law, “CPL”) stipulates that “the scope of protection in the patent right for an invention or a utility model shall be determined by the *contents* of the patent claim. The specification and appended drawings may be used to interpret the *contents* of the patent claim.”³²⁹ The wording is different from the CPL 2000 version stipulating that “the specification and appended drawings may be used to interpret the patent claim.”³³⁰ The *contents* of a claim shall be determined “according to the description of the claim and in consideration of the understanding of the claim by regular technicians in the same field after reading the specification and drawings”,³³¹ with full account taken of the

³²⁷ Alexander Harguth, *Patents in Germany and Europe: Procurement, Enforcement and Defense: An International Handbook* 176 (2011) (“That is, the patent claims are not limited to the strict literal meaning of the claim language. Rather, terms of the claims are interpreted to sufficiently cover the technical teaching as disclosed in the description.”)

³²⁸ *Batteriekastenschmur* [1989] GRUR 903, 904 (German Federal Supreme Court), 22 IIC 104 (1991) (“From these principles, this Court deduced that the interpretation of the patent claims serves not only to eliminate any ambiguities but also to define clearly the technical terms involved, as well as to elucidate the significance and consequence of the respective invention”)

³²⁹ Patent Law of the People’s Republic of China (adopted at the Fourth Meeting of the Standing Committee of the Sixth National People’s Congress and promulgated by order No. 11 of the President of the People’s Republic of China on March 12, 1984, and effective as of April 1, 1985, revised Dec 27, 2008), Art. 59, translated in LawInfoChina (last visited July 31, 2011) (P.R.C.). According to Article 2 of the CPL, “inventions-creations” include inventions, utility models and designs.

³³⁰ Patent Law of the People’s Republic of China (adopted at the Fourth Meeting of the Standing Committee of the Sixth National People’s Congress and promulgated by order No. 11 of the President of the People’s Republic of China on March 12, 1984, and effective as of April 1, 1985, revised Aug.25,2000), Art.56, translated in LawInfoChina (last visited July 31, 2011) (P.R.C.). *Xu Yong Wei yu Ning Bo Shi Hua Tuo Tai Yang Neng Ke Ji You Xian Gong Si Qin Fan Fa Ming Zhuan Li Quan Jiu Fen An* [*Xu Yongwei vs. Ning Bo Hua Tuo Solar Energy Technology Co Ltd.*] No. 64, Civil Case Review, Supreme People’s Court (2011). The Supreme People’s Court ruled in the case that the embodiments in the specifications should not be imported to limit the claim scope.

³³¹ Interpretation of the Supreme People’s Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (promulgated by the Supreme People’s Court., Dec. 28, 2009, effective Jan. 1, 2010), Art.2, translated in LawInfoChina (last visited June 20, 2011)

object, function and effect of the invention, rather than the exact wording of the patent.³³²

In the *Batteriekastenschnur* case³³³ the German Supreme Court explained its claim construction approach as follows: “As this court first explained in its *Formstein* decision, subsequently in the decision *Ionenanalyse*, and most recently in its decision *Schwermetalloxidationskatalysator*, the decisive basis for establishing the scope of protection of a patent is, pursuant to section 14 of the 1981 Patent Act, the *content* of the claims, for the interpretation of which the description and drawings must be referred to.” The Court then cited the Protocol on the Interpretation of Article 69 and stated: “In examining the question whether the patented invention is being used, it is therefore necessary to begin by establishing the *content* of the patent claims based on technical expertise.”³³⁴

In *Formstein*, the Federal Court of Justice confirmed that the principle set out in the Protocol also applies to German patents.³³⁵ Under the former German practice before the harmonization of interpretation of Article 69 EPC, patent claims were seen as guidelines in defining the general inventive

(P.R.C.)(hereinafter, “Judicial Interpretation”). According to the Guidelines, 2.4 Person Skilled in the Art, the “regular technicians” means the person skilled in the art, a fictional person who is presumed to be aware of all the common technical knowledge and have access to all the technologies existing before the filling date or the priority date in the technical field to which the invention pertains, and have capacity to apply all the routine experimental means before that date. However, he is not presumed to have creativity.

³³² National Science and Technology Commission of China, *Intellectual Property System in China (Bluebook No.7 on Science and Technology in China)* (1992). The National Science and Technology Commission, now the Ministry of Science and Technology, provided an official overview of the intellectual property legal system in China in the form of a blue book.

³³³ *Batteriekastenschnur* [1989] GRUR 903, 904 (German Federal Supreme Court), 22 IIC 104 (1991). See also, Jonathan Radcliffe, Ulrich Worm, Mayer Brown in *Current Patent Litigation Trends: UK and Germany*, World Intellectual Property Report, 26 WIPR 40, 07/01/2012.

³³⁴ *Id.*

³³⁵ *Formstein*, BGH GRUR 1986, 803. See also, Pagenberg, *New Trends in Patent Claim Interpretation in Germany - Good-bye to the "General Inventive Idea"*, 26 IIC 228 (1995)

concept,³³⁶ which is in contrast to the traditional UK approach where patent protection was strictly tied to the wording of the claims. The Protocol was intended to eliminate major discrepancies and provide a middle course between the UK and German traditions of interpretation to claims.³³⁷ While the UK courts began to adopt the purposive approach where the scope of protection can extend beyond its literal meaning to encompass variants of a claimed invention, the German courts have also made changes to be more in line with the Protocol and decided that the protection of a general inventive idea is no longer possible under the new law.³³⁸ However, the application of this provision in the national courts is far from uniform.³³⁹ The *Epilady* cases³⁴⁰ illustrated how UK and German courts have reached conflicting outcomes related to identical European Patent claims: as a result of different claim interpretation,³⁴¹ the patent was held to be infringed by the German courts, but not by the UK courts.³⁴²

There are two reasons why German approach is different from the UK approach under the same legal provision. First of all, serving as written

³³⁶ Turner, *supra* note 245.

³³⁷ Tanya Aplin & Jennifer Davis, *Intellectual Property Law: Text, Cases, and Materials* 716 (2013); See also, David Vaver, Lionel Bently, *Intellectual Property in the New Millennium: Essays in Honour of William R. Cornish* 99 (2004). (“The Protocol decreed that claims were not to be limited to the strict literal meaning of their words, a repudiation of the deemed United Kingdom approach, but, also, were not to be viewed as merely a guideline, a repudiation of the deemed German approach.”)

³³⁸ Aufsatz von Jochen Pagenberg, *New Trends in Patent Claim Interpretation in Germany - Good-bye to the "General Inventive Idea"*, 19 IIC 788 (1988)

³³⁹ Jochen Pagenberg, *The Scope of Art.69 European Patent Convention: Should Sub-combinations be Protected? - a Comparative Analysis on the Basis of French and German law* IIC 1993, 24(3), 314-345

³⁴⁰ See, e.g., *Improver Corp. v. Remington Consumer Prod. Ltd.* [1990] 17 F.S.R. 181 (Ch. Pat. Ct.1989) (discussing both English and German cases from trial to appeal)

³⁴¹ *Id.* In the U.K., the Court of Appeal decided that the term “helical spring” could not cover a slitted rubber rod because there was no suggestion that the inventors of the *Epilady* device had considered using a rubber rod. In Germany, however, the Düsseldorf Landgericht interpreted the claims more functionally and concluded that the slitted rubber rod operated in essentially the same way as the helical spring and found that the substitution was disclosed in the claims when read in view of the description through the eye of man skilled in the art.

³⁴² Adam Jolly & Jeremy Philpott, *The Handbook of European Intellectual Property Management: Developing, Managing and Protecting Your Company's Intellectual Property* 332 (2012)

international minimum standards³⁴³ for claim construction, the Protocol permits a claim to be construed more broadly than its literal language but does not define specifically that breadth.³⁴⁴ “Neither the EPC nor the Protocol set out how the scope of protection is to be determined.”³⁴⁵ Such flexibility results in patent claims to be interpreted by national courts as they would be under each country’s national patent system. It is believed that “each approach is appropriate for the legal culture in which it resides.”³⁴⁶ A second, but more subtle reason is that the German texts of the EPC use the word “*Inhalt*”, which has a broader meaning (“the surrounding content where a term appears must be considered”)³⁴⁷ than the English word “terms”. This translation issue provides additional room for interpretation in German courts. Under the current constructive approach, terms of the claims are construed in the context

³⁴³ Alexander James Stack, *International Patent Law: Cooperation, Harmonization, and an Institutional Analysis of WIPO and the WTO* 95 (2011). (“It has been argued that this reality requires there to be an international court to decide patent cases; otherwise, attempts to adopt minimum standards on claim construction and other patent law fundamentals will be frustrated.”)

³⁴⁴ Ray D. Weston, *A Comparative Analysis of the Doctrine of Equivalents: Can European Approaches Solve an American Dilemma*, 39 J.L. & Tech. 35 (1998) (“European scholars understandably tend to interpret Article 69 as they would interpret a claim under the national patent system of their home states. British lawyers could find the level of certainty they desired in the strong expression that the scope of protection “shall be determined by the terms of the claims.” German patent lawyers, on the other hand, discovered all the breadth they wanted in the distinction between the “terms” of the claims and the claim language: the former suggested the elements one derives by interpretation, the essential content, substance, or core of a claim.”)

³⁴⁵ Pumfrey et al., *supra* note 322 (“Unfortunately, this Article leaves broad room for interpretation and is not understood in the same way all across Europe.”)

³⁴⁶ David Vaver and Lionel Bently (eds.), *Intellectual Property in the New Millennium: Essays in Honour of William R. Cornish* 99 (2004). *See also*, David L. Cohen, *Article 69 and European Patent Integration*, 92 Nw. U. L. Rev 1082 (1997-1998) (“German jurisprudence, like English jurisprudence, is still strongly rooted in its historical practice...while legal integration is possible, it requires a level of mutual cultural adaptation.”)

³⁴⁷ Ray D. Weston, *A Comparative Analysis of the Doctrine of Equivalents: Can European Approaches Solve an American Dilemma*, 39 J.L. & TECH. 35 (1998) *See also*, Turner, *supra* note 245 (“Article 69 of the European Patent Convention provides that the extent of protection of a European patent is to be determined by the terms (or “*inhalt*” or “*teneur*” in the equally authentic German and French texts) of the claims.”) Donald S. Chisum & Stacey J. Farmer, *Lost in Translation: The Legal Impact of Patent Translation Errors on Claim Scope*, in , in Toshiko Takenaka (ed.), “Patent Law And Theory A Handbook of Contemporary Research” 289 (2009). (“In the German and French versions of Article 69 (1) EPC 1973, the translated equivalent of ‘terms of claims’ is ‘*Inhalt der Patentansprüche*’ and ‘*teneur des revendications*’ respectively. Interesting, both ‘*Inhalt*’ and ‘*teneur*’ suggest a broader interpretation to a multi-lingual reader that the surrounding content where a term appears must be considered, which could extend the more literal meaning given to an English ‘term’.”)

of the solution that the patent application objectively discloses.³⁴⁸

The constructive approach is more conceptually justifiable than the other two approaches in establishing claim meaning. While the ordinary meaning approach and the purposive approach have difficulties in dealing with some situations (*e.g.*, claim terms lack a well-understood meaning at the time of invention, or the ordinary meaning does not resolve the ambiguity; the intent is not clear even to the patentee himself, or there are technological changes that patentee did not originally foresee and therefore have developed meanings which he did not intend), the constructive approach is always capable of identifying the technical properties of the subject matter in the claim, because a claim is a verbal portrayal of an invention.³⁴⁹ The following paragraphs will further compare the similarities and differences between the constructive approach and the other two approaches.

A. The constructive approach and the purposive approach

According to the purposive approach, patents should be interpreted on the basis of the inventor's purpose instead of a literal meaning.³⁵⁰ Under both the purposive approach and the constructive approach, the strict literal rule has

³⁴⁸ Harguth, *supra* note 327, 177. ("The understanding of a term is thus primarily influenced by the function it fulfills within the claimed teaching.")

³⁴⁹ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd*, 535 U.S. 722, 731 (2002) ("An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirement of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled. Often the invention is novel and words do not exist to describe it.")

³⁵⁰ *Rockwater Ltd v Technip France SA* [2004] EWCA Civ 381, [2004] RPC 46; *Virgin Atlantic Airways Ltd v Premium Aircraft Interiors UK Ltd* [2009] EWCA Civ 1062, [2010] RPC 8, ("(ii) Article 69 says that the extent of protection is determined by the claims. It goes on to say that the description and drawings shall be used to interpret the claims. In short the claims are to be construed in context. (iii) It follows that the claims are to be construed purposively - the inventor's purpose being ascertained from the description and drawings.")

been relaxed. There are two main differences between them: Firstly, under the constructive approach, the intention of the patentee is not the last authority in determining the meaning of the text, and there are other equally legitimate authorities for that determination.³⁵¹ The purposive approach focuses on “a practical idea which the patentee has had for a new product or process.”³⁵² However, unlike the purposive approach, the constructive approach does not make patentee’s purpose at the time of filing the primary concern of interpretation. Second, under the constructive approach, the interpreter adopts an evaluative stance to specify the content.³⁵³ The interpreter’s own reasoning and evaluation (by using the reference of a PHOSITA) of what is to be achieved by the disputed feature plays a critical role. The constructive approach is interested in identifying the content or the subject matter from a problem/solution analysis:³⁵⁴ assessing the disadvantages of the prior art and the advantages to be achieved by the invention.³⁵⁵

Terms of the claims are construed in the context of the solution that the patent application objectively discloses....In other words, the skilled person needs to

³⁵¹ Cristina Lafont, *Meaning and Interpretation: Can Brandomian Scorekeepers be Gadamerian Hermeneuts?*, in Andrzej Wierciński, *Gadamer's Hermeneutics and the Art of Conversation* 164 (2011). (“That is, it is perfectly possible and legitimate to provide an accurate description of what the author intended to say in the author’s own terms. It is just that there are many other things that can be illuminating in interpreting a text.”)

³⁵² *Kirin-Amgen Inc and Others v. Hoechst Marion Roussel Limited and Others* [2004] UKHL 46. (“...reads the specification on the assumption that its purpose is both to describe and to demarcate an invention—a practical idea which the patentee has had for a new product or process...It is this insight that lies at the heart of ‘purposive construction’.”)

³⁵³ Lafont, *supra* note 351.

³⁵⁴ Tilman Müller-Stoy, *German Federal Supreme Court: On the interpretation of the scope of protection of a patent claim and the role of the court expert (Decision of February 12, 2008, Case X ZR 153/05 –“Mehrgangnabe”/ “Multi-gear hub”)* (2008) <http://www.mondaq.com/article.asp?articleid=76230> (Last visited Nov 26, 2012)(“ patent claims are usually interpreted on the basis of a so-called function-oriented interpretation, *i.e.* the literal meaning of a claim feature is interpreted in the light of its technical function from the point of view of the average person skilled in the art...the objective technical results and advantages achieved in the future with the patented teaching in view of the actually claimed subject matter.”)

³⁵⁵ Harguth, *supra* note 327, at 177. (“German courts often name this a ‘function oriented interpretation of patent claims.’”)

read the specification in a reasonable way to identify the particular functions of the terms by which they provide for the inventive solution. The understanding of a term is thus primarily influenced by the function it fulfills within the claimed teaching.

One example is *Muller v. Hilti* case³⁵⁶ in the German Court. To interpret the patent claim “a washer...is *introduced* before tightening between head and flange,” a PHOSITA would have understood that the prior art used long screws and the flange was tightened along a circular path, and in order to overcome the difficulty of the prior art, short screws would be used and the flange would be tightened along a straight path.³⁵⁷ By formulating the technical problem and solution, the term “introduced” was interpreted as “inserted into tightening position along straight line along a flange surface.”

Another example is the “Overhead Stereo Building” case in the Chinese court.³⁵⁸ Claim 1 read as “several house units are arranged on the surrounding space and the *surface* of the space support structure...the top surface of the space structure is roadway.” To construe the claim, Shanghai High People’s Court determined the advantageous aspects (“*You Yi Xiao Guo*”) of the invention³⁵⁹ (to increase the area of structure and improve comfort and

³⁵⁶ *Muller v. Hilti* (“Tension Screw”; Spannschraube [1999] GRUR, 909-914 2000 P.I.B.D. III, 305; 2002 IIC, 746-749); In *Muller v. Hilti* the German courts decided that the European patent was not infringed, whereas the Swiss and French courts decided otherwise. See also S. Luginbuehl, *European Patent Law: Towards A Uniform Interpretation*, (Edward Elgar, 2011) at 3-6.

³⁵⁷ Mario Franzosi, *Three European Cases on Equivalence – Will Europe Adopt Catnic?*, 32 IIC 113 (2001).

³⁵⁸ *Wang Qun su Shang Hai Shi Bo Hui Fa Guo Guan he Zhong Guo Jian Zhu Di Ba Gong Cheng Ju You Xian Gong Si* [*Wang Qun v. Pavilion France at Expo Universelle Shanghai and China Construction Eighth Engineering Division*] No.83, 3rd Tribunal, Final decision, Shanghai High People’s Court (2010) (P.R.C). This case was selected by the Supreme People’s Court as one of the Ten Typical Intellectual Property Rights Cases in 2010, Chinacourt, <http://www.chinacourt.org/html/article/201104/25/449078.shtml> (last visited 30 July, 2011).

³⁵⁹ *Ren Wen Lin su Dong Fang Jia Yuan Bei Jing Li Ze Zhuang Shi Jian Cai You Xian Gong Si* [*Ren Wenlin*

communication), and the indispensable solution of achieving this goal (by extending outward from the space support structure). Based on such analysis, the Court narrowly defined “surface” in Claim 1 as “surface excluding the top surface of the space support structure.”

The purposive approach asks whether the strict compliance with the particular descriptive word or phrase appearing in a claim would have been intended by the patentee to be an essential requirement of the invention.³⁶⁰ The purposive approach interprets claim meaning right at the time of filing and allows extension to future equivalents³⁶¹ only when the claim term is sufficiently general and abstract to include the new technologies.³⁶² In *Ancon Ltd vs. ACS Stainless Steel Fixings Ltd*,³⁶³ Ancon argued that the Judge construed claim term “the head has a generally elliptical cone shape” too narrowly—they argued that by virtue of the amendments made to the Protocol in 2000, infringement should be found under the doctrine of equivalents. The Court of Appeal pointed out that the House of Lords has already indicated that there has been no change to the EPC in this respect—there is nothing in the

v. Oriental Home Beijing Li Ze Deco Construction Co. Ltd] No. 6988, Civil Tribunal, Beijing No.2 Intermediate People’s Court (2004) (“Claims are not isolated but closely in connection with the specifications and drawings...one must take into account of all patent documents to properly understand the claims, making clear the purpose of the invention, its function and effect...”) *See also*, Zhang Lian Qin su Tian Jin Tai Guan Jian Cai Gong Mao You Xian Gong Si [*Zhang Lianqin v. Tianjin Guan Tai Construction Industry & Trade Co. Ltd*] No. 1830, Civil Tribunal, Beijing No.1 Intermediate People’s Court (2006) (“According to the specification, the ‘enhanced layer’ can be omitted. However, the purpose and the technical effects of the ‘enhanced layer’ have been fully explicated in the specifications and the drawings, and the technical means of the ‘enhanced layers’ is also specified. Therefore, the ‘enhanced layer’ is one of the essential elements of the patent.”)

³⁶⁰ *Catnic Components Ltd. vs. Hill & Smith Ltd.*, [1982] R.P.C. 183 (H.L.). at 243.

³⁶¹ Jonathan Radcliffe, *European Union: Current Patent Litigation Trends: UK and Germany* (2012) (“UK courts are now taking a nuanced approach that is firmly rooted in the overarching requirement under Article 69 of the European Patent Convention that the claims themselves must determine the scope of protection.”) http://www.mondaq.com/article.asp?article_id=198524&signup=true (last visited Oct 1st, 2012)

³⁶² *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46, [2005] RPC 9.

³⁶³ *Ancon Ltd vs. ACS Stainless Steel Fixings Ltd* [2009] EWCA Civ 498.

travaux préparatoires to the EPC 2000 to show a clear intention to change the law in this way.³⁶⁴

By comparison, under the constructive approach, a patent claim may be interpreted “below” or “beyond” the claim language,³⁶⁵ on the basis of the technical teaching as disclosed in the description.³⁶⁶ On the one hand, a restrictive interpretation of a patent claim “below” its literal meaning is justified if the technical result to be achieved by the invention is only achieved by a technical teaching according to such restrictive interpretation.³⁶⁷ On the other hand, the subject matter embraces solutions “as being technically equivalent”³⁶⁸ to the claimed teaching, based on “ideas deriving from the meaning of the content of the invention defined in the claims.”³⁶⁹ While the purposive approach often uses the perspective of a PHOSITA to support a narrow claim

³⁶⁴ *Id.* Ancon argued that even if the claim as properly construed did not cover the ACS assembly, there was infringement nonetheless by virtue of the amendments made to Art 69 of the EPC and the Protocol thereto in 2000. The Court held that “In the event it is not necessary to consider this argument. All I would say is that has considerable difficulties both because our House of Lords has indicated it makes no difference (see *Kirin-Amgen* at [49]) and because a trawl through the *travaux préparatoires* to the EPC 2000 does not show a clear intention to change the law.” See also, *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46 (Holding “Since the *Catnic* case we have article 69 which, as it seems to me, firmly shuts the door on any doctrine which extends protection outside the claims. I cannot say that I am sorry because the *Festo* litigation suggests, with all respect to the courts of the United States, that American patent litigants pay dearly for results which are no more just or predictable than could be achieved by simply reading the claims.”)

³⁶⁵ Müller-Stoy, *supra* note 354. (“...the Federal Supreme Court had to decide whether at all, and if yes, under which circumstances an interpretation of a patent claim “below” its literal meaning applies.”) See also, Toshiko Takenaka, *Patent Law and Theory: A Handbook of Contemporary Research* 295 (2008). In the German version of Article 69 (1) EPC 1973, the translated equivalent of “terms of the claims” is “Inhalt der Patentansprüche”, which suggest a broader interpretation that the surrounding content where a term appears must be considered.

³⁶⁶ Brieflocher [2001] GRUR, 232, X ZR145/98, Federal Supreme Court, quoted in Harguth, *supra* note 327, at 176. (“Terms can thus be given the broadest possible technical understanding under the disclosed teaching.”)

³⁶⁷ Mehrgangnabe/ Multi-gear hub [2008], Case X ZR 153/05, German Federal Supreme Court.

³⁶⁸ Formstein [1986] GRUR 804, German Federal Supreme Court. See also, Duncan Bucknell, *Pharmaceutical, Biotechnology and Chemical Inventions: World Protection and Exploitation* 90(2011)

³⁶⁹ *Batteriekastenschnur* [1989] GRUR 903, 904 (German Federal Supreme Court); see also, *Kunststoffrohrteil* [2002] GRUR 511 (German Federal Supreme Court) as well as in four other cases of the same date (*Schneidmesser I & II, Custodiol I & II*, all 2002): (“infringement by equivalence is still possible, if: (a) the variant achieves the same technical effect (at least in essence); (b) the skilled reader could have discovered the variant without inventive effort at the priority date as a solution equal in function; and (c) the considerations of the skilled reader must be directed to the semantic content of the patent claim in such a way that he would contemplate the variant as being an equal solution.”)

construction, the constructive approach inclines to expand the semantic meaning to include equivalents.³⁷⁰

According to the Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies (hereinafter referred to as the "Provisions"), the content of a patent claim includes "the scope determined by the essential technical features explicitly recorded in the claims, as well as the scope determined by the features equivalent to those essential technical features."³⁷¹ The second paragraph further explains the definition of equivalent features: "the features perform the same function and achieve the same result in the same way as the features explicitly recorded in the claims, and those can be imagined by the ordinary technological person in the specific technical area through reading patent claims and specifications without creative labor."³⁷² The focus on the technical content of patent claims has a greater tendency to expand the scope of patent protection and cover the after-arising technologies.³⁷³

³⁷⁰ Golden, *supra* note 127. ("Although courts in a number of countries putatively use an ordinary artisan perspective for claim construction, they have used this perspective to justify strikingly different interpretive methodologies.") See also, Toshiko Takenaka, *Claim Construction and the Extent of Patent Protection: A Comparative Analysis of the Phillips en banc Federal Circuit Decision*, 1 J. Intell. Prop. L. & Prac. 119, 130 (2005) (noting that German "courts use the perspective of a hypothetical person in the art . . . to expand the literal meaning" to include "variations and equivalents," whereas Japanese courts historically invoked this perspective "to support a narrow claim construction" tied to "disclosed embodiments").

³⁷¹ Article 17, para. 1, Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies (promulgated by the Supreme People's Court, June. 22, 2001, effective July. 1, 2001), translated in LawInfoChina (last visited July 16, 2011) (P. R.C.).

³⁷² *Id.* para. 2. See e.g., *Shaan Xi Jing Ye Bo Li Gang You Xian Gong Si Yu Yong Chang Ji Shui Fu He Cai Liao You Xian Gong Si Qin Fan Shi Yong Xin Xing Zhuan Li Quan Jiu Fen An* [*Shaanxi Jingye Glass Fibre Reinforced Plastic Co., Ltd vs. Yongchang Sekisui Composite Co., Ltd*] No. 181, Civil Appeal, Supreme People's Court (2010). ("When deciding whether the technical feature of the defendant's product is equivalent to that of the patented invention, we not only ask whether it can be imagined by the ordinary technological person without creative labor, but also ask whether the feature performs the same function and achieves the same result in the same way as the feature explicitly recorded in the claims. Both conditions must be satisfied.")

³⁷³ *Minnesota Mining & Manufacturing CO v. Beiersdorf(Australia) Ltd* (1980) 144 CLR 253. Justice

B. *The constructive approach and the ordinary meaning approach*

The constructive approach and the ordinary meaning approach both interpret claim terms from the eyes of a PHOSITA.³⁷⁴ Under the ordinary meaning approach, the analysis focuses on the ordinary and customary meaning of a patent claim term to a PHOSITA,³⁷⁵ rather than what the patentee actually invented, reduced to practice, and disclosed to the public.³⁷⁶ The patentee's broad construction often prevails, unless there is an "explicit definition" or a "clear disavowal."³⁷⁷ By comparison, the constructive approach at all times requires interpreting the disputed claims by "following the inventive purpose, plan, existing technology and inventive effects as stated in the description and drawings, and applying that interpretation to comparison of the patent and the

Aickin in the High Court of Australia said: It remains the law that a defendant may not take the substance of an invention unless the wording of the claims make it clear that the relevant area has been deliberately left outside the claim.

³⁷⁴ *Shen Zhen Shi Lan Ying Wu Jin Su Jiao Zhi Pin Chang yu Luo Shi Zhong Qin Fan Shi Yong Xin Xing Zhuan Li Quan Jiu Fen An* [Shenzhen Lanying Metal & Plastics Products Co., Ltd vs. Luo Shizhong] No. 248, Civil Case Review, Supreme People's Court (2011). The Supreme People's Court ruled that the patent claim should be interpreted from the perspective of a PHOSITA, and not be limited by the literal wording.

³⁷⁵ Menell et. al., *supra* note 5, ("It is unfortunate that the Federal Circuit has failed to expressly disavow the "heavy presumption of ordinary meaning." Lawyers have persisted in citing pre-Phillips case law to argue this standard, and district courts have all too- frequently adopted this obsolete rule.") Mohammad Nilforoush, *The Elusive Role of the Specification in Patent Claim Construction*, 4 Intellectual Property Brief No. 1, 34-53 (2012). ("When the emphasis is on avoiding improperly reading limitations from the specification into the claims...this approach places more emphasis on the rule that the claims define the scope of the patent right and emphasizes giving claim terms their ordinary and customary meaning.")

³⁷⁶ *Retractable Technologies Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296 (Fed. Cir. 2011). Judge Moore's dissent, with which Chief Judge Rader joined. Judge Moore asserted that the process of claim construction should not be confused with a validity determination, and that claim terms should be given their plain and ordinary meaning unless "the inventor acted as his own lexicographer" or expressly disavowed claim scope. Scholars and courts split on the opinion whether the inventor's contribution to the art – "what the inventor actually invented" – should be considered in the claim construction process. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). ("Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.")

³⁷⁷ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc), cert. denied, 126 S. Ct. 1332 (2006). Unless the alleged infringer can prove "an intentional disclaimer, or disavowal, of claim scope," or that patentee used a "special definition . . . that differs from the meaning [a claim term] would otherwise possess."

imitation, so as to reach a sound solution of the dispute.”³⁷⁸

Under the constructive approach, the terms of the claim are less limited to the semantic meaning of the claim language. Rather, they are interpreted to sufficiently cover the actual technical teaching as disclosed in the description.³⁷⁹ For example, in the “Auto-recording counter ticket” case,³⁸⁰ independent Claim 1 read as: “...then to *convey* the machine-readable ticket to the read-write equipment.” One of the disputes was how to interpret the term “convey”. The plaintiff argued that the term was unambiguous and clear on its face, and therefore should be given an ordinary meaning broad enough to include “conveying the ticket either by machine or by human.” To interpret, Guangdong High People’s Court determined the advantageous aspects of the invention, which was to enhance efficiency and lower labor intensity. The Court then analyzed the technical solution to achieve the goal of enhancing the utilization rate of the computers at the ticket counter and lowering labor intensity. To fulfill the goal, the solution must be limited to the use of machine, and hence the term should be narrowly defined as “conveyed by the conveying machine or any equivalent apparatus.”

Compared with the ordinary meaning approach, the constructive approach is based on a more factual problem-solution analysis:³⁸¹ what is the

³⁷⁸ Peter Feng, *Intellectual Property In China* 217 (1997).

³⁷⁹ Harguth, *supra* note 327, 176. (“Terms can thus be given the broadest possible technical understanding under the disclosed teaching... German courts often name this a ‘function oriented interpretation of patent claims.’”)

³⁸⁰ Shen Zhen Pai Li Ke Ji You Xian Gong Si su Shen Zhen Xian Dai Ji Suan Ji You Xian Gong Si [*Shenzhen Paili Technology Co. v. Shenzhen Modern Computer Co.*] No. 34, Final Decision, 3rd Civil Tribunal, Guang Dong High People’s Court(2010).

³⁸¹ *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 974 (Fed. Cir. 1985) (“[W]hen the meaning of a term in the claim is disputed and extrinsic evidence is necessary to explain that term, then an underlying factual

significance or advantages of the invention? The determination of content of the patent claim has a direct impact on the scope of protection. The constructive approach can be considered as a more flexible policy lever in resolving patent disputes. For instance, in Chinese courts, patent claim interpretation is regarded as an important policy lever to exert influence on “public interest and the development of national interest and technology”.³⁸² A broader scope of protection is given for “frontier inventions with important significance”, but a restriction is imposed on the scope of protection for “combination inventions or selective inventions.”³⁸³ Rather than elevate the role of intrinsic evidence, the constructive approach permits a variety of sources that might be appropriate and helpful in determining the technical content.³⁸⁴ When the meaning of the claims cannot be determined by the claims, specifications and prosecution history files, the interpretation may be made by reference to the public documents such as reference books and textbooks and the ordinary understanding by the person skilled in the art.³⁸⁵ In practice, it is also common for Chinese judges to solicit opinions on intellectual property policies from the administrative departments and seek advice on the overall

question arises, and construction of the claim should be left to the trier or jury under appropriate instruction.”);

³⁸² Cheng Yongshun & Luo Lihua, *Zhuan Li Qin Quan Pan Ding: Zhong Mei Fa Tiao Yu An Li Yan Jiu* [Patent Infringement Determination: A Comparison between the Chinese and the US Laws and Cases] 28(1998).

³⁸³ Beijing High People’s Court, Several Questions Concerning Patent Infringement Judgments Opinion (Trial Implementation) (promulgated by the Beijing High People’s Court, Sept. 29, 2001, effective Sept. 29, 2001), Art. 40, translated in *Chinalawandpractice* (last visited June 20, 2011) (P.R.C.). (“2001 Opinion”)

³⁸⁴ David Luban, *What’s Pragmatic about Legal Pragmatism*, in Morris Dickstein (ed.), *The Revival of Pragmatism: New Essays on Social Thought, Law, and Culture*, 275 (1998). (“The pragmatist mistrusts the pretensions of totalizing Big Think theories to capture all that is important in law. The pragmatist is willing to give every theory a hearing, however, and to appropriate insights from any source if they seem useful.”)

³⁸⁵ Interpretation of the Supreme People’s Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (promulgated by the Supreme People’s Court., Dec. 28, 2009, effective Jan. 1, 2010) , Art.3, translated in *LawInfoChina* (last visited June 20, 2011) (P.R.C.)

technology development from the experts in the pertinent fields.³⁸⁶

However, it does not mean that the constructive approach totally disregards the form (the linguistic expression) of the claims. In fact, form and content are mutually dependent. Form cannot be separated from content because form serves as an expressive medium for its meaning.³⁸⁷ The technical content is communicated through words and drawings. In the *Dalian Xinyi Construction Materials* case,³⁸⁸ the Supreme People's Court of China pointed out that "all technical features recorded by the patentee in the patent claim are essential technical features." The Court also clearly called for "a full respect for all technical features recorded in the patent claim," so that "the public will not be confused by the unpredictable changes made to the contents of the patent claim."³⁸⁹

³⁸⁶ Wang Pingrong, *Chong Su Wo Guo Zhi Shi Chan Quan Si Fa Jian Ding Zhi Du De Jian Yi [Proposals for Restructuring the Intellectual Property Judicial Appraisal System in China]*, *Zhong Guo Si Fa Jian Ding [Chinese Journal of Forensic Sciences]*, Issue 1, pp.78. (2008) ("In judicial practice, since intellectual property cases are concerned about very technical problems and most judges lack technical backgrounds, they heavily depend on experts to differentiate and identify the disputed facts...the two most common ways are expert consultation and consignment of forensic authentication.") Jiang Hongyi, *Zhi Shi Chan Quan Jian Ding Bu Ke Hui Bi De Kun Jing [The Dilemmas Faced by Intellectual Property Judicial Appraisal System]*, *Zhong Guo Fa Ming Yu Zhuan Li [China Invention & Patent]* Issue 10, pp.57 (2007) ("The appraisal procedures are apparently more frequently invoked in patent infringement cases than any other cases.")

³⁸⁷ Paul A. Boghossian, *Content and Justification: Philosophical Papers*, 12 (2008). ("One cannot threaten linguistic meaning without threatening thought content, since it is from thought that linguistic meaning is held to derive; one cannot threaten linguistic meaning that thought content is held to derive.")

³⁸⁸ *Da Lian Xin Yi Jian Cai You Xian Gong Si yu Da Lian Ren Da Xin Xing Qiang Ti Jian Cai Chang [Dalian Xinyi Construction Materials Co. Ltd. v. Dalian Renda Wall Materials Factory]*, No. 1, 3rd Civil Tribunal, Supreme People's Court (2005). See also, *Zhang Zhen yu Yang Zhou Jin Zi Hao Xie Ye You Xian Gong Si, Bao Tou Shi Tong Sheng Xie Dian Qin Fan Shi Yong Xin Xing Zhuan Li Quan Jiu Fen An [Zhang Zhen vs. Yangzhou Jinzihao Footwear Co Ltd, Baotou Tongsheng Shoe Shop]* No.630, Civil Case Review, Supreme People's Court(2011)

³⁸⁹ *Id.* A series of cases decided by the High People's Court have obviously attempted to limit the application of the doctrine of equivalents. *Huo Jing He yu Chang Zhou Heng Tong Su Pu Er Su Liao You Xian Gong Si [Huo Jinghe et.al v. Changzhou Hengtong Superior Plastics Industry Co. Ltd]*, No. 0095, 3rd Civil Tribunal, Jiangsu High People's Court (2007). The Jiangsu High People's Court denied the application of the doctrine of equivalents and adhered to the all-element rule. *Zong Shen Ke Ji Kai Fa Yan Jiu Gong Si yu Lv Xiao Rong [Zongshen Technology Research and Development Co. Ltd v. Lv Xiaorong et. al]*, No. 156, Civil Tribunal, Chongqing High People's Court (2007). Chongqing High People's Court also rejected the doctrine, holding that "if the doctrine of equivalents applied, the insert materials would be extended beyond cast iron recorded in the claim, which would unreasonably expand the scope of

In sum, under the constructive approach, interpreters are not restricted to look at the ordinary sense of the term or give effect to the patentee's purpose. The constructive approach gives interpreters more room to construe the claim terms than the ordinary meaning approach and the purposive approach. The following section will take the practice of Chinese courts as an example to show how this approach actually works.

Section 2 The application of the constructive approach in Chinese courts

Currently in China, there are 56 Intermediate People's Courts having jurisdiction to interpret claims in patent infringement litigations and 31 High People's Courts to authorize the judgments of claim interpretation on appeal.³⁹⁰

The Supreme People's Court is the only court resolving conflicts between lower courts and providing coordinative guidelines and regulations for judicial practice.³⁹¹ As one scholar has commented, "China's protection of intellectual

patent protection." *Xinjiang Nong Ye Ke Xue Yuan Nong Ye Gong Cheng Gong Si yu Shi He Zi Shi Hua Nong Zong Zi Ji Xie Zhi Zao You Xian Gong Si* [Xin Jiang Academy of Agriculture Technology Co., Ltd v. Shihezi Huanong Machinery Manufacture Co. Ltd] No. 10, Final Decision, 3rd Civil Tribunal, Xinjiang Uyghur Autonomous Region High People's Court (2007). The Xinjiang Uyghur Autonomous Region High People's Court overturned the lower court's decision based on the doctrine of inferior change, and invoked the all-element rule. Non-infringement was found. *Yang Jing yu Tian Jing Li Tai Xie Ye You Xian Gong Si* [Yang Jing v. Tianjing Li Tai Shoe Industry Co. Ltd] No. 65, Civil Appeal, Supreme People's Court (2009).

³⁹⁰ Opinions of the Supreme People's Court's on Comprehensively Strengthening the Trial Work Involving Intellectual Property Rights to Provide Judicial Safeguard for the Construction of an Innovative Country (promulgated by the Supreme People's Court., Jan. 11, 2007, effective Jan. 11, 2007), translated in LawInfoChina (last visited July 16, 2011) (P.R.C.). The Supreme People's Court has highlighted the importance of uniform judgments on patent litigations. More independent intellectual property tribunals and panels will be set up in lower courts and professional personnel will be in charge of the review and enforcement of patent cases.

³⁹¹ Wu Yuhe, *Zhuan Li Quan Li Yao Qiu Bao Hu Fan Wei Ji Deng Tong Wu Pan Ding: Zui Gao Fa Yuan <Guan Yu Chu Li Zhuan Li Qin Quan Jiu Fen An Jian You Guan Wen Ti Jie Jue Fang An Cao Gao> Ping Jie* [Scope of Patent protection and the determination of equivalents: Comments on the Supreme People's Court's draft on "Solutions to several questions on resolving patent infringement disputes"], *Zhong Guo Zhuan Li Yu Shang Biao* [China Patents and Trademarks], Issue 76, pp27-39 (2004).

property rights has come a long way in a short time.”³⁹² In China, patent claim construction is guided by CPL and the relevant judicial interpretations and regulations. The *Interpretation of the Supreme People's Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases*, which came into force in January 2010, re-emphasizes that the people’s court shall determine the *content* of a claim in Article 2.³⁹³

The constructive approach requires a factual inquiry into the technical problem being addressed and the solution to that problem through the invention. Such claim construction directly affects the substantive scope of the patent rights and actually involves a delicate balancing of policy concerns: the interpreter needs to make sure the patent claim scope is “just right”, *i.e.*, not being too broad or too narrow. The constructive claim construction is guided by some general and overarching principles. This Section will highlight three main principles of claim interpretation used in Chinese courts, namely, the eclectic interpretation, the equivalent interpretation and the fairness interpretation.

A. *The eclectic interpretation*

The eclectic principle was established by the Beijing High People’s Court in the *Several Questions Concerning Patent Infringement Judgments Opinion (Trial)* (hereinafter referred to as “2001 Opinion”). The 2001 Opinion provides suggestions on how to determine patent infringement and is not legally binding

³⁹² Cynthia Smith, *A Practical Guide to Chinese Patent Law*, 29 Seton Hall Legis. J. 643 (2005).

³⁹³ Interpretation of the Supreme People's Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (promulgated by the Supreme People’s Court., Dec. 28, 2009, effective Jan. 1, 2010) , Art.2, translated in LawInfoChina (last visited June 20, 2011) (P.R.C.).

to all courts in China. However, because the Beijing High People’s Court has rich experience in solving patent-related disputes, the 2001 Opinion is in fact a very important legal source to which courts at different levels may cite as a legal basis in their decisions. The spokesman of the Intellectual Property Tribunal of the Supreme People’s court in answering the correspondent’s questions explained that, “Article 2 of the Judicial Interpretation establishes the eclectic principle in patent claim construction from a macro view.”³⁹⁴

According to Article 6 of the 2001 Opinion, the eclectic interpretation is proposed as a middle position between the “peripheral definition” and the “central definition” to combine the reasonable and justifiable protection of the patentees with public legal certainty as well as reasonable public interest.³⁹⁵ “Peripheral definition involves marking out the periphery . . . area covered by the claim and holding as infringements only such constructions as lie within that area.”³⁹⁶ Peripheral claiming is the current claiming regime codified in 35 U.S.C. § 112,³⁹⁷ in which patent claims define the boundaries of the patented invention.³⁹⁸ The patent claim was seen as a means through which the patentee could recite the specific metes and bounds of the patented invention.

³⁹⁴ The spokesman of the Intellectual Property Tribunal of the Supreme People’s court in answering the correspondent’s questions about the Judicial Interpretation http://www.legaldaily.com.cn/index_article/content/2009-12/29/content_2012814.htm (last visited, Jan 20, 2010) The eclectic principle is upheld in Judicial Interpretation and often cited in the decisions, although some scholars believed that China took a wholesale shift towards US-style claim construction. Ronald Fernando, *A Case for Internationally Adopting a Modified US-Style Approach to Claim Construction* (2009) http://works.bepress.com/ronald_fernando/1/ (Last visit July 7, 2012) (“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.”)

³⁹⁵ Article 6, 2001 Opinion.

³⁹⁶ *Teleflex, Inc. v. Focosa N. Am. Corp.*, 299 F.3d 1313, 1327-28 (Fed. Cir. 2002). See also Martin J. Adelman et al., *Cases And Materials on Patent Law*, 634–642 (American Casebook Series 1998). Ridsdale Ellis, *Patent Claims* §§ 4–5 (1949).

³⁹⁷ Christopher A. Cotropia, *Patent Claim Interpretation and Information Costs*, 9. *Lewis & Clark L. Rev.* 57, 84 (2005)

³⁹⁸ Act of July 8, 1870, ch. 230, § 26, 16 Stat. 198, 201. The Patent Act of 1870 changed the claiming requirements, specifying that the patentee needed to claim her invention distinctly and with particularity.

³⁹⁹ Central definition is the use of a patent claim to define the core of the patented invention. “Central definition involves the drafting of a narrow claim setting forth a typical embodiment coupled with broad interpretation by the courts to include all equivalent constructions.” ⁴⁰⁰ Civil law countries such as Germany traditionally⁴⁰¹ adopted the central definition, where claims were seen as defining the general inventive concept of an invention. ⁴⁰²

The eclectic interpretation is consistent with Article 1 of the Protocol on the Interpretation of Article 69 of the EPC. The Protocol favors neither a strict literal interpretation nor a liberal interpretation by merely using the claims as a guideline. ⁴⁰³ Article 6 of the 2001 Opinion also declares that the claims should not be interpreted by the “peripheral definition” principle that expects the scope of patent protection to be exactly the same as that recorded by the literal wording of the claims, and employs the specifications and appended drawings only for the purpose of resolving ambiguity in the meaning of the claim terms. Neither should patent claims be interpreted by the “central definition” principle that merely establishes a general gist of the invention, and expands the actual scope of protection to what, from a consideration of the description and

³⁹⁹ See Merges & Nelson, *supra* note 14 (“Claims define what the inventor considers to be the scope of her invention, the technological territory she claims is hers to control by suing for infringement.”).

⁴⁰⁰ *Teleflex, Inc. v. Focosa N. Am. Corp.*, 299 F.3d 1313, 1327-28 (Fed. Cir. 2002). See also Martin J. Adelman et al., *Cases And Materials on Patent Law*, 634–642 (American Casebook Series 1998).

⁴⁰¹ Mineko Mohri, *Maintenance, Replacement and Recycling - Patentees' Rights in the Aftermarkets: Germany, the U.S. and Japan* 17 (2010) (“Germany had the tradition of the central form of claim interpretation. However, upon the adoption of the European Patent Convention (“EPC”) in 1973, Germany moved towards the harmonized interpretation of claims.”)

⁴⁰² Toshiko Takenaka, *Interpreting Patent Claims: The United States, Germany and Japan* (1995) (describing Germany’s “central claiming” system). Burk & Lemley, *supra* note 5 (“Central claiming was also the approach in Germany until accession to the European Patent Convention required harmonization with the peripheral approaches of other EPC member states; at that point, Germany moved to an intermediate position that continues to incorporate many aspects of central claiming.”)

⁴⁰³ Turner, *supra* note 245. (“Accordingly, patent claims should be interpreted on the basis that their purpose is neither to define the boundary of the monopoly, nor to act merely as guidelines for ascertaining the scope of the protection from the description and drawings, but rather to state the invention described and exemplified in the description and drawings, with a view to combining fair protection for the patentee with a reasonable degree of certainty for third parties.”)

appended drawings by a technical expert, the patentee has contemplated. The purposive approach enables the UK to meet its obligations under Article 69 EPC and its Protocol. Therefore, the constructive approach shares this same bedrock principle underlying the purposive approach: there shall be a balance between a narrow literal interpretation by means of the claims and a broad interpretation of the general inventive idea of the specification.

But the constructive approach differs from the purposive approach on the understanding of Article 2 of Protocol on the Interpretation of Article 69 EPC, which states that “For the purpose of determining the extent of protection conferred by a European patent, due account shall be taken of any element which is equivalent to an element specified in the claims.” To protect the public legal certainty, the UK courts are very careful in imposing restrictions on equivalent interpretation. By comparison, the constructive approach uses the equivalent interpretation frequently as showed in the following paragraphs.

B. The equivalent interpretation

It has been commented that for the purpose of determining the extent of patent protection, “under the European Patent Convention, interpretation of the claims is the only way in which such flexibility can be provided. Article 69 precludes a doctrine of equivalents along the lines of US law or the pre-Catnic English approach, according to which a claim means X but can be infringed in certain circumstances by an equivalent or colourable imitation of X.”⁴⁰⁴ Under the

⁴⁰⁴ *Id.* (“It also includes the knowledge that there is no principle of colourable infringement under the European Patent Convention, and hence that the balancing of the requirements of reasonable certainty and fair protection has to be achieved by a degree of flexibility in the interpretation of the claims.”)

purposive approach, there is no “different” or “other” test to find the equivalent which stays outside the meaning of the claims. In *Amersham Pharmacia Biotech v. Amicon*,⁴⁰⁵ Lord Justice Aldous stated that “I do not believe that the Protocol introduced into our law a doctrine of infringement by equivalent effect by use of a different mechanism. That may be for the future.” Lord Hoffmann has explained that:

[In the English approach] the question of equivalence is taken into account as part of the process of interpretation. But equivalence is not a principle which operates outside the claims and gives protection to something which upon a fair construction would not be understood by the skilled man as falling within the claims.⁴⁰⁶

Lord Hoffmann further acknowledged that there is no doctrine of equivalents under the EPC:

Since the Catnic case we have article 69 which, as it seems to me, firmly shuts the door on any doctrine which extends protection outside the claims. I cannot say that I am sorry because the Festo litigation suggests, with all respect to the courts of the United States, that American patent litigants pay dearly for results which are no more just or predictable than could be achieved by simply reading the claims.⁴⁰⁷

However, the doctrine of equivalents is widely adopted by Chinese courts.

⁴⁰⁵ *Amersham Pharmacia Biotech AB v. Amicon Limited* [2001] E.W.C.A. Civ.1042; Aldous L.J. at para.32 referred to two systems between which there was no material difference when they were carried out, in the sense that they produced the same result, but with a different mechanism. They showed different ways that could produce an equivalent result.

⁴⁰⁶ Lord Hoffman, *Patent Construction*, 108 Heft 9, GRUR 720 [2006], reproduced at CIPA [2006] No.11, 727.

⁴⁰⁷ *Kirin-Amgen Inc and others v Hoechst Marion Roussel Limited and others* [2004] UKHL 46.

⁴⁰⁸ The application of the doctrine of equivalents, which had not been provided in the CPL but already existing in judicial practice,⁴⁰⁹ was first recognized by the Supreme People's Court decision in *Ningbo Oriental Movement Factory v. Jiangyin Jinling Hardware Co. Ltd* in 2002.⁴¹⁰ The Court held that:

Determination of the protection scope of patent right should be based on the substantive *contents* of the claims, and descriptions and drawings can be used to clarify the ambiguous terms in the terms. The protection of the scope can be extended to the equivalent technical features that can be imagined by an ordinary person skilled in the art without creative labor after reading the specifications and drawings... that is, the equivalent feature performs the identical function in substantially the same way to achieve substantially the same result.

The application of the doctrine of equivalents must be based on both the triple-identity test and the test of easy association without creative labor of an ordinary skilled person.⁴¹¹ The Judicial Interpretation officially authorizes several doctrines already in practical use, including the means-plus-function

⁴⁰⁸ Chang Zhou Bo Yun Zhuang Shi Cai Liao You Xian Gong Si yu Cai Zu Sheng [*Changzhou Decoration Material Co. Ltd vs. Cai Zusheng*] No. 0013, Intellectual Property Tribunal, Final Decision, Jiangsu Higher People's Court (2011) ("Even the allegedly infringing process changed the operating step in Claim 1, but it objectively achieve the same effect and generate the same product."); Qin Zhou Chuang Hua Gong Kong She Bei You Xian Gong Si yu Qin Zhou Hua Cheng Zi Kong She Bei You Xian Gong Si [*Qinzhou Chuanghua Industrial Control Equipment Co. Ltd v. Qinzhou Huacheng Automatic Control Equipment Co.Ltd*] No. 79, 3rd Civil Tribunal, Final Decision, Guangxi Zhuang Autonomous Region Higher People's Court (2010) ("both have direction controller, the claimed invention has one controller but the allegedly infringing product has two controllers...but both has the same function and achieve the same result.")

⁴⁰⁹ See e.g., *Shenzhen Chuang Ge Ke Ji Shi Ye You Xian Gong Si su Mei Guo Kang Bai Dian Nao You Xian Gong Si* [*Shenzhen Chuangge Scientific & Technology Enterprise Co. Ltd and Ma Xiguang vs. US Compaq Computer Company*], No. 36, Intellectual Property Tribunal, Beijing High People's Court (1998).

⁴¹⁰ *Ning Bo Shi Dong Fang Ji Xin Zong Chang su Jiang Yin Jin Ling Wu Jin Zhi Pin You Xian Gong Si* [*Ningbo Oriental Movement Factory v. Jiangyin Jinling Hardware Co. Ltd*], No. 1, 3rd Civil Tribunal, The Supreme People's Court (2002).

⁴¹¹ Opinions of the Supreme People's Court's on Comprehensively Strengthening the Trial Work Involving Intellectual Property Rights to Provide Judicial Safeguard for the Construction of an Innovative Country (promulgated by the Supreme People's Court., Jan. 11, 2007, effective Jan. 11, 2007), translated in LawInfoChina (last visited July 16, 2011) (P.R.C.).

limitation (Article 4),⁴¹² the doctrine of public dedication (Article 5),⁴¹³ the doctrine of prosecution history estoppel (Article 6),⁴¹⁴ and reaffirms the doctrine of equivalents, “where the alleged infringing technical solution contains technical features identical or equivalent to all the technical features described in a claim, the people’s court shall determine that it falls into the scope of protection of the patent.”⁴¹⁵

Therefore, interpreters employing the constructive approach not only have flexibility in construing the language of the claims, but also can use a separate test to find the equivalents outside the language of the claims.⁴¹⁶ It is less limited to the wording of claims than the other approaches.⁴¹⁷ Due to the broad understanding of the concept of “content”, interpreters frequently extend the

⁴¹² Article 4 of Judicial Interpretation: “For technical features described by function or effect in a claim, the people’s court shall determine the content of these technical features according to the specific way of implementation of the functions or effects described in the specification and drawings or an equivalent way of implementation.”

⁴¹³ Article 5 of Judicial Interpretation: “Where a right holder includes a technical solution, which is described only in the specification or drawings, not in the claims, in the scope of protection of a patent in a patent infringement dispute case, the people’s court shall not support it.”

⁴¹⁴ Article 6 of Judicial Interpretation: “Where a right holder includes a technical solution, which the patent applicant or patentee has abandoned through an amendment of claims or specification or through a statement in the patent granting or invalidation procedure, in the scope of protection of a patent in a patent right infringement dispute case, the people’s court shall not support it.”

⁴¹⁵ Interpretation of the Supreme People’s Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (promulgated by the Supreme People’s Court., Dec. 28, 2009, effective Jan. 1, 2010), Art.7, translated in LawInfoChina (last visited June 20, 2011) (P.R.C.).

⁴¹⁶ Li Mingde, Preface to *Scope of Patent Claims: Patent Claim Construction and Doctrine of Equivalents*, in Yan Wenjun, *Zhuan Li Quan De Bao Hu Fan Wei [Scope of Patent Claims: Patent Claim Construction and Doctrine of Equivalents]* (2007). (“Equivalence interpretation is the most difficult part of the patent claim construction.”)

⁴¹⁷ *Hu Bei Wu Shi Yao Ye Gu Fen You Xian Gong Si Yu Ao Nuo (Zhong Guo) Zhi Yao You Xian Gong Si, Wang Jun She Qin Fan Fa Ming Zhuan Li Jiu Fen An [Hubei Wushi Pharmaceutical Co Ltd vs. Aonuo (China) Pharmaceuticals Co., Ltd. and Wang Junshe]* Supreme People’s Court, Civil, Certiorari, Retrial Petition, Civil Judgment No. 20 (2009). The technology was appraised by Beijing Zitu Intellectual Property Appraisal Centre. Both the trial court and appellate court gave a broad interpretation of the term and found that the “calcium gluconate” was equivalent and substitutable to “active calcium”. No.23, Final Decision, 3rd Civil Tribunal, Hubei High People’s Court (2007); No. 00169, First Instance, 5th Civil Tribunal, Shi Jiazhuang Intermediate People’s Court (2006). The Supreme People’s Court disagreed, and reasoned that since there was a description in the specification that “soluble calcium is calcium gluconate, calcium chloride, calcium lactate, calcium carbonate or active calcium”, “calcium gluconate” and “active calcium” were two parallel concepts depending upon the semantic and syntactic cues. However, in construing another disputed term “Glutamic acid(Glu) and Glutamine(Gln)”, the Supreme People’s Court asked whether “Diaminohexanoic acid hydrochloride” was an equivalent to the claimed term. While the lower courts found equivalency, the Court decided that “Diaminohexanoic acid hydrochloride” was more advanced in solubility and stability, and there were substantial difference between the two.

scope of patent claims to the equivalent technical features beyond their literal terms in infringement litigations.⁴¹⁸

C. *Fair interpretation*

The principle of fairness is highlighted in patent claim interpretation in Chinese courts:

Patent claim interpretation shall follow the principle of fairness.⁴¹⁹ On one hand, the interpretation must take full account of the contribution to the prior art made by the patentee, in order to soundly identify the scope of patent and protect the rights of the patentee, on the other hand, the interpretation cannot harm the public interest.⁴²⁰

The rationale behind this fairness principle is that it ensures that the choice of meaning is fully thought through by the interpreter and that both the patentee's contribution and the public interest have been fully taken into account. The principle of fairness is used not only to avoid under-protection of patentee's rights, but also to prevent the abuse of monopoly, which raises policy concerns. The fairness principle can be used to avoid the absurd results and

⁴¹⁸ Article 17, para. 1, Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies (promulgated by the Supreme People's Court, June. 22, 2001, effective July. 1, 2001), translated in LawInfoChina (last visited July 16, 2011) (P. R.C.). See also, Liu Jixiang, *Shi Lun Zhuan Li Qin Quan Su Song Zhong De Deng Tong Yuan Ze de Shi Yong* [*The Application of the Doctrine of Equivalents in Patent Infringement Cases*], in Cheng Yongshun, *Zhuan Li Qin Quan Pan Ding Shi Wu* [*Practice of Decisions of Patent Infringement*], 82 (2002) ("To determine equivalents at the time of infringement takes into account the benefits of the patentees and is more practical"). But some scholars believe that the equivalents should be determined at the time of filing, see e.g., Yi Jun et.al, *Ru He Que Ding Zhuan Li Quan De Bao Hu Fan Wei?* [*How to Determine the Scope of Protection of Patent Rights?*] in *Pan Jie Yan Jiu* [*Case Study*] Vol.2, No. 4 (2008) ("When deciding whether a technical solution is an equivalent, it is at the time of filing rather than at the time of infringement that the PHOSITA should consider, so as to avoid including improvements into the monopoly.")

⁴¹⁹ Article 4, General Principles of the Civil Law of the People's Republic of China (promulgated by the Nat'l People's Cong., April. 12, 1986, effective Jan. 1, 1987, revised Aug 27, 2009), translated in LawInfoChina (last visited June 15, 2011) (P.R.C.).

⁴²⁰ Article 9, 2001 Opinion.

correct the claim drafting mistakes. For example, in *Ye Guandong vs. Yangjiang Hongyang Food Industry Co., Ltd.*,⁴²¹ the subject matter of the claim was a “washing and glue-extracting process bucket”. Claim 1 recorded a feature of “a filter net set inside the bucket and relatively *under* the outlet.” The allegedly infringing product used a filter net set *above* the outlet. The court decided that the claim contained an “obvious error” based on consideration of the claim language, the specification and drawings from a PHOSITA’s perspective. It was recommended that “courts should not understand the content of the claim mechanically and narrowly but understand it in a fair and ‘matter-of-fact’ way.”⁴²²

The rule against surplusage was also introduced to protect patentee’s rights due to his lack of experience and skill in claim drafting. The rule against surplusage is stipulated in Article 47 to Article 55 of the 2001 Opinion. According to this rule, the obviously additional technical features recorded in the claim can be omitted, for the patent scope can be only determined by the essential technical features of the patent claim.⁴²³ The judges can wipe out the “superfluous technical features”, *i.e.* the obviously additional technical features, from the claims.

The rule against surplusage was first established in the seminal case *Zhou*

⁴²¹ *Ye Guandong Su Yangjiang Hongyang Shi Pin Gong Ye You Xian Gong Si Zhuan Li Qin Quan Jiu Fen* [*Ye Guandong vs. Yangjiang Hongyang Food Industry Co. Ltd*] No. 6, 3rd Civil Tribunal, Preliminary Decision, Guangzhou Intermediate People’s Court (2003); No.158, Final Decision, Guangdong Higher People’s Court (2004).

⁴²² Lin Guanghai & Qiu Yongqing, *Zai Zhuan Li Su Song Zhong Ru He Jie Shi Quan Li Yao Qiu* [*How To Interpret Patent Claims in Infringement Litigations*] (2012) <http://www.gdcourts.gov.cn/gdcourt/front/front!content.action?lmdm=LM119&gjid=20120308082353878047> (last visited July 7, 2012)

⁴²³ Article 47, 2001 Opinion.

Lin v. Beijing Hua Ao Electronic Medical Equipment Co. Ltd ⁴²⁴ in 1995. Zhou Lin was the patentee of an invention named “Apparatus and a method of production for bio-frequency spectrum matching-effect field treatment.” Zhou Lin sued against Hua Ao Company for infringing the patent by making and selling the “WSPA Broadband Bio-simulation Wave Spectrum Treatment Apparatus.” Beijing High People’s Court identified six essential technical features from the patent claim but asserted that the seventh feature, *i.e.* the stereo system for musical treatment, has no substantial meaning and does not produce any indispensable functions. The Court believed that the seventh feature was added by the patentee “because of inexperience”⁴²⁵, and therefore it should be considered as an inessential and superfluous technical feature.⁴²⁶ In order to strike a balance of public and private interests, the judges have to exhibit a certain degree of flexibility by interpreting the meaning of the claim terms.⁴²⁷ In the end, each case must still be decided in light of the nature of the claimed invention.

Section 3 The dilemma of the constructive approach in Chinese courts

The constructive approach is an attempt to come up with an alternative

⁴²⁴ *Zhou Lin su Hua Ao Dian Zi Yi Liao Yi Qi You Xian Gong Si* [Zhou Lin v. Beijing Hua Ao Electronic Medical Equipment Co. Ltd], No. 22, 3rd Civil Tribunal, Beijing High People’s Court (1995).

⁴²⁵ *Id.*

⁴²⁶ The rule against surplusage was later reaffirmed in the case *Bei Jing Tai Yang Neng Yan Jiu Suo su Dong Guan Shi Hao Te Dian Qi Gong Si* [Beijing Solar Energy Research Institute v. Dongguan Haote Electric Co. Ltd], No. 24, Final Decision, the Intellectual Property Tribunal, Beijing High People’s Court (1998). It was discovered that the composition and proportion of the electric heating panels of the defendant’s product were both within the scope of the patented claim, but the defendant argued that its product did not have the second recorded technical feature “an insulation layer.” The Beijing High People’s Court upheld the lower court’s decision, and reasoned that the insulation layer was merely designed for enhancing the insulation property of the material and had no impact on the electric heating. Therefore, insulation layer was only an additional non-essential technical feature and the rule against surplusage should apply.

⁴²⁷ Turner, *supra* note 245.

approach to ascertain claim meaning. China's young patent system is maturing and critically learning from the rich experience of patent systems in other jurisdictions.⁴²⁸ It is deeply aware of the predicament of the peripheral definition which purports to use claim language to set the outermost boundaries of patent rights,⁴²⁹ and the central definition which extends patent protection beyond the scope of the claim and weakens the notice function. The constructive approach requires a balance between "the reasonable and justifiable protection of the patentees" and "the public legal certainty as well as the reasonable public interest".⁴³⁰ It follows the theme of the Protocol on the Interpretation of Article 69 EPC to provide a middle ground between a strict literal interpretation and a broader one. However, "this is surely what the interpretation of patent specification is all about. But then it does not seem likely that many courts will admit that their decisions do not comply with this standard."⁴³¹

Generally speaking, the constructive approach is flexible in determining the scope of protection, which can tip the balance one way or the other. The constructive approach emphasizes substance rather than form. However, there is an enormous and diverse range of properties the *content* can stand for. A word like "attach"⁴³² can be used to describe a diverse range of means to join

⁴²⁸ Ronald S. Fernando, *A Case for Internationally Adopting a Modified US-Style Approach to Claim Construction* (2009) Available at: http://works.bepress.com/ronald_fernando/1 (Last visited Oct 23, 2010). China has made remarkably positive changes to its patent enforcement system throughout the last decade. 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.

⁴²⁹ Burk & Lemley, *supra* note 5.

⁴³⁰ Article 6, 2001 Opinion.

⁴³¹ Van Empel, *The Granting of European Patents* 307 (1975).

⁴³² *Chen Hong Bo yu Shang Hai Ke Mo Wu Jin Pei Jian You Xian Gong Si* [*Chen Hongbo v. Shanghai*

or fasten. The constructive approach seeks the technical content hidden behind words which inherently include their equivalents.⁴³³ This approach demonstrates a potentially expansive scope of the claims,⁴³⁴ which is subject to the interpreter's fairness analysis combining with a PHOSITA's understandings of the claims and specifications.⁴³⁵ The wide discretion "invariably leads to inconsistent application of legal principles and a concomitant lack of predictability."⁴³⁶

Although courts purport that they have followed the same approach, the outcomes of the same case can be very different.⁴³⁷ The *Yuanda Metal Co. Ltd.* cases tried respectively in three High People's Courts are a typical example of the inconsistent claim interpretation. Yuanda Metal Company was the owner of a patent related to "A Detachable Handlebar of Directional Scooters". The Company brought patent infringement lawsuits against three manufacturers in

Kemo Hardware Accessories Co. Ltd.] No. 76, 3rd Civil Tribunal, Final Decision, Shanghai High People's Court (2010). The disputed claim read as "balls attached between plate and guide rail." The allegedly infringing product arranged the balls within an additional slide rail between plate and guide rail. The Court construed "attach" as direct contact with both plate and guide rail. Non-infringement was found.

⁴³³ *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997) ("[T]he substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself" If the essential predicate of the doctrine of equivalents is the notion of identity between a patented invention and its equivalent, there is no basis for treating an infringing equivalent any differently from a device that infringes the express terms of the patent.)

⁴³⁴ Zhang Rongyan, *Che Ba Shou Zhuan Li Qin Quan An Pou Xi [Analysis of the Handlebar case—Determination of the Scope of Protection]*, *Zhong Guo Fa Ming Yu Zhuan Li [China Invention & Patent]* vol. 7, pp. 22 (2006). The author believed that this practice unreasonably expands the scope of patent monopoly and leads to an abuse of the doctrine of equivalents. For different opinions see also Meng Fanxin, *Deng Tong Yuan Ze Zai Shi Yong Xin Xing Zhuan Li Qin Quan Su Song Zhong De Shi Yong [Application of the Doctrine of Equivalents in the Infringement Litigation of Utility Model Patent]*, *Zhong Guo Zhuan Li Yu Shang Biao [China Patents & Trademarks]*, issue 1, pp. 10 (2006).

⁴³⁵ Interpretation of the Supreme People's Court on Several Issues concerning the Application of Law in the Trial of Patent Infringement Dispute Cases (promulgated by the Supreme People's Court., Dec. 28, 2009, effective Jan. 1, 2010), Art.2, translated in LawInfoChina (last visited June 20, 2011) (P.R.C.)

⁴³⁶ Louis S. Sorell, *A Comparative Analysis of Selected Aspects of Patent Law in China and the United States*, 11 *Pac. Rim L. & Pol'y J.* 319 (2002).

⁴³⁷ Cheng & Luo, *supra* note 382. In practice, it has been recommended by some scholars that when interpreting the claims, the courts take reference from the specifications and drawings "positively and initiatively, instead of negatively and passively." See also Yan Wenjun, *Zhuan Li Quan De Bao Hu Fan Wei [Scope of Patent Claims: Patent Claim Construction and Doctrine of Equivalents]* 443(2007). It is recommended that courts interpret the patent claims in every circumstance, whether ambiguity exists or not.

Shanghai, Zhejiang and Guangdong High People's Courts. The interpretation of the same claims varied significantly from court to court.⁴³⁸

The disputed term was “a circle of aligning holes” and the allegedly infringing product had “only one aligning hole.” The last two paragraphs of the specification clearly recorded a curved-handlebar which enabled the riders to hold the scooter at the best position and allowed them to adjust the angle of the handlebar for convenience. The Guangdong High People's Court and Zhejiang High People's Court refused to read this limitation into the patent claim and held that the specification was only an applicable example. The courts therefore concluded that the patent claim itself did not limit the scope of protection to a curved-handlebar, and found infringement under the doctrine of equivalents. However, Shanghai High People's Court stated that without the limitations in the specification, the goal of the invention could not be accomplished. Since the allegedly infringing product did not have the essential technical feature of “a circle of aligning holes,” the two technologies were not equivalent in way, function or result, and therefore non-infringement was found.

Moreover, some interpreters believe that inferior change is a special form of the equivalent change, and it should be embraced into the scope of protection in order to fairly protect the patentee's rights.⁴³⁹ Article 41 of the 2001 Opinion

⁴³⁸ *Yuan Da Jin Shu Shi Ye You Xian Gong Si su Tian Qi Yun Dong Yong Pin You Xian Gong Si*[*Yuanda Metal Industry Co. Ltd v. Tianqi Sports Equipment Co. Ltd.*] (2004) The High People's Court of Zhejiang Province; No. 6, 3rd Civil Tribunal, The High People's Court of Guangdong Province (2003); No.6, 3rd Civil Tribunal (Intellectual Property), The High People's Court of Shanghai (2003). This case was also listed as one of the top 10 Intellectual Property cases of Zhejiang Province in 2004.

⁴³⁹ *Beijing Wan Te Fu Co. Ltd yu Beijing Ke Lin Zhong Yi Xue Ji Shu Yan Jiu Suo* [*Beijing Wantefu Technology Co. Ltd v. Beijing Kelinzhong Institute for Medical Technology*], No. 108, Final Decision, Civil Tribunal, Beijing High People's Court (2003). See also, Liu Xiaojun, *Bian Lie Xing Wei Qin Fan Zhuan Li Quan Zhi Yan Jiu*[*The Infringement under the Doctrine of Inferior Change*], 4 Intellectual

provides that, “if the inferior method or product intentionally omits some essential technical features in the patented claim in order to make it worse than the function or effect of the invention, and the inferior method or product apparently resulted from the omission of the essential technical features, the doctrine of equivalents should be applied and infringement should be found.”⁴⁴⁰ Here the “inferiority” was also considered as a particular type of the broader concept of “equivalents.”⁴⁴¹

For example, in *Beijing Wantefu Technology Co. Ltd v. Beijing Kelinzhong Institute for Medical Technology*,⁴⁴² the allegedly infringing product omitted one claimed feature, *i.e.* “a hematoma pulverizer”, and replaced it with a normal syringe. Based on the description of the invention, the flush fluid was ejected from the micro-hole at the end of the hematoma pulverized needle to form high-pressure vortex flow, so that the hematoma could be pulverized and washed. However, in the allegedly infringing product, the flush fluid was infused by the needle of the syringe, so that the hematoma could be soaked and dissolved, which would take longer time. Apparently, the allegedly infringing product was inferior to (not equivalent to) the claimed invention in technical effect. On appeal, the Beijing High People’s Court invoked the doctrine of

Property 22 (2006) (“A broad concept of equivalents include inferior changes.”) Sun Nanshen, *Chan Pin Ji Shu Te Zheng Yu Zhuan Li Qin Quan De Pan Ding Biao Zhun [Product Features and the Criteria for Deciding Patent Infringement]*, Pan Jie Yan Jiu [Case Law], Issue 3, pp. 79 (2003) (“The doctrine of equivalents should be applied extensively into the inferior changes.”)

⁴⁴⁰ Article 41, 2001 Opinion.

⁴⁴¹ See also, Liu Xiaojun, *Bian Lie Xing Wei Qin Fan Zhuan Li Quan Zhi Yan Jiu [The Infringement under the Doctrine of Inferior Change]*, 4 Intellectual Property 22 (2006) (“A broad concept of equivalents include inferior changes.”) Sun Nanshen, *Chan Pin Ji Shu Te Zheng Yu Zhuan Li Qin Quan De Pan Ding Biao Zhun [Product Features and the Criteria for Deciding Patent Infringement]*, Pan Jie Yan Jiu [Case Law], Issue 3, pp. 79 (2003) (“The doctrine of equivalents should be applied extensively into the inferior changes.”)

⁴⁴² *Beijing Wan Te Fu Co. Ltd yu Beijing Ke Lin Zhong Yi Xue Ji Shu Yan Jiu Suo [Beijing Wantefu Technology Co. Ltd v. Beijing Kelinzhong Institute for Medical Technology]*, No. 108, Final Decision, Civil Tribunal, Beijing High People’s Court (2003). See also Liu Huiming, *Discussion on the Doctrine of Equivalents in Determining the Scope of Patent Protection*, 4 Global Law Review 98 (1999).

inferior change and adopted a broad scope of patent protection.

The Supreme People's Court has become aware that the doctrine of equivalents has been used without proper limitations.⁴⁴³ Article 3 of the Judicial Interpretation emphasizes the role of specifications,⁴⁴⁴ relevant claims,⁴⁴⁵ prosecution estoppel files⁴⁴⁶ and patentee's definition as own lexicographer⁴⁴⁷ in interpreting the disputed claims. Article 7 of the Judicial Interpretation also highlights the all-element rule for determining patent infringements, with the hope of controlling the undue expansion of the claim meaning.⁴⁴⁸ However, the application of the all-element rule is never an easy

⁴⁴³ Wei Zheng, *Deng Tong Yuan Ze De Wu Du Yu Wu Yong* [Misreading and Misapplication of the Doctrine of Equivalents], *Zhong Guo Zhuan Li Yu Shang Biao* [China Patents & Trademarks], Issue 3, pp 3 (2006) ("It is undeniable that the applications of the doctrine of equivalents are inconsistent with abuse due to the lack of clear legal principles and rules.") See also, *Cheng Du You Ta Zhi Yao You Xian Ze Ren Gong Si Su Jiang Su Wan Gao Yao Ye You Xian Gong Si Qin Fan Fa Ming Zhuan Li Jiu Fen Zai Shen An* [Chengdu Youta Pharmaceutical Co. Ltd vs. Jiangsu Wangao Pharmaceutical Co. Ltd] No. 158, Case Review, Civil Judgment, Supreme People's Court (2009). The trial court and Appellate Court in China both adopted a broad interpretation and found infringement under the doctrine of equivalents, the Supreme People's court reviewed the case and overturned the decision.

⁴⁴⁴ *Tai Shan Xian Qu Jian Cai You Xian Gong Si Yu Guang Zhou Xin Lv Huan Zu Ran Zhuang Shi You Xian Gong Si, Fu Zhi Hong Qin Fan Shi Yong Xin Xing Zhuan Li Quan Jiu Fen An* [Forerunner Building Products of Taishan Ltd. vs. Guangzhou New GEP Decoration Material Co., Ltd] No. 871, Civil Appeal, Supreme People's Court (2010). ("If a different understanding of the content expressed by the claim leads to a dispute regarding the scope of protection, the specifications and the drawings can be used to interpret the claim.")

⁴⁴⁵ *Guang Zhou Zhao Ying Wu Jin You Xian Gong Si Su. Huang Gang Ager You Xian Gong Si.* [Guangzhou Zhao Ying Hardware Co. Ltd vs. Huang Gang Ager Hardware Manufacturing Co. Ltd.], No. 1180, Civil Appeal, Supreme People's Court (2010) ("If the disputed term in independent Claim 1 is unclear, the dependant Claim 2 can be used to interpret that term. This is not regarded as a limitation.") See also, Yin Wei & Wei Lan, *Ru He Zheng Que Jie Shi Zhuan Li Quan Li Yao Qiu* [How To Interpret Patent Claims Correctly], *Ren Min Fa Yuan Bao* [People's Court Daily], pp. 6, 2011, Jan 13.

⁴⁴⁶ If the surrender of protection took place in the progress of patent filing, the statements made by the patentee could not only give rise to an estoppel in applying the doctrine of equivalents, but also restrict the meaning of the terms in claim construction. *Zhu Yu Zhen su Ning Bo Fang Tai Chu Ju You Xian Gong Si* [Zhu Yuzhen v. Ningbo Fang Tai Kitchen Utensils Co. Ltd], No. 017, The 3rd Civil Tribunal, Final Decision, Jiangsu High People's Court (2004). The Jiangsu High People's Court pointed out that "since the patentee redefined the term 'directly open towards outdoor' in the patent reviewing process in order to meet the criterion of novelty, he is prevented from recapturing the content that he has explicitly surrendered, otherwise it will impair the public interest." The High Court reasoned that "there is no need to invoke the doctrine of equivalents" and found no infringement by adopting a narrow interpretation.

⁴⁴⁷ *Fu Jian Duo Ling Gang Ye Ji Tuan You Xian Gong Si Yu Qi Dong Shi Ba Ling Gang Wan You Xian Gong Si Qin Fan Fa Ming Zhuan Li Quan Jiu Fen An* [Fujiang Duoling Steel Group Co. Ltd vs. Qidong Baling Steel Shot Co., Ltd.] No. 979, Civil Appeal, Supreme People's Court (2010). ("The specification points out the specific definition of 'two-stage crushing' ...so the meaning of the term should be based on such definition. 'Two-stage crushing' includes primary crushing and fine crushing. ")

⁴⁴⁸ See also, Rule 3.1.2., Guidelines to Patent Examination of China (2010). According to the Guidelines to Patent Examination of China, in determining whether a certain technical feature is an essential technical feature, the examiner shall start from the technical problem to be solved and take account of "the whole

task.⁴⁴⁹ An overly broad application may improperly “swallow the doctrine of equivalents entirely” and limit infringement to “a repeated analysis of literal infringement.”⁴⁵⁰

As long as a separate test of equivalence is permitted, the interpreter may go beyond the claim language, which would violate the middle way required by the Protocol that considers the public notice function of patent claims and the desire to encourage innovation. To achieve predictability in interpretation, it is important to clearly set out different circumstances where a broader or a narrower meaning should be adopted. This requires the continually changing technological context to be taken into account. Explicit and concrete guidance is needed for interpreters to give justifiable reasons for accepting a particular interpretation, *i.e.*, why they would want to define the claim term as such.

In sum, although the constructive approach purports to walk between the lines of overly restricted interpretation and overly broad interpretation, the combination of different and sometimes conflicting methods creates more

contents” of the description, rather than simply take the technical features of an embodiment as the essential technical features.

⁴⁴⁹ Kahrl, *supra* note 1. As illustrated by the practice in the U.S. courts, the doctrine of equivalents is inapplicable if a claim limitation is totally missing from the accused device, however, “whether or not a limitation is deemed to be vitiated must take into account that when two elements of the accused device perform a single function of the patented invention, or when separate claim limitations are combined into a single element of the accused device, a claim limitation is not necessarily vitiated, and the doctrine of equivalents may still apply if the differences are insubstantial.” *DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1332 (Fed. Cir. 2001). *See also Warner-Jenkinson*, 520 U.S. at 33-34; *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934-35, 939 (Fed. Cir. 1987); *Dolly, Inc. v. Spalding & Evenflo Companies, Inc.*, 16 F.3d 394, 398 (Fed. Cir. 1994); *Eagle Comtronics, Inc. v. Arrow Communication Laboratories, Inc.*, No. 01-1544, -1591 (Fed. Cir. Sept. 17, 2002).

⁴⁵⁰ *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309, 1317 (Fed. Cir. 1998) (“... the above-quoted statements from Dolly, Wiener, and Sage would force the All Elements rule to swallow the doctrine of equivalents, reducing the application of the doctrine to nothing more than a repeated analysis of literal infringement. Once a negative determination of literal infringement is made, that failure to meet a limitation would preclude a finding of infringement under the doctrine. The doctrine of equivalents would thus be rendered superfluous under USSC’s view, because a finding of non-infringement would be foreordained when a court has already found that the accused subject matter does not literally fall within the scope of the asserted claim.”)

questions than it answers. It was commented that “the patent law in China, as arguably transplanted out of context with the aim to encourage inventions and pursue economic development, invites difficulties for many sectors while its objectives, as shall be seen later, are hardly accomplished.”⁴⁵¹ Because of the non-rivalrous and non-exclusive nature of intangible objects,⁴⁵² to strike a right balance between the patentee’s interest and the public good is an undisputable goal.⁴⁵³ The general principle of “middleness” can be the basic underpinning for patent claim interpretation, but it fails to provide useful instructions about how to balance competing interests in different situations. Explicit guides are necessary to help interpreters find in each concrete case a middle way between encouraging technology innovation and preserving the public freedom to exploit the inventions.⁴⁵⁴

⁴⁵¹ Liu Deming, *The Transplant Effect of the Chinese Patent Law*, 5 Chinese J. Int'l L. 733 (2006).

⁴⁵² Richard A. Spinello & Herman T. Tavani, *Intellectual Property Rights in a Networked World: Theory and Practice* 5 (2005). (“Unlike tangible objects, intellectual objects are public goods. Public goods are both non-rivalrous and non-exclusive. An object is non-rivalrous if consumption by one person does not diminish what can be consumed by others...A good is non-exclusive if it is impossible to exclude people from consuming it.”)

⁴⁵³ See e.g. Aubrey Silberston & Klaus Boehm, *The British Patent System I. Administration* 163 (1967) (“...at the heart of all patents policy—the problem of hitting right balance between the public interest in restricting the grant of monopolies and the private interests of the patentee.”); D. Vaver, *Intellectual Property Rights: Critical Concepts in Law* 69 (2006) (The balance between individual gain and the public good was the foundational aim of the intellectual property law.); Christian Lenk et al., *Ethics and Law of Intellectual Property: Current Problems in Politics, Science and Technology* 98 (2007) (“much current discourse on IP policy ranges along a single dimension, between two extreme nodes—the grant of private rights to exclude and the defense of the public domain.”); Michael A. Gollin, *Driving Innovation: Intellectual Property Strategies for a Dynamic World* 45(2008) (“Balancing exclusion and access is one goal on which all should be able to agree.”)

⁴⁵⁴ Shan Qiao & Yan Chunguang, *Si Fa Shi Jian Zhong Dui Zhuan Li Quan Li Yao Qiu Jie Shi De Shi Li Fen Xi [Case Analysis of Patent Claim Interpretation in Judicial Practice]*, Zhong Guo Fa Ming Yu Zhuan Li[China Invention & Patent] Issue 4, 72 (2006).

PART II: THE INTERPRETIVE THEORIES UNDERLYING THE APPROACHES

CHAPTER 4 PROMINENT THEORETICAL APPROACHES IN CLAIM CONSTRUCTION

This Chapter explores the theoretical bases of the three claim construction approaches discussed in Part I. For a long time, patent claims have been analogized both to statutes and contracts. The theories of claim interpretation remain poorly understood by comparison to the rich literature on statutory and contractual interpretation. This Chapter recognizes the distinguishing features of claim interpretation. Claim interpretation is to explicate the meaning of a claim text in terms of what the PHOSITA means by it in the technological context. All the theories of meaning behind the claim construction approaches explain language use in particular contexts from the pragmatic point of view. Three types of theories underpinning current approaches are introduced respectively for discussion: (1) the ordinary use-based theory of meaning establishes the conventional use of a term among technological community; (2) the intention-based theory of meaning emphasizes the role of the author's intention, which is considered as the crucial determinant of what that term means. (3) The content-based theory of meaning ascertains the interpreter's construction of contents of the claims. Different theories demonstrate different ways of reasoning the meaning of a claim term. The legal outcomes are heavily influenced by the interpretive theories adopted by the judge.

Section 1 Distinguishing characteristics of patent claim interpretation

Theories of legal interpretation have been fashioned by legal scholars based on interpretative theories influential in other disciplines, especially in philosophy and literature.⁴⁵⁵ In interpreting a legal text, a judge might look to three kinds of meaning: (i) word meaning (what the words of the provision mean, considered independently of the intentions of those who adopted them and independently of the intentions of those to whom they are addressed), (ii) speaker meaning (what those who adopted the provision took it to mean), and (iii) hearer meaning (what those to whom the provision is addressed take it to mean).⁴⁵⁶ For a long time, the patent claims have been analogized both to statutes and contracts.⁴⁵⁷ That is probably because “patents are documents that are largely privately drafted, like contracts, but have broad effects on the general public, like statutes.”⁴⁵⁸

A. Patent claims interpreted like statutes

⁴⁵⁵ Peter C. Schanck, *The Only Game in Town: Contemporary Interpretive Theory, Statutory, Construction, and Legislative Histories*, 82 Law Libr. J. 419 (1990).

⁴⁵⁶ Samuel C. Rickless, *What is Legal Interpretation? A Synthetic Approach to Legal Adjudication*, 42 San Diego L. Rev. 519(2005).

⁴⁵⁷ *Phillips v. AWH Corp.*, 376 F.3d 1382, 1382 (Fed. Cir. 2004) (Circuit Judge Rader, concurring) (“Is claim construction amenable to resolution by resort to strictly algorithmic rules, e.g., specification first, dictionaries first, etc.? Or is claim construction better achieved by using the order or tools relevant in each case to discern the meaning of terms according to the understanding of one of ordinary skill in the art at the time of the invention, thus entrusting trial courts to interpret claims as a contract or statute?”); see also Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 Lewis & Clark Law Review 123 (2005); Crissa Cook, *Constructive Criticism: Phillips V. AWH Corp. and the Continuing Ambiguity of Patent Claim Construction Principles*, 55 U. Kan. L. Rev. 255 (2006); Frederick W. Claybrook, Jr., *It’s Patent that “Plain Meaning” Dictionary Definitions Shouldn’t Dictate: What Phillips Portends for Contract Interpretation*, 16 Fed. Cir. B.J. 91(2007).

⁴⁵⁸ Mullally, *supra* note 32.; See also, Elmer A. Driedger, *The Composition of Legislation* xxiii (1957) (“Statutes are law. They are supposed to settle the rights and liabilities of the people. Every word in a statute is intended to have a definite purpose and no unnecessary words are intentionally used.”) Curtis J. Mahoney, *Treaties as Contracts: Textualism, Contract Theory, and the Interpretation of Treaties*, 116 Yale L.J. 824 (2007). E. Allan Farnsworth, “Meaning” in the Law of Contracts, 76 Yale L.J. 939, 946-52 (1967).

The US Federal Circuit en banc *Markman* decision tried to determine an appropriate analogy for claim construction and finally concluded that claim construction is more akin to statutory interpretation:

The more appropriate analogy for interpreting patent claims is the statutory interpretation analogy. Statutory interpretation is a matter of law strictly for the court. There can be only one correct interpretation of a statute that applies to all persons. Statutes are written instruments that all persons are presumed to be aware of and are bound to follow.⁴⁵⁹

Statutory interpretation often focuses on the ordinary or natural meaning of the statute's language. The ordinary or natural meaning does not mean strict literal meaning,⁴⁶⁰ but means using the words or phrases in "the same way that ordinary people in common usage might speak...any day of the week."⁴⁶¹ Adherence to the common sense understanding of the words is critical,⁴⁶² because judges have to fulfill their duty as faithful agents of congressional

⁴⁵⁹ *Markman v. Westview Instruments, Inc.*, 52 F.3d (Fed. Cir. 1995) at 967, 986, 987 (Patent applications, unlike contracts, are reviewed by patent examiners, quasi-judicial officials trained in the law and presumed to "have some expertise in interpreting the [prior art] references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents." *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984); *See also Western Electric Co. v. Piezo Technology, Inc.*, 860 F.2d at 431 (Fed. Cir. 1988). However, Judge Mayer asserted that "...claim construction may sometimes require the resolution of factual matters before a claim can be authoritatively construed. The exercise is further informed by decisions interpreting analogous instruments, for patents are legal documents like contracts or deeds." (Mayer, Circuit Judge, concurring in the judgment).

⁴⁶⁰ Michael Zander, *The Law-Making Process* 125 (5th, ed., 1999); *See also* Aharon Barak, *The Judge in a Democracy*, 151(2006). Strict literalism has been criticized for its "judicial shallowness" that encourages judges to adopt the most straightforward interpretation of the words without regard to whether the interpretation makes sense in a particular context.

⁴⁶¹ Tobias A Dorsey, *Statutory Construction and Interpretation: General Principles and Recent Trends; Statutory Structure and Legislative Drafting Conventions; Drafting Federal Grants Statutes; And Tracking Current Federal Legislation and Regulations* 96 (2010). *See Federal Deposit Insurance Corporation v. Meyer*, 510 U.S.471, 476 (1994), and *General Dynamics Land System v. Cline*, 540 U.S. 581 (2004)

⁴⁶² Peter Tiersma & Lawrence Solan, *The Oxford Handbook of Language and Law* 94 (2012) ("As in all cases [of statutory construction], we begin by analyzing the statutory language, 'assuming that the ordinary meaning of the language accurately expresses the legislative purpose.'")

will.⁴⁶³ The Court would use the ordinary meaning that prevailed when the statute was enacted, not when it is being interpreted.⁴⁶⁴

Textualism has been one of the leading theories in the legal interpretation, particularly in statutory interpretation.⁴⁶⁵ Textualism began its rise in the 1980s in statutory interpretation in the United States Supreme Court, championed by Justices Scalia, Anthony Kennedy and Clarence Thomas on the U.S. Supreme Court and by Judge Easterbrook on the United States Court of Appeals for the Seventh Circuit. The primary characteristic of textualism is its attention to the fact of textuality itself,⁴⁶⁶ that is, “how a term is used within the text.”⁴⁶⁷ Textualists believe that the text achieves meaning distinguishable from what the author may have intended.⁴⁶⁸ Ricoeur characterized the “semantic autonomy of the text” as three-fold: autonomy (1) from the author’s intention;⁴⁶⁹ (2) from the

⁴⁶³ William K. Wimsatt & Monroe C. Beardsley, *The Intentional Fallacy*, 54 *Sewanee Review* 468 (1946). Revised version in: *The Verbal Icon: Studies in the Meaning of Poetry* 3-18 (1954). Textualists assume that textual meaning is “detached from the author at birth and goes about the world beyond his power to intend about it or control it.”

⁴⁶⁴ *Dorsey, supra* note 461. See *BedRoc Limited, LLC v. United States*, 541 U.S.176 (2004). The Court has emphasized that a departure from plain meaning is justified in “rare and exceptional circumstances.” See *TVA v. Hill*, 437 U.S. 153, 187 fn 33 (1978)

⁴⁶⁵ Caleb Nelson, *What Is Textualism?* 91 *Va. L. Rev.* 347 (2005). See also, William N. Eskridge, Jr., *The New Textualism*, 37 *UCLA L. REV.* 621 (1990) (discussing the rise of textualism among scholars and judges). The acceleration of this discourse occurred in the mid-1980s when prominent academics and members of the judiciary began urging a textualist approach to interpreting statutes.

⁴⁶⁶ George H Taylor, *Structural. Textualism*, 75 *B.U. L. Rev* 321 (2007).

⁴⁶⁷ Bradley C. Karkkainen, “*Plain Meaning*”: *Justice Scalia’s Jurisprudence of Strict Statutory Construction*, 17 *Harv. J. L. & Pub. Pol’y* 401 (1994). Antonin Scalia, *Common-Law Courts in a Civil-Law System: The Role of United States Federal Courts in Interpreting the Constitution and Laws*, in *A Matter of Interpretation* 16–18, 29–37 (1997) (“Textualism should not be confused with so-called strict constructionism, a degraded form of textualism that brings the whole philosophy into disrepute.”)

⁴⁶⁸ Antonin Scalia & Amy Gutmann, *A Matter of Interpretation: Federal Courts and the Law* viii (1998)(“judicial interpretation should be guided by the text and not by intentions or ideals external to it”); Peter M Tiersma, *Message in a Bottle: Text, Autonomy, and Statutory Interpretation*, 76 *Tul. L. Rev.* 431 (2001-2002) (“Statutes tend to be quite autonomous, not unlike messages set adrift in the currents of the ocean...The relative autonomous nature of legal texts thus provides a linguistic explanation for the development of plain meaning rule and textual approaches to interpretation.”) Peter M. Tiersma, *Legal Language* 128 (2000) (“A judge interpreting a legal document can reasonably presume that the lawyer drafting it was successful in creating a carefully crafted and relative complete and autonomous document ... these presumptions, obviously, form the underpinnings of the plain meaning rule.”)

⁴⁶⁹ Antonin Scalia, *Law and Language*, 157 *First Things*37, 37 (2005). Justice Scalia, one of the most prominent adherents of textualism, considers words as conventional symbols that convey an objective meaning, regardless of what their author intended them to mean (“What is needed for a symbol to convey meaning is not an intelligent author, but a conventional understanding on the part of the readers or hearers

cultural and sociological conditions of the text's production;⁴⁷⁰ and (3) from its original audience.⁴⁷¹ It is the objective of textualist interpretation to establish the ordinary meaning of a word at the time of the creation of the text.⁴⁷²

Textualism attempts to constrain the discretion of judges from reading their own values and beliefs into the text.⁴⁷³ It favors understanding the text the way a neutral, detached and impartial observer would have understood it at the time it was created.⁴⁷⁴ It is believed that when interpreters are constrained by the text of the statute, statutory meaning becomes more certain and the cost of discerning meaning decreases.⁴⁷⁵ By employing the statutory interpretation analogy in claim construction, courts emphasize the public notice function of patent claims to enhance certainty of meaning.

However, there still remain significant differences between the "ordinary meaning" in statutory interpretation and claim interpretation. While statutory

that certain signs or certain sounds represent certain concepts.")

⁴⁷⁰ Joel Schellhammer, *Defining the Court's Role as Faithful Agent in Statutory Interpretation: Exxon Mobil Corp. v. Allapattah Services, Inc.*, 125 S. Ct. 2611 (2005), 29 Harv. J.L. & Pub. Pol'y 1119 (2006) ("when contextual evidence of semantic usage points decisively in one direction, that evidence takes priority over contextual evidence that relates to questions of policy".) Frank B. Cross, *The Theory and Practice of Statutory Interpretation* 25 (2009). ("Textualism places limits on the sort of extrinsic evidence relevant to interpretation and its relative significance.")

⁴⁷¹ Paul Ricoeur, *Hermeneutics and the Human Sciences* 91 (John B. Thompson ed. & trans., 1981); *See also*, Paul Ricoeur, *From Text to Action* 74 (1991); Paul Ricoeur, *Interpretation Theory: Discourse and the Surplus of Meaning* 91 (1976) ("The text—objectified and dehistoricized—becomes the necessary mediation between writer and reader.")

⁴⁷² Sotirios A. Barber & James E. Fleming, *Constitutional Interpretation: the Basic Questions* 67 (2007).

⁴⁷³ Roger Colinvaux, *What Is Law? A Search for Legal Meaning and Good Judging Under a Textualist Lens*, 72 Ind. L.J. 1133, 1141(1997). ("The text is meant to be objective and judges are meant to approach it using tools that are mechanical and so facilitate the likelihood that the result will be objective.")

⁴⁷⁴ Aharon Barak, *Purposive Interpretation in Law*, 34 (2007) ("According to new textualism, a judge should interpret a text according to the ordinary and natural meaning that the words would have to an ordinary person reading the text at the time it was created."); *See also* John F. Manning, *Textualism and the Equity of the Statute*, 101 Colum. L. Rev. 1, 108–09 (2001).("Modern textualists, however, are not literalists. In contrast to their early-twentieth-century predecessors in the 'plain meaning' school, they do not claim that interpretation can occur 'within the four corners' of a statute... Rather, modern textualists acknowledge that language has meaning only in context.) Michael Stokes Paulsen, *Does the Constitution Prescribe Rules for its Own Interpretation?* 103. Nw. U. L. Rev. 857 (2009).("It is the understanding of a hypothetical objective observer that matters.")

⁴⁷⁵ Linda D. Jellum, *Mastering Statutory Interpretation* 20 (2008). ("When judges and litigants are constrained by the text of the statute, statutory meaning becomes more certain and litigation cost decreases.")

interpretation relies on publicly shared conventions for deciphering words from a neutral, detached and impartial observer, patent claim construction asks how an ordinary skilled person would read the claim text in a particular technological context.⁴⁷⁶ By comparison, patent claims are often interpreted in specific and constantly changing technological contexts, by referring to the highly context-sensitive and pragmatic technological knowledge which are not well known to a layman. Therefore, one cannot simply analogize claim interpretation to statutory interpretation either in theory or practice.

B. Patent claims interpreted like contracts

Patent claim interpretation has also been analogized to contract interpretation.⁴⁷⁷ James Oldham made an observation of the case *Liardet v. Johnson*⁴⁷⁸ that “the contract model was more realistic, or at least plausible as an analogy, despite the fundamental nature of the patent as a bestowed grant.” In *Kirin-Amgen*, Lord Hoffmann referred to changes in approach led by Lord Wilberforce in cases such as *Prenn v. Simmonds*⁴⁷⁹ and *Reardon Smith Line Ltd.*

⁴⁷⁶ Gold & Durell, *supra* note 217.

⁴⁷⁷ Mullally, *supra* note 32. (“The examiner typically rejects or objects to one or more claims in the application. In response, the applicant may amend her claims to address the examiner’s concerns. The applicant may also submit arguments or additional information about the invention to overcome claim rejections, with or without making amendments to the claims. These transactions continue until either the examiner allows the claims or the applicant decides not to pursue them... This back-and-forth process is similar to a contract negotiation.”) Jiri Janko, *Linguistically Integrated Contractual Interpretation: Incorporating Semiotic Theory of Meaning-Making into Legal Interpretation*, 38 Rutgers L.J. 601 (2007). (“Statutes and contracts do not come into being in the same way. The latter is often the product of bargaining, negotiation, or at least the product of the expectations of two parties.”) Jonathan L. Moore, *supra* note 5. (“When responding to this initial rejection, an applicant will either submit arguments in support of the original claim or amend his or her claims in order to address the examiner’s concerns. Undoubtedly, this process resembles the negotiating and bargaining that routinely occurs with contracts.”)

⁴⁷⁸ James Oldham, *The Mansfield Manuscripts and the Growth of English Law in the Eighteenth Century* 731(1992).

⁴⁷⁹ *Prenn v. Simmonds* [1971] 1 WLR 1381. In *Prenn v. Simmonds*, Lord Wilberforce remarked that “The time has long passed when agreements, even those under seal, were isolated from the matrix of facts in which they were set and interpreted purely on internal linguistic considerations.”

*v. Yngvar Hansen-Tangen*⁴⁸⁰, and pointed out that:

The author of a document such as a contract or patent specification is using language to make a communication for a practical purpose and that a rule of construction which gives his language a meaning different from the way it would have been understood by the people to whom it was actually addressed is liable to defeat his intentions.⁴⁸¹

In contractual interpretation, it is important to interpret that term according to the intention of the parties.⁴⁸² For example, European Principles of Contract Law provides that: “if it can be shown that they shared a common intention, or that one party’s intention was or must have been known to the other party, the contract will be interpreted accordingly even if that is not the literal meaning of the word used. If it is not possible to establish a common intention, the contract is to be interpreted objectively, according to the meaning that reasonable persons of the same kind (condition) as the parties would give to it in the same circumstances.”⁴⁸³ Intentionalism is basic to contractual interpretation.⁴⁸⁴

⁴⁸⁰ *Reardon Smith Line Ltd. v. Yngvar Hansen-Tangen* [1976] 1 WLR 989.

⁴⁸¹ *Kirin-Amgen, Inc. v Hoechst Marion Roussel Ltd.* [2004] UKHL 46, [2005] RPC 169. David J. Brennan, *The Evolution of English Patent Claims as Property Definers*, 4 *Intellectual Property Quarterly* 361-399, (2005). In the UK, there is an explicit conception of the “social contract” theory of patents: disclosure as the quid pro quo for exclusive patent right.

⁴⁸² Cross, *supra* note 470. When courts are required to interpret a contract, they must examine the intent of the contracting parties. The prevailing view is that a court should consider context, including extrinsic sources, in order to determine the intent of the contracting parties. Nelson, *see supra* note 465-466. In statutory interpretation, the intentionalists interpret the words of a statute in the sense which their author intended to convey, that is, they regard the goal of statutory interpretation as being to discern and implement the intent of the legislature.

⁴⁸³ Ole Lando, Hugh Beale, Commission on European Contract Law, *Principles of European Contract Law* xxxv (2000) Article 5.101 (1) of the European Principles of Contract Law provides that: (1) A contract is to be interpreted to the common intention of the parties even if it is different from the literal meaning of the words. (2) If it is established that one party intended the contract to have a particular meaning, and at the time of the conclusion of the contract the other party could not have been unaware of the first party. (3) If an intention cannot be established according to (1) or (2), the contract is to be interpreted according to the meaning that reasonable persons of the same kind as the parties would give to it in the same circumstances. The European Principles of Contract Law can be found at: General Rules of Interpretation <http://www.jus.uio.no/lm/eu.contract.principles.parts.1.to.3.2002/5.101.html> (last visited Jul. 25, 2012)

⁴⁸⁴ Cross, *supra* note 470, at 60.

Intentionalism posits the authorial intention as the constitutive basis for textual meaning. It holds that “text alone, no matter how long and dense, can never yield meaning,”⁴⁸⁵ Instead, the meaning of a text is identical to the meaning that its author intended it to communicate.⁴⁸⁶ John Wigmore rejected the plain meaning rule as unsound:

...the ordinary standard or ‘plain meaning’ is simply the meaning of people who did not write the document. The fallacy consists in assuming that there is or ever can be *some one real* or absolute meaning. In truth, there can be only *some person’s meaning*, and that person, whose meaning the law is seeking, is the writer of the document.⁴⁸⁷

There are strong and moderate versions of intentionalism. Steven Knapp and Walter Benn Michaels advocated strong intentionalism, arguing that the meaning of a text is identical to the meaning that its author intended it to communicate.⁴⁸⁸ Strong intentionalism believes that the author is the source of the authority over the meanings of the text he or she produces.⁴⁸⁹ The moderate intentionalism, which was advocated by Professor Jeffrey Goldsworthy, held that the true meaning of a text is its “utterance meaning” given the totality of

⁴⁸⁵ Stanley Fish, *There Is No Textualist Position*, 42 San Diego L. Rev. 629 (2005). Larry Alexander & Saikrishna Prakash, “*Is That English You’re Speaking?*” *Why Intention Free Interpretation is an Impossibility*, 41 San Diego L. Rev. 967 (2004). There can be no such thing as intention-free meaning.

⁴⁸⁶ Jeffrey Goldsworthy, *Moderate versus Strong Intentionalism: Knapp and Michaels Revisited*, 42 San Diego L. Rev. 669 (2005).

⁴⁸⁷ 9 John H. Wigmore, *Evidence* §2462 at 198 (James H. Chadbourne rev. 1981) (Emphasis in original).

⁴⁸⁸ Steven Knapp & Walter Benn Michaels, *Against Theory 2: Hermeneutics and Deconstruction*, 14 Critical Inquiry 49 (1987). See also, Lord Reid in *Westminster Bank v. Zane* (1966), A.C. 182, quoted in Alfred Phillips, *Lawyers’ Language: How and Why Legal Language is Different* 95 (2003).

⁴⁸⁹ Jacqueline Mariña, *The Cambridge companion to Friedrich Schleiermacher* 73 (2005); Tom Campbell, *Prescriptive Legal Positivism: Law, Rights and Democracy* 88 (2004). Hirsch, *supra* note 292, at 5 (“if the meaning of the text is not the author’s, then no interpretation can possibly correspond to the meaning of a text, since the text can have no determinate or determinable meaning.”) Mark Bevir, *Meaning and Intention: A Defence of Procedural Individualism*, 31 New Literary History 3, 386 (2000). So to understand what a text says, strong intentionalists would typically identify authorial intentions with prior purposes.

admissible evidence, which is distinct from both the speaker's meaning and the word meaning.⁴⁹⁰ Moderate intentionalists ignore secret and disguised subjective intent but demands attention to the ostensible intention.⁴⁹¹ They assume that any interpretation of the text must comport with the "explicit, implicit, or reconstructed intention of its makers".⁴⁹² It asserts that the meaning of a text is what the author's intent or purpose might plausibly have been, regardless of whether it matches the actual intentions of the author.⁴⁹³ Moderate intentionalism and textualism may yield the same result in many cases.⁴⁹⁴ The theories will yield different outcomes when the notional interpreter has access to "evidence that goes beyond this public language meaning, which may support an attribution of intentions that resolves the case."⁴⁹⁵

⁴⁹⁰ Goldsworthy, *supra* note 486. ("Moderate intentionalists hold that an author may intend his text to mean something, but fail to give it that, or perhaps any, meaning.") See, Grant Huscroft & Bradley Miller, *The Challenge of Originalism: Theories of Constitutional Interpretation* 49 (2011) ("Utterance meaning is distinct from both its sentence meaning and its speaker's meaning. Utterance meaning is the full meaning of an utterance, implied as well as expressed, and it depends on what the speaker's meaning appears to be, given evidence that is readily available to his or her intended audience, including the sentence meaning of the utterance and other clues such as its context.") Henry M. Hart, Jr. & Albert M. Sack, *The Legal Process* 1374 (William N. Eskridge & Philip P. Frickey ed., 1994) ("under which a court interpreting a statute should "decide what purpose ought to be attributed to the statute and ... interpret the words of the statute immediately in question so as to carry out the purpose as best it can.") The Hart and Sacks version of purposivism theory is based on two fairly sensible assumptions about the legislative process. The first assumption posits a legislature "made up of reasonable persons pursuing reasonable purposes reasonably." Second, "every statute must be conclusively presumed to be a purposive act." The two assumptions, taken together, proceed on the view that lawmakers enact laws not as a meaningless exercise but as a conscious effort to reach some objectivity.

⁴⁹¹ Abby Wright, *For All Intents and Purposes: What Collective Intention Tells us about Congress and Statutory Interpretation*, 154 U. Pa. L. Rev. 983 (2006); Richard A. Posner, *Statutory Interpretation — In the Classroom and in the Courtroom*, 50 U. CHI. L. REV. 800 (1983). It should be noted that both legislative intent and legislative purpose are different from what Judge Easterbrook has called "raw intent" - that is, intent without any law, meaning that a "law" could be enforced if it comported with a legislative purpose that had no instantiation in an actual statute—which is no longer a serious contender as an interpretive theory.

⁴⁹² Allan C. Hutchinson, *It's All In the Game: A Nonfoundationalist Account of Law and Adjudication*, 91 (2000).

⁴⁹³ Paul Brest, *The Misconceived Quest for the Original Understanding*, 60 Boston University Law Review 204-238 (1980), in *Constitutional Law and Its Interpretation* 305 (Jules L. Coleman & Anthony James Sebok ed., 1994).

⁴⁹⁴ Huscroft & Miller, *supra* note 490, 49. (In any particular case, utterance meaning may be similar or even identical to sentence meaning, or to speaker's meaning, or to both. It all depends on how much contextual evidence of speaker's meaning is or was readily available to the intended audience, and how far speaker's meaning goes beyond sentence meaning.)

⁴⁹⁵ Andrei Marmor & Scott Soames, *Philosophical Foundations of Language in the Law* 141 (2011). In

Intentionalism is attractive because it claims faithfulness to the original design or plan of the author.⁴⁹⁶ In the patent context, the inventor is presumed to convey his intent in the patent documents, “much like the parties to a fully integrated, written contract are presumed to have conveyed their intent in the written contract.”⁴⁹⁷ Under purposive construction, interpreters also construct, project or hypothesize a most plausible patentee’s intention in light of the text and context. However, patent claim interpretation should be distinguished from contractual interpretation.

Besides the unique use of an ordinary skilled person for specific technical issues, in patent claim interpretation there is no *consensus ad idem* (“meeting of minds” or “common intention”)⁴⁹⁸ between the litigating parties, *e.g.* the patentee and the possible infringers, at a point of time in the past. A patent by its very nature is affected with a public interest.⁴⁹⁹ “Patents, unlike contracts, are not executory in nature or discretionary in their issuance, and always involve a transaction with the federal government rather than any other entity.”⁵⁰⁰ The

some cases of this sort, the interpreter may have access to evidence that goes beyond the public language meaning that is ambiguous or non-specific, which may support an attribution of intentions that resolves the case; in other cases of this sort, the public language meaning may be sufficient but the interpreter has access to information which supports a different outcome.

⁴⁹⁶ W.K. Wimsatt, Jr., & Monroe C. Beardsley, *The Verbal Icon: Studies in the Meaning of Poetry* 4 (1954).

⁴⁹⁷ Jessica C. Kaiser, Note, *What's that Mean? A Proposed Claim Construction Methodology for Phillips v. AWH Corp.*, 80 Chi.-Kent L. Rev. 1009 (2005). (“The competitor to a patentee, unlike the nondrafter of the contract, did

not have an opportunity to review the patent and object to provisions or refuse his assent before the patent issued. Therefore, in the case of patent claim construction, the court has stronger reasons to construe ambiguity against the drafter of the patent than in contract interpretation under the doctrine of *contra preferentum*.)

⁴⁹⁸ Mindy Chen-Wishart, *Contract Law* 54 (2007).

⁴⁹⁹ Manual of Patent Examining Procedure (MPEP), 8th Edition, August 2001, Latest Revision July 2010, § 1.56 Duty to disclose information material to patentability.

⁵⁰⁰ *Markman v. Westview Instruments, Inc.*, 52 F.3d 984–87 (Archer, C.J., writing for majority and rejecting argument that claim construction should be analogized to the interpretation of contracts, deeds and wills), with *id.* at 997–98 (Mayer, J., concurring in judgment but rejecting majority view that claim construction is a matter of law solely for the judge; drawing instead an analogy between construction of patent claims and interpretation of contracts and deeds which may have underlying questions of fact), and *id.* at 1007 (Newman, J., dissenting and referring with approval to the treatment of disputes concerning the

patentee is obliged to make full disclosure of his invention in exchange for exclusionary right.⁵⁰¹ Therefore, judges not only need to ascertain and effectuate the intent of the inventor, but also need to ensure that the public interest is best served by injecting factual and policy considerations into claim construction.⁵⁰² An intentionalist stance alone cannot account for the process of determining patent claim meaning.

C. Uniqueness of patent claim interpretation

This thesis does not analogize theories of claim interpretation to those of contractual or statutory interpretation, but highlights the distinguishing features of claim interpretation theories. The difficulty of patent claim interpretation has been best summarized as follows: “Attaching verbal labels to non-verbal objects becomes more difficult as the complexity of the object increases, and this problem only deepens when, as well as labeling the object itself, we are additionally asked to use words to draw its boundaries.”⁵⁰³ In patent law, once the claim text is interpreted, all subsequent determinations of whether the patent is infringed or whether the invention is patentable are governed by that

meaning of technical terms as fact issues for a trier of fact in contract cases).

⁵⁰¹ Osenga, *supra* note 81. (“The patentee agrees to make full disclosure of his invention, a task that he is not otherwise obligated to do, in return for receiving an exclusionary property right in the invention from the government.”)

⁵⁰² Lee, *supra* note 35. The author proposed to shift attention away from the literal text of patent claims toward a substantive appraisal of a patent’s technological contribution. (“Congress could amend the Patent Act to clarify that courts should consider an invention’s technological merit, the accused device, and the competitive dynamics of a particular field when construing claim.”) Donald S. Chisum, *Chisum on Patents*, § 18.03 [2] [a]. A claim has been analogized as a contract, which is a bilateral instrument. (“To interpret the communication, it is also necessary to determine “what a patentee intended to claim as his invention or discovery” and “what invention or discovery the patent office intended to grant a temporary monopoly”.)

⁵⁰³ Matthew Fisher, *The Tyranny of Words: Patent Claim Construction in the UK and US*, 36 Common Law World Review 262 (2007). *See also*, e.g. *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855 (Fed. Cir. 1989) (“On one side rests the very important, statutorily-created necessity of employing the clearest possible wording in preparing the specification and claims of a patent, one of ‘the most difficult legal instruments to draw with accuracy.’ On the other lies the equally important, judicially-created necessity of determining infringement without the risk of injustice that may result from a blindered focus on words alone.”)

meaning.⁵⁰⁴ The choice of interpretive legal theory has important effects on the outcomes of patent litigations.⁵⁰⁵

In order to know how to read a patent claim text, we must have a better understanding of interpretation.⁵⁰⁶ Interpretations have to do with meanings.⁵⁰⁷ “A general theory of meaning and interpretation is a theoretical conception which allows to grasp, in an overall way, the nature of linguistic expressions and what their meaning is, and also what their interpretation is.”⁵⁰⁸ As Owen Fiss stated, “interpretation, whether it be in the law or literary domain is... a dynamic interaction between reader and text.”⁵⁰⁹ The discernment of legal meaning is an important feature of law.⁵¹⁰ In legal interpretation, various theories of meaning and interpretation give an answer to these questions in some way or other. In patent claim construction, how do we locate meaning of a claim in the interpretive process: is it the intention of the patentee or an

⁵⁰⁴ Lefstin, *supra* note 27. See also, Douglas Y’Barbo, *Interpreting Words in a Patent*, 1 Chi.-Kent J. Intell. Prop. 191, 192 (1999). (“Naturally, the accused infringer will urge a construction of the disputed term that places the accused device outside the just-determined scope, and not surprisingly this proffered construction is as broad as possible yet just barely avoids the accused device. Of course, the patent owner will urge a construction that places the accused device within the scope. Yet while the patent owner wishes to urge a construction that captures the accused device, he is careful not to offer a proposed construction that is so broad that the recently construed claims are judged invalid. Hence, the process of proffering an interpretation of the disputed claim’s term has a strong self-policing character to it.”) James R. Barney & Charles T Collins-Chase, *An Empirical Analysis of District Court Claim Construction Decisions, January to December 2009*, 2011 Stan. Tech. L. Rev. 2 (2011). The author believed that this description was generally accurate, but it left out an important exception: “if an accused infringer believes that the accused device is likely to meet a particular claim limitation under any reasonable construction, he may choose to propose a very broad construction for that term (i.e., broader than the patentee’s construction), in hopes of strengthening his invalidity defense.”

⁵⁰⁵ Richard S. Gruner, *How High Is Too High? Reflections on the Sources and Meaning of Claim Construction Reversal Rates at the Federal Circuit*, 43 Loy. L.A. L. Rev. 981 (2010) (“...cases in which claim constructions are both material and indeterminate—that is cases in which there are several plausible claim interpretations, each with substantial support in the case record, but each leading to a very different case result.”)

⁵⁰⁶ Aharon Barak, *Hermeneutics and Constitutional Interpretation* (“What is “interpretation” and how is it accomplished?”)

⁵⁰⁷ Willem A. DeVries, *Meaning and Interpretation in History*, 22 History and Theory 253-63 (1983) (“it is through interpretation that we come to know meanings.”)

⁵⁰⁸ Urszula Wybraniec-Skardowska, *Meaning and Interpretation I*, 85 Studia Logica 1, 108 (2007).

⁵⁰⁹ Gary C. Leeds, *The Latest and Best Word on Legal Hermeneutics: A Review Essay of Interpreting Law and Literature: A Hermeneutic Reader*, 65 Notre Dame L. Rev. 375 (1990).

⁵¹⁰ Dennis Patterson, *What is Legal Interpretation? Interpretation in Law*, 42 San Diego L. Rev. 685 (2005).

objective meaning of the claim text itself independent of the intention of the patentee? The theories underpinning the three claim interpretation approaches (the ordinary meaning approach, the purposive approach and the constructive approach) can be classified into three types: the ordinary use-based theory of meaning, the intention-based theory of meaning and the content-based theory of meaning.

This thesis, however, is aware that theories of meaning are the terrain of the philosophy of language and theoretical linguistics.⁵¹¹ The central task in law is the application of a historical text to a present case.⁵¹² Both in theory and in practice the ascertainment of meaning is far more complex than a simple application of a theory of meaning: “interpretive problems are not reducible to linguistic problems.”⁵¹³ The theories of meaning, in fact, are used to provide insight to a range of possible approaches to meaning, which lead to competing modes of analysis for claim interpretation. They help to explain how judges approach their own interpretative tasks and explore key differences and overlaps between various approaches.

To get a clearer concept of patent claim construction, first it is necessary to answer two questions: *what constitute meaning of a patent claim*, and, *what goes to prove that meaning?* Compared to interpretation of other legal texts, patent claim construction has its unique features, such as the perspective of the

⁵¹¹ Lawrence B. Solum, *Artificial Meaning*, 89 Wash. L. Rev. 69-86 (2014)

⁵¹² Ralf Poscher, *Hermeneutics, Jurisprudence and Law*, in Jeff Malpas & Hans-Helmuth Gander (eds.), *Routledge Companion to Philosophical Hermeneutics* (2014)

⁵¹³ Pierluigi Chiassoni, *A Nice Derangement of Literal-Meaning Freaks: Linguistic Contextualism and the Theory of Legal Interpretation* (2005)
http://www.giuri.unige.it/intro/dipist/digita/filo/testi/analisi_2006/07chiassoni.pdf (last visited at 06/07/2014)

person having ordinary skill in the art,⁵¹⁴ the technical nature of the subject matter,⁵¹⁵ and the dynamic changes in technology,⁵¹⁶ *etc.* It is the principal lesson of contemporary semantics that all words, legal and other wise, take their complete meaning from a relevant context.⁵¹⁷ Patent claim interpretation explicates the meaning of a claim term in terms of what the ordinary skilled person means by it in a pertinent technological context, taking into consideration of the claims, the specification and drawings, as well as dictionaries and expert evidence, *etc.*. Various claim interpretation approaches all pay much attention to the use of terms by the specialized audience, *i.e.*, the PHOSITA, in a specific technological context.⁵¹⁸

Despite many differences, all the theories of meaning behind these claim construction approaches share the common aim of “looking at the actual uses of language and attention to the pragmatics of language,”⁵¹⁹ which is a vision of

⁵¹⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (“The person of ordinary skill in the art “is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field.””) *See also*, Gold & Durell, *supra* note 217.

⁵¹⁵ Menell et. al., *supra* note 5. (“The substantive law of claim construction can be analogized to interpretation of other texts, but various nuanced features – the perspective of the person of ordinary skills, the technical nature of the subject matter, distinctions between lay and technical terms, the importance of prosecution history, the interplay of multiple claims, and the need to safeguard the jury’s role in determining infringement – distinguish interpretation of patent claims from contractual and statutory.”)

⁵¹⁶ Lemley, *supra* note 7.

⁵¹⁷ Myres S. McDougal & Richard N. Gardner, *The Veto and the Charter: An Interpretation for Survival*, 60 *Yale Law Journal* (1951), 258 at 289.

⁵¹⁸ Stephen Neale, *Paul Grice and The Philosophy of Language*, *Linguistics and Philosophy* 15 (5):509 – 559 (1992). Wittgenstein et al, *Philosophical Investigations* lxxiii (2009); *See also*, Stanley Cavell, *The Claim of Reason*, 206-207 (1979). (“The meaning is the use’ calls attention to the fact that what an expression means is a function of what it is used to mean or to say on specific occasions...””) Stephen Neale, *Paul Grice and The Philosophy of Language*, *Linguistics and Philosophy* 15 (5):509 – 559 (1992). The only useful thing to say about the meaning of an expression is that “it is used in such-and-such a way, or is usable in such-and-such circumstances.” James Conant, *Wittgenstein On Meaning and Use*, *Philosophical Investigations* 21:3 (1998) (quoting Wittgenstein’s words, “it is a mistake to think that the words themselves possess a meaning apart from their capacity to have a meaning when called upon in various contexts of use.””) Finn Collin & Finn Guldmann, *Meaning, Use, and Truth: Introducing the Philosophy of Language* 21 (2005) (“Wittgenstein encapsulates this insight in the slogan ‘meaning is use’.”)

⁵¹⁹ Maria Baghramian, *Modern Philosophy of Language*, xxxiv (1999).

language as “public practice and shared action.”⁵²⁰ That is, in describing how a word is used in a specific context, we describe its meaning.⁵²¹ They remind us that claim interpretation is not purely of linguistic interest, and the terms must always be understood in reference to how they occurs in a particular technical field from the perspective of a PHOSITA—claim language has a strong, inherent context dependency.⁵²²

Section 2 Ordinary use-based theory in claim interpretation

To begin with, the notion of the ordinary use of words or expressions is as follows: “an expression which has an ordinary use, *i.e.* which is ordinarily used to describe a certain sort of situation... To be an ordinary expression it must have a commonly accepted use; it need not be the case that it is ever used.”⁵²³

The ordinary use-based theory holds that the meaning of the words corresponds to the ordinary meaning used in the given community of speakers in a given context.⁵²⁴ Relying on this theory, interpretations of patent claim are to be guided by the commonly accepted meaning of the terms used by a PHOSITA in the relevant technological community. Notably, this meaning is not a commonly understood public meaning in abstraction from any specific

⁵²⁰ Donatella Di Cesare, *Gadamer: A Philosophical Portrait* 164 (2013). (“Precisely because language is always ‘public’, it is always communal and necessarily dialogical.”)

⁵²¹ Oswald Hanfling, *Wittgenstein's Later Philosophy*, 43 (1989) (“knowing what it means is the same as knowing how to use it.”)

⁵²² Joseph F. Hanna, *Two Ideals of Scientific Theorizing*, in Michael Burgoon (ed.), *Communication Yearbook* 5, 39 (1981).

⁵²³ Norman Malcolm, *Moore and Ordinary Language*, in Richard M. Rorty (ed.), *The Linguistic Turn: Essays in Philosophical Method* 16 (1992). (“By this I do not mean that the expression need be one that is frequently used. It need only be an expression which would be used.”)

⁵²⁴ Fabrizio Macagno, *The Presumptions of Meaning: Hamblin and Equivocation*, 31 *Informal Logic* 4, 368-394 (2011) (“On the one hand, the speaker presumes that the hearer knows the meaning of the words he used, because they correspond to the ordinary (in the given community of speakers) meaning (in context). On the other hand, the hearer interprets the words on the basis of the presumption that the speaker is using them according to their ordinary usage (in con-text).”)

context.⁵²⁵ It is ordinary not in the sense of being plain, but that it is formulated based on the well-accepted and conventional usage of words in the scientific and technological community.⁵²⁶ The meaning of claims can be formulated as follows under this theory:

(A) What a PHOSITA would understand a claim term α to mean by identifying its ordinary usage in the art at the time of filing.

The theoretical rationale is that when a word or phrase has been widely used in a given community, using the word with a different meaning creates uncertainty and leads to further confusion. Thus, it is important that the interpretation will not result in any significant changes in the way that a word is commonly or ordinarily used. In patent claim interpretation, if no novel uses of claim words are expressly disclosed by the patent,⁵²⁷ an inventor's claim terms should take on their ordinary meaning from the perspective of the PHOSITA.⁵²⁸ Such interpretation creates a "heavy presumption" in favor of a term's ordinary

⁵²⁵ *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1367 (Fed. Cir. 2003) ("while this 'ordinary meaning' rule is usually expressed as a pat formula, the context supplied by the field of invention, the prior art, and the understanding of skilled artisans generally is key to discerning the normal usage of words in any claim.")

⁵²⁶ *Dow Chem. Co. v. Sumitomo Chem. Co., Ltd.*, 257 F.3d 1364 (Fed. Cir. 2001). The Court gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art. *See also*, Joseph LaLumia, *The Ways of Reason: A Critical Study of the Ideas of Emile Meyerson*, 105 (2004) ("Thus, convention, that is to say, ordinary use and disposition commonly attending such ordinary use, make such statements analytical.")

⁵²⁷ *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("The patentee may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope."); *See also Merck & Co. v. Teva Pharmaceuticals USA, Inc.*, 395 F.3d 1364, 1370 (Fed. Cir. 2005) ("When a patentee acts as his own lexicographer in redefining the meaning of particular claim terms away from their ordinary meaning, he must clearly express that intent in the written description.")

⁵²⁸ *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004); *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002); *Elekta Instrument, S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302 (Fed. Cir. 2000), *Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 951 (Fed. Cir. 1993); *Smithkline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 882 (Fed. Cir. 1988); *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1579 (Fed. Cir. 1988).

and customary meaning.⁵²⁹ The motivation for the choice of the ordinary use-based theory is the desire to further the public notice function of claims.⁵³⁰ “The function of claims is to enable everyone to know, without going through a lawsuit, what infringes the patent and what does not.”⁵³¹ Meaning enters the public domain and is more accessible and comprehensible to the readers,⁵³² so that those who need to read patents would understand the scope of patent claims in a plain or straightforward manner.⁵³³

With the aim of enhancing public notice,⁵³⁴ even if the commonly accepted meaning yields an absurd result, judges are not willing to redraft claims to avoid a nonsensical result; even if “error” occurred in drafting of the claim, it is what the patentee claimed and what the public is entitled to rely on. For example, in *Chef America, Inc. v. Lamb-Weston, Inc.*,⁵³⁵ the claim at issue related to a dough-producing process. The sole issue in this appeal was the

⁵²⁹ Barney, *supra* note 104.

⁵³⁰ Note, *Textualism as Fair Notice*, 123 Harv. L. Rev. 542 (2009) (“The traditional concept of fair notice demands that no person be held to account under a law the content of which he was unable to know before hand. By seeking to discern the most reasonable, plain meaning of a statute, textualism by its very definition seeks to satisfy this dictate of fair notice.”)

⁵³¹ Rich, *supra* note 6.

⁵³² Clark D. Cunningham, et al., *Plain Meaning and Hard Cases*, 103 Yale Law Journal 1561 (1994); *See also* Neil MacCormick, *Rhetoric and the Rule of Law* 126 (2005). (Textualism is widely embraced on a principle that the language in the legal text ought to be readily understood by the audience, “in as straight forward and immediately comprehensible a way as possible.”)

⁵³³ *See e.g. General Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938). (“The inventor must inform the public during the life of the patent of the limits of the monopoly asserted so that it may be known which features may be safely used or manufactured without a license and which may not.”) *Markman v. Westview Instruments, Inc.*, 517 U.S. 373, 116 S. Ct. 1384 (1996) (“the public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights.”)

⁵³⁴ *Haemonetics Corp. v. Baxter Healthcare Corp.*, No. 09-1557 (Fed. Cir. 2010). The Federal Circuit reversed the district court’s claim construction of the term “centrifugal unit” in claim 16 of U.S. Patent No. 6,705,983. The body of claim 16 refers back to “the centrifugal unit,” further defining its height and radius dimensions. The district court construed the term “centrifugal unit” as used in claim 16 to mean only the vessel, not the vessel and the tubing. The district court reasoned that because the vessel and tubing are always larger than the vessel alone, construing “centrifugal unit” to include the tubing in the context of dimensional limitations would yield an absurdity. The Federal Circuit reverse the district court’s claim construction and hold that “centrifugal unit” in claim 16 consistently means a vessel and a plurality of tubes, irrespective of its meaning in claim 1.

⁵³⁵ *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371 (Fed. Cir. 2004). Chef America urged the court to interpret the claim as if it read “heating the ... dough at a temperature in the range of,” *i.e.*, to apply the heating requirement to the place where the heating takes place (the oven) rather than the item being heated (the dough).

meaning of the following language in a patent claim: “heating the resulting batter-coated dough to a temperature in the range of about 400° F. to 850° F.” The problem with this limitation was that undisputedly, if the dough was heated to the specified temperature range, “it would be burned to a crisp.” Chef America, the owner of the patent, argued that “to” should be construed to mean “at” because otherwise the patented process could not perform the function the patentees intended. However, the Federal Circuit held that “these are ordinary, simple English words whose meaning is clear and unquestionable,” and the court must look to the ordinary meaning of the claim terms “even if the ordinary meaning produces a nonsensical result.”⁵³⁶

Another example is *Teknowledge v. Akamai*.⁵³⁷ In order to avoid summary judgment of invalidity for claim 29, the Plaintiff argued that the final phrase of the claim was an inadvertent typographical error and requested that the court change the phrase “objects fetched from said clients” to either “objects fetched for said clients,” or “objects fetched from said servers.” The court denied the request and held that the plain meaning of the phrase to one skilled in the art was that the clients were the source of the objects, although the plain meaning presented a nonsensical result.⁵³⁸ The preoccupation within the four corners of

⁵³⁶ *Id.*

⁵³⁷ *Teknowledge vs. Akamai*, 73 U.S.P.Q.2d 1021 (N.D. Cal. 2004). The U.S. District Court held that the correction of an alleged typographical error in the text of a patent claim would constitute an impermissible re-drafting of the patent. *Sage Products Inc vs. Devon Industries Inc.* 126 F 3d 1420 (Fed Cir 1997) The court suggested a doctrine of patent drafter estoppel, stating that a skilled patent drafter would have foreseen the limiting potential of the language actually used in the claim, and that the patent drafter was not prevented by any “subtlety of language or complexity of the technology” from using language that encompassed the equivalent at issue. *Freedman Seating Co v American Seating Co.* 420 F 3d 1350 (Fed Cir 2005), the court held that the patentee had clear opportunity to negotiate broader claims but failed to do so; therefore, the patentee had to bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.

⁵³⁸ *Ultimax Cement Manufacturing Corp. vs. CTS Cement Manufacturing Corp.*, 587 F.3d 1339, 1353 (Fed. Cir. 2009) The district court declined to correct the error of lacking a comma between “f” and “cl,” in the claimed compound C9S3S 3Ca(f cl)2 and found the asserted claim indefinite, holding that it was not

a text is motivated by the desire to minimize discretion and constrain courts to behave in conformity.⁵³⁹

The ordinary meaning approach based on the ordinary use-based theory emphasizes the customary use and application of a term which grows out of a technological community. It is believed that “the inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.”⁵⁴⁰ The quest for the patentee’s intent is considered inappropriate in identifying the meaning of a claim term, since “to consider the inventor’s intent would be to thwart the very objectivity the PHOSITA provides.”⁵⁴¹ To ascertain the ordinary use of a claim term at the time of filing, judges prefer to inquire linguistic conventions, key sentence features and textual cross-references, and compare the relevant parts of the text of the whole document. There is a relatively fixed hierarchy of interpretive rules in favor of intrinsic evidence.⁵⁴² For instance, the specification’s significance

apparent on the face of the patent, even though it might be clear to one of ordinary skill in the art. On appeal, the Federal Circuit adopted a more contextual reading, “if the correction is not subject to reasonable debate to one of ordinary skill in the art, namely, through claim language and the specification, and the prosecution history does not suggest a different interpretation, then a court can correct an obvious typographical error. In that regard, we note that the court has determined that the claimed formula C₉S₃S₃Ca(f cl)₂ “corresponds to no known mineral,” and that one of ordinary skill in the art would know that the formula should contain a comma.”

⁵³⁹ Louis E. Wolcher, *A Philosophical Investigation into Methods of Constitutional Interpretation in the United States and the United Kingdom*, 13 Va. J. Soc. Pol’y & L. 239 (2006). In the article, Professor Wolcher gave concise philosophical descriptions of methods of constitutional interpretation, he pointed out that to be an exercise of legal interpretation judges must follow, in good faith, some legally valid method of interpretation that they consider to be binding on them - either as “textualism,” “originalism,” “evolutionism,” “judicial pragmatism,” or something else. He also noted the critique of textualism and originalism that “any alleged public agreement about a word’s meaning is haphazardly determined by a multiplicity of forces and the observer’s selective reaction.” See also Adam M. Samaha, *Originalism’s Expiration Date*, 30 Cardozo Law Review 1295 (2008).

⁵⁴⁰ *Innova/Pure Water, Inc. v Safari Water Filtration Sys.*, 381 F.3d at 1116 (Fed. Cir. 2004).

⁵⁴¹ Osenga, *supra* note 81. The author believed that “a more appropriate mechanism for claim construction might instead be akin to textualism.”

⁵⁴² Nelson, *supra* note 486. (“What is clear is that judges whom we think of as textualists have a greater affinity for ‘rules’ than judges whom we think of as intentionalists.”) See also Paul Killebrew, *Where are All the Left-Wing Textualists?* New York University Law Review, 82 N.Y.U.L. Rev. 1895 (2007) (The textualist goal is to “provide judges with a rule-bound method of statutory interpretation that coincides with their vision of democratic lawmaking.”) Abbe R. Gluck, *The States as Laboratories of Statutory*

derives both from its statutory role as the repository of the “full, clear, concise and exact terms” the inventor chose to describe the invention and from its role during patent prosecution.⁵⁴³

Section 3 Intention-based theory in claim interpretation

Compared to the ordinary use-based theory of meaning, the intention-based theory opposes the idea that the meaning of technical terms shall correspond to ordinary use, instead, it stresses on the intentions of users. The intention-based theory argues that meaning should be interpreted in terms of the intentions of persons engaged in an act of communication.⁵⁴⁴ For example, Lady Welby defined “meaning” as “the intent which it is desired to convey – the intention of the user.”⁵⁴⁵ Based on the intention-based theory of meaning, patentee’s purpose or intent is the central issue in patent claim interpretation. The goal of seeking patentee’s intent remains “not only when the language of a text is found

Interpretation: Methodological Consensus and the New Modified Textualism, 119 Yale L.J. 1750 (2010) (“textualism is grounded in a different premise: the value of rule-based (and hence predictable) interpretation.”) For a general discussion of the distinction between rules and standards, see e.g. Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. Legal Stud. 257, 258 (1974) (noting that “[a] rule withdraws from the decision maker’s consideration one or more of the circumstances that would be relevant to decision” while “[t]he term ‘standard’ de-notes . . . a general criterion of social choice,” such as efficiency or reasonableness); Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 Duke L.J. 557, 559–60 (1992) (“[A] rule may entail an advance determination of what conduct is permissible, leaving only factual issues for the adjudicator. . . . A standard may entail leaving both specification of what conduct is permissible and factual issues for the adjudicator.”); Ofer Raban, *The Fallacy of Legal Certainty: Why Vague Legal Standards May Be Better for Capitalism and Liberalism*, 19 Public Interest Law 175 (2010). (“And in fact, clear and determinate rules would often produce less predictable environments than vague legal standards.”)

⁵⁴³ *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005).

⁵⁴⁴ Christian Plunze, *Why Do We Mean Something Rather Than Nothing?* in G. Grewendorf, G. Meggle (ed.), *Speech Acts, Mind, and Social Reality: Discussions with John R. Searle*, 105 (2002) (“The answer given by Paul Grice is that someone means something by his utterance if and only if he intends to communicate something to an addressee.”) For Paul Grice, what matters for a theory of language is what the agent intends to communicate. See, Stephen Neale, *Paul Grice and The Philosophy of Language*, *Linguistics and Philosophy* 15 (5):509 – 559 (1992).

⁵⁴⁵ Lady Victoria Welby, *What Is Meaning?: Studies in the Development of Significance*, xx (1903) (“There is, strictly speaking, no such thing as the Sense of a word, but only the sense in which it is used—the circumstances, state of mind, reference, “universe of discourse” belonging to it. The meaning of a word is the intent which it is desired to convey—the intention of the user.”)

to be ambiguous but in every case and at every stage of interpretation.”⁵⁴⁶

Under this theory, what the text means is determined by the utterer’s communicative intentions in a particular situation, notwithstanding what others might have intended in those circumstances.⁵⁴⁷ It is believed that the reliance on ordinary meaning will “frequently misperceive some speaker’s intention, or misapply some background purpose or goal.”⁵⁴⁸ As discussed in the last section, the ordinary use-based theory of meaning asks “(A) What a PHOSITA would understand a claim term α to mean by relying on its ordinary usage in the art at the time of filing.” The intention-based theory asks what the person skilled in the art would have understood the patentee to be using the language of the claim to mean.⁵⁴⁹ The meaning of the claim term can be formulated as:

(B) What a PHOSITA would have understood the patentee’s intended meaning for claim term α at the time of filing, either expressly or impliedly.

Under the intention-based theory, it is important that the speaker intended her or his communicative intention to be recognized.⁵⁵⁰ Therefore, the purposive approach based on the intention-based theory does not question the subjective states of mind,⁵⁵¹ but reconstruct the patentee’s hypothetical

⁵⁴⁶ Sullivan, *supra* note 76, at 194.

⁵⁴⁷ Gerald L. Bruns, *Intention, Authority, and Meaning*, 7 *Critical Inquiry* 297-310 (1980). (“to interpret correctly means to stand in place of the author.”)

⁵⁴⁸ Frederick Schauer, *Statutory Construction and the Coordinating Function of Plain Meaning*, 1990 *Sup. Ct. Rev.* 231(1990).

⁵⁴⁹ *WL Gore & Associates GmbH v. Geox SPA*[2009] EWCA Civ 794.

⁵⁵⁰ Russell Eliot Dale, *The Theory of Meaning* (1996) (“Thus, Gardiner sees it as an essential feature of an act of speech that the speaker intends her or his communicative intention to be recognized.”) <http://www.russelldale.com/dissertation/1996.RussellDale.TheTheoryOfMeaning.pdf> (last visited 31 July, 2012)

⁵⁵¹ A case indicating the exclusion of external evidence is *Ranbaxy Laboratories Limited and others v.*

objective intent to describe and demarcate the scope of protection.⁵⁵² It ascertains the patentee's objective intent by establishing "some rational basis" within the knowledge and experience of a skilled person in the art.⁵⁵³ While the ordinary meaning approach focuses on the conventional usage of the term in the scientific and technological community, the purposive approach is most concerned with the particular purposes or intentions of patentee (from the perspective of the PHOSITA) existing at the time of filing.

The two approaches are very likely to reach the same interpretive result, because both look for the "codes" or "maps" of the claim text in order to ascertain what claim term α means.⁵⁵⁴ However, the purposive construction does not treat the claim text as "a mere place holder for concocting plausible

Warner-Lambert Company [2005] IESC 81 decided by the Ireland's Supreme Court. The key issue in the dispute concerns the proper interpretation of the patent and the admissibility of evidence: whether communications made by Warner-Lambert Company, including with the US Patent and Trade Mark Office, the European Patent Office, and the Danish Patent Office, were admissible in these proceedings for the purposes of patent claim construction. The Supreme Court held that the meaning of a claim text "may not be a meaning which was actually intended by the patentee or the inventor...the relevant test is the understanding of the persons to whom it was addressed rather than the understanding of the patentee or inventor." With this strict "objective purpose" test, the appeal was dismissed. *See also* John Whelan & Ciara Cullen, *Constructing Patent Claims*, *Managing Intellectual Property*, Issue 158, April 01 (2006).

⁵⁵² *Convatec Ltd. & Ors v Smith & Nephew Healthcare Ltd & Ors* [2011] EWHC 2039 (Pat). ("it is always important to bear in mind that the skilled person reads the specification in light of the common general knowledge and appreciating that its purpose is to describe and demarcate an invention, that is to say a practical idea for a new product or process.")

⁵⁵³ *Kirin-Amgen Inc. vs. Hoechst Marion Roussel* [2004] UKHL 46 ("I do not think that it is sensible to have presumptions about what people must be taken to have meant but a conclusion that they have departed from conventional usage obviously needs some rational basis.") *Occlutech GmbH vs. AGA Medical Corp* [2010] EWCA (Civ) 702 ("If there is a conventional meaning of a word or expression, either in the eyes of the skilled team, or in everyday language if the words have no special meaning to the team, then a conclusion that it has some unconventional meaning requires a rational basis.") The objectification of author's intent is popular in contract interpretation. *See e.g. Mannai Investments Co Ltd v Eagle Star Life Assurance Co Ltd* [1997] A.C. 749 at 778 ("The aim of the inquiry is not to probe the real intentions of the parties but to ascertain the contextual meaning of the relevant contractual language. The inquiry is objective: the question is what reasonable persons, circumstanced as the actual parties were, would have in mind.") *See also Investors Compensation Scheme v. West Bromwich Building Society* [1998] 1 W.L.R.896 ("Interpretation is the ascertainment of the meaning which the document would convey to a reasonable person having all the background knowledge which would reasonably have been available to the parties in the situation in which they were at the time of the contract.")

⁵⁵⁴ Barak, *supra* note 474, at 90. Judge Aharon Barak has classified the objective purpose into four levels: "At the lowest level, it is what the specific author would have wanted to carry out had he or she thought about it. At the intermediate level, it is what the reasonable author would have wanted to carry out. At the high level, it depends on the type of legal arrangement in question and its characteristics. At the supreme level, it actualizes the fundamental values of the legal system. I call these types of objective purpose the "intention" or will of the system."

inferences about purpose,”⁵⁵⁵ but seeks to identify what the patentee is implying in the broader context of the invention.⁵⁵⁶ It has been declared that “the triumph of purposive construction over formalism is that you have regard to materials outside the four corners of the document in order to divine meaning.”⁵⁵⁷ Interpreters will have in mind the common general knowledge, the generalized patent practice and the potential of the invention in order to determine what the patentee intended to communicate when he used α in that circumstance.⁵⁵⁸ Since purposive construction is not limited to the commonly accepted meaning of a claim text,⁵⁵⁹ it is expected to rescue the claim meaning from absurdity and errors.⁵⁶⁰

The differences between the understandings of meaning can be explained

⁵⁵⁵ John F. Manning, *What Divides Textualists From Purposivists?*, 106 Colum. L. Rev. 70, 73., 79-80 (2006).

⁵⁵⁶ *Hammar Maskin AB & Others v Steelbro New Zealand Limited* [2010] NZCA 83. (“The claims of a patent specification must “always be interpreted in their overall context and by reference to the object and description in the body of the specification”); *Lucas v. Peterson Portable Sawing Systems Ltd* [2006] 3 NZLR 721 (SC). *Catnic* was applied in New Zealand through to the *Peterson v. Lucas litigation*.

⁵⁵⁷ Michael D. Pendleton, *A Defence of Purposive Construction*, 22 E.I.P.R. 342 (2000).

⁵⁵⁸ *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067; 2000 SCC 67. (“While ‘purposive construction’ is a label introduced into claims construction by *Catnic*, supra, the approach itself is quite consistent in my view, with what was said by Dickson J. the previous year in *Consolboard*, supra, on the topic of claims construction, at pp. 520-21: We must look to the whole of the disclosure and the claims to ascertain the nature of the invention and methods of its performance...”); see also, *Improver Corporation v Remington Consumer Product Limited* [1990] F.S.R. 181. The earlier case of *Catnic Components Ltd. v Hill & Smith Ltd.*, Lord Diplock had established the principle that patents were to be read in a “purposive” manner. Hoffmann J formulated Lord Diplock’s approach in *Catnic* into three questions which the court should ask itself. The first question asks whether the variant have a material effect upon the way the invention works.

⁵⁵⁹ *Rockwater Ltd v. Coflexip SA* [2004] R.P.C. 46. (“Purposive construction could lead to the conclusion that a technically trivial or minor difference between an element of a claim and the corresponding element of an alleged infringement nonetheless fell within the meaning of the element when read purposively.”) *Whirlpool Corp. v. Camco Inc.*, [2000] 2 S.C.R. 1067; 2000 SCC 67 (“purposive construction is usually criticized by accused infringers for tending to expand the written claims. In fact, purposive construction can cut either way. Here it enabled the appellants to escape infringement...”)

⁵⁶⁰ *Hammar Maskin AB & Others vs. Steelbro New Zealand Ltd* [2010] NZCA 8. The body of a patent specification is always relevant to the interpretation of the claims, not just if the claims are ambiguous and capable of having more than one meaning. In this case, the defendant argued that, as the meaning of the claim “a bearing” was clear on its face (ie there was no ambiguity) no reference could be made to the body of the specification. While the Court of Appeal agreed that the phrase “a bearing” in isolation from its context might more naturally denote a separate physical component, interpreted in the context of the specification as a whole, that phrase could only refer to “bearing” in a functional sense. The decision followed the judgment in *Peterson Portable Sawing Systems Ltd vs. Lucas* [2006] 3 NZLR 721 (SC) (“each part of the specification is to be read objectively in its overall context, and in light of the function of that part, and the claims are to be interpreted by reference to the object and description in the body of the description.”)

by the following example. A patentee claimed “A polypeptide product of the expression in a eucaryotic *host cell* of a DNA sequence according to any of claims 1.”⁵⁶¹ The primary dispute between the parties was whether the term “host cell” should be interpreted narrowly as a cell which was host to “exogenous gene” only, or interpreted broadly as a cell which was also host to “endogenous gene”.⁵⁶² The two ways of understanding meaning are:⁵⁶³

- (1) What a PHOSITA would understand a claim term *host cell* to mean by identifying its ordinary usage in the art at the time of filing.
- (2) What a PHOSITA in patentee’s shoes would have intended claim term *host cell* to mean at the time of filing, either expressed or implicated.

Adopting the ordinary use based-theory of meaning, a PHOSITA would apply the customary and normal usage of the word in the particular field of art.⁵⁶⁴ The PHOSITA would find that “the plain meaning of the claims controls

⁵⁶¹ *Kirin Amgen Inc v. Hoechst Marion Roussel* [2004] UKHL 46, [2005] RPC 9. A product-by-process claim is a claim in which the product is described through the process with which it is made. It describes how a product is made, not how it is used. *Cochrane et al. v. Badische Anilin and Soda Fabrik*, 111 U.S. 293 (1884) (“Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process.”) Pursuant to the Patents Act of 1949, a product made by a different process was distinguishable from an identical product that was already part of the state of the art.

⁵⁶² *Id.* (“The chief question of construction is whether the person skilled in the art would understand “host cell” to mean a cell which is host to the DNA sequence which coded for EPO. The alternative, put forward by Amgen, is that it can include a sequence which is endogenous to the cell, like the human EPO gene which expresses GA-EPO, as long as the cell is host to some exogenous DNA.”)

⁵⁶³ *Amgen, Inc. v Hoechst Marion Roussel, Inc. and Transkaryotic Therapies, Inc.*, 126 F. Supp. 2d. 69 (D. Mass. 2001), affirmed in part and vacated in part, 314 F.3d 1313, 1385 (Fed. Cir. 2003) In June 1999, Amgen brought an action in the District of Massachusetts asserting that Hoechst and TKT infringed claims of five US patents assigned to Amgen. (The five patents-in-suit include the ‘933 patent, the ‘698 patent, the ‘080 patent, the ‘349 patent, and the ‘422 patent.) The patent claims at issue in the US are not directly comparable to those in the European patent. But in the U.S. cases, TKT urged that the district court erred by failing to limit the asserted claims to exogenous DNA, despite the fact that none of the claims in suit contain an “exogenous DNA” limitation.

⁵⁶⁴ *Id.* (Rader, Chief Judge, dissenting in part) (“Claim language is to be given its ordinary and customary meaning, as understood by a person of ordinary skill in the art at the time of the invention. *Id.* at 1312-13.

here, and they plainly are not so limited.”⁵⁶⁵ Therefore, the interpreter would not import into the claims the limitation that the gene be exogenous. In comparison, adopting the intention-based theory of meaning, a PHOSITA would be more willing to investigate the intent that the patentee desired to convey, by taking into consideration of the descriptions and the background knowledge at the relevant time.⁵⁶⁶ Since there was no knowledge of the technique of “switching on” an endogenous encoding sequence, from a PHOSITA’s perspective, the patentee would not have intended to use the term “host cell” to include the endogenous gene.⁵⁶⁷ The second way of understanding meaning leads to a different outcome of interpretation. The divergent interpretations of the claims related to the same invention highlight the difficulty in construing patent claims of complex emerging technologies and may create obstacles for cross-broader enforcement of patent rights.⁵⁶⁸

Section 4 Content-based theory in claim interpretation

In this case, neither party contends that “body” has a special, technical meaning in the field of art, and thus claim construction requires “little more than the application of the widely accepted meaning of commonly understood words.”)

⁵⁶⁵*Amgen Inc v. Hoechst Marion Roussel Inc.*, 314 F.3d 1313, 1385 (Fed. Cir. 2003). The Court also remanded the case for the District Court to reassess infringement under the doctrine of equivalents.

⁵⁶⁶ *Kirin Amgen Inc v. Hoechst Marion Roussel* [2004] UKHL 46, [2005] RPC 9. (“The examples contained in the [patent in suit] are all concerned with EPO-encoding DNA which has been isolated outside the cell and inserted into the cell to which it is foreign. Indeed, at the relevant time, the routine method of production of a recombinant protein was by cloning the gene encoding the protein and the introduction of that clone into a self-replicating organism by transfection or transformation. There was no knowledge of the technique of ‘switching on’ an endogenous encoding sequence by transfecting the cell with exogenous DNA sequences as including an artificial promoter.”)

⁵⁶⁷ *Id.* The House of Lords finally held that “the meaning of the term ‘host cell’ is wholly dependent on context,” and explained that this was “not reading words into the claim any more than when one says that in a particular context ‘the City’ means ‘the City of London.’” See also, *Kirin-Amgen v. Roche and Transkaryotic Therapies* [2002] RPC 1. (“I am of the view that a cell is not a ‘host cell’ unless it is host to exogenous DNA encoding for EPO or its analogue. Such a conclusion is based in part on the teaching of the [patent in suit]. The terms ‘host’ and ‘host cell’ are used consistently to describe cells which have been transfected with exogenous or foreign DNA (ie DNA from outside that particular cell) which encodes EPO, with a view to securing expression of EPO in those host cells.”)

⁵⁶⁸ *Kirin-Amgen, Inc. et al v. Hoechst Marion Roussel Ltd. et al.* [2004] UKHL 46. Even in the same UK jurisdiction, the trial judge held that claim 19 was invalid (for insufficiency) but that claim 26 was valid and infringed. The Court of Appeal (Aldous, Hale and Latham LJ) held that both claims were valid but that neither was infringed.

The content-based theory is a theory of meaning advocated by the American philosopher Robert Brandom.⁵⁶⁹ Robert Brandom, following Wilfrid Sellars, develops a pragmatic view of meaning and attempts to specify and explicate the content expressed by an utterance or text.⁵⁷⁰ According to this theory, there are two styles of content specification: de dicto and de re.⁵⁷¹ The former type determines how the speaker thinks the content is, while the latter type determines what, from the interpreter's viewpoint, really follows from the text.⁵⁷²

De re specifications of conceptual content attempt to say what really follows from the claims made, what is really evidence for or against them, and so what the author has really committed herself to, regardless of her opinion about the matter. The de re style... requires laying facts alongside the claims of the text, in extracting consequences, assessing evidence, and so delineating their conceptual content.⁵⁷³

⁵⁶⁹ Robert Brandom, *Making It Explicit: Reasoning, Representing, and Discursive Commitment* 609 (1998). See also, Joshua Wretzel, *Speaking with the Dead: The Philosophical Implications of Brandom's Interpretive Oversights* (2011). The author made a distinction between "what is represented, the objective, de re, relational content of what is ascribed, on the one hand, and how it is represented its subjective de dicto, notional content, on the other." See also, Robert B. Brandom, *Between Saying and Doing: Towards an Analytic Pragmatism: Towards an Analytic Pragmatism* xii (2008) ("By calling it "pragmatism" I mean a view inspired by insights of the later Wittgenstein, which situates concern with the meanings of expressions in the broader context of concern with properties governing their use."); Andrzej Wierciński, *Gadamer's Hermeneutics and the Art of Conversation* 159 (2011) ("According to Brandom's exposition, a purely de dicto interpretation would aim to tell us something about what the author intended to claim... in order to assess the truth of what the author intended to say, the interpreter needs to specify the content of the claim correctly. For this purpose a different type of interpretation may be needed.")

⁵⁷⁰ Robert Brandom, *Tales of the Mighty Dead: Historical Essays in the Metaphysics of Intentionality* 99 (2002).

⁵⁷¹ Jaroslav Peregrin, *Tales Of The Mighty Dead* (Book Review), 59 *Erkenntnis* 421-424 (2003).

⁵⁷² Espen Hammer, *German Idealism: Contemporary Perspectives* 174 (2007). ("We understand what a concept in a particular text means by seeing how it is used by an author, and how it would be understood (used) in the community at the time. Or, in a different approach, we can try to understand how an original concept would be used in a later context, such as ours. In this latter case, one is concerned not with what the author took to follow from her premises, but with what really does follow. One can focus on what the conceptual content is about.")

⁵⁷³ Brandom, *supra* note 570, at 102.

De re means “of the thing.”⁵⁷⁴ According to Brandom, the interpreter can specify the content without knowing what the author intended to claim.⁵⁷⁵ The key difference between the intent-based theory and the content-based theory is that the latter holds that “intentions, whether stated by the author or inferred by an interpreter, provide just one sort of context against the background of which inferential significance can be assessed.”⁵⁷⁶ The content-based theory allows words to carry somewhat different meanings than just convention or intention. Adopting the content-based theory, the constructive approach does not rely on the conventional usage of a term among the scientific and technology community, neither does it rely on the intent or purpose of the patentee. This approach holds that the interpreter can specify what the claim is *really* about.⁵⁷⁷ The constructive approach is an empirical inquiry⁵⁷⁸ into pragmatic facts in light of present context: the technical content, *i.e.* the technical solution of the patent,⁵⁷⁹ which is presumed to lie beyond the conventional linguistic

⁵⁷⁴ A. Pablo Iannone, *Dictionary of World Philosophy* 136 (2013). (“De dicto... is contrasted with de re, which means ‘of the thing.’”)

⁵⁷⁵ Wierciński, *supra* note 351.

⁵⁷⁶ Jorge J. E. Gracia, *A Theory of Textuality: The Logic and Epistemology* 161 (1995) (“Meaning is not determined by their author alone, but by other factors as well, such as society and language...an interpretation is no longer concerned merely with understanding the meaning of the historical text, but with much more.”) See also, Richard A. Posner, *Bork and Beethoven*, 42 *Stan. L. Rev.* 1365 (1990). (“the pragmatist judge believes that constitutional interpretation involves the empathic projection of the judge’s mind and talent into the creative souls of the framers rather than slavish obeisance to the framers’ every metronome marking.”) See also, Richard A. Posner, *Law, Pragmatism, and Democracy* 71 (2003). Different interpreters, each with his own idea of the community’s needs and interests, will weigh consequences differently.

⁵⁷⁷ David L. Sherman, *The Blackwell Guide to Continental Philosophy* By Robert C. Solomon, 228 (2003) (“the interpreter’s projection of completed textual meaning constitutes the meaningful being of the text.”) See also, *Bei Jing Tai Yang Neng Yan Jiu Suo su Dong Guan Shi Hao Te Dian Qi Gong Si [Beijing Institute of Solar Energy v. Dong Guan Hao Te Electric Company]*, No.24, Final Decision, Intellectual Property Tribunal, Beijing High People’s Court (1998). The interpreter should not be confined by the literal wording of the independent claim but discover the “real meaning” of the terms based on descriptions and drawings, as well as the goal of patented invention.

⁵⁷⁸ Brandom, *supra* note 569, at 83 (1997) (“Semantics must answer to pragmatics... This means settling how linguistic expressions of those contents are properly or correctly used, under what circumstances it is appropriate to acquire states and attitudes with those contents, and how one then ought or is obliged to go on to behave.”)

⁵⁷⁹ Xu Yao, *Patent Rights [Zhuan Li Cai Chan Quan—Cai Chan Quan An Li Jing Xi Cong Shu]* 104 (2005). Understanding of the scope of protection is not simply based on the words or prototypes, but is derived technically from the intact technical solution in the patent claims.

meaning of words and phrases. The focus on the specification of the technical content makes meaning of a claim term more specific and contextual.⁵⁸⁰ “What matters in determining the scope of protection...is not the grammatical or general scientific understanding of the terms used in the patent, but the understanding of an average person skilled in the art when reading the very specific patent in dispute.”⁵⁸¹

There are two particular hermeneutic characters in applying content-based theory to patent claim interpretation. Firstly, content-based theory always focuses on the interpreter’s (using a PHOSITA as a reference) construction of the content or the subject matter, and emphasizes pragmatic significance of meaning.⁵⁸² What distinguishes content-based theory from intention-based theory is that the former accepts that the interpreter’s own context is a legitimate authority in determining the meaning of the text.⁵⁸³ To obtain a factual description of content, an interpreter will evaluate the disadvantages of

http://www.legaldaily.com.cn/index_article/content/2009-12/29/content_2012814.htm (last visited, Oct 15, 2011)

⁵⁸⁰ Kim Lane Scheppele, *Legal Theory and Social Theory*, 20 Annual Review of Sociology 383-406 (1994). (“They start from the present “here and now,” rather than from the imagined original places and times”) See also, Robert L. Hayman & Jr. & Nancy Levit, *Jurisprudence: Contemporary Readings, Problems, and Narratives* 457(1994) (“Being cognizant of the finite historical situation, pragmatists treat understanding as contextual and situated.”)

⁵⁸¹ Reinhardt Schuster & Martin Köhler, *Germany: Latest Trends in Patent Infringement Cases*, Managing Intellectual Property (2000)

<http://www.managingip.com/Article/1321986/Germany-Latest-trends-in-patent-infringement-cases.html> (last visited November 26, 2012)

⁵⁸² Charles S. Peirce, *How to Make Our Ideas Clear*, Popular Science, Monthly 12, 286-302 (1878) Charles Peirce wrote: “consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object.” William James, *Pragmatism* 20 (2008) (“To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve — what sensations we are to expect from it and what reactions we must prepare.”) See also, Ronald Dworkin, *Fidelity in Constitutional Theory: Fidelity as Integrity: The Arduous Virtue of Fidelity: Originalism, Scalia, Tribe, and Nerve*, 65 Fordham L. Rev. 1249 (1997).

⁵⁸³ Wierciński, *supra* note 569, at 164. (“According to Brandom, the intentions of the author are not the last authority in determining the meaning of the text simply because there are other, equally legitimate authorities for that determination (such as the interpreter’s present context, etc.)”) James A. Holstein & Jaber F. Gubrium (ed.), *Handbook of Constructionist Research* 92 (2008) The terms by which the interpreters understand are socially, historically and culturally situated.

the prior art and the advantages of the invention from the eyes of a PHOSITA. Secondly, according to content-based theory, meaning is fluid and the technological conditions and customary usage are malleable. What distinguishes content-based theory from ordinary use-based theory is that the former accepts that social and linguistic conventions change over time.⁵⁸⁴ When determining the content of the claims, the interpreter also takes into account of the equivalents at the time of infringement, *i.e.* the features that are identical or equivalent to the patented technical solution will be interpreted as coming within the scope of the claims.

In sum, the content-based theory focuses on the interpreter's construction of the subject matter within the changing context of interpretive communities,⁵⁸⁵ in contrast with static and mechanical interpretations.⁵⁸⁶ The meaning of the claim term can be formulated as:

(C) What a PHOSITA would understand the subject matter referred to by the term α to be in light of changed context.

For example, if the claim term *host cell* is interpreted under the constructive approach, the interpreter would first analyze the advantages of the invention over the prior art, *e.g.*, the essence of the invention was the introduction of an exogenous DNA sequence coding for EPO into a host cell in

⁵⁸⁴ Irving King, *Pragmatism as a Philosophic Method*, 12 *Philosophical Review* 510 (1903). See also, Stanley E. Fish, *Is There A Text in This Class? The Authority of Interpretive Communities* 43(1980). From the point of pragmatism, a fixed and permanent meaning in a text is considered to be an illusion.

⁵⁸⁵ Stefan Neubert & Kersten Reich, *Toward a Constructivist Theory of Discourse: Rethinking the Boundaries of Discourse Philosophy* (2002) <http://www.uni-koeln.de/hf/konstrukt/texte/download/constructivist%20discourse.pdf> (last visited Aug 8, 2012)

⁵⁸⁶ Laurence Horn & Gergory Ward (ed.) *The Handbook of Pragmatics*, 451 (2006).

which it would be expressed. In order to achieve this goal and overcome the disadvantages of the prior art, “the introduction of an exogenous DNA sequence” was an indispensable part of the solution. The PHOSITA would further decide whether the expression of EPO in a human cell “by an endogenous gene naturally present” is an equivalent content to the technical solution at the time of infringement. The PHOSITA will probably find out that they are not equivalent in form of function, way and result. Based on the above analysis, the interpreter has good reason for adopting a narrow meaning and limiting the patentee’s monopoly.

This Chapter discusses the uniqueness of patent claim interpretation and introduces the theories of meaning behind three approaches including the ordinary use-based theory of meaning, the intention-based theory of meaning and the content-based theory of meaning. These theories share the common characteristic of paying attention to the pragmatics of language.⁵⁸⁷ Different underlying interpretive theories demonstrate different ways of explaining the meaning of a claim term.⁵⁸⁸ Depending on what a judge considers to be legitimate objectives and means of claim interpretation, he or she may reach a different outcome in a patent case.⁵⁸⁹ The next Chapter will discuss the

⁵⁸⁷ Pau Livingston, *Philosophy and the Vision of Language*, 41 (2008). (“knowing the sense of a term as knowing how it is used.”)

⁵⁸⁸ G E Devenish, *Nature of Legal Reasoning Involved in the Interpretation of Statutes*, 2 Stellenbosch L. Rev. 224 (1991) (“It is for this reason that the interpretation of statutes requires a knowledge of the underlying methods of legal reasoning and its relationship with formal logic...a rational approach to the interpretation of statutes involve constructing and weighing arguments against each one another”); See also Jacob Scott, *Codified Canons and the Common Law of Interpretation*, 98 GEO. L.J. 341 (2010) (“As a result, various methods of legal reasoning becomes widespread because they produce substantive results in which the public has confidence and on which legal actors rely.”)

⁵⁸⁹ It is agreed that the canons do not mechanically determine interpretation reached by judges, but the canons have some value as rules of thumb, pointing to possible meanings that a language might have in context. Thomas Chen, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 Va. L. Rev. 1165 (2008) (“a single claim can support several reasonable meanings because different judges may select different interpretive canons or may simply apply the same canons in different ways to generate differing

deficiencies of these theories in guiding interpreters in claim construction.

yet equally reasonable interpretations.”) Osenga, *supra* note 81 (“the canons of claim construction arguably effectuate some of the goals for claim construction and mitigate some of the Federal Circuit’s failures as discussed in this Article, but because the canons are not uniformly employed and are hampered by limitations on their usage, they do not fulfill the goals with sufficient certainty.”)

CHAPTER 5 DEFICIENCIES OF THE CONVENTIONAL THEORIES

This Chapter presents limitations of the existing interpretive theories in guiding claim interpretation. Although these theories specify some goals to be pursued, there still remain a number of unresolved issues. (1) The ordinary use-based theory focuses on the ordinary use of claim term at the time of invention, which may be vague and stand in need of refinement. As a consequence, the ordinary use of a term sometimes fails to capture the distinctiveness of the invention or resolve the ambiguities about the scope of protection. (2) The intention-based theory presumes that meaning is the patentee's objective intent at the time of filing, which may be absent, ambiguous, or misleading. As objective intent is an artificial construct, it may enlarge the field of imaginative reconstructions and result in indeterminacy of meaning. (3) The content-based theory specifies the content of the patent claim in light of changed context, but the construction of content over time invites interpreters to exercise a broad discretion, which raises the question of how public notice function of patent claims could be served. The lack of evaluation criteria for assessing fairness also causes ongoing controversies. This Chapter does not declare that the above interpretive theories lack relevance or value; in practice, different theories pursue different goals and each theory contributes to understanding the claim meaning. The critical task of patent claim interpretation is then how to preserve original meaning across changed contexts. This Chapter points out that a theory of meaning that can mediate between the past and present technological contexts is a better fit for patent claim interpretation.

Section 1 Vagueness of ordinary meaning in claim construction

A. Ordinary meaning in need of refinement

It has been pointed out that one of the important defects of ordinary use-based theory is that ordinary meaning can be vague and ambiguous.⁵⁹⁰ Claim language is required to be very specific and clear, *i.e.*, “particularly pointing out and distinctly claiming” the subject matter which the applicant regards as his invention in patent law. The meaning of words in ordinary use may be unclear or may have a number of different uses. However, the real dispute between the litigating parties over the claim terms often concerns the distinctiveness of the invention, and when a term in its ordinary use is too general or abstract, “there is some freedom of choice left as to how to turn it into an exact technical term, in other words, how to explicate it.”⁵⁹¹ As some judges and scholars have recognized, “the proper construction is frequently not a term’s ordinary meaning.”⁵⁹²

The ordinary meaning approach based on this theory places a particular emphasis on the ordinary use of the claim term so as to better serve a public

⁵⁹⁰ Kanti Lal Das, *Philosophical Relevance of Language* 83(2006). (“One of the important defects of ordinary language is that it is more or less ambiguous.”) Andrei Marmor, *Textualism in Context* (2012) USC Law Legal Studies Paper No. 12-13. <http://ssrn.com/abstract=2112384> (last visited Oct 10, 2012) (“This is what borderline cases of vague terms essentially are: cases about which there is no saying whether the instance falls within the extension of the term or not. Linguistically it can go either way. Therefore, when a court faces such a borderline case, paying close attention to what the law says is not going to be helpful at all.”)

⁵⁹¹ Rudolf Carnap, *Meaning and Necessity*, 28 (1988). Andrei Marmor, *The Immorality of Textualism* (2005) 38 Loy. L.A. L. Rev. 2063, 65 (“An attempt to figure out what “tall” or “bald” really means in ordinary English can only reveal that these terms are vague and thus would necessarily have borderline cases.”)

⁵⁹² Menell, *supra* note 5. (“The phrase “ordinary meaning” is deeply engrained in the case law, but it is a slippery concept... Thus, the “ordinary meaning” is not the first step in the analysis. Nor is it the endpoint, as Phillips and its progeny have confirmed.”) Barney & Collins-Chase, *supra* note 504 (Our data indicate that when patentees argued “no construction necessary” or “ordinary meaning,” that argument prevailed 38.5% of the time. In contrast, when accused infringers argued “no construction necessary” or “ordinary meaning,” they prevailed only 13.5% of the time.)

notice function. However, an attempt to figure out what that term really means reveals that the ordinary uses are sometimes too vague to demarcate the boundaries.⁵⁹³ “Lacking any theoretical guidance, American courts have reached results without providing the patentee or the public an adequate explanation of their reasoning. Although the Court assured that claim construction remains the alpha and omega for determining patent scope, it failed to provide the terminology to discuss (or a standard to assess) when claim limitations would be stretched too far.”⁵⁹⁴

The ordinary use of a term may not be that helpful in resolving the interpretative issues that courts need to decide. As a result, interpreters often have to fine-tune the “ordinary meaning” initially found in order to reach the final proper construction, which is more specific and descriptive. The following claims in different industries (mechanics, chemistry and software) were all construed by judges under the ordinary meaning approach.⁵⁹⁵ Interestingly, the parties in these cases did not dispute the “ordinary meaning” initially understood by a PHOSITA,⁵⁹⁶ they nonetheless disagreed over the detailed characterization of the claimed invention, so as to differentiate it from the

⁵⁹³ Andrei Marmor, *supra* note 591.

⁵⁹⁴ Joshua D. Sarnoff, *Abolishing the Doctrine of Equivalents and Claiming the Future After Festo*, 19 Berkeley Tech. L.J. 1157, 1212-15 (2004).

⁵⁹⁵ The claims (1) (2) and (3) are cited from the following three cases decided in the U.S. Federal Circuit. *Cordis Corporation v. Boston Scientific Corporation*, 2010-1311, -1316 (Fed. Cir. September 28, 2011); *AIA Engineering Ltd. v. Magotteaux International S/A*, No. 11-1058 (Fed. Cir. Aug. 31, 2011); *Wang Lab. Inc. v. America Online Inc.*, 197 F.3d 1377 (Fed. Cir. 1999).

⁵⁹⁶ *Cordis Corporation v. Boston Scientific Corporation*, 2010-1311, -1316 (Fed. Cir. September 28, 2011) (“Cordis does not challenge the district court’s construction of the term “undulating” as requiring “at least a crest and a trough.” We therefore do not review the construction itself, and instead focus on what that construction means.”) *AIA Engineering Ltd. v. Magotteaux International S/A*, No. 11-1058 (Fed. Cir. Aug. 31, 2011) (“While the parties agree on the ordinary meaning of “solid solution,” they dispute the physical form of the alumina-zirconia material required by the “solid solution” of claim 1 of the ’176 patent.”) *Wang Lab. Inc. v. America Online Inc.*, 197 F.3d 1377 (Fed. Cir. 1999). (“The parties agreed before the district court that the term “frame” can in general usage be applied to bit-mapped display systems as well as to character-based systems; experts for both sides so testified. The disagreement was as to whether the term “frame” in the ’669 claims embraced this general usage, or whether the term would be understood by persons of skill in this field as limited to the character-based systems described in the ’669 patent.”)

defendant's technology.

- (1) Each cell having one or more *undulating* sections.
- (2) A homogeneous *solid solution* of 20 to 80 % of Al₂O₃ and 80 to 20 % of ZrO₂.
- (3) Apparatus for locally processing *frames* of information.

The ordinary and conventional use of the word is ascertained through a PHOSITA. The first claim relates to coronary stents having undulating longitudinal sections. A PHOSITA would commonly understand “undulating” to mean “rising and falling in waves, thus having at least a crest and a trough.”⁵⁹⁷ In the second claim, there is also nothing unconventional or non-ordinary about the use of the word “solid solution”—a PHOSITA would have commonly understood the ordinary meaning of “solid solution” to require a single, uniform crystalline structure in the field of chemistry.⁵⁹⁸ In the third claim, a PHOSITA would commonly understand that the term “frame” could in general usage be applied to bit-mapped display systems as well as to character-based systems.⁵⁹⁹

According to the ordinary meaning approach, if the ordinary meaning of a

⁵⁹⁷ *Cordis Corporation v. Boston Scientific Corporation*, 2010-1311, -1316 (Fed. Cir. September 28, 2011) (The patentee did not challenge the district court's construction of the term “undulating” as requiring “at least a crest and a trough.”)

⁵⁹⁸ *AIA Engineering Ltd. v. Magotteaux International S/A*, No. 11-1058 (Fed. Cir. Aug. 31, 2011) (“Initially, we note that Magotteaux and AIA agree that the ordinary meaning of “solid solution” requires a single, uniform structure containing both a “solvent” component and a “solute” component, in which the solvent component dictates the overall structure of the solid.”) The Federal Circuit held that the district court legally erred in its construction of “homogeneous solid solution,” and that, correctly construed, this term was synonymous with “homogeneous ceramic composite” in the patents at issue.

⁵⁹⁹ *Wang Lab. Inc. v. America Online Inc.*, 197 F.3d 1377 (Fed. Cir. 1999) (“The parties agreed before the district court that the term “frame” can in general usage be applied to bit-mapped display systems as well as to character-based systems; experts for both sides so testified.”)

claim is readily discernible, further construction is unnecessary:⁶⁰⁰

If the claim language is clear on its face, then our consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified. . . . If however the claim language is not clear on its face, then our consideration of the rest of the intrinsic evidence is directed to resolving, if possible, the lack of clarity.⁶⁰¹

Since the words “undulating”, “solid solution” and “frame” are clearly used with their ordinary meanings from the eyes of the PHOSITA, the interpreter should look no further than that.⁶⁰² However, such meanings are too general for differentiating the present inventions from the defendant’s technologies. Throughout the interpretive process, the words should be construed in a more specific and precise way. For example, the real dispute in claim (1) is whether the construction of “undulating” meant only a wave-like crest or more than just a single curve.⁶⁰³ The real dispute in claim (2) is the physical form of the material required by the “solid solution”. The patentee asserted that “solid solution” involved a solute in a solvent with a single, uniform structure. The defendant, on the other hand, urged that the patentee

⁶⁰⁰ Julie S. Turner, *Patent Claim Construction: Principles and Doctrines*, 907 PLI/Pat 51(2007).

⁶⁰¹ *Interactive Gift Express, Inc. v. Compuserve, Inc* 256 F.3d 1323, 59 USPQ2d 1401 (Fed. Cir. 2001); *see also, Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1145 (Fed. Cir. 2003) (“Generally, terms in a patent claim are given their plain, ordinary, and accustomed meaning to one of ordinary skill in the relevant art. After identifying the plain meaning of a disputed claim term, the court examines the written description and the drawings to determine whether use of that term is consistent with the ordinary meaning of the term.”)

⁶⁰² Russell Holder, *Say What You Mean and Mean What You Say: The Resurrection of Plain Meaning in California Courts*, 30 U.C. Davis L. Rev. 569 (1997) (textualist philosophy requires practitioners have a heightened awareness of the statute, related statutory provisions, rules of construction, and legislative process).

⁶⁰³ *Cordis Corporation v. Boston Scientific Corporation*, 2010-1311, -1316 (Fed. Cir. September 28, 2011). Citing claim 25, Patentee argued that “undulating structures include those that have [only] a wave-like crest, and are not limited to structures that have both a crest and an associated trough.” The defendant, on the other hand, explicitly argued that “undulating” cannot simply mean “curved,” and instead “requires that a structure have both a ‘crest’ and a ‘trough,’” The Court embraced Defendant’s proposed construction and construed “undulating” to mean “rising and falling in waves, thus having at least a crest and a trough

used the term as a synonym for “homogeneous ceramic composite.”⁶⁰⁴ In claim (3), the disagreement was whether the term “frame” in the claims embraced the general meaning, or whether the term would be limited to the character-based systems.⁶⁰⁵

As we can see from the table below, because the ordinary meaning fails to reveal the distinctiveness of the invention, the interpreters have to further explain “what that construction means”,⁶⁰⁶ and this may bring the potential for delay, uncertainty and expense of litigation. To reach the final construction, the actual reasons are varied, including but are not limited to: the final meaning is inherently implied by the general ordinary meaning;⁶⁰⁷ the final meaning is capable of avoiding contradiction with other parts of the specification;⁶⁰⁸ the final meaning can preserve the validity of the claim.⁶⁰⁹ After fine-tuning of the interpretation, the final meanings are already not the ordinary meanings initiatively grasped by a PHOSITA.

Disputed terms	<i>“undulating”</i>	<i>“solid solution”</i>	<i>“frame”</i>
Ordinary meaning by a PHOSITA	rising and falling in waves, thus having at	a solute in a solvent with a single,	Can be applied to bit-mapped display

⁶⁰⁴ *AIA Engineering Ltd. v. Magotteaux International S/A*, No. 11-1058 (Fed. Cir. Aug. 31, 2011).

⁶⁰⁵ *Wang Lab. Inc. v. America Online Inc.*, 197 F.3d 1377 (Fed. Cir. 1999).

⁶⁰⁶ *Cordis Corporation v. Boston Scientific Corporation*, 2010-1311, -1316 (Fed. Cir. September 28, 2011). (“We therefore do not review the construction itself, and instead focus on what that construction means.”) On appeal, the Federal Circuit focused on “what that construction means” and held that the construction required multiple “waves.”

⁶⁰⁷ *Id.* Accordingly, the terms “crest” and “trough,” as used in district court’s claim construction, “implicate changes of direction, with the curve ex-tending beyond the point of inflection.”

⁶⁰⁸ *AIA Engineering Ltd. v. Magotteaux International S/A*, No. 11-1058 (Fed. Cir. Aug. 31, 2011). The Court attempted to avoid such contradictions when possible and noted that construing “solid solution” to have the same meaning as “ceramic composite” avoided this problem.

⁶⁰⁹ *Wang Lab. Inc. v. America Online Inc.*, 197 F.3d 1377 (Fed. Cir. 1999) (“it is not disputed that Wang had not been able to implement a bit-mapped protocol in the claimed system; the inventors testified that they had been unable to develop a NAPLPS-based decoder.”)

	least a crest and a trough	uniform structure	systems & character-based systems
Considerations & Reasons	Implication of the definition of “waves”	Avoid contradiction with other claim terms	Embodiments not specifically illustrated
Final construction	more than just a single curve	homogeneous ceramic composite	character-based systems only

Patent claim fulfills the distinct function of defining the monopoly.⁶¹⁰

Therefore, claim construction is very often dispositive for the determination of infringement. When vagueness is found, “we are only concerned with knowledge up to a margin of error; we are ignorant of precise facts.”⁶¹¹ Even the well-understood ordinary meaning of simple, plain English words may yield no conclusions about the technical scope, or about the correct resolution of patent infringement disputes.⁶¹² To decide whether a word appears unambiguous on its face is highly intuitive,⁶¹³ a term that someone thinks is abundantly ordinary may seem totally undefined to others. Judges often have divided opinions on even the simplest words like “board”, “baffle”, “vertical”

⁶¹⁰ EA Kellaway, *Principles of Legal Interpretation of Statutes, Contracts and Wills* 505 (1995)

⁶¹¹ Joey Frazee & David Beaver, *Vagueness Is Rational Under Certainty*, in Maria Aloni et al., *Logic, Language and Meaning: 17th Amsterdam Colloquium*, Amsterdam, The Netherlands, December 16-18, 2009, Revised Selected Papers 161 (2010).

⁶¹² *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351 (Fed. Cir. 2008). *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, No. 2:04-CV-32 (E.D. Tex. Aug. 26, 2005).). The construction of the terms “only if” was the main dispute in the lower court. While the plaintiff argued that the term “only if” needed no construction, the defendants argued that the term “only if” should be construed to mean “exclusively or solely in the event that” or “never except when.” In its Markman order, the district court ruled that no construction of “only if” was needed, stating that the term “has a well-understood definition, capable of application by both the jury and this court in considering the evidence submitted in support of an infringement or invalidity case.” But the appellate court held that the district court erred, and courts must construe terms when the parties were actually arguing over the scope of the claim and not just the meaning of the term.

⁶¹³ *Edwards Lifesciences AG v. CoreValve, Inc.*, Nos. 11-1215, 11-1257 (Fed. Cir. 2011) (“The district court agreed with Edwards that the “cylindrical” support need not have a “diameter ... constant along the longitudinal axis” but instead could have a shape that merely “related to a cylinder.” In so doing, the court provided no analysis of the claim language, the specification, or any intrinsic evidence to support its construction.”)

and so on.⁶¹⁴ The search for ordinary meaning would easily miss the chance to discuss and debate the reasons behind the decision on the scope of protection.⁶¹⁵ As a result, separate methods such as the doctrine of equivalents and the substantiality test are introduced to demarcate the boundaries of the invention. The deviation from the textual language is because of the inability of ordinary meaning to accurately capture the invention.⁶¹⁶

B. Ordinary meaning and the changing technological context

Recently there has been increased debate over whether the “meaning” of a claim term changes with the enlargement of knowledge and the development of new technology.⁶¹⁷ Take the technical term “a monoclonal antibody”⁶¹⁸ for example. The term “a monoclonal antibody” written in 1984 apparently referred to antibodies made with hybridoma only,⁶¹⁹ however, the same term could cover all sorts of antibodies such as chimeric and humanized antibodies developed between 1984 and 1999.⁶²⁰ Has the meaning of “a monoclonal antibody” changed or not changed? Some scholars argue that the meaning of claim terms will frequently change over time: “Indeed, the risk of change in the

⁶¹⁴ Alan L. Durham, *Patent Law Essentials: A Concise Guide* 54 (2d ed., 2004). The author reasoned that even words as simple as “on” and “a” have been the subject of intense debate in the context of patent infringement litigation.

⁶¹⁵ Jonathan T. Molot, *The Rise and Fall of Textualism*, 106 Colum. L. Rev. 1 (2006) (“when judges define textualism in a way that places heavy reliance on the clarity/ambiguity distinction, they tend to aggravate, rather than alleviate, the problem of judicial leeway.”)

⁶¹⁶ *Autogiro Co. of America v. United States*, 384 F.2d 391, 396 (Ct. Cl. 1967) (“Often the invention is novel and words do not exist to describe it.”)

⁶¹⁷ Chiang & Solum, *supra* note 38.

⁶¹⁸ *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247 (2004) (“Because the first publication that disclosed chimeric antibody technology did not appear until four months after this filing, it is not surprising that the 1984 application does not disclose any chimeric antibodies. Similarly, the first publication to disclose humanized antibodies appeared in May 1986.”)

⁶¹⁹ *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247 (2004). (“Thus, the term “monoclonal antibody” in 1984 apparently referred to antibodies made with hybridoma and was not broad enough to encompass chimeric antibodies.”)

⁶²⁰ *Chiron Corp. v. Genentech, Inc.*, 266 F. Supp. 2d 1172 (E.D. Cal. 2002) (interpreting a patent that, when written in 1984, covered only mouse-derived antibodies, to cover all sorts of antibodies developed between 1984 and 1999, including chimeric and humanized antibodies).

meaning of terms over time is particularly great in patent law, because patents necessarily involve new ideas, and the process of assigning terms to describe those new ideas is not static.”⁶²¹ Some scholars argue that the meaning of claim terms is constant: “This is not a change in linguistic meaning...But the set of real-world objects that fit within the definition has changed.”⁶²²

To gain a better understanding of the debate, it is useful to examine a pair of fundamental concepts: *interpretation* and *construction* (sometimes referred to as *word construction and thing construction*.) “Interpretation” is the process that discovers the linguistic meaning of a text,⁶²³ and “construction” is the process that gives a text legal effect.⁶²⁴ In reading claims, interpretation is the process of ascertaining the meaning of a claim term (semantic content), and construction goes beyond interpretation and delves into “explaining the legal effects and consequences of the instrument in question” (legal content). The more semantic content is translated into legal content, the greater the interpreter’s “construction zone”⁶²⁵ (where the interpreter can move from interpretation to construction).⁶²⁶ The distinction between words and things is similar to the distinction made between interpretation and construction. Patent claim construction is a way of establishing the relationship between the word and the thing.⁶²⁷ Meaning-scope can remain fixed on the date of filing while

⁶²¹ Mark A. Lemley, *supra* note 7.

⁶²² Chiang & Solum, *supra* note 38.

⁶²³ Willem A. DeVries, *Meaning and Interpretation in History*, 22 *History and Theory* 253-63 (1983) (“it is through interpretation that we come to know meanings.”)

⁶²⁴ Lawrence B. Solum, *The Interpretation-Construction Distinction*, 27 *Constitutional Commentary* 95-118 (2010).

⁶²⁵ Lawrence B. Solum, *The Unity of Interpretation*, 90 *B.U. L. REV.* 551 (2010). The author called the zone of underdeterminacy in which construction (that goes beyond direct translation of semantic content into legal content) is required for application, “the construction zone.”

⁶²⁶ *Id.*

⁶²⁷ Richard Robinson, *Definition* 16, 20 (1950) (“The purpose of real definition, on the other hand, is

allowing thing-scope to expand over time to encompass after-arising technologies.⁶²⁸ Using such distinction to reconcile the debate above, there is no change in linguistic meaning, what changed was “the set of real-world objects that fit within the description.”⁶²⁹

The distinction between the semantic (meaning) interpretation and legal (thing) construction provides a very helpful way to explain the fixation-growth paradox in patent claim construction.⁶³⁰ However, it has been a well-established principle that there is no such dichotomy between “virtue fence” and “actual invention” in claim construction.⁶³¹ The strict distinctions between “interpretation” and “construction”, or “word construction” and “thing construction” easily lead to a conclusion that finding linguistic meaning and determining the legal content are independent, two separate mechanisms.⁶³²

nothing to do with *nomina* or words or signs or symbols. It is something to do with *res* or things.”) *See also*, Peter D. Rosenberg, *Patent Law Fundamentals* 39 (1975) (“A claim is an abstraction and generalization of an indefinitely large number of concrete, physical objects.”); Collins, *supra* note 40. (“In fact, courts often use scope in a fashion that makes it synonymous with word meaning. “[T]he full scope of [a term’s] ordinary meaning” is, and is nothing more than, the term’s ordinary word meaning... This concept of the scope of a peripheral claim is the claim’s meaning-scope... Thing-scope measures the size of the set of distinct things described by the claim. The larger the set is, the broader the thing-scope of the claim.”) *See also*, Chiang, *supra* note 129.

⁶²⁸ Collins, *supra* note 40.

⁶²⁹ Chiang & Solum, *supra* note 38.

⁶³⁰ Collins, *supra* note 40. (The fixation theory asserts that claim scope is and/or should be fixed on the date a claim is filed and that this fixation makes it impossible for the claim to encompass AAT because a claim must grow in some sense after the filing date in order to encompass AAT. In stark contrast, the growth theory argues that literal claim scope does and/or should encompass AAT on a routine basis and that literal claim scope therefore cannot be fixed on the date of filing.) Mammen, *supra* note 24. (“There is fertile soil at the intersection of patent law and the theory of legal interpretation. Many of the issues that arise in patent claim construction cannot be easily answered by analogy to other fields of legal interpretation. But use of the analytic tools that general jurisprudence makes available can help advance our understanding of the enterprise of patent claim construction, and help to resolve some of the most vexing issues in the post-Markman world of claim construction.”)

⁶³¹ *Catnic Components Ltd. v. Hill & Smith Ltd.* (1982) R.P.C. 183. (“A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge.”)

⁶³² Chiang & Solum, *supra* note 38. (“...tells us which issues are problems of linguistic meaning, and which issues are problems of legal effect. This is important because the two types of problems call for different solutions.”) Collins, *supra* note 40. (“There are two independent mechanisms, each of which implicates a different category of AAT. One mechanism focuses on the nature of things and the way in which thing-scope can be fixed in one sense and yet expand in another to encompass AAT. The other addresses an ambiguity in the meaning of meaning.”)

Such distinction raises the old problem of form and substance—a sharp division between literal text and the spirit of invention has long been questioned and rejected by courts.⁶³³ In fact, the distinction between “interpretation” and “construction” of meaning is not clear-cut but often muddled in reading claims.⁶³⁴ For example, the U.S. Supreme Court recognized the “mongrel” character of claim construction, having aspects that are both legal and factual.⁶³⁵ This thesis considers interpretation and construction as distinguishable but nonetheless intertwined activities.⁶³⁶ When ascertaining the “ordinary meaning”, courts deal with a mix of linguistic questions and factual questions.

The ordinary use-based theory asks how the conventional usage of the words in the scientific and technological community can shed light on the understanding of the claim text. The concept of convention plays a significant role in the ordinary use-based theory of meaning. The question is whether convention is static or dynamic.⁶³⁷ The court has held that a patent claim is given its ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of the invention, *i.e.*, as of the effective filing

⁶³³ *C. Ven Der Lely N.V. v. Bamfords Ltd.* [1963] R.P.C. 61 at 75 (H.L.) (per Lord Reid) (“Copying an invention by taking its “pith and marrow” without textual infringement of the patent is an old and familiar abuse which the law has never been powerless to prevent. It may be that in doing so, there is some illogicality, but our law has always preferred good sense to strict logic.”)

⁶³⁴ Randy E. Barnett, *Interpretation and Construction*, 34 Harv. J. L. & Pub. Pol’y 65 (2011). (“Although I begin by offering definitions of interpretation and construction, the labels are not important. Both activities could be called “interpretation”—for example, something like “semantic interpretation” and “applicative interpretation.”) See also, Huscroft & Miller, *supra* note 490, at 34.

⁶³⁵ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 378, (1996).

⁶³⁶ Alex Wellington, *The Metes and Bounds of Purposive Claim Construction in Canadian Patent Law*, 18 I.P.J. 31(2004). See also, Edwin W. Patterson, *The Interpretation and Construction of Contracts*, 64 Colum. L. Rev. 833 (1964) (“The distinction between interpretation and construction of contracts has been doubted or rejected, principally, it is believed, for two reasons: First, because it is difficult or impossible to draw the line between the two in many problematic cases, and secondly, because many courts in many cases have ignored the distinction.”)

⁶³⁷ Yoshitake Masaki, *Critique of J. L. Austin’s Speech Act Theory: Decentralization of the Speaker-Centered Meaning in Communication* (2004) http://www.caj1971.com/~kyushu/KCS_02_Yoshitake.pdf (last visited Aug 16, 2012) (“convention must not be such static rules that exist independently of human agents and that simply connect the intention with the utterance. Instead, convention has to be a dynamic concept.”)

date of the patent application.⁶³⁸ This is because to allow patentees to capture technologies that come into existence after the filing date would reward them for inventions they did not make.⁶³⁹ In patent claim construction, it is declared by the courts that “we are powerless to rewrite the claims and must construe the language of the claim at issue based on the words used.”⁶⁴⁰ Therefore, when ascertaining the ordinary meaning, stability is favored over change.⁶⁴¹

However, since claim construction is often outcome-determinative for a validity or infringement decision,⁶⁴² fixing ordinary meaning at the time of effective filing sometimes fails to offer sufficient reasons for embracing or rejecting the after-developed technologies.⁶⁴³ As patent claim construction is becoming more and more important in demarcating the scope of protection,⁶⁴⁴ judges may have to decide whether the ordinary meaning encompasses after-arising technologies, which is a task traditionally performed by the doctrine of equivalents.⁶⁴⁵ Patent law does not require that an applicant describe in his specification every conceivable and possible future embodiment

⁶³⁸ *Phillips v. AWH Corp.*, No. 03-1269, -1286 (Fed. Cir. July 12, 2005) (en banc). See also, *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1355 (Fed. Cir. 2004) (“The touchstone for discerning the usage of claim language is the understanding of those terms among artisans of ordinary skill in the relevant art at the time of invention.”)

⁶³⁹ *Schering Corp. v. Amgen Inc.*, 222 F.3d 1347, 1353–54 (Fed. Cir. 2000); see also *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1262 (Fed. Cir. 2004) (Bryson, J., concurring) (stating that valid claims should not “be construed broadly enough to encompass technology that is not developed until later and was not enabled by the original application”).

⁶⁴⁰ *SRAM Corp. v. AD-II Eng’g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir., 2006).

⁶⁴¹ Brian G. Slocum, *Linguistics and ‘Ordinary Meaning’ Determinations*, 33 Statute L. Rev. 39 (2012).

⁶⁴² Lester Horwitz & Ethan Horwitz, *Patent Litigation: Procedure & Tactics* (2013) Vol. 2, Chapter 6 Claim Construction-Markman Hearings, § 6.01 (“Claim construction is the first step in any infringement or validity analysis and is largely outcome determinative of the litigation”) Moore, *supra* note 5. (“The ultimate goal for a court when interpreting terms in a claim is to provide a fixed meaning which can then be compared with the allegedly infringing device. However, even though it is only the first step, it is usually determinative. Shortly after a district court’s claim construction, infringement cases typically resolve via summary judgment or settlement. As a result, “litigants usually spend significant resources disputing the meaning of each claim term at issue in a suit.”)

⁶⁴³ Collins, *supra* note 40. (“simultaneous fixation of and growth in literal claim scope is a logical impossibility.”)

⁶⁴⁴ Schwartz, *supra* note 153.

⁶⁴⁵ For the discussion of after-arising technologies, see Cotropia, *supra* note 206; Lemley, *supra* note 7; Collins, *supra* note 40; Saulsbury, *supra* note 205.

of his invention.⁶⁴⁶ When there is a change of scientific and technical knowledge, judges have a great chance to lean away from the claim text to satisfy the contemporary needs in the field of art, and this invites wider interpretive imagination.⁶⁴⁷ Looking for a static conventional meaning leaves us without a framework to justify different understanding at different times, and the process of claim interpretation would become inconsistent.⁶⁴⁸ As a result, the actual patent claim construction cases dealing with after-arising technology are not all uniform.⁶⁴⁹ It is important to balance needs for providing sufficient certainty to the public with providing flexibility to adequately protect the rights of inventors.

Section 2 Reconstruction of a hypothetical intent

*A. Objective intent is an artificial construct which may enlarge the field of imaginative reconstructions.*⁶⁵⁰

⁶⁴⁶ *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). *See also*, “it is not necessary to embrace in the claims or describe in the specifications all possible forms in which the claimed principle may be reduced to practice.” *Smith v. Snow*, 294 U.S. 1, 11, 55 S. Ct. 279 (1935).

⁶⁴⁷ Roger Colinvaux, *What Is Law? A Search for Legal Meaning and Good Judging Under a Textualist Lens*, 72 Ind. L.J. 1133 (1997); *See also*, Jesse M. Barrett, *Legislative History, The Neutral, Dispassionate Judge, and Legislative Supremacy: Preserving the Latter Ideals Through the Former Tool*, 73 Notre Dame L. Rev. 819 (1998).

⁶⁴⁸ Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 Ind. L.J. 759 (1999) (“certainty has proven to be somewhat elusive in recent years...There are essentially two reasons for this. First... part of certainty's elusive nature can be attributed to the inherent ambiguity of language. The second reason for certainty's evasiveness is the generous exercise of judicial discretion). *See also* Kirk M. Hartung, *Claim Construction: Another Matter of Chance and Confusion*, 88 J. Pat. & Trademark Off. Soc'y 831(2006) (“claim construction still is a matter of chance and confusion for patent owners, accused infringers and their patent attorneys.”).

⁶⁴⁹ Robin Feldman, *Rights in Biospace*, 79 S. Cal. L. Rev. 1 (2006). (“...cases concerning how far a biotechnology inventor can reach toward future inventions stand in contradiction to each other. Some opinions conclude broadly that the definition of an invention includes all embodiments, even those that could not have existed at the time of the invention. Other opinions use claim construction doctrines to limit a patent holder's reach only to embodiments known at the time of the invention. Still others use a different set of doctrines to conclude that a patent holder's reach sometimes includes things that were unknown at the time of the invention, but not always. These opinions, pulling in different directions, make it difficult to predict how far an inventor can reach toward later inventions.”)

⁶⁵⁰ Richard S. Kay, *Original Intention and Public Meaning in Constitution Interpretation*, 103 Northwestern University Law Review 2. 703 (2009).

According to the intention-based theory, meaning of a word is the intent which it is desired to convey. “The meaning of a text is that which the author meant by his use of a particular linguistic symbol.”⁶⁵¹ Therefore, interpretation is not necessarily dependent on conventions that function as connecting factors between text and what is meant by it,⁶⁵² and the recognition of intention is at the heart of interpretation.⁶⁵³ The intention-based theory emphasizes the objective intention rather than the subjective intention of the author.⁶⁵⁴ Rather than a real fact, the objective intent is an artificial construct.⁶⁵⁵ According to the intention-based theory, it is not the author’s actual intentions that are crucial, but rather what might be called the author’s objective intentions. It is what an ideal reader (in the context of patent law, the ideal reader is the PHOSITA) would rationally take the author to have intended that determines meaning. The

⁶⁵¹ Hirsch, *supra* note 292, 255 (1967).

⁶⁵² Yoshitake Masaki, *Critique of J. L. Austin’s Speech Act Theory: Decentralization of the Speaker-Centered Meaning in Communication* (2004) http://www.caj1971.com/~kyushu/KCS_02_Yoshitake.pdf (last visited Aug 16, 2012) *See also*, Hirsch, *supra* note 292, at 13 (“It is an empirical fact that the consensus does not exist, and it is a logical error to erect a stable normative concept (i.e. the public meaning) out of an unstable descriptive one. The public meaning is nothing more or less than those meanings which the public happens to construe from the text. Any meaning which two or more members of the public construe is ipso facto within the public norms that govern language and its interpretation.”)

⁶⁵³ Mark Greenberg, *Legal Interpretation and the Study of Linguistic Communication*, in *Philosophical Foundations of Language in the Law*, A. Marmor, S. Soames, eds. 133 (2011). *See also*, Gideon Rosen, *Textualism, Intentionalism, and the Law of the Contract*, in *Philosophical Foundations of Language in the Law*, A. Marmor, S. Soames, eds. 133 (2011) (“communicative intentions: the intention to cause certain beliefs or expectations in their audience in a characteristic way.”)

⁶⁵⁴ Subjective intentionalists hold that the texts can only be identified as texts by reference to actual authorial intent, “the correct interpretation of a text is the meaning of the text that is compatible with the author’s subjective intentions.” *See* Noel Carroll, *Interpretation and Intention: the Debate between Hypothetical and Subjective Intentionalism*, in *The Philosophy of Interpretation 75* (Joseph Margolis & Tom Rockmore ed., 2000); Barak, *supra* note 474, at 136 (stating that the purpose comprises “both subjective and objective elements,” and the subjective purpose reflects the subjective intention of the legislature, in contrast to the intention of the reasonable legislature, which forms a part of the objective purpose.)

⁶⁵⁵ The objective intentionalists define meaning as “an ideal audience’s best hypothesis regarding the author’s intention, given a certain restriction on available evidence.” Robert Stecker, *Aesthetics and the Philosophy of Art: an Introduction* 138 (2005); *See also*, Jerrold Levinson, *Intention and Interpretation*, in *Intention and Interpretation 224* (Gary Iseminger ed., 1992) (“Principally, a ‘best’ attribution of intention to the hypothesized author is one that is epistemically best—that has the most likelihood of being correct, given the total evidence available to one in the position of ideal reader.”); Patricia Waugh, *Literary Theory and Criticism: an Oxford Guide* 186 (2006) (“an interpreter’s task is to hypothesize an author’s intention from the point of view of an ideal member of the intended audience fully informed about “the work’s internal structure and the relevant surrounding context of creation.”)

purposive construction is designed to “elicit objectively”⁶⁵⁶ what the patentee’s intention is, instead of inquiring into his subjective or actual intention.

It has been pointed out that “interpretation” tends to become “invention” as the characterization of the author becomes “more abstract”.⁶⁵⁷ In patent law, a PHOSITA is supposed to know not only the common general knowledge of the technology, but also the patent practice such as explicit drafting conventions by which the claims were framed,⁶⁵⁸ and the practice of filing divisional applications,⁶⁵⁹ as well as other commercial or technical reasons,⁶⁶⁰ *etc.*. Judges also look at all the “objective” evidence⁶⁶¹ outside the four corners of the claim texts in order to decide whether there is intent to restrict the scope of claims or not. “You always have to go outside the circle of syntax and semantics, because you always have to ascertain what the author of the text intended it to mean.”⁶⁶² In cases where there is no direct and express information about such intent,⁶⁶³ claim meanings might be neither intended by nor known to the patentee. Two judges are very likely to reach two opposing but plausible results.⁶⁶⁴ Interpreters have to bring in their considerations in

⁶⁵⁶ *Qualcomm Inc. v. Nokia Corp* [2008] EWHC 329 (Pat). For example, when assessing infringing variants in a patent litigation, if the skilled person had foreseen but the actual inventor did not see, it may then be a “self-inflicted” wound. Robert H C MacFarlane & Adam Bobker, *Understanding Construction at Trial*, 156 M.I.P. 114-116 (2006).

⁶⁵⁷ Andrei Marmor, *Interpretation And Legal Theory* 25 (2005) (“The more abstract the characterization of the fictitious author, the greater amount of creativity the interpretation allows.”)

⁶⁵⁸ *Schenck Rotec GmbH v. Universal Balancing Limited* [2012] EWHC 1920 (Pat).

⁶⁵⁹ *Virgin Atlantic Airways Ltd v. Delta Airways Inc* [2010] EWHC 3094 (Pat).

⁶⁶⁰ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* [2009] EWCA Civ 252.

⁶⁶¹ Lord Bingham, *A New Thing under the Sun? The Interpretation of Contract and the ICS Decision*, 12 Edin. L.R. 374-390 (2008). A matrix of facts “includes absolutely anything which would have affected the way in which the language of the document would have been understood by a reasonable man”?

⁶⁶² Michael Robertson, *The Impossibility of Textualism and the Pervasiveness of Rewriting in Law*, 22 Can. J.L. & Juris. 381(2009). *See also*, Moises Silva, *Foundations of Contemporary Interpretation* 107 (1996) (“the interpretive key is thought to lie outside of the text itself in its origin or background.”)

⁶⁶³ Stephen Davies, *The Philosophy of Art* 119 (2006). The difference is that in establishing subjective intent, all hypotheses are trumped by direct, accurate information about the author’s intention, even if what was hypothesized is more plausible than what was actually intended.

⁶⁶⁴ Barak, *supra* note 474, 303 (“when there is no credible information about that intent . . . then the

reconstructing the “practical purpose” of the patentee at the time of filing.⁶⁶⁵ Without concrete instructions to follow, it will be difficult for an interpreter to offer convincing justification for the claim that a certain interpretation is the only correct meaning that corresponds to the patentee communicative intention.⁶⁶⁶

After all, the intention-based theory “tells you what you are doing when you are interpreting; you are looking for the author’s intention. It doesn’t tell you how to find it and it doesn’t guarantee that you will find it.”⁶⁶⁷ The same is true in purposive interpretation, “it is good that Lord Hoffmann is telling us what to do (answer the crucial question⁶⁶⁸ and not the Improver questions), but he does not tell us how to do it in these specialized cases.”⁶⁶⁹ The objective intent is an important factor but not the only factor in the determination of claim meaning.⁶⁷⁰ The real question is not whether the

interpreter abandons legislative intent in favor of the fundamental values of the system.”)

⁶⁶⁵ Michael J. Meurer & Craig Allen Nard, *Invention, Refinement and Patent Claim Scope: A New Perspective on the Doctrine of Equivalents*, 93 *Georgetown L J* 1947 (2005). It has been criticized that the goal of bringing objectivity to patent claim cases through formalistic legal rules is a costly illusion.

⁶⁶⁶ Posner, *supra* note 491. (“The task for the judge called upon to interpret a statute is best described as one of imaginative reconstruction. The judge should try to think his way as best he can into the minds of the enacting legislators and imagine how they would have wanted the statute applied to the case at bar.”). Also see, Cross, *supra* note 470. (“It is difficult to imaginatively reconstruct intent when circumstances have changed so dramatically.”)

⁶⁶⁷ Stanley Fish, *Intention is All There Is: A Critical Analysis of Aharon Barak’s Purposive Interpretation in Law*, 29 *Cardozo L. Rev.* 1109 (2008). (“Intentionalism is simply the right answer to a question (what is the meaning of a text?) and not a method. Knowing that it is intention you are after gives you no leg up when you are faced with the task of interpreting a particular text. You still have to determine what the intention is, and more often than not that determination will involve disputes in which, by offering different accounts of the intention animating a text, interpreters will give different accounts of its properties and meanings.”)

⁶⁶⁸ *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46 (“there is only one compulsory question: What would a person skilled in the art have understood the patentee to have used the language of the claim to mean?”)

⁶⁶⁹ Paul Quan Kaih Shiuh & Teo Guan Siew, *Interpreting Patent Claims: Some Thoughts on the UK Kirin-Amgen Decision*, 18 *Singapore Academy of Law Journal* 203-233 (2006) (“Lord Hoffmann did not lay down any alternative guidelines to the Improver questions. Further guidance on how to interpret claims in such cases is noticeably lacking.”)

⁶⁷⁰ Michael Hancher, *Three Kinds of Intention*, 87 *Modern Language Notes* 827-851 (1972).

patentee intended a certain result,⁶⁷¹ but whether the result is legally justifiable given the specific context of the interpretive question.

B. Determinacy is hard to be achieved in the context of changing technology

When the intention-based theory asserts that “meaning cannot be autonomous from intent”,⁶⁷² it assumes that as soon as meaning was formed by an author, it was reserved in the originating historical moment. The intention-based theory seeks for the ideal “determinacy” of meaning:

“Reproducibility is a quality of verbal meaning that makes interpretation possible...determinacy, on the other hand, is a quality of meaning required in order that there be something to reproduce...if a meaning were indeterminate, it would have no boundaries, no self-identity, and therefore could have no identity with a meaning entertained by someone else...”⁶⁷³

The intention-based theory also holds authorial meaning to be sharable so that the interpreter is able to reproduce the verbal meaning.⁶⁷⁴ The problem with this theory is that to “share” a meaning is to have the same meaning that someone else has: “This is perhaps an odd sort of ‘sharing’: what I share remains someone else’s.”⁶⁷⁵ In a dynamic context, there would be states of

⁶⁷¹ Gregory Leyh, *Toward a Constitutional Hermeneutics*, 32 *American Journal of Political Science* 369 (1988). (“Texts and their histories do not exist out there in the past awaiting the disinterested recovery of their objective meaning.”)

⁶⁷² Alexander & Prakash, *supra* note 485. Kaye Mitchell, *Intention and Text: Towards an Intentionality of Literary Form* 35 (2008) (“the author retains a relative autonomy from linguistic conventions”).

⁶⁷³ E.D. Hirsch, *Validity in Interpretation*, in David Davies & Carl Matheson, *Contemporary Readings in the Philosophy of Literature: An Analytic Approach* 136 (2008)

⁶⁷⁴ Guyora Binder & Robert Weisberg, *Literary Criticisms of Law*, 148 (2000). (“Hirsch added that verbal meaning is a type or class of mental objects. Because all examples of the type share some characteristic...it is sufficient for the reader to identify the shared characteristic to reproduce the verbal meaning.”)

⁶⁷⁵ Henry Staten, *Wittgenstein and Derrida* 140 (1986) (“He shares it with me, but it is still his...The interesting move in Hirsch’s argument are his definition of the precise nature of this property and this proprietorship.”)

affairs that are utterly foreign to the author's intentions. However, fidelity to the authorial intent requires that its original meaning be preserved over time. In the context of patent claim construction, due to the complex and ever changing technological environment, there is a tension between the past and the present moment of interpretation.

Under the purposive approach, because the PHOSITA is to construe the claim by ascertaining the patentee's purpose as on the date of patent application, it is more difficult to cover the issue of after-arising technology.⁶⁷⁶ Judges tend to give a narrow interpretation to the claim terms in order to avoid any over-reaching construct of meaning. As Lord Hoffman noted in *Kirin-Amgen*:

I do not dispute that a claim may, upon its proper construction, cover products or processes which involve the use of technology unknown at the time the claim was drafted. . . . In the present case, however . . . the man skilled in the art would not have understood the claim as sufficiently general to include gene activation. He would have understood it to be limited to the expression of an exogenous DNA sequence which coded for EPO.⁶⁷⁷

The problem is that the patentee usually did not contemplate future development of technologies at the time of filing. There are difficulties involved in speculating about the hypothetical intent of the patentees in relation to subject matter of which they had no knowledge or understanding of the relevant context. When the patentees could not have foreseen or

⁶⁷⁶ Pumfrey et al., *supra* note 322. ("In other words, unless the claim is general enough to cover variants that deploy after-arising technology, without running the risk of being invalidated for lack of sufficient disclosure or enablement, it may not be possible to construe such a claim to include the said variant.")

⁶⁷⁷ *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46.

contemplated the technological changes, it is difficult to attribute to them some intention about how to deal with later-developed technologies. For example, a PHOSITA for engineering and construction of satellite in the late 1950's and early 1960's could not have foreseen the rapid acceleration of computer technology.⁶⁷⁸ A too restrictive construction makes the patent protection less effective as soon as a new technology is developed.⁶⁷⁹

In recent years, the purposive approach has garnered accumulating legitimacy in claim construction in many jurisdictions. The intention-based theory may gain some benefits in patent claim construction for it breaks through the four corners of the literal text. However, its application brings with it significant difficulties both theoretically and practically. Intent or purpose plays a necessary role in patent claim interpretation, because the patent statute requires a statement of what the applicant claims as his invention.⁶⁸⁰ However, the controversies in patent interpretation cannot be reduced merely by the use of phrases like “expressed intent” or “objective basis.”⁶⁸¹

Section 3 Interpreter's construction of content of a claim

A. Content-based theory faces the problem of preserving original meanings.

Under the content-based theory, the author of the text is not the source of

⁶⁷⁸ *Hughes Aircraft Co. v. United States*, 717 F.2d 1351 (Fed. Cir. 1983). Although the applicant did not draft claims to the full extent of a patent's disclosure within the confines of the teachings of the prior art, the Federal Circuit nonetheless awarded him the shortfall via an equivalency theory.

⁶⁷⁹ Toshiko Takenaka, *Patent Law and Theory: A Handbook of Contemporary Research* 453 (2008).

⁶⁸⁰ Edward B. Gregg, *Some New Patent Cases in the Supreme Court*, 3 *Stan. L. Rev.* 601 (1951).

⁶⁸¹ Livingston, *supra* note 123. Francis J. Mootz, III, *The Ontological Basis of Legal Hermeneutics: A Proposed Model of Inquiry Based on the Work of Gadamer, Habermas, and Ricoeur*, 68 *B.U.L. Rev.* 523 (1988) (“...although a legal text has an objective meaning to the extent that the reader is bound by the text and prevented from creating a meaning *ex nihilo*, any attempt to discover the meaning of the text is a misguided project that ignores both the dynamic interaction of the reader and the text, and the implications of the reader's finite and temporal nature.”)

meaning, and patent claim interpretation is not a grasp of objective intention.⁶⁸² In patent claim construction, we grasp not the word, but the subject matter through the word.⁶⁸³ The interpreter is concerned with “the essential content of a claim”⁶⁸⁴ by looking at the technical problem and particular solution in the light of the prior art. The content-based theory has advantages in at least two aspects: Firstly, as the claim text must always particularly point out “the subject matter which the applicant regards as his invention,”⁶⁸⁵ focusing on the content of the text can avoid the conceptual difficulties of finding ordinary meaning or the patentee’s objective intent at the time of filing, *e.g.*, there might be no well-established ordinary meaning, or the patentee’s intent was absent or unclear, *etc.*. By articulating the descriptive feature of the technical content,⁶⁸⁶ this theory allows the interpreters to attend to the distinctiveness of meaning in the field of the invention.

Secondly, it has been pointed out earlier that the theories seeking meaning

⁶⁸² Richard Shusterman, *Croce on Interpretation: Deconstruction and Pragmatism*, 20 *New Literary History* 199-216 (1988) (“no perfect foundational objectivity ... and no titanic leap of imagination to place us in the mind of the author.”) *See also*, Heidi Li Feldman, *Objectivity in Legal Judgment*, 92 *Michi. L. Rev.* 5, 1187-1255 (1994). (“It is prima facie unlikely that a conception of objectivity suitable for more purely evaluative or normative judgments would be suitable for more closely world-guided judgments.”)

⁶⁸³ 35 U.S.C. § 112, ¶2 (2006). By statute, a patent’s specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996) (“It has long been understood that a patent must describe the exact scope of an invention and its manufacture to ‘secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them.’”

⁶⁸⁴ Alessandro Steinfl, *The Doctrine of Equivalents Through the Eyes of the European Patent Convention*, Casrip Publication Series: Rethinking International Intellectual Property 114, 117 (2000), available at <http://www.law.washington.edu/casrip/symposium/Number6/Steinfl.pdf> (“the German approach to both claim interpretation and infringement relied on interpreting patent claims broadly. Therefore, the claim language was heavily stretched beyond its strict literal meaning when adopting the [historic] doctrine of equivalents.”)

⁶⁸⁵ 35 U.S.C. § 112, Specification. *See also* Anthony. W. Deller, *Patent Claims* §5 (1971) (2d ed.) (stating peripheral definition involves “marking out the periphery or boundary of the area covered by the claim and holding as infringements only such constructions as lie within that area,” and central definition involves “drafting of a narrow claim setting forth a typical embodiment coupled with broad interpretation by the courts to include all equivalents constructions.”)

⁶⁸⁶ Pirmin Stekeler-weithofer, *The Pragmatics of Making It Explicit* 72 (2008) (“...the difference in meaning between *de dicto* and *de re* ascriptions, according to which the expression ‘of x’, when figuring within *de re* belief ascriptions, somehow contributes to the articulation of a descriptive feature of the ascribed belief that is not articulated by a corresponding *de dicto* ascription.”)

at the time of filing are not consonant with the fast-changing technological context. Legal interpretation is always a practical response out of the present.⁶⁸⁷ A theory of meaning needs the ability to continue to grow and adapt to new circumstances.⁶⁸⁸ The content-based theory holds that conventional usage and authorial intention are useful but not binding in the light of changing experiences and perceptions—“interpreters can never be distanced from the text: they are always embedding their own meanings in it.”⁶⁸⁹ The technical content inherently includes equivalents and the equivalents are often determined at the time of infringement.⁶⁹⁰ Interpreters can therefore adapt their decisions to the circumstances of the present day.

The content-based theory overcomes the problem of “lack of engagement on the interpreter’s part”⁶⁹¹ in the intention-based theory. However, its

⁶⁸⁷ Howard J. Vogel, *The Possibilities of American Constitutional Law in a Fractured World: A Relational Approach to Legal Hermeneutics*, 83 U. Det. Mercy L. Rev. 789 (2006). (“a response out of the present, in light of future possibilities for the purpose of reaching a satisfaction in the present.”); *See also*, Stephen M. Griffin, *Pluralism in Constitutional Interpretation*, 72 Texas Law Review 1753 (1994). Williams James, “What Pragmatism Means”. *Lecture II in Pragmatism: A New Name for Some Old Ways of Thinking* 20 (1907). (“He turns away from abstraction and insufficiency, from verbal solutions, from bad a priori reasons, from fixed principles, closed systems, and pretended absolutes and origins. He turns towards concreteness and adequacy, towards facts, towards action, and towards power.”)

⁶⁸⁸ John E. Smith, *Purpose and Thought: The Meaning of Pragmatism* 50 (1978) (Pragmatism is a novel philosophical position which aims at “sweeping away previous philosophical traditions in order to establish a new and ‘practical’ outlook on the nature of things.”) *See also*, William James et.al, *The Meaning of Truth*, 116 (1975) (“The whole originality of pragmatism, the whole point in it, is its use of the concrete way of seeing. It begins with concreteness, and returns and ends with it.”); Rorty Richard, *Consequences of Pragmatism*. xli (1982). The criteria of justification are seen by pragmatists as “temporary resting-places constructed for specific utilitarian ends.”

⁶⁸⁹ Stephen W. Littlejohn & Karen A. Foss, *Theories of Human Communication* 135 (2007). (“Readers are members of interpretive communities. So meaning really resides in the interpretive community of readers.”)

⁶⁹⁰ *Zhong Guo Jie Fang Jun Kong Jun Zong Yi Yuan Su Bei Jing Da Lun Ke Ji Gong Si Qin Fan Dian Nao Zhong Pin Dian Liao Yi [China PLA General Hospital vs. Beijing Dalun Technology Co. Ltd]* No. 390, First instance, Economics & Intellectual Property Tribunal, Beijing Intermediate People’s Court (1995); No.4, Final Decision, Intellectual Property Tribunal, Beijing High People’s Court (1996). Both courts found the time of infringement as the reference point for measuring equivalents. The patent claim was filed on October 8th, 1985 and the defendant’s technology was developed in the 1990s. Compared with the claimed invention which had 19 features, 5 features including a control point, a switch, a modulator, a digital attenuator and a synchronous counter were absent from the defendant’s technology. However, the court found that the defendant’s technology performed the same function to achieve the same result in substantially the same way. It was fair to embrace the equivalents to the claims in response to the rapid development of software technology.

⁶⁹¹ Wierciński, *supra* note 569. (“in de dicto interpretation as described by Brandom, the orientation

disadvantage is also obvious: there is lack of the historical dimension of understanding.⁶⁹² The content-based theory is not interested in merely what the historical author was committed to, but what would he have to be committed to in a more contemporary context.⁶⁹³ The constructive approach derived from this theory faces the problem of constructing technical content from the modern interpreter's circumstances and is therefore subject to interpreter's discretion (using a PHOSITA as a reference). Such approach cares less about preserving the original meaning of claims, but pays primary attention to the specification of the content.⁶⁹⁴ The content-based theory is still unsatisfactory in explaining the fixation and growth paradox in claim construction. Determination of equivalents at the time of infringement implies that the indefiniteness of interpretation will not come to an end until the judges have considered the allegedly infringing technology. As a result, the public is not likely to know what balance to strike between promoting invention and maintaining free competition. This situation is unsatisfactory because it produces unduly and prolonged litigations that will also harm the public notice function of the claims.⁶⁹⁵

B. Lack of evaluation criteria for assessing fairness

toward the validity of what is said in the text is missing. This lack of engagement on the interpreter's part, however, closes up the possibility of genuinely learning something from the text.)

⁶⁹² *Id.* ("in de re interpretations as described by Brandom, the orientation toward what is said in the text is present, but what is missing is the openness toward the possibility that what the text says could be valid for us. This also precludes the possibility of learning from the text. ")

⁶⁹³ Robert Brandom, *Tales of the Mighty Dead: Historical Essays in the Metaphysics of Intentionality* 99 (2002) ("The motivating idea of de dicto specifications of the conceptual content of ascribed commitments is that the inferential context is to be supplied by the circumstances of *production* of the text... But besides the question of what one takes to follow from a claim one has made, there is the issue of what really follows from it.")

⁶⁹⁴ *Id.* 100. ("Denotational de re ascriptions specify conceptual content by saying what it is one is talking about, in the normative sense of which object one needs to investigate the properties and relations of in order to assess the truth of the claim in question.")

⁶⁹⁵ Smith, *supra* note 34.

The ordinary use-based theory develops an inquiry as what an interpreter *would have* understood the words to mean when the text was adopted. The intention-based theory focuses on what the interpreter *would have* understood the author to be using the words to mean when the text was adopted.⁶⁹⁶ The two theories can be considered as a “close construction”,⁶⁹⁷ which respect intent and “the most direct possible application of the text” to new cases. By comparison, the content-based theory is a more extensive construction, which can be considered as “transcendent construction” that goes beyond the text and intent.⁶⁹⁸ The transcendent construction is derived from “principles superior to the text”, and it nevertheless remains within the spirit of the law or document to be construed.⁶⁹⁹ In the case of claim construction, superior principles are the general legal principles such as the eclectic principle and the fairness principle.

Under the content-based theory, claim interpretation is a pragmatic activity in which decision must always be attentive to the purposes of invention, its function, way and effect, its contribution over the prior art, as well as the practical consequences of judicial decisions.⁷⁰⁰ The essence of constructive

⁶⁹⁶ Barnett, *supra* note 634. (“Unlike ascertaining original semantic meaning, however, ascertaining “what the framers would have done” is a counterfactual, not a factual or historical inquiry.”)

⁶⁹⁷ Lieber, *supra* note 45, at 81. In this book, Lieber classified five types of construction: close construction, comprehensive construction, transcendent construction and extravagant construction. Gregory Leyh, *Legal Hermeneutics History, Theory, and Practice* 94 (1992) (“In general, Lieber argues for what he calls ‘close construction’ but not ‘strict construction’. Close construction respects intent and ‘the directest possible application of the text ... to new or unprovided cases’. But strict construction refuses to go beyond the text at all.)

⁶⁹⁸ *Id.*

⁶⁹⁹ *Id.*

⁷⁰⁰ Perry Keller, *Sources of Order in Chinese Law*, 42 Am. J. Comp. L. 711(2004). Professor Williams James’ definition of “Pragmatism” from *Dictionary of Philosophy and Psychology* Vol. II 321-322 (J. M. Baldwin ed., 1902). It is an admirable way to “establish the different meanings of different conceptions by tracing and comparing their respective consequences.” Paul Ricoeur, *Interpretation Theory: Discourse and the Surplus of Meaning* 90(1976). To interpret a text then means to primarily consider it as the expression of certain socio-economic needs and as a response to certain problems well localized in a particular circumstance. Thomas C. Grey, *Freestanding Legal Pragmatism*, 18 Cardozo L. Rev. 21(1996) (“The most pervasive and influential of these has been economic analysis, which treats law as a mechanism of wealth maximization; law-and-economics is the latest and most sophisticated manifestation

approach is the determination of technical contents, taking into account of present day disputes. It emphasizes the realization of “fairness” in each and every case at hand.⁷⁰¹ However, the concept of “fairness” is inherently vague. As the claim is open for interpretation in various directions, different interpreters have different observations of particular facts and different determination of implications. The broad construction of the technical content has the implication of providing adequate protection of the rights of the patentee, while the narrow construction of the technical content has the implication of providing certainty to the public.

There is a lack of concrete standards and stable criteria for resolving the conflicts between the private and public interests, especially when various type of evidence is pointing at different directions. The interpreters constantly attend to different interests of disputing parties in different patent cases, and adapt the judgments to changing values in contemporary society.⁷⁰² Without clear guidance and direction, the technical contents are always subject to revision, expansion or rejection by different interpreters,⁷⁰³ which leads to inconsistency of decision outcomes.⁷⁰⁴ Then the court may be presented with rival

of the Benthamite instrumentalist tradition in legal theory.”)

⁷⁰¹ Article 9, Opinions. “To protect the rights of the patentee and the public interest, patent claim construction should follow the principle of fairness, and reasonably ascertain the scope of protection by sufficiently considering the patentee’s contribution over the prior art.” Article 11, “Specifications and drawings can be used to expand or limit the scope of protection of the technical contents defined by the literal words, *i.e.* either incorporating the equivalent features into the scope of protection or restricting certain technical features by the specifications or drawings.”

⁷⁰² Richard A. Posner, *Pragmatic Adjudication*, 18 *Cardozo L. Rev.* 1(1996). (A pragmatic judge is defined as one that “always tries to do the best he can do for the present and the future, unchecked by any felt duty to secure consistency in principles with what other officials have done in the past.”)

⁷⁰³ John Dewey, *Reconstruction in Philosophy* 96(1920).

⁷⁰⁴ Yan Wenjun & Liu Xin, *Duo Yu Zhi Ding Yuan Ze Bi Jiao Yan Jiu [A Comparative Study of the rule against surplusage, in Research on Patent Law]*, in Legal Affairs Department of State Intellectual Property Office (ed.), *Zhuan Li Fa Yan Jiu 2006 [Studies on Patent Law 2006]*, 233 (2007). (“The rule against surplusage would harm the public function of patent claims and increases the cost of determining the patent scope...In order to clarify whether a technical feature is essential or not, the judges and the

interpretations, given the uncertainty of which results are “better”— the best possible result takes on different values in different situations. The insufficient guidance on the decision-making process makes it unpredictable to know what justice requires or what fairness dictates.

Application of constructive claim construction is proposed as a middle way to reduce the tension between the text and the authorial intent. However, it is not a final solution. It leaves immense latitude to judges in the process of judicial interpretation without providing useful criterion for determining patent scope. One should be alert to the potential danger of unconstrained interpretive freedom,⁷⁰⁵ which may erode public confidence in the patent system.

Section 4 Fitting theory into practice

As previously discussed, one distinguishing feature of theories of meaning underpinning claim construction practice is their attention to applying meaning in context, that is, to explicate the meaning of a claim term in terms of what the ordinary skilled person means by it in the particular field of invention.⁷⁰⁶ It is certainly right to say that one cannot separate the meaning of a word from the entire context in which it occurs. However, it would be more helpful to hear different answers to the essential question of interpretation:

litigants have to invest more time and energy in the litigation.”)

⁷⁰⁵ Jerzy Wroblewski & Neil MacCormick, *On justification and Interpretation*, published in *Law and Legal Interpretation* 258 (Fernando Atria & D.Neil MacCormick ed., 2003) (The exercise of uncabined discretion without proper limitations violates two central values of judicial decision: non-arbitrariness and legality.) Stephen Neale, *Paul Grice and The Philosophy of Language, Linguistics and Philosophy* 15 (5):509 – 559 (1992). The meaning of a word is its use in the language.

⁷⁰⁶ Stephen Neale, *Paul Grice and The Philosophy of Language, Linguistics and Philosophy* 15 (5):509 – 559 (1992).

“*What is meaning?*” Different theories pursue different goals,⁷⁰⁷ although the means or sources needed to accomplish these goals may converge at some point.⁷⁰⁸ The ordinary use-based theory holds that the meaning of a word corresponds to its ordinary usage in the given community of speakers.⁷⁰⁹ The intention-based theory argues that meaning should be interpreted in terms of the intentions of speakers engaged in an act of communication.⁷¹⁰ The content-based theory focuses on the construction of the subject matter from the interpreter’s point of view and emphasizes the pragmatic significance of meaning.⁷¹¹

The weaknesses of the above three theories are further analyzed in this Chapter. The aim of the critical analysis is not to deny the possibilities of

⁷⁰⁷ Jonathan R. Siegel, *The Inexorable Radicalization of Textualism*, 158 U. PA. L. REV. 117 (2009) (“not only does textualism differ fundamentally from intentionalism and purposivism, but the gap between them gets wider with time.”) For articles representing a new wave of scholarship that attempts to reach an accommodation among competing interpretive methods, see e.g. Molot, *supra* note 615; Nelson, *supra* note 465. Akhil Reed Amar, *Textualism and the Bill of Right: Textualism and the Bill of Rights*, 66 Geo. Wash. L. Rev. 1143(1998). See also, Akhil Reed Amar, *Intratextualism*, 112 Harv. L. Rev. 747 (1999). In his articles, Professor Amar advocated “holistic textualism” through which the words of a legal text are seen as part of broad linguistic and structural patterns rather than individual provisions. The holistic textualism was criticized that based on textual similarities, interpreters are likely to be distracted from the context of particular provisions and increase decision costs. See Adrian Vermeule & Ernest A. Young, *Hercules, Herbert, and Amar: the Trouble with Intratextualism*, 113 Harv. L. Rev. 730(2000).

⁷⁰⁸ Siegel, *id.* (“Attention to context and other interpretive conventions can sometimes help bridge the gap between interpretive methods, but sometimes it cannot.”)

⁷⁰⁹ Fabrizio Macagno, *supra* note 524. (“On the one hand, the speaker presumes that the hearer knows the meaning of the words he used, because they correspond to the ordinary (in the given community of speakers) meaning (in context). On the other hand, the hearer interprets the words on the basis of the presumption that the speaker is using them according to their ordinary usage (in con-text).”)

⁷¹⁰ Christian Plunze, *Why Do We Mean Something Rather Than Nothing?* in G. Grewendorf, G. Meggle (ed.), *Speech Acts, Mind, and Social Reality: Discussions with John R. Searle*, 105 (2002) (“The answer given by Paul Grice is that someone means something by his utterance if and only if he intends to communicate something to an addressee.”) For Paul Grice, what matters for a theory of language is what the agent intends to communicate.

⁷¹¹ Charles S. Peirce, *How to Make Our Ideas Clear*, *Popular Science*, Monthly 12, 286-302 (1878) Charles Peirce wrote: “consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object.” William James, *Pragmatism* 20 (2008) (“To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve — what sensations we are to expect from it and what reactions we must prepare.”) See also, Ronald Dworkin, *Fidelity in Constitutional Theory: Fidelity as Integrity: The Arduous Virtue of Fidelity: Originalism, Scalia, Tribe, and Nerve*, 65 Fordham L. Rev. 1249 (1997).

meaning,⁷¹² but rather to recognize the key dilemma of current theories of claim interpretation: the tension between preservation of the original understanding and adapting it to technology development. Claim construction is a process that “can expand or restrict the reach of a patent into improvements.”⁷¹³ For example, it is necessary to explain why the meaning of claims is fixed at the time of filing yet grows to encompass improvements.⁷¹⁴ As pointed out by Professor Chisum, a common policy objective on patent claim scope in all patent systems is “fair protection for patent owners combined with a reasonable degree of certainty.”⁷¹⁵ In claim interpretation, on one hand, patent law requires the kind of certainty for the public to ascertain “where the patentee’s proprietary interest begins and ends.”⁷¹⁶ Therefore we must preserve the original meaning over time. On the other hand, as the contemporary context influences the reading of the past text, technological changes will influence the application of the term in new cases, and claim construction needs to justify this change of understanding.

Therefore, the critical task of patent claim interpretation is then how to

⁷¹² Mistrale Goudreau, *The So-Called Purposive Construction of Patent Claims: Comments on Whirlpool and Free World Trust*, 2 *University of Ottawa Law & Technology Journal* 1, 219 (2005). (“The aim is neither to reject nor to prefer a method, but rather to use all appropriate methods to interpret a text in a just and reasonable manner, given the particular circumstances of a case.”)

⁷¹³ Kevin Emerson Collins, *Getting into the “Spirit” of Innovative Things: Looking to Complementary and Substitute Properties To Shape Patent Protection for Improvements*, 26 *Berkeley Tech. L.J.* 1217 (2011). (“Some determine the permissible level of generality at which a claim can be drawn. Claim construction—the process through which judges determine the meaning of claim language to the PHOSITA—can expand or restrict the reach of a patent into improvements. In addition, a court can expand or contract patent protection beyond the literal scope of a claim through either the doctrine of equivalents (“DOE”)139 or the reverse DOE.”)

⁷¹⁴ Saulsbury, *supra* note 205. (“In the case of allegedly infringing improvements, a court’s approach to thing construction determines whether literal claim scope can stay fixed in some sense at the time of filing even as it grows, in another sense, to encompass improvements.”)

⁷¹⁵ Donald S. Chisum, *Common and Civil Law Approaches to Patent Claim Interpretation: ‘Fence Posts’ and ‘Sign Posts’*, in David Vaver & Lionel Bentley (eds.), *Intellectual Property in the New Millennium: Essays in Honour of William R. Cornish*, 107 (2004).

⁷¹⁶ Nard, *supra* note 648.

preserve original meaning across changed contexts.⁷¹⁷ An appropriate theory is needed to establish a dialogue about meaning between that past texts and the present situation.⁷¹⁸ A proposed patent claim interpretation must fit, and explain the legal practices it interprets as well as justify them. The goals to preserve the original meaning and to adapt the text to new situations may seem at odds with each other, but they actually are two sides of the same coin.⁷¹⁹

The trend in the field of legal interpretation, such as constitutional interpretation and statutory interpretation,⁷²⁰ is toward unifying rather than separating originalism and living document,⁷²¹ which will be analyzed in detail in the next Chapter. In a brief summary, the key concepts lying at the core of this trend are “meaning (connotation/sense)” and “application (denotation/reference)”.⁷²² For example, it has been pointed out that

⁷¹⁷ William M. Treanor, *The Original Understanding of the Takings Clause and the Political Process*, 95 Colum. L. Rev. 782, 857 (1995). It is necessary to “translate” the original understanding of a constitutional provision into the present context. In analyzing Professor Lessig’s model, Professor William M. Treanor explains that “a translator seeks to identify the ends that the Constitution’s framers sought to advance and then interprets a constitutional provision in a way that best advances those ends in today’s world.”

⁷¹⁸ T.M. Seebohm, *Hermeneutics. Method and Methodology*, 46 (2005) (“The task of hermeneutics is to bridge the gap by re-creating the past horizon for the present reader.”)

⁷¹⁹ Balkin, *supra* note 42. The author argued “that original meaning originalism and living constitutionalism are not only not at odds, but are actually flip sides of the same coin.” The basic idea is that interpreters must be faithful to the original meaning of the constitutional text and to the principles that underlie the text. But fidelity to original meaning does not require fidelity to original expected application.

⁷²⁰ Lawrence B. Solum, *Interpretation-Construction Distinction*, *The Symposium: The Interpretation/Construction Distinction in Constitutional Law: Annual Meeting of the AALS Section on Constitutional Law*, 27 Const. Comment 95. (2010-2011) (“These facts include the characteristics of the utterance itself—what marks appear in the writing?—and by facts about linguistic practice—how is that word used?—and what are the rules (or regularities) of syntax and grammar?”) Laura A. Cisneros, *The Constitutional Interpretation/construction Distinction: A Useful Fiction* 27 Const. Comment 71(2010-2011) (“construction is what happens when judicial and non-judicial actors take the product of the interpretation enterprise--i.e., the recovered meaning of the text--and then implement that meaning through legal rules that govern everyday social and political life.”) Huscroft & Miller (ed), *supra* note 490, at 64 (2011) (Under original public meaning originalism, the original meanings of the concepts used (and their meaning in combination with each other) should be preserved, but we are not necessarily bound by either the intentions of the persons who framed the words, or by the general public expectation of how those words would be applied.”)

⁷²¹ John T. Valauri, *As Time Goes By: Hermeneutics and Originalism*, 10 (3) Nevada Law Review 719–731(2012) (“No longer is there a sharp line separating originalism and living constitutionalism. Some writers even combine the two theories into aspects of one theory.”) See also, Randall N. Graham, *A Unified Theory of Statutory Interpretation*, 23 Statute L. REV. 91, 104 (2002)

⁷²² Jack M. Balkin, *Abortion and Original Meaning*, 24 Const. Comm. 291. (2007) (“...they have tended to conflate two different ideas—the expected application of constitutional texts, which in not binding law,

interpreters must follow the “original meaning”, but are not constrained by the “original expected application”.⁷²³ The “original expected application” concerns the problem how to adapt the meaning of a text to a concrete situation at a point of a time in the past, but it does not necessarily determine the final meaning.⁷²⁴ The original meaning of the text itself is limitless with possibilities and open to interpretation and reinterpretation, therefore, an interpreter is able to explore opportunities for the production of new meaning generated in a changing context.⁷²⁵ An appropriate theory of claim interpretation has to clarify the circumstances that justify the activity of construction, and to explain what information matters or how facts should be used consistently in determining the patent scope.⁷²⁶ The theory needs to provide a convincing justification for decision-making and enhance the overall coherence of claim interpretation.⁷²⁷ The philosophical hermeneutics is

and the original meaning, which is. ”) See also, Richard H. Fallon, Jr., *Are Originalist Constitutional Theories Principled, or Are They Rationalizations for Conservatism?*, 34 Harv. J.L. & Pub. Pol’y 5, 7(2011). (“Brown v. Board of Education²² illustrates the potential distinction between anticipated applications of constitutional language and the Framers’ intent, the original understanding, or the original public meaning... Obviously, it is the formal text of the Fourteenth Amendment that governs, and not the uncodified and erroneous ideas of the ratifiers of that text as to what it might mean.”)

⁷²³ Lawrence B. Solum, *District of Columbia v. Heller and Originalism*, 103 NW. U. L. REV. 923, 926–39 (2009), at 935. See also, John O. McGinnis & Michael B. Rappaport, *Original Interpretive Principles as the Core of Originalism*, 24 Const. Comment 371(2007) (“The original meaning is informed by, but not exhausted by, its original expected applications... the expected applications can be strong evidence of the original meaning).

⁷²⁴ Fallon, *supra* note 722. (“Whether—and, if so, when—originally intended or expected applications of constitutional language conclusively establish its original meaning is obviously a crucially important question with implications for how myriad constitutional questions ought to be resolved.”)

⁷²⁵ Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules of Canons about How Statutes Are to Be Construed*, 3 Vand. L. Rev. 395 (1950) (“increasingly as a statute gains in age...its language is called upon to deal with circumstances utterly un contemplated at the time of its passage. Here the quest is not properly for the sense originally intended by the statute, for the sense sought originally to be put into it, but rather for the sense which can be quarried out of it in the light of the new situation.”) Dostal, *supra* note 46, 95. (In we are to be open to an alternative understanding of a text, we must acknowledge that we possess a pre-understanding, that, indeed, we are part of thick traditions and conditioned by the inevitably parochial character of our historical situation...we must acknowledge our lack of neutrality, our pre-conceptions and our biases.)

⁷²⁶ Twining & Miers, *supra* note 15, at 344. (Description and conclusion of facts has to be translated into the context of normative reasoning.)

⁷²⁷ R. Dworkin, *Taking Rights Seriously*, 150-68 (1977). See also, Neil MacCormick, *Legal Reasoning and Legal Theory* 156 (1978). The notion of coherence addresses the question about linking the various individual parts into one integrated whole. Barbara Baum Levenbook, *The Role of Coherence in Legal Reasoning*, 3 Law and Philosophy 3, pp. 355-74 (1984). To achieve the goal of coherence, different rules

especially relevant for law, which is grounded in the interpretation of authoritative texts from the past to resolve present-day disputes.⁷²⁸

must have some justificatory relation, either direct or indirect, to the same principle. J.M. Balkin, *Understanding Legal Understanding: The Legal Subject and the Problem of Legal Coherence*, 103 Yale L.J. 105 (1993).

⁷²⁸ Francis Joseph Mootz III, *Nietzschean Critique and Philosophical Hermeneutics*, 24 Cardozo Law Review 967 (2003). It has been acknowledged that legal practice inevitably is hermeneutical, with lawyers and judges interpreting governing legal texts and the social situations in which they must be applied. *See also* Lieber, *supra* note 45 (“It is in vain, therefore, to believe in the possibility of forming a code of laws absolutely distinct, like mathematical theories. All that true wisdom requires is to make laws as distinct and perfect as possible, following both the dictates of reason and the suggestions of experience, and carefully to establish rules of interpretation and construction, or legal hermeneutics.”)

PART III: THE APPLICATION OF PHILOSOPHICAL HERMENEUTICS TO CLAIM INTERPRETATION

CHAPTER 6 PHILOSOPHICAL HERMENEUTICS AND LEGAL INTERPRETATION

This Chapter introduces an alternative interpretive theory, *i.e.* philosophical hermeneutics, to patent claim construction. It has been pointed out that the key challenge facing current theories of claim interpretation is the tension between preserving the certainty of claim scope coverage and adapting the claim to technology development. Philosophical hermeneutics' main concern is how the meaning of a text can be continually understood by interpreters in present conditions by reading the text. This Chapter introduces its core theoretical concepts such as "Sache", "application" and "fusion of horizons". The dynamic legal interpretation derived from philosophical hermeneutics strives for adapting old texts to new circumstances. Scholars in the field of constitutional interpretation and statutory interpretation have realized that it is worthwhile to reconcile the fixed meaning and the evolving facts. Some express such idea by reference to the distinction between a fixed "concept (connotation/sense)" and variable "conceptions (denotation/reference)" of that concept. While the connotation of the words remains fixed, their denotation may vary over time. The main theoretical basis is that the applications of a general term do not exhaust the sources for understanding its essential characteristics. This Chapter studies the implications of this "connotation-denotation" model for patent claim construction.

Section 1 Basic introduction to philosophical hermeneutics

Since its emergence in the seventeenth century, the Latin word *hermeneutica* has referred to the art of interpretation.⁷²⁹ The modern use of the term “hermeneutics” can be traced to the work⁷³⁰ of Friedrich Schleiermacher and Wilhelm Dilthey, whose adherents look to hermeneutics as a general body of methodological principles. Emilio Betti and E.D. Hirsch, for example, sought to elaborate hermeneutics as a general body of methodological principles for humanistic studies,⁷³¹ and argued strongly for the autonomy of the object of interpretation and the possibility of “objectivity” in making valid interpretations.⁷³² Philosophical hermeneutics, by comparison, is of very recent date. This term refers to the philosophical position of Hans-Georg Gadamer. Gadamer, following Heidegger, oriented his thinking to the more philosophical question of what understanding itself is.

According to Gadamer, a person who wants to understand the text must question what lies behind what is said.⁷³³ Philosophical hermeneutics aims at

⁷²⁹ Jean Grondin, *Introduction to Philosophical Hermeneutics* 1 (1994); See also Jean Grondin, *Sources of hermeneutics* 19 (1995).

⁷³⁰ Friedrich Schleiermacher, *Hermeneutics and Criticism and Other Writings* 225 (1998). Prior to Schleiermacher, the task of textual interpretation was thought to require different interpretive methods depending on the type of text to be interpreted. Schleiermacher is credited with taking the first steps toward developing a general hermeneutic methodology. In 1900, Dilthey applied Schleiermacher’s description of “general hermeneutics” and expanded the scope of the hermeneutic application. See also, Alan D. Schrift, *Nietzsche and the Question of Interpretation: Between Hermeneutics and Deconstruction* 2(1990); Palmer, Richard, E., *Hermeneutics* 123 (1969).

⁷³¹ Gayle L. Ormiston & Alan D. Schrift, *The Hermeneutic tradition: from Ast to Ricoeur* (1990) (In general, Schleiermacher is credited with taking the first steps towards establishing a general hermeneutical methodology in contrast to a variety of regional hermeneutic approaches.) See also Richard Kearney, *Twentieth-century continental philosophy* 293(2003) (Betti and Hirsch have sought to argue anew for hermeneutics as a general body of methodological principles and rules for achieving validity in interpretation.)

⁷³² Richard E. Palmer, *Hermeneutics* 46(1969).

⁷³³ Chris Lawn, *Gadamer: A Guide For The Perplexed* 75 (2006). Hans-Georg Gadamer, *Philosophical Hermeneutics*, 88 (2008). “The hermeneutical inquiry,” says Gadamer, “is based on the fact that language always leads behind itself and behind the façade of overt verbal expression that it first presents.”

the subject matter⁷³⁴ and emphasizes that there is no meaningful way to distinguish “what the thing is” from interpretation.⁷³⁵ Therefore, philosophical hermeneutics is not centering the meaning of a text with its author's intent or its ordinary usage.⁷³⁶ but turning our attention to the subject matter of the expression. The best interpretation captures what the text has said that is true about the subject matter (*die Sache*) at stake in the text⁷³⁷ -- that is, “the things themselves”, which may be the things that the historical author did not have or could not have had.⁷³⁸

Philosophical hermeneutics not only recognizes the pragmatics of language, but also reveals the interplay between text, author and interpreter.⁷³⁹ For Gadamer, meaning is produced through an agreement between the

⁷³⁴ Tom Rockmore, *In Kant's Wake: Philosophy in the Twentieth Century* 115 (2006) (“hence ontology, is descriptive, and description is interpretive, or hermeneutical.”) See also, Richard E. Palmer, *Hermeneutics* 129 (1969). (“Ontology must turn to the process of understanding and interpretation through which things appear.”)

⁷³⁵ Ingrid Scheibler, *Gadamer: Between Heidegger and Habermas* 139 (2000). (“For the “content” of tradition exists in constantly widening possibilities, newly expressed in language.”)

⁷³⁶ Gadamer, *supra* note 46, 396. (“What is fixed in writing has detached itself from the contingency of its origin and its author and made itself free for new relationships. Normative concepts such as an author’s meaning or the original reader’s understanding in fact represent only an empty space that is filled from time to time in understanding...The idea of the original reader is full of unexamined idealization.”) See also, David Couzens Hoy, *Legal Hermeneutics: Recent Debates*, in Kathleen Wright (ed.), *Festivals of Interpretation* (1990), pp. 111-35. (“Although hermeneutics does not deny a role for intentions in interpretation, neither does it privilege the original intentions of legal authors as textual meaning is determined.”) Hans Georg Gadamer & Lawrence Kennedy Schmidt, *Language and Linguisticality in Gadamer's Hermeneutics* 63 (2000). (“...what comes to language is, certainly, different than the spoken word itself.”) Burhanettin Tatar, *Interpretation and the Problem of the Intention of the Author: H.-G. Gadamer Vs. E.D. Hirsch* 9 (1998) (“It seems that according to Gadamer understanding means not only to share the same perspective with someone, but more basically to share the same ground which is the subject matter (Sache). Therefore, he seems to imply that in order to understand someone else’s perspective, one has first to understand on what ground (subject matter) one’s perspective is based. From this angle, understanding an author’s intention must be secondary to understanding the subject matter.”)

⁷³⁷ Kathleen Wright (ed), *Festivals of interpretation: essays on Hans-Georg Gadamer's work* 113 (1990). Barry D. Smith, *Distanciation And Textual Interpretation*, 43 *Laval théologique et philosophique* 2, 205-216 (1987). The German word Sache means thing, subject matter, content, business, real issue at stake. (“In Gadamer's thought, we noted that the interpreter stands before the text as someone whose task it is to understand what the text is about, i.e., its Sache. ”) See also, Tatar, *supra* note 736, 106. (“In this sense, Sache remains always as transcendental ground which asserts its truth in the dialogical process between the language of the text and that of the interpreter.”) Nicholas Davey, *Unquiet Understanding: Gadamer's Philosophical Hermeneutics* 70 (2006) (“As such, a Sache denotes the subject matter of an expression, the substance of what is being addressed.”)

⁷³⁸ Kevin J. Vanhoozer (ed.), *Hermeneutics at the Crossroads* 16 (2006)

⁷³⁹ Donatella Di Cesare, *Gadamer: A Philosophical Portrait* 165 (2013).

interpreter and the author about the *Sache*,⁷⁴⁰ rather than produced by the text, author or interpreter alone (see FIG 1). One important feature of this theory is its acknowledgment of our finitude and knowledge constraints. The past horizon is opened to us in an always incomplete manner,⁷⁴¹ and the reader in the present horizon inevitably projects his prejudices onto a text.⁷⁴² Gadamer argues that interpretation involves the “*fusion of the horizons*”⁷⁴³, that is, interpretation involves a merge of horizons of the past and present: on the one hand, we get to know the *Sache* from our preconceptions in the historical context;⁷⁴⁴ on the other, we are influenced by our present situation that reveals new dimensions of the *Sache*.⁷⁴⁵ The “*fusion of horizon*” is not two people becoming one through the elimination of difference. Instead, “it is two distinct horizons finding common ground in their orientation to, and development of,

⁷⁴⁰ Gadamer, *supra* note 46, 292. (“The goal of all attempts to reach an understanding is agreement concerning the subject matter.”)

⁷⁴¹ *Id.*, 296. (“Not just occasionally but always, the meaning of a text goes beyond its author.”)

⁷⁴² *Id.*, 269. (“A person who is trying to understand a text is always projecting.”) Gadamer, *supra* note 46, 576 (1989) (“the fusion does not allow the interpreter to speak of an original meaning of the work without acknowledging that, in understanding it, the interpreter’s own meaning enters in as well.”)

⁷⁴³ Chris Lawn, *Gadamer: A Guide for the Perplexed*, 66 (2006). Gadamer, *supra* note 46 at 301. For Gadamer the understanding of the other can be achieved by a “fusion of horizons”, a fusion between the interpreter’s and the interpreted. The horizon is defined as “the range of vision that includes everything that can be seen from a particular vantage point.” The horizons of interpretation constantly changes and can never be fully achieved or finally completed.

⁷⁴⁴ David Couzens Hoy et al, *Critical Theory*, 190(1994). (“so for Gadamer even though the *Sache* guides the interpretation, the *Sache* is not eternal, but is itself evolving with the history of interpretation. There is no need to ask the metaphysical question whether the *Sache* remains the same or changes, since the *Sache* is not some external reality that exist independently of the process of interpretation.”)

⁷⁴⁵ Gadamer, *supra* note 46, at 321 (“The interpreter dealing with a traditional text seeks to apply it to himself... In order to understand that, he must not seek to disregard himself and his particular hermeneutical situation. He must relate the text to this situation, if he wants to understand at all.”) *See also* Brian Leiter & Michael Rosen, *The Oxford Handbook of Continental Philosophy* 62 (2007) (“interpretations change over time, and these changing interpretations are internal to the meaning of the art, text, or discourse in question, so that there is after all no such thing as an original meaning independent of these changing interpretations.”); William N. Eskridge, Jr., *Gadamer/Statutory Interpretation*, 90 Colum. L. Rev. 609 (1990) (“Interpretation is not merely an exercise in discovery, but involves a critical approach to the text. The interpreter questions the text, the presuppositions of which may be attenuated or undermined over time.”) Paul Campos, *That Obscure Object of Desire: Hermeneutics and the Autonomous Legal Text*, 77 Minnesota Law Review 1065 (1993). Paul Campos regarded an interpreter as a hermeneutic reader “constrained by both the text and the circumstances of its interpretation, but simultaneously empowered to engage the object of interpretation so as to make it the best linguistic artifact it can be for the purposes of a particular interpretive practice.”

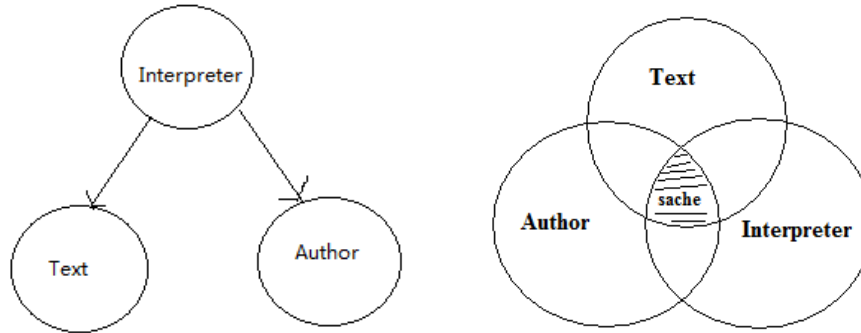
*die Sache.*⁷⁴⁶

Figure 1 Comparison between the traditional theories and the philosophical hermeneutics

FIG 1.1. Relationship in traditional theories

FIG 1.2 Relationship in philosophical

hermeneutics



Under the philosophical hermeneutics, meaning is not construed as the recapturing or repetition of the original intention. “The meaning of a text surpasses its author not occasionally, but always. Thus understanding is not a reproductive procedure, but rather always also a productive one.”⁷⁴⁷ Therefore, meaning is not simply discovered, but is decided after extensive deliberation.⁷⁴⁸ A concrete application is always involved in order to understand the *Sache*.⁷⁴⁹ Understanding is generated through the interplay between the text, author and interpreter in concrete circumstances.⁷⁵⁰ Gadamer argues that

⁷⁴⁶ Jan M. Broekman (ed.), *The Semiotics of Law in Legal Education* 11 (2011)

⁷⁴⁷ Hans-Georg Gadamer, *Philosophical Hermeneutics* xxv (2008). Chris Lawn, *Wittgenstein and Gadamer* 96 (2004) (“Interpretation (and translation) are not reproductive acts, they are productive and hence creative.”)

⁷⁴⁸ Stanley Fish, *Doing What Comes Naturally: Change, Rhetoric, and the Practice of Theory in Literary and Legal Studies* 185 (1989). For example, it is concluded that “the language of the statute is plain and admits of only one meaning” is, in the words of Stanley Fish, “a product of perspective” and “itself an interpretation.”

⁷⁴⁹ Dostal, *supra* note 46.

⁷⁵⁰ Georgia Warnke, *Gadamer. Hermeneutics, Tradition and Reason* 107 (1987) (“A transformation of the initial positions of both ‘text and interpreter’ and is ‘a consensus over meanings that reveals new dimension of die Sache (the matter at hand) and issues in a new stage of the tradition of interpretation.”) Mootz, *supra* note 49 (“The text is recontextualized to one’s situation only if one is willing to listen, to put all one’s prejudices in play with the text and to follow the possibilities of meaning.”) Lawn *supra* note 7, 2. (““Interpretation is sited within the mutual horizon of the interpreter and the thing to be interpreted... A text, or anything or event within the world we interpret, has its own horizon of meaning.”)

it is impossible to arrive at an absolutely objective understanding of the meaning of a text. To speak of “objectively valid interpretation” is naïve, because understanding is an historical act and as such is always connected to the present.⁷⁵¹

The work of Gadamer has had a determinative influence on examinations of law and literature as vehicles of meaning.⁷⁵² Gadamer’s masterwork, *Truth and Method*, has influenced jurisprudential discussion about the concept and task of legal interpretation.⁷⁵³ For Gadamer, legal hermeneutics is the model for philosophical hermeneutics generally.⁷⁵⁴ The adoption of the philosophical hermeneutics urges us to reconsider the attempt to discover the objective and univocal meaning in a legal document,⁷⁵⁵ and pay attention to the application of meaning to particular circumstances.⁷⁵⁶ It reminds us in the context of law that

⁷⁵¹ Fish, *supra* note 485.

⁷⁵² Patterson, *supra* note 26, at 448. (“The study of law as literature has become the study of legal hermeneutics, in particular the study of similarities between law and literature with regard to the role of author, reader, and institutional context.”) See also, Robin L. West, *Are There Nothing but Texts in This Class? Interpreting the Interpretive Turns in Legal Thought*, 76 Chi.-Kent L. Rev. 1125, 1126–27 (2000). (“Whatever may be true of Gadamer’s influence in other disciplines, his influence in law has been unambiguously both broad and deep.”)

⁷⁵³ Mootz, *supra* note 49, 30. (“Legal hermeneutics is the exploration of this interpretive reality, which is always anterior to the conceptual formulations used in making any legal argument or rendering any legal judgment.”) See also, Jerzy Stelmach & Bartosz Brożek, *Methods of Legal Reasoning* 173 (2006). The authors presented the influence of a variety of hermeneutics on jurisprudence, such as Schleiermacher and Dilthey’s universalistic account of hermeneutics and Husserl, Heidegger, Gadamer and Ricoeur’s ontological and methodologically oriented hermeneutics. For an intellectually accessible introduction to this literature, see also, David Couzens Hoy, *Interpreting the Constitution: Hermeneutical and Poststructuralist Perspectives*, 58 S. Cal. L. Rev. 135 (1985); Drucillar Cornell et al., *Hermeneutics and the Rule of Law, Deconstruction and the Possibility of Justice* (1992); Gregory Leyh, *Legal Hermeneutics: History, Theory, and Practice* (1992).

⁷⁵⁴ Costas Douzinas & Ronnie Warrington, *Postmodern Jurisprudence: The Law of Text in The Text of Law* 30 (1991). See also, Peter Goodrich, *Historical Aspects of Legal Interpretation*, 61 IND. L.J. 331, 347 (1986). (“Gadamer, however, develops this process of transmission into a principle of interpretation as translation in which essential oppositions are constituted between the divine and the human, the foreign and the familiar, the written and the spoken, and lastly and most broadly, the past and the present. The notion of translation is pivotal and has a peculiar relevance to legal hermeneutics.”)

⁷⁵⁵ Mootz, *supra* note 49, 32 (“...any attempt to discover the meaning of a text is a misguided project that ignores both the dynamic interaction of the reader and the text, and the implications of the reader’s finite and temporal nature.”)

⁷⁵⁶ George H. Taylor, *The Distinctiveness of Legal Hermeneutics*, in *Ricoeur Across the Disciplines*, Scott Davidson ed. 84 (2010). See also, Hans-Georg Gadamer, *Man and Language*, in *Philosophical Hermeneutics* 59, 68 (David E. Linge ed. & trans., 1976). Gadamer describes the translator’s aim “must never be to copy what is said, but to place himself in the direction of what is said (i.e., in its meaning) in

objective, bias-free or detached interpretation never exists, and “legal interpretation is always a response out of the present, in light of future possibilities for the purpose of reaching a satisfaction in the present.”⁷⁵⁷ The following section will introduce the dynamic approach in legal interpretation, which focuses on the move from an original meaning to a contemporary application.

Section 2 Dynamic legal interpretation practice

Dynamic interpretation is so-called because judges adapted the legal text to present-day circumstances.⁷⁵⁸ The proponents of dynamic interpretation of constitutions, statutes and treaties advocate that meaning changes over time.⁷⁵⁹ For example, in statutory interpretation, American theorist William Eskridge developed the well-known dynamic statutory interpretation based on his analysis of the hermeneutics of Gadamer.⁷⁶⁰ “Practical reason”⁷⁶¹ plays a

order to carry over what is to be said into the direction of his own saying.”

⁷⁵⁷ Howard J. Vogel, *The Possibilities of American Constitutional Law in a Fractured World: A Relational Approach to Legal Hermeneutics*, 83 U. Det. Mercy L. Rev. 789 (2006). See also, Daniel A. Farber, *Statutory Interpretation and the Idea of Progress*, 94 U. Mich. L. Rev. 1546 (1996) (“Dynamic interpretation’s distinctive feature is the view that statutory meaning changes over time.”) Jarkko Tontti, *Right and Prejudice: Prolegomena to Hermeneutical Philosophy of Law* 34 (2004) (Even if the letters of a text remain the same, the meaning of the text is necessarily new and different for each new interpreter....A new interpreter who begins to interpret the text has a different situation and pre-understanding of the object than the historically earlier interpreters.)

⁷⁵⁸ Frank Cross, *The Theory and Practice of Statutory Interpretation* 110 (2008). (“Updating meaning to accommodate changed circumstances...”)

⁷⁵⁹ Nerlich Brigitt, *Change in Language: Whitney, Br ául, and Wegener* 132 (1990). (“Wordsonly have meaning in so far as they are interpreted as meaningful, in so far as the hearer attributes meaning to them in context. According to this view of language, change of meaning is not unexpected. As there are no invariants, variation is the norm, meaning changes all the time.”) See also, Lawrence C. Marshall, *Contempt of Congress: A Reply to the Critics of an Absolute Rule of Statutory Stare Decisis*, 88 MICH. L. REV. 2467, 2478 (1990) (“The Constitution is replete with clauses that call on the courts to apply norms to ever changing political and social circumstances. Consistent with the notion of the Constitution as a living document, definitions and applications of terms like ‘due process,’ . . . evolve over time.”)

⁷⁶⁰ Paul Michell, *Just Do it! Eskridge’s Critical Pragmatic Theory of Statutory Interpretation*, 41 McGill L.J. 711 (1996). See also Guyora Binder & Robert Weisberg, *Literary criticisms of law* 188 (2000) (“Lieber, Cardozo, Radin, Llewellyn, Bickel, Hart and Sacks, and Dworkin all figure in Eskridge’s work. But perhaps the most important influence is Gadamer.”) Professor Eskridge identified Gadamer with four ideas: first, interpretation of a text can be neither simply “originalist” nor “present-oriented,” second, it must be traditional, third, it should be tolerant of heteronomy, and fourth, it is practical rather than theoretical, a craft rather than a science.

crucial role in the dynamic approach to bring the past text into the present situation.⁷⁶² Rather than rely on the ordinary meaning or the authorial intent at a point of time in the past,⁷⁶³ practical reasoning requires the interpreter to strengthen the views of the text as much as possible in order to check his horizon with respect to the text.⁷⁶⁴ Professor Eskridge found hermeneutics an appealing approach to statutory interpretation, because a judge can give a legal norm, created in the past, a modern interpretation to suit modern needs:⁷⁶⁵

Interpretation is required for those issues that were either unanticipated or politically sidestepped. Where such gaps or ambiguities exist, a legislator voting for the statute might have a different interpretation than would contemporary administrators or judges (or, indeed, other legislators). Over time, the gaps and ambiguities proliferate as society changes, adapts to the statute, and generates new variations on the problem initially targeted by the statute.⁷⁶⁶

⁷⁶¹ William N. Eskridge, Jr. & Philip P. Frickey, *Statutory Interpretation as Practical Reasoning*, 42 Stan. L. Rev. 321 (1990) Practical reason is defined as an approach that eschews objectivist theories in favor of a mixture of inductive and deductive reasoning (similar to the practice of the common law), seeking contextual justification for the best legal answer among the potential alternatives.

⁷⁶² Tatar, *supra* note 736, 116 (1998) (“The task of the interpretation is to bring the past (written) text to its original function in the living conversation. In other words, interpretation is the living conversation itself between the past and the present.”)

⁷⁶³ Eskridge, *supra* note 50. The author acknowledged the value of originalist sources such as statutory text and structure, legislative history and purpose – and found some useful insights in originalist theories. However, the author concluded that originalist approaches to statutory interpretation were undesirable in theory and unworkable in practice. For critical analysis of the dynamic approach, *see* generally John Copeland Nagle, *Newt Gingrich, Dynamic Statutory Interpreter*, 143 U. Pa. L. Rev. 2209 (1995).

⁷⁶⁴ Gadamer, *supra* note 46, at 350. Central to Gadamer’s theory is the concept of pre-understandings or prejudices of the interpreter, which originates from his linguistic, historical, social and cultural background; *See also*, Tatar, *supra* note 736, 112, 116 (1998) (“Every genuine interpretation starts with the dialectic of the question and answer... The task of the interpretation is to bring the past text to its original function in the living conversation.”) Mootz, *supra* note 49, 110. (“A valid model of legal hermeneutics must take the preeminent status of the text into account. The central feature of such a model, therefore, is the attitude of listening. Listening is an attitude in a negative sense rather than a positive sense. It is not a methodological program for extracting meaning from the text but rather a willingness to lower one’s defenses and to meet the text in play.”)

⁷⁶⁵ Barak, *supra* note 474, at 41.

⁷⁶⁶ William N. Eskridge, Jr., *Dynamic Statutory Interpretation* 5 (1994). (“Interpretation is not static, but dynamic. Interpretation is not an archeological discovery, but a dialectical creation. Interpretation is not mere exegesis to pinpoint historical meaning, but hermeneutics to apply that meaning to current problems and circumstances.”) In his book *Dynamic Statutory Interpretation*, Eskridge also applied the new theory to illustrate that statutory interpretation is a battleground for broader political and legal struggles. *See e.g.*

In light of the development of concepts and principles by new scientific insights and the change of political paradigms, legal scholars have also developed “dynamic interpretation” in treaty interpretation. The treaty is considered as “a living instrument” which can change its meaning in accordance with developments in State and society:⁷⁶⁷

Treaties, particularly if they have been negotiated a long time ago, might be more viable if an interpretation of their term is not static but adaptable and expressive of the understanding of terms at the time of their interpretation. To serve this purpose, treaty interpretation can and should consider new international rules as expressed by modern, subsequently enacted treaties, on similar issues.⁷⁶⁸

According to Professor Herman Philipse, Gadamer’s theory of “fusion of horizons” is considered as the philosophical counterpart to the conception of the “living” or “evolving” Constitution,⁷⁶⁹ *i.e.* the meaning of the Constitution may

William N. Eskridge, Jr., *Gadamer/Statutory Interpretation*, 90 Colum. L. Rev. 609 (1990); William N. Eskridge, Jr., *Legislative History Values*, 66 CHI.-KENT L. REV. 365 (1990); Eskridge & Frickey, *supra* note 761.

⁷⁶⁷ Malgosia Fitzmaurice, *Dynamic (Evolutive) Interpretation of Treaties and the European Court of Human Rights*, in Alexander Orakhelashvili (ed.), *40 Years of the Vienna Convention on the Law of Treaties* 55 (2010); *see also*, Oliver Dörr et al., *Vienna Convention on the Law of Treaties: A Commentary* 568 (2012); Sir Ian McTaggart Sinclair, *The Vienna Convention on the Law of Treaties* 131 (1984) (“An even more dynamic variant of teleological approach is the so-called theory of “emergent purpose” whereby the object and the purpose itself is not regarded as fixed and static but as variable, so that at any given moment, the convention is to be interpreted not so much, or not merely, with reference to what its object was when entered into, but with reference to what that object has since become and now appears to be.”)

⁷⁶⁸ Rudiger Wolfrum et al., *Conflicts in International Environmental Law*, 145 (2003).

⁷⁶⁹ Herman Philipse, *Antonin Scalia’s Textualism in philosophy, theology, and judicial interpretation of the Constitution*, 3 Utrecht Law Review 169-192 (2007). (“Let me therefore turn to my own field and discuss briefly how Textualism fares in philosophy. Its main opponent is still Gadamer’s theory of interpretation. It is illuminating to dissect this theory because it is the paradigmatic philosophical counterpart of Justice Scalia’s main scapegoat, the doctrine of The Living Constitution.”) Adam Winkler et al. (ed.), *Encyclopedia of the American Constitution*, Vol. 6, 2712 (2000) (“Over the past two hundred years, American constitutional interpretation has undergone a transformation from its early static and TEXTUALIST tradition to a modern, dynamic approach wherein a ‘living constitution’ changes to accommodate the needs of the times.”) Louis J. Virelli III, *Constitutional Traditionalism in the Roberts Court*, 73 U. Pitt. L. Rev. 1 (2011) (“Living constitutionalism advocates a dynamic approach to constitutional interpretation, where contemporary notions of justice and societal needs drive constitutional meaning.”) Jack L. Landau, *Some Thoughts about State Constitutional Interpretation*, 115 Penn St. L. Rev. 837 (2011) (“A third approach to constitutional interpretation is one that advocates for a “living” constitution. According to proponents, the meaning of a constitution is not static or fixed in time, as the

evolve in light of current circumstances.⁷⁷⁰ Such “living-force”⁷⁷¹ vision has also been implemented by Australian courts.⁷⁷² Judges distinguish between the meaning of the words (*connotation*) and their intended applications (*denotation*) in constitutional interpretation.⁷⁷³ McHugh J preferred to express the same basic idea by reference to the distinction, introduced to the legal canon by Ronald Dworkin, between a fixed “*concept*” (more abstract) and variable “*conceptions*” (less abstract) of that concept.⁷⁷⁴ Gadamer’s and Dworkin’s theories share an interest in mediating between the past and the present.⁷⁷⁵ The

originalists contend. Rather, the meaning of the constitution is dynamic, capable of changing in response to changing conditions in society.”)

⁷⁷⁰ Schor, *supra* note 52.

⁷⁷¹ Kirby, *supra* note 53. (approving of Andrew Inglis Clark's argument that the Australian Constitution must be "made a living force" and arguing that present understandings of the Constitution's meaning should control interpretation today). Robert Shenton French et. al. (ed.) *Reflections on the Australian Constitution* 20 (2003) (“A constitution is sometimes described as a ‘living instrument’ or as having ‘living force.’ Whatever these metaphorical expression may be intended to mean, they at least convey the idea that a constitution develops over time and that as new questions are decided, the provisions of the constitution come to have an operation which was previously not authoritatively established.”)

⁷⁷² Craven, *supra* note 54; See also, Robert Shenton French et.al (ed.), *Reflections on the Australian Constitution* 20 (2003). (“A constitution is sometimes described as a ‘living instrument’ or as having ‘living force’.”)

⁷⁷³ Ginsburg & Dixon, *supra* note 55, 602.

⁷⁷⁴ Lim, *supra* note 61. See also, Ginsburg & Dixon, *supra* note 55, 602. (“This Australian distinction between two kinds of meaning has parallels with Ronald Dworkin’s well-known distinction between legal concepts and legal conceptions.”) Michael Stokes, *Contested Concepts, General Terms and Constitutional Evolution*, 29 Syd. LR 683 (2007) (“At least one major advocate of the concept-conception distinction, Prof Ronald Dworkin, relies on the distinction, to some extent at least, in his defence of the claim that there are right answers to such questions, often arguing that the court can reach the right answer by applying the best conception of a contested concept.”) J. Neville Turner & Pamela Williams, *The happy couple: law and literature* 320 (1994) (“This builds on the court’s connotation/denotation distinction, and is consistent with Dworkin’s distinction between ‘concepts’ and ‘conceptions.’”) Dworkin in his discussion of constitutional interpretation—the distinction between concepts and conceptions, see Ronald Dworkin, *Taking Rights Seriously* 134-36 (1978).

⁷⁷⁵ Kathleen Wright, *Festivals of interpretation: essays on Hans-Georg Gadamer's work* 114 (1990) (“They both acknowledge that interpretation of texts must be aware of the origin of the text in a particular time and place. Yet, they both think that texts address us from within the present context and note merely from a dead past.”) See also, Grant Huscroft & Bradley W. Miller, *The Challenge of Originalism Theories of Constitutional Interpretation*, in Huscroft & Miller (eds.), *supra* note 490 (“He urges the new originalists to engage more fully with those legal philosophers, such as Dworkin and Gadamer, who maintain that the interpretation of a text and its application in any particular instance are not separate actions but a single unitary process.”) Ronald K. Rowe (II.), *Contemporary Legal Theory and Philosophical Hermeneutics: Originalism's Failed Reliance on Intentionalist Theories of Meaning* 100, 101 (2008) (“In describing the nature of law and how it operates in practice, Ronald Dworkin commits himself to a picture of the activity of legal interpretation and adjudication most consistent with Gadamer’s philosophical hermeneutics...Gregory Leyh, in his essay ‘Dworkin’s Hermeneutics,’ acknowledges similar features of Dworkin’s view that align with Gadamer’s project.”) Ian Ward, *An Introduction to Critical Legal Theory* 44 (2004) (“It is Gadamer’s theory of hermeneutics, and more particularly of “fidelity” to the text, which Dworkin employs in Law’s Empire as a complement to his theory of law as “principle”)

meaning of a constitutional term is its connotation,⁷⁷⁶ and connotations have usually been understood to consist of “the essential qualities or characteristics of the concept referred to”.⁷⁷⁷ Toohey J explained this principle concisely: “whilst the connotation of the words in the Australian Constitution remains fixed, their denotation may vary over time.”⁷⁷⁸ Five key propositions involved in the connotation-denotation model have been succinctly summarized as follows:⁷⁷⁹

1. The meaning of a term (its connotation) is distinct from its application (its denotation).
2. The connotation of a term was fixed at the time the Constitution was enacted.
3. The connotation of a term is determined by the essential features (‘attributes’ for Dawson J) of the term.
4. The denotation of a term can change.
5. The denotation of a term at any time after the Constitution was enacted is determined by the range of things that at that later time possess the essential features or attributes specified in the connotation of the term.

⁷⁷⁶ Zines, *supra* note 56. (“All the judges accepted that one had to look to the meaning ... and that “meaning” referred to the connotation rather than the denotation of the expression.”)

⁷⁷⁷ H. P. Lee & Peter A. Gerangelos (ed.), *Constitutional Advancement in a Frozen Continent: Essays in Honour of George Winterton* 266(2009)

⁷⁷⁸ *McGinty v The State of Western Australia*. ((1996) 186 CLR 140); *See also*, Anne Twomey, *Rowe v Electoral Commissioner – Evolution or Creationism?* University of Queensland Law Journal, Vol. 31, No. 2, pp. 181-202 (2012). (“Her Honour then noted that “[w]hat is sufficient to constitute democratic representative government has changed over time, as conceptions of democracy have changed to require a fully inclusive franchise – that is, a franchise free of arbitrary exclusions based on class, gender or race.” Thus the denotation has changed, while the connotation has remained the same.”)

⁷⁷⁹ Simon Evans, *supra* note 59, Citing Dawson J’s description in *Street v. Queensland Bar Association* (1989) 168 CLR 461: “The essential meaning of the Constitution must remain the same, although with the passage of time its words must be applied to situations which were not envisaged at federation. Expressed in the technical language of the logician, the words have a fixed connotation but their denotation may differ from time to time. That is to say, the attributes which the words signify will not vary, but as time passes new and different things may be seen to possess those attributes sufficiently to justify the application of the words to them.”

To adapt legal texts to new circumstances or respond to new political preferences, the dynamic interpretation must avoid going against the original meaning, otherwise it amounts to unconstitutional *ex post facto* legislation and is unfair to litigants whose transactions arose in the past.⁷⁸⁰ That is, to be faithful to the legal text is to interpret its words in ways that sustain their vitality over time.⁷⁸¹ In consistency with the modern trends towards reconciling fixed meaning with the reality of changing facts in legal interpretation, which will be further discussed in the next Section, the connotation-denotation model reflects an attempt to strike a balance between legal certainty and flexibility.⁷⁸²

Section 3 Trends of reconciling fixed meaning and evolving facts

Whether the meaning of the legal text can ever change has been long debated.⁷⁸³ Some assert that the meanings may change over time. For example, Justice Holmes wrote: “A word is not a crystal, transparent and unchanged; it is the skin of a living thought and may vary greatly in color and content according to the circumstances and the time in which it is used.”⁷⁸⁴ The main problem of the evolutionary version of meaning, as Justice Scalia contended, is that “there is no agreement, and no chance of agreement, upon what is to be the guiding principle of the evolution.”⁷⁸⁵ Some assume that meaning was fixed at the time

⁷⁸⁰ Anthony D'Amato, *The Injustice of Dynamic Statutory Interpretation*, 64 U. Cin. L. Rev. 911 (1996).

⁷⁸¹ Goodwin Liu et al., *Keeping Faith with the Constitution* 103 (2010).

⁷⁸² Valauri, *supra* note 721 (“The grand issue in legal and constitutional interpretation is always how to go forward and apply the law or constitution to the next case in a manner that demonstrates fidelity to text and tradition while, at the same time, paying sufficient attention to both larger values and the particular facts and circumstances of the case....bridge the temporal and other distances between framers and current interpreters.”)

⁷⁸³ Huscroft & Miller (ed.), *supra* note 490, at 4.

⁷⁸⁴ Frank Cross, *The Failed Promise of Originalism* 6 (2013). Quoting Justice Holmes’ dissenting opinion in *Town v. Eisner* 1918, 425.

⁷⁸⁵ Antonin Scalia, *Common-Law Courts in a Civil-Law System: The Role of United States Federal Courts in Interpreting the Constitution and Laws*, in *A MATTER OF INTERPRETATION* 44-45 (Amy Gutmann

of formation.⁷⁸⁶ Although the inquiry of the static version of meaning is often hypothetical (from the standpoint of a neutral, unbiased observer), it is narrow in the sense of attempting to determine how the observers would have expected the drafters to resolve the issue, if they had contemplated it.⁷⁸⁷

Recently, scholars in the field of constitutional interpretation have realized that it would be worthwhile to explore whether the two versions are compatible.⁷⁸⁸ The goal is to strike a compromise between the desire to preserve the original meaning of the texts and the desire to accommodate the effect that changing context may have on meaning.⁷⁸⁹ The basic theme is that “the past and present are no longer so sharply differentiated.”⁷⁹⁰ Both this new trend of legal interpretation theory and philosophical hermeneutics share the similarities of seeking to apply past historical texts in contemporary contexts.⁷⁹¹

Professor Lawrence Solum also applied Gadamer’s insights to the practice,

ed., 1998).

⁷⁸⁶ Solum, *supra* 723 .

⁷⁸⁷ Thomas B. Colby, *The Sacrifice of the New Originalism*, 99 *Geo. L.J.* 713 (2011).

⁷⁸⁸ Lawrence B. Solum, *What is Originalism? The Evolution of Contemporary Originalist Theory*, in Huscroft & Miller (eds.), *supra* note 490 (“Compatibilism could be the view that originalism and living constitutionalism have separate domains. Originalism has constitutional interpretation as its domain: the linguistic meaning of the Constitution is fixed. Living constitutionalism has constitutional construction as its domain: the vague provisions of the constitution can be given constructions that change over time in order to adapt to changing values and circumstances.”) *See also*, Dawn Johnsen, *The Progressive Political Power of Balkin’s “Original Meaning,”* 24 *Const. Comment.* 417, 417–21 (2007); Jamal Greene, *On the Origins of Originalism*, 88 *TEX. L. Rev.* 1 (2009); Jamal Greene, *Selling Originalism*, 97 *GEO. L.J.* 657 (2009); Richard S. Kay, *Original Intention and Public Meaning in Constitutional Interpretation*, 103 *NW. U. L. REV.* 703 (2009); John O. McGinnis & Michael B. Rappaport, *Originalism and the Good Constitution*, 98 *GEO. L.J.* 1693 (2010); Peter J. Smith, *How Different are Originalism and Non-Originalism?* 62 *Hastings Law Journal*, 707 (2011); David A. Strauss, *Can Originalism be Saved?*, 92 *B.U. L. Rev.* 1161, 1163-67 (2012)

⁷⁸⁹ Schweda Nicholson, *Linguistic and Extralinguistic Aspects of Simultaneous Interpretation*, 8 (2) *Applied Linguistics*, 194-205 (1987). *See also*, Goodwin Liu et al., *Keeping Faith with the Constitution* 103 (2010). (“Constitutional interpretation must be informed by contemporary norms and circumstances, not simply by its original meaning.”)

⁷⁹⁰ Reva B. Siegel, *Heller and Originalism’s Dead Hand—In Theory and Practice*, 56 *UCLA L. REV.* 1399, 1414 (2009). (“Claims about the past express contemporary identities, relationships, and concerns, and express deep normative convictions.”)

⁷⁹¹ John T. Valauri, *Interpretation, Critique, and Adjudication: The Search for Constitutional Hermeneutics*, 76 *CHI.-KENT L. REV.* 1083, 1087-90 (2000). (“legal hermeneutics has an exemplary status within the study of interpretation, n37 and historical investigation and [*1092] adjudication are not so different at all - they both seek, out of current concerns, to apply past historical texts in contemporary contexts”)

“[o]ur understanding of the Constitution... is enabled by our participation in a tradition that links us to (but also separates us from) the concerns of the framers and ratifiers... [T]radition both conditions and enables understanding.”⁷⁹²

One significant and also widely debated proposal is dubbed as “living originalism”,⁷⁹³ which clearly distinguishes between the non-binding “original expected application” and the binding “original meaning.”⁷⁹⁴ Living originalism is so called because “we understand our present situation and the possibilities and needs of the future through the trajectory of our interpretation of the meaning of the past.”⁷⁹⁵ As its proponent Professor Jack M. Balkin pointed out, “when people use the term ‘original understanding’ and sometimes even ‘original meaning’ ... they are actually talking about original expected application.”⁷⁹⁶ Professors John O. McGinnis and Michael B. Rappaport further refined this theory, and argued that the original meaning “is informed by, but not exhausted by”⁷⁹⁷ its original expected applications. The rationale is that, although the general meaning is fixed (*e.g.*, by legislative action) and remains constant, “the set of factual applications of that fixed general meaning may

⁷⁹² Lawrence Solum, *Originalism as Transformative Politics*, 63 TUL. L. REV. 1599 (1988-1989).

⁷⁹³ James E. Fleming, *Living Originalism and Living Constitutionalism as Moral Readings of the American Constitution*, 92 B.U.L. Rev. 1171 (2012).

⁷⁹⁴ Jack M. Balkin, *Abortion and Original Meaning*, 24 Const. Comment. 291 (2007).

⁷⁹⁵ Jack M. Balkin, *Living Originalism* 63 (2011). See also, Randy E. Barnett, *Underlying Principles*, 24 CONST.COMMENT. 405 (2007); Randy E. Barnett, *Welcome to the New Originalism: A Comment on Jack Balkin's Living Originalism*, Jerusalem Review of Legal Studies 1-7 (2013). There are numerous varieties of originalism, the general introduction can be found in James E. Fleming, *Living Originalism and Living Constitutionalism as Moral Readings of the American Constitution*, 92 Boston University Law Review 1187 (2012) (“Some of the varieties include the following. It all began with conventional “intention of the Framers” originalism. Then it became “intention of the ratifiers” originalism. Of course, we also have original expectations and applications” originalism (what I elsewhere have called “narrow” or “concrete” originalism). Then came “original meaning” originalism, which was refined as “original public meaning” originalism (officially, this is now the position of Scalia and Barnett).”)

⁷⁹⁶ Jack M. Balkin, *Abortion and Original Meaning*, 24 CONST.COMMENT. 291, 296 (2007)

⁷⁹⁷ McGinnis & Rappaport, *supra* note 723 (“Balkin presents a false dichotomy — either embrace abstract principles whose meaning is almost infinitely malleable or confine the Constitution to the applications the Framers imagined. We believe there is [a] middle way that is also a better way. In our view, the Constitution's original meaning is informed by, but not exhausted by, its original expected applications. In particular, the expected applications can be strong evidence of the original meaning.”)

expand or contract with the application of the fixed general meaning to changed circumstances.”⁷⁹⁸ Living originalism is dynamic as it does not simply apply the original meaning in the context of application “as if any differences between the context of writing and the context of reading just did not matter.”⁷⁹⁹ Instead, it pays serious attention to the contemporary knowledge of facts which may change the outcome of the meaning’s application.⁸⁰⁰

An alternative moderate form⁸⁰¹ of expressing the distinction between meaning and application is the sense/reference (or connotation/denotation) model.⁸⁰² “The sense of [an] expression is fixed at the time of the framing, but the reference is not, because it depends on the facts about the world, which can change.”⁸⁰³ This model centers on the connotation imputed to “meaning.”⁸⁰⁴ The connotation of the terms is fixed but their denotation may change from time to time. “That is to say, the attributes which the words signify will not vary, but as time passes new and different things may be seen to possess those attributes sufficiently to justify the application of the words to them.”⁸⁰⁵ The connotation/denotation model attempts to establish the link between the past

⁷⁹⁸ Patrick J. Kelley, An Alternative Originalist Opinion for *Brown v. Board of Education*, 20 S. ILL. U. L.J. 75, 76 (1995)

⁷⁹⁹ Lawrence Lessig, *Fidelity in Translation*, 71 Tex. L. Rev. 1165 (1993) (“While the approach here is certainly ‘dynamic,’ it is dynamic in its effort to preserve meaning rather than evolve.”)

⁸⁰⁰ As for the criticisms on living originalism, see, e.g., Ethan J. Leib, *The Perpetual Anxiety of Living Constitution*, 24 Const. Commentary 353 (2007) (“But my main thesis here is that Balkin should no longer be welcomed by the living constitutionalists, despite his claim to be meeting their fundamental needs.”) Michael C. Dorf, *The Undead Constitution*, 125 Harv. L.Rev, Vol. 125, 2011, (2012) (“...because in branding his theory as a new twist on an old idea, Balkin undersells his real accomplishment: his subtle account of how social and political movements contribute to legitimate constitutional change.”)

⁸⁰¹ Lim, *supra* note 61.

⁸⁰² Christopher R.Green, *Originalism and the Sense-Reference Distinction*, 50 St. Louis L.J. 555 (2006).

⁸⁰³ *Id.* (“The Theory of Original Sinn could equivalently be explained as holding to a fixed constitutional connotation, but evolving constitutional denotation, or as holding to a fixed constitutional intension, but evolving constitutional extension.”)

⁸⁰⁴ Toler, Lorianne Updike et.al., *Pre-'Originalism'*, 36 Harvard Journal of Law and Public Policy 278 (2012).

⁸⁰⁵ Grant R. Darwin, *Originalism and Same-Sex Marriage*, University of Pennsylvania Journal of Law and Social Change, vol. 17.1 (Forthcoming 2013). Available at SSRN: <http://ssrn.com/abstract=2239782>

and present context, and interprets and adapts the legal texts to changing times.

A dynamic interpretation is necessary for patent claim texts due to their inherently dynamic nature.⁸⁰⁶ There is often a distance between the time of filing patent application and the time of patent litigation. Over time, the usage of claim terms can “take on an increasingly broad scope”⁸⁰⁷ as science and technology evolve and improve. It has been pointed out that “the process of assigning terms to describe those new ideas is not static.”⁸⁰⁸ Patent law balances between protecting original inventors on the one hand and encouraging competition and follow-on innovation on the other.⁸⁰⁹ Since patent claim construction also involves understanding past thought and addressing present concerns,⁸¹⁰ it would be helpful to study the relationship between understandings of original meaning and application of the claim text to modern circumstances. The following section will discuss the implications of the philosophical hermeneutics and the dynamic approach for claim construction.

⁸⁰⁶ William R. Hubbard, *Efficient Definition and Communication of Patent Rights: The Importance of Ex Post Delineation*, 25 Santa Clara Computer & High Tech. L.J. (2009) (“discoveries and inventions often involve changing, cutting-edge technology. However, both the future state of that technology and its terminology may be unsettled, and infringement claims may not be brought until years after the patent was issued. In addition, the lack of widely accepted terminology may prompt a patent applicant to use a word unconventionally, thereby placing the use of the word well outside of familiar prototypes. The meanings of words may also fluctuate over time as new terminology becomes standardized.”)

⁸⁰⁷ John M. Romary & Arie M. Michelsohn, *Patent Claim Interpretation After Markman: How the Federal Circuit Interprets Claims*, 46 AM. U. L. REV. 1887, 1889 (1997). (“...technical terms used conventionally by a patentee can take on an increasingly broad scope over time as the relevant art gradually recognizes that term as conventionally encompassing a concomitantly wider scope of embodiments.”) See also, Collins, *supra* note 40 (stating that a claim’s breadth describes the range of products encompassed by the claim at the time of filing, while the claim’s depth describes the expansion of the claim set over time as claim scope reaches an increasing array of newly discovered after-arising technologies).

⁸⁰⁸ Lemley, *supra* note 7. (“Indeed, the risk of change in the meaning of terms over time is particularly great in patent law, because patents necessarily involve new ideas...”)

⁸⁰⁹ Ronald A. Cass & Keith N Hylton, *Laws of Creation: Property Rights in the World of Ideas* 60 (2013).

⁸¹⁰ H. Jefferson Powell, *Rules for Originalist*, 73 Va. L. Rev. 659 (1987). (calling attention to the subjectivity involved in historical interpretation)

Section 4 Implications for patent claim interpretation

The existing theories of meaning are correct in pointing out that to know what a word means is to know how it is being used in a given context.⁸¹¹ The philosophical hermeneutics and the dynamic legal interpretation may provide new insights for refining patent claim construction. In this section, the following three implications will be discussed: (1) a new pair of concepts “meaning” and “application” is needed to justify the interpretive choice in a changing context. (2) The thing construction and the meaning interpretation are not necessarily independent of each other. In the connotation-denotation model, meaning refers to the essential attributes that a thing must have in order to come within the term.⁸¹² (3) With a caveat that constitutions are often to be read broadly to adapt themselves as far as possible to the changing conditions, the determination of the connotation, *i.e.*, the essential attributes, in claim construction is of critical importance.

A. “Meaning” and “application” in patent claim construction

One often cited case in the debate “whether meaning has changed or not” is *SuperGuide Corp. v. DirecTV Enterprises, Inc.*⁸¹³ The disputed technical term is “a regularly received television signal.”⁸¹⁴ Some would agree that there is a

⁸¹¹ Vyvyan Evans, *How Words Mean: Lexical Concepts, Cognitive models, and Meaning Construction* 153 (2009).

⁸¹² Geraldine Chin, *Technological Change and the Australian Constitution*, 24 Melb U L Rev 609, 640 (2000). (“The ‘connotation’ refers to the essential meaning of the constitutional language as at 1900, and comprises all the essential attributes that a thing must have in order to come within the term. The ‘denotation’ includes new and different items with that essential meaning; this the Court determines by assessing whether the new item possesses all the essential attributes.”)

⁸¹³ *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870 (Fed. Cir. 2004).

⁸¹⁴ *SuperGuide Corporation v. DirecTV Enterprises, Inc.*, 358 F.3d 870 (Fed. Cir. 2004). Federal Circuit found that the district court erred in construing the claim “regularly received television signal”. The majority adopted a broad meaning of “regularly received television signal” as encompassing digital

change in the technological context which should justify a changed reading: the claim term in mid-1990s (e.g., the digital signals) might well be different from what a PHOSITA expected in 1985 (e.g. the analogy signals). Based on this argument, the claimed invention would be limited to analog television signals at the time of filing. But some would argue that the change of context could not justify a changed reading: “The claim language does not limit the disputed phrases to any particular type of technology or specify a particular type of signal format, such as analog or digital.”⁸¹⁵ Therefore, the term “regularly received television signals” would be broad enough to encompass both formats.

As science and technology evolves over time, a theory that applies meaning only in the old context has difficulty in explaining the effect of context changes on interpreters’ understandings. On the other hand, a theory that asks interpreters to reconstruct meaning in the new context fails to explain how to enhance certainty in claim construction.⁸¹⁶ “Context” is defined as “the set of circumstances or facts that surround a particular event, situation, etc.”⁸¹⁷ A proper interpretation is not to simply rely on the original context, but

television signals based on the “plain meaning of claim language.”

⁸¹⁵ *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870 (Fed. Cir. 2004). The Seventh Circuit reversed, concluding that the fixation of meaning-scope on the date of filing did not prevent the claim from reading on the after-arising technology. See also, *Leland Stanford v. Roche*, 528 F.Supp.2d 967 (2007). The court noted that “[t]he term in question may be a category, the contents of which expand over time... Here, there is no evidence that the patentee intended to limit the patent ‘antiretroviral agents’ to known and available technologies, nor is there evidence that the categorical term, antiretroviral agents, was ever used to refer only to agents that inhibit reverse transcription.” Kahrl, *supra* note 1, at 4-42. (“The meaning of a claim term is fixed at the time that the application for patent is filed. Thus, in fast-moving technologies when the meaning of a term change with new discoveries, the court will discard more recent definitions of a claim term in favour of the definition in use when the inventor wrote the specification of the patent.”)

⁸¹⁶ Lemley, *supra* note 7. (“This was the fate of Schrödinger’s unfortunate (and mercifully apocryphal) cat, quoting John Gribbin, *In Search of Schrödinger’s Cat: Quantum Physics and Reality* (1984). Regardless whether the cat would truly be both alive and dead, a question upon which physicists disagree, the claim construction would exist in an ambiguous state until we knew the context of the lawsuit in which the claim would be construed.”) The author discussed which point in time we shall fix the meaning of the claims, and proposed that the logical way to unify the meaning of patent claim terms is to fix that meaning at the time of filing.

⁸¹⁷ Webster’s Dictionary 439 (2d ed. 2001).

to strike a compromise between the desire to preserve the original meaning of the texts and the desire to accommodate the effect that changing context may have on meaning.⁸¹⁸ In the theories of constitutional interpretation, Professor Lessig and Professor Balkin have made a contribution to reconciling constitutional change with fidelity to original meaning.⁸¹⁹ It is useful to examine a pair of concepts: “meaning” and “application”. The meaning of the legal texts does not change through time, even though its applications may change.⁸²⁰ The rapidly changing social conditions over time may generate tension between the “original expected application of the text”,⁸²¹ *i.e.*, how people living at the time the text was adopted would have expected it would be applied, and the “contemporary application of the text”, *i.e.* how the interpreter understand it in the present-day context. It is not original expected application but original meaning that controls.⁸²² The original *meaning* is not exhausted by its original expected *applications*.⁸²³

In claim construction, there is often a gap between the time of patent

⁸¹⁸Schweda Nicholson, *Linguistic and Extralinguistic Aspects of Simultaneous Interpretation*, 8 (2) Applied Linguistics, 194-205 (1987). See also, Goodwin Liu et al., *Keeping Faith with the Constitution* 103 (2010). (“Constitutional interpretation must be informed by contemporary norms and circumstances, not simply by its original meaning.”) See also, Lessig, *supra* note 799. Understanding Changed Readings: Fidelity and Theory (Whether conceived broadly or narrowly, all “facts” are background to the particular text read, and a change in any could in principle constitute a change in the context of the text read.)

⁸¹⁹ James E. Ryan, *Laying Claim to the Constitution: The Promise of New Textualism*, 97 Va. L. Rev. 1523 (2011). (“originalism, properly understood, is not really in tension with the idea of a “living” Constitution, insofar as fidelity to original meaning still allows for changed applications.”)

⁸²⁰ Lawrence Lessig, *Understanding Changed Readings: Fidelity and Theory*, 47 Stan. L. Rev. 395 (1994-1995). (“...the legal texts remain the same across contexts. What changes across contexts is the application, or as I will call it, the reading of the legal text in context.”)

⁸²¹ Mark D. Greenberg & Harry Litman, *The Meaning of Original Meaning*, 86 GEO. L.J. 569 (1998). The authors are the first to articulate a similar distinction between “original meaning” and “original practices”. Greenberg and Litman saw their point primarily as a criticism of originalism; Balkin sees the same issue, but concludes that originalism is strengthened by excluding “original expected applications. See also, Solum, *supra* note 723; Thomas B. Colby, *The Sacrifice of the New Originalism*, 99 Geo. L.J. 713 (2011).
⁸²² Jamal Greene, *Selling Originalism*, 97 Geo. L.J. 657, 668–70 (2009).

⁸²³ McGinnis & Rappaport, *supra* note 723. Balkin, *supra* note 42. (“But fidelity to original meaning does not require fidelity to original expected application. Original expected application is merely evidence of how to apply text and principle.”)

filing and the time of interpretation.⁸²⁴ According to the concept of *fusion of horizons*, it is improper to privilege either the perspective of the patentee or the interpreter and marginalize another.⁸²⁵ It is necessary to maintain the relation of the present content on its internal continuity with the previous historical context.⁸²⁶ According to the *meaning-application* distinction in the constitutional theory, it is not enough to look at the “non-binding, partly-fact-based applications”⁸²⁷ of the words at the time of filing. The originally-intended or originally-understood application is not conclusive for meaning. The next paragraph will discuss the payoff of this theory.

B. “Connotation” and “denotation” in patent claim construction

We now understand that in *SuperGuide Corp.* case, it is the *application* rather than *meaning* that has changed. By saying that the application has changed, one is arguing that the category of potential referents of the technical content expand over time⁸²⁸—they have changed from analog signals to digital signals.⁸²⁹ More examples can be found in scientific and technological development. For example, the term “autism” was once defined as a single disorder in 1968 (“original expected application”). As a result of new medical

⁸²⁴ Lemley, *supra* note 7 (“Indeed, the risk of change in the meaning of terms over time is particularly great in patent law, because patents necessarily involve new ideas, and the process of assigning terms to describe those new ideas is not static.”)

⁸²⁵ Menell *et.al*, *Supra* note 5. The evidence of ordinary meaning, the patentee’s intent and the interpreter’s own perception of fairness may all be a helpful reference point, but not an end point.

⁸²⁶ Burhanettin Tatar, *Interpretation and the Problem of the Intention of the Author* 111 (1998).

⁸²⁷ Christopher R. Green, *McDonald v. Chicago, the Meaning-Application. Distinction, and 'Of' in the Privileges or Immunities Clause*, 11 Engage 26 (2010)
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1523920

⁸²⁸ Sonja Sickert, *What is meaning?* 6 (2006). (“According to Lobner ‘the denotation of a content word is the category, or set of all its potential referents.’”)

⁸²⁹ Chiang & Solum, *supra* note 38. (“it is important to see that the linguistic meaning of “regularly received television signal” was constant... What changed was the set of real-world objects that fit within the description.”)

advancements and more effective methods of diagnosing, now the term refers to the spectrum of autism disorders, including Asperger’s syndrome and five different forms of pervasive developmental disorder (“contemporary application”).⁸³⁰ Another example is the term “textbook”. With the technological developments such as 4G wireless, open source and massive computing power, new policy has changed the definition to include digital content (“contemporary application”).⁸³¹

The Australian High Court has long employed a connotation-denotation model, “whereby a constitutional expression includes not only the specific instances which fell within that expression in 1900 (denotation), but also any further instances which have come into being since that time but which are nevertheless within the idea represented by the expression in question (connotation).”⁸³² Importantly, this model has traditionally been applied “where there have been technological advances”⁸³³ in constitutional interpretation.

In claim construction, the distinction between connotation and denotation has been noticed by Kevin Emerson Collins in his article *The Reach of Literal Claim Scope into After-Arising Technology: On Thing Construction and the Meaning of Meaning*.⁸³⁴ Collins aims to offer a descriptive explanation for the fixation-growth paradox in determining claim scope. He points out that judges

⁸³⁰ Louise Cummings, *Clinical Linguistics* 234 (2008). American Psychiatric Association (APA) used to define “autism” as a single disorder.

⁸³¹ Blair Levin & J. Erik Garr, *A New America through Broadband*, Washington Post (July 16, 2010). The Texas legislature passed a bill in 2009 creating a commissioner’s list for digital content technology. <http://www.washingtonpost.com/wp-dyn/content/article/2010/07/15/AR2010071504175.html>.

⁸³² Craven, *supra* note 54.

⁸³³ (1996) 186 CLR 140 at 200.

⁸³⁴ Collins, *supra* note 40. (“courts can sanction play between thing-scope and meaning- scope”)

resolve this paradox either by constructing things or defining meaning.⁸³⁵ Collins considers things and meanings as “independent” and “separate” doctrinal policy levers that courts manipulate to tailor the claim scope: “[Different judges] had different theories of construction and different policy judgments about the desirability of allowing patentees to cover subsequently developed technology.”⁸³⁶ Such sharp distinction⁸³⁷ generates the dichotomy of form and substance, which has been proven unhelpful for patent claim construction.

This thesis differs in adopting a dynamic framework for using the “connotation-denotation analysis” coherently and consistently in claim construction. As taught by Gadamer, the separated goals of interpreting meaning and applying meaning are “different aspects of the same activity.”⁸³⁸ The main theoretical basis is: “the expected applications of a general term do not exhaust the sources for understanding its essential characteristics.” Denotation of a term (the class of objects to which it refers) is dependent on its connotation (the class of properties by which the referred objects can be identified), and “the more properties that make up the connotation of a term,

⁸³⁵ *Id.* (“courts can sanction play between thing-scope and meaning- scope”)

⁸³⁶ *Id.* (“There are two independent mechanisms, each of which implicates a different category of AAT. One mechanism focuses on the nature of things and the way in which thing-scope can be fixed in one sense and yet expand in another to encompass AAT. The other addresses an ambiguity in the meaning of meaning.”)

⁸³⁷ Vyvyan Evans & Melanie C. Green, *Cognitive linguistics* 293 (2006) (“The traditional position, both in philosophy and in linguistics—and indeed the everyday view—is that (1) there is a stable and unambiguous notion of literality, and (2) that there is a sharp distinction to be made between literal language, on the one hand, and non-literal or figurative language on the other. According to this view, while literal language is precise and lucid, figurative language is imprecise, and is largely the domain of poets and novelists....In particular, it seems that it is difficult to establish a neat dividing line between literal and figurative meaning...linguistic metonymy is referential in nature: it relates to the use of expression to “pin-point” entities in order to talk about them. Defining feature of metonymy: ‘X stands for Y.’”)

⁸³⁸ Ronald K. Rowe, *Contemporary Legal Theory and Philosophical Hermeneutics: Originalism's Failed Reliance on Intentionalist Theories of Meaning* 95 (2008) (“one cannot do the former without applying it to one’s own situation because interpretation simply is the fusion of one’s own horizon with that of the text.”)

the narrower will be the class of objects denoted by the term.”⁸³⁹ The connotation-denotation model adopted by Australian High Court is normative in that it clearly defines *meaning* as the *connotation* rather than the *denotation* of the expression.⁸⁴⁰ Therefore, the model does not draw a clear-cut division between linguistic meaning scope and thing scope, it is the essential characteristics or attributes of the words used that need to be ascertained.⁸⁴¹ The next paragraph will discuss the role of essential characteristics in the context of patent claim construction.

C. Determination of essential attributes in patent claim construction

There are both desirability and limitation to the application of the connotation-denotation model in patent claim construction. On one hand, patent law fosters both private and public interest,⁸⁴² and a patent is an outcome of a bargain between society and the inventor. From a societal perspective, both the constitution and patent can share the same common theoretical root: social contract theories. Social contract theories provide that rational individuals will agree by contract, compact, or covenant to give up the condition of unregulated freedom in exchange for the security of a civil

⁸³⁹ Massimo La Torre, *Law As Institution* 174 (2010) (“the class denoted is inversely proportional to the extension of the class connoted.”) (2010)

⁸⁴⁰ Zines, *supra* note 56.

⁸⁴¹ Suzanne Corcoran & Stephen Bottomley, *Interpreting Statutes* 68 (2005) (“The most successful and least controversial of these theories is the connotation-denotation distinction. It claims that the connotation or essential meaning of a general term, which provides the list of features which an object must have to fall within the term, may remain the same while its denotation or extension, that is the class of objects or phenomena which have all the features necessary to fall within the term, may expand...”)

⁸⁴² Alexander James Stack, *International Patent Law: Cooperation, Harmonization, and an Institutional Analysis of WIPO and the WTO* 46 (2011) (“Patent law is a private means for fulfilling a public function... it is also about public law: it is enacted to further a public purpose of increasing innovation, patent rights are against everyone.”) *See also*, Markman, 52 F.3d 967, 32 USPQ 2d 1321 (Fed. Cir. 1995) (“patents...are enforceable against the public...unlike private agreements between contracting parties.”)

society governed by a just, binding rule of law.⁸⁴³ Accordingly, patents can be viewed as a type of social contract⁸⁴⁴ because “the state gives the inventor a monopoly in return for an immediate disclosure of all the information necessary to enable performance of the invention.”⁸⁴⁵ With such a common basis, the dynamic interpretive methods of patent claim construction are able to “closely track”⁸⁴⁶ the canons of dynamic constitution interpretation, which adapt legal texts to contemporary societal needs and values.

On the other hand, a constitution is a fundamental legal text, which provides the basic structure of the political and legal systems, and the connotation-denotation model must be applied with caution and further refinements are necessary. The constitutions are often to be read more broadly than other statutes to adapt themselves as far as possible to the changing conditions:⁸⁴⁷ “For that reason where the question is whether the Constitution has used an expression in the wider or in the narrower sense, the Court should, in my opinion, always lean to the broader interpretation unless there is something in the context or in the rest of the Constitution to indicate that the

⁸⁴³ Anita L. Allen, *Social Contract Theory in American Case Law*, 51 Florida Law Review 1 (1999)

⁸⁴⁴ Jean O. Lanjouw, *Comment on “Of Patents and Genes: Flows of knowledge and Intellectual Property Rights” by Claude Henry*, in François Bourguignon et al. (ed.) *Economic Integration and Social Responsibility*, 135 (2007) (“Through the patent system, consumers effectively agree to pay inventors prices above marginal costs for a limited period of time in order to give inventors reason to invest in the discovery and development of useful products.”) *See also*, P. Drahos, *The Global Governance of Knowledge: Patent Offices and their Clients* 30 (2010) (The author has argued that the ideal that should guide patent offices is the patent social contract. “society offers a monopoly in exchange for the release of an invention of social value.”)

⁸⁴⁵ *Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46, [2005] RPC 169.

⁸⁴⁶ Burk, *supra* note 37. (“given the close parallels between patent claims and statutes, it should not be surprising to find interpretive strategies common to both.”) This thesis does not compare dynamic claim interpretation to dynamic contract interpretation, because dynamic contract interpretation often consists of principles that are individualized and sometimes subjective, and the inventor’s subjective intent plays no role when construing claim terms in patent cases. *See*, Melvin Aron Eisenberg, *The Emergence of Dynamic Contract Law*, 88 Cal. L. Rev. 1743 (2000). *See also*, Moore, *supra* note 5. (“whereas in contract cases, the subjective intent of the parties is the primary focus.”)

⁸⁴⁷ Craven, *supra* note 54.

narrower interpretation will best carry out its object and purpose.”⁸⁴⁸ In patent claim construction, the broader the claim, the higher the likelihood that products will infringe, the claim.⁸⁴⁹ “[I]t is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee's right to exclude”⁸⁵⁰ others from the invention.

The need for certainty and predictability in claim construction has long been recognized by courts.⁸⁵¹ Therefore, to apply the model in patent claim construction, the way of determining connotation, *i.e.*, the essential attributes, must be more specific and clearer than that in constitutional interpretation. In patent law, there is an existing concept of “essential features” (or “essential integers”, “essential elements”)⁸⁵² of claims. An independent claim must indicate all the essential features. “All features which are necessary for solving the technical problem with which the application is concerned have to be

⁸⁴⁸ Zines, *supra* note 56.

⁸⁴⁹ Edward F. O'Connor, *Intellectual Property Law and Litigation: Practical and Irreverent Insights* 90 (2009).

⁸⁵⁰ *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 978-79 (Fed.Cir.1995) (en banc).

⁸⁵¹ See, e.g. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39 n.8 (1997) (noting need “to promote certainty, consistency, and reviewability” in patent law); *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996) (expressing a need for certainty in claim construction); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (noting a need for “reasonable certainty and predictability” in claim construction), cert. denied, 126 S. Ct. 1332 (2006).. *Kirin-Amgen v Hoechst Marion Roussel*. 2002 RPC 2. [2002] EWCA Civ 1096. [2004] UKHL 46. (“in determining the extent of protection according to the content of the claims but avoiding literalism, the courts of the Contracting States should combine “a fair protection for the patentee with a reasonable degree of certainty for third parties.”) *Free World Trust v. Electro Sant é Inc. et al.* (2000) 2 S.C.R. 1024, (2001) 9 C.P.R. (4th) 168 (S.C.C. per Binnie J.) (“The appeal thus raises important questions about the scope and ambit of a patent owner's monopoly. Too much elasticity in the interpretation of the scope of the claims creates uncertainty and stifles competition.”)

⁸⁵² Manual of Patent Practice UK Intellectual Property Office, “a. One independent claim defining all the technical features essential to the invention or inventive concept. Inessential or optional features should not be included in this claim; b. Dependent claims incorporating all the features of the independent claim and characterised by additional non-essential features.” <http://www.ipo.gov.uk/practice-sec-014.pdf> (Last visited 01/08/2013); Manual of Patent Examining Procedure USPTO, Chapter 2100 Section 2163 “Each claim must include all elements which applicant has described as essential.” See, e.g., *Johnson Worldwide Associates Inc. v. Zebco Corp.*, 175 F.3d at 993; *Gentry Gallery, Inc. v. Berklene Corp.*, 134 F.3d at 1479; *Tronzo v. Biomet*, 156 F.3d at 1159. <http://www.uspto.gov/web/offices/pac/mpep/s2163.html> (last visited 01/08/2013)

regarded as essential features.”⁸⁵³

Particularly, in the “pith and marrow” approach, the court would read the specification and determine the substance of the invention by identifying what it considered to be the essential elements of the invention.⁸⁵⁴ The “pith and marrow” approach is a doctrine of infringement inquiring about the substance of an invention, which is different from the rules of interpretation relating to the meaning of claims.⁸⁵⁵ The former requires a factual comparison of the allegedly infringing technology to the construed claims, while the latter determines what the claim terms mean. After *Catnic*, the purposive interpretation abandons the “pith and marrow” approach and emphasizes that claim wording deliberately chosen by the patentee cannot be disregarded.⁸⁵⁶ However, it still involves separating the essential from the non-essential: the interpretive question expressly inquires into whether a PHOSITA “would understand that strict compliance with the particular descriptive word or

⁸⁵³ Case Law of the Boards of Appeal of the European Patent Office (sixth edition 2010) B. Claims 1.1.4 Indication of all essential features, http://www.epo.org/law-practice/legal-texts/html/caselaw/2010/e/clar_ii_b_1_1_4.htm (last visited 01/08/2013)

⁸⁵⁴ *Clark v. Adie* (1877) 2 App Cas 315 (HL). Lord Cairns LC coined the phrase “pith and marrow” to refer to the infringement by the taking of the substance of a patent claim. Prior to *Catnic* the English law influence regarding the use of the doctrine of pith and marrow to determine liability for the non-textual infringement of patents had spread to many countries. Such countries included South Africa and Canada. See, e.g., *Electrolier Manufacturing Co. Ltd. v. Dominion Manufacturing Ltd.*, [1934] S.C.R. 436 (Rinfret J. of the Supreme Court of Canada) (“according to any fair interpretation of the language of the specification, he has taken, in substance, the pith and marrow of the invention, with all its essential and characteristic features, except in details which could be varied without detriment to the successful working of it. There is no difference in the main elements of the two structures. There is no difference in the operation. Both perform the same function in the same way. Above all, “the spirit of the invention” was infringed.”)

⁸⁵⁵ Raymond Mnyamezeli Mlungisi Zondo, *The Replacement of the Doctrine of Pith and Marrow by the Catnic Test in English Patent Law: A Historical Evaluation* (2012)

http://uir.unisa.ac.za/bitstream/handle/10500/5697/thesis_zondo_r.pdf?sequence=1

⁸⁵⁶ *Catnic Components Ltd. v. Hill & Smith Ltd.* (198) RPC 183, 242 (Lord Diplock) (“Both parties to this appeal have tended to treat ‘textual infringement’ and infringement of the ‘pith and marrow’ of an invention as if they were separate causes of action, the existence of the former to be determined as a matter of construction only and of the latter upon some broader principle of colourable evasion. There is, in my view, no such dichotomy; there is but a single cause of action and to treat it otherwise... is liable to lead to confusion.”) *Kirin-Amgen Inc v. Hoechst Marion. Roussel Ltd* [2004] UKHL 46 (“It seems to me that both the doctrine of equivalents in the United States and the pith and marrow doctrine in the United Kingdom were born of despair.”)

phrase appearing in a claim was intended by the patentee to be *an essential requirement of the invention* with the result that any variant would fall outside the monopoly claimed ...”⁸⁵⁷

The determination of the connotation, *i.e.*, the essential attributes under the connotation-denotation model, is different from identifying the essential elements under the purposive approach in that: (1) According to the purposive approach, a superfluous limitation may be held inessential if “a particular word or phrase used in a claim cannot have been intended by a patentee” from the perspective of a PHOSITA.⁸⁵⁸ However, under the proposed model, every technical feature described in the independent claim is to be regarded as essential and subject to interpretation. (2) The connotation-denotation model focuses at a more micro-level examination. As instructed by philosophical hermeneutics, an initial way of grasping a *Sache* is to conceive of it as technical content that a claim term is concerned with.⁸⁵⁹ In patent claim interpretation, interpreters want to grasp what is said and what it refers to, and meaning of a claim term consists of *technical properties* perceived by a PHOSITA. For example, a patent claim was directed to fuel oil composition.⁸⁶⁰ The use of

⁸⁵⁷ *Catnic Components Ltd. v. Hill & Smith Ltd.* (1982) R.P.C. 183. *Improver Corporation v Remington Consumer Products Limited* [1990] FSR 181 (“(3) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention. If yes, the variant is outside the claim.”)

⁸⁵⁸ “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 descriptive 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 readers to whom the patent was addressed, could have no material effect upon the way in which the invention worked.”) Michael Pendleton, *The Purposive Approach to Patent Construction: A Divergence in Anglo-Australian Judicial Interpretation*, 14 Melb. U. L. Rev. 75 (1983-1984) (“Hence it appears that for the first time the Court will protect what the patentee might have claimed, provided that both the patentee and his readers would recognize, had they directed their minds to it, that a minor variant was incapable of having any material effect on the way the invention work.”)

⁸⁵⁹ Davey, *supra* note 737.

⁸⁶⁰ T 0409/91 (Fuel oils) of 18.3.1993. (“this part of the description of the invention is of a fuel oil composition which must contain, as an essential constituent, “certain additives”. It is precisely this feature

“certain additives” could be identified as an essential element of the invention. The essential attributes of the technical content, *i.e.*, “certain additives”, were a set of unique technical properties used to describe such element. In this context, the essential attributes of “certain additives” could be described as the capability of producing the desired small wax crystals---particle sizes below 1000 nanometers.⁸⁶¹ Other physical and chemical properties of the additives could be considered as accidental (or non-essential) attributes.

The next question is finding the most useful properties for identifying the technical content in the claims. The traditional parameters of “function”, “way”, “result” or “material effect” might be fit for the mechanical inventions, but are much too simplistic to deal with the more complex technologies such as chemistry, biotechnology, software engineering and nanotechnology.⁸⁶² The U.S. Supreme Court explained that the function-way-result test arose in an era characterized by relatively simple mechanical technology.⁸⁶³ “As technology becomes more sophisticated, and the innovative process more complex, the function-way-result test may not invariably suffice to show the substantiality of the differences.”⁸⁶⁴ For example, in the field of chemistry, it is often

that is missing from the present claims, which, therefore, do not meet the requirement of Art. 84 EPC”

⁸⁶¹ *Id.*

⁸⁶² Yusing Ko, *An Economic Analysis of Biotechnology Patent Protection*, 102 *The Yale L. J.*, 777 (1992); J. Jason Lang, *The German Resolution: A Proposed Doctrine of Equivalents Analysis and a Flexible Rule of Prosecution History Estoppel for Biotechnology*, 52 *Emory L.J.* 427(2003); Megan E. Lyman, *Judicial fitness for review of complex biotechnology issues in patent litigation: technical claim interpretation*, 23 *J. Nat'l A. Admin. L. Judges* 503 (2003); Andrew Wasson, *Protecting the Next Small Thing: Nanotechnology and the Reverse Doctrine of Equivalents*, 2004 *Duke L. & Tech. Rev.* 10 (2004); John C. Miller, *The Handbook of Nanotechnology: Business, Policy, and Intellectual Property Law* 68 (2005); Mark A. Lemley, *Patenting Nanotechnology*, 58 *Stan. L. Rev.* 601(2005); Georgios I. Zekos, *Nanotechnology and Biotechnology Patents*, 14 *Int'l J.L. & Info. Tech.* 310 (2006); Dan L. Burk & Mark A. Lemley, *The Patent Crisis and How the Courts Can Solve It* 58(2009).

⁸⁶³ *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*, 339 U.S. at 609, 70 S.Ct (1950), at 856-57.

⁸⁶⁴ *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc.* 62 F.3d 1512 (1995). (Lourie, J., dissenting) (“One can also consider the example of the well-known analgesics aspirin and ibuprofen. These

difficult to determine the precise way in which a chemical ingredient performs a given function, or accomplishes a certain result.⁸⁶⁵

Technical knowledge is generated largely with the intention to have something working in practice or to achieve some level of technical performance.⁸⁶⁶ Inventions have been regarded as distinct technological capabilities combined to accomplish a specific outcome:⁸⁶⁷

The laser presupposes the ability to construct highly reflective optical cavities, create light intensification mediums of sufficient purity, and supply light of specific wavelengths; the polymerase chain reaction results from (among various other capabilities) the ability to finely control thermal cycling (which requires the use of computers), and isolate short DNA fragments and a DNA polymerase (both of which require techniques from chemical engineering). The U.S. Patent and Trademark Office (USPTO) in effect follows this approach and defines inventions as bundles of technological capabilities.⁸⁶⁸

Therefore, this thesis proposes “performance parameter”⁸⁶⁹ as the most

compounds have the same function (to provide analgesia, anti-inflammatory activity, and lower temperature), do so in the same way (by inhibiting prostaglandin synthesis), and give the same results (kill pain, relieve inflammation, and lower fever). Yet, they have a different structure, which makes them different compounds, and no knowledgeable person would consider that a claim to aspirin would be infringed by the sale of ibuprofen.”)

⁸⁶⁵ Chemistry is one of the so called “unpredictable” arts, where the relationship between structure and function is not as completely understood as in the mechanical or electrical arts. In *re Soni*, 54 F.3d 746 (Fed. Cir. 1995) (stating “The principle applies most often to the less predictable fields, such as chemistry, where minor changes in a product or process may yield substantially different results.”).

⁸⁶⁶ Ove Granstrand, *The Economics and Management of Intellectual Property: Towards Intellectual Capitalism* 119 (2000).

⁸⁶⁷ Deborah Strumsky, *Using Patent Technology Codes to Study Technological Change*, <http://www.santafe.edu/media/workingpapers/10-11-028.pdf>, quoting Nathan Rosenberg, *Exploring the Black box: Technology, Economics, and History* 18 (1994) (“it is inherited, path-dependent technological capabilities that have dominated the eventual commercial exploitation of new technologies whose underlying technological feasibility has been made by the advancement of science.”) See also, Frederick Betz, *Managing Technological Innovation: Competitive Advantage from Change* 231 (3rd ed., 2011) (“The capability of a technology identifies the functional transformation of the technology that transforms inputs to the technology system into outputs.”)

⁸⁶⁸ *Id.*

⁸⁶⁹ Frederick Betz, *Managing Technological Innovation: Competitive Advantage from Change* 230 (2011)

useful properties for identifying the technical content, because it is the most common and familiar parameter in technology assessment, which will be best suitable for describing various types of inventions in various industries. The next Chapter will set forth the principle and the implementation guides for dynamic claim construction.

(“Technical progress can be measured in the improvements of its performance— technology performance parameters.”)

CHAPTER 7 THE PROPOSED DYNAMIC CLAIM INTERPRETATION

Patent claim interpretation would be improved by making greater use of hermeneutical perspectives. This Chapter outlines a dynamic claim construction framework based on the existing claim construction approaches. At the beginning, the general principle of dynamic claim construction is proposed. Under the dynamic construction, the meaning of a claim term is its connotation: what a PHOSITA would have understood the essential attributes of the technical solution referred to by the term to be at the time of filing. The theoretical and practical similarities and differences between “connotation”, “intention” and “ordinary meaning” will be compared in detail. This Chapter further shows how the implementation of the dynamic claim construction can produce interpretive results that may become dispositive of the infringement issue. The two-step dynamic construction method first ascertains the essential attributes of the technical solution referred to by the term at the time of filing, then decides whether the variant falls within that connotative meaning when circumstance changes. In the second step, the interpreter will assess whether the variant possess all the essential attributes as so defined. This thesis keeps in mind that there is no one-size-fits-all formula that will result in effectively generating the essential attributes in all inventions, thus, it provides only a modest method for achieving the dynamic principle. The dynamic interpretation is context-sensitive and explanatory, which will hopefully offer a more persuasive justification of claim interpretation. It is both important to preserve certainty of the scope of patent claim and adapt the claim to modern

scientific-technological context.

Section 1 The general principle of dynamic claim construction

This thesis proposes the dynamic claim construction principle: the meaning of a claim term is its connotation—*what a PHOSITA would have understood the essential attributes of the technical solution referred to by the term to be at the time of filing*. Here a “term” (or a word) is a symbol used to identify⁸⁷⁰ a technical solution. Under patent law, the patentable subject matter has to provide a technical solution to a technical problem based on technical considerations.⁸⁷¹ As summarized before, the connotation of a term is defined as the generally unchanging bundle of attributes that is central to the term’s meaning;⁸⁷² and the denotation refers to the actual usage relevant of a term at a particular circumstance, and it “includes new and different items with that essential meaning.”⁸⁷³ The dynamic approach recognizes the difference between essential and accidental attributes:

“As to Essential and Accidental, these terms are derived from the doctrine of Realism. Realists maintain that the essence of a thing, or that which makes a

⁸⁷¹ Alexander Harguth, *Patents in Germany and Europe: Procurement, Enforcement and Defense : an International Handbook* 57 (2011) (“Whether the subject matter is patentable first depends upon the question whether the requirement of technicality is fulfilled--i.e. on whether the subject matter provides a technical solution to a technical problem based on technical considerations.”) Annette Kur Max Planck & Thomas Dreier, *European Intellectual Property Law: Text, Cases and Materials* 107 (2013) (“Patentable Subject Matter Art. 52 (1) EPC describes patentable subject matter as “any inventions, in all fields of technology provided that they are new, involve an inventive step and are susceptible of industrial application. ” This language of the revised EPC reflects both the language of Article 27 (1) TRIPS and the established practice of the EPO to examine applications for their “technical character” or for the “technical solution” they provide for “technical problems.”) Rohan Kariyawasam, *Chinese Intellectual Property and Technology Laws* 248 (2011) (“In accordance with Rule 2.1 Patent Examination Guidelines (2010), ‘invention’ under Article 2.2 Patent Law means ‘any new technical solution relating to a product, a process or improvement thereof.’”)

⁸⁷² Jack Tsen-Ta Lee, *The Text Through Time*, 31(3) *Statute Law Review* 217–237 (2010)

⁸⁷³ Geraldine Chin, *Technological Change and the Australian Constitution*, 24 *Melb. U. L. Rev.* 609 2000.

thing to be what (or of what kind) it is, also makes everything else of the same kind to be what it is. The essence, they say, is not proper to each thing or separately inherent in it, but is a ‘Universal’ common to all things of that kind.”⁸⁷⁴

The meaning of a term (its connotation) is determined by a set of necessary and sufficient features.⁸⁷⁵ An object falls within the meaning of the term if, and only if, it possesses all these features.⁸⁷⁶ Under the dynamic claim construction, to find a characterization of the class of properties becomes crucial to determining the scope of a patent claim, because “the more properties or characteristics the claim recites, the smaller the scope of the subject matter thus defined.”⁸⁷⁷ As discussed before, the essential attributes of the technical solution referred to by the claim term can be considered a limited and specific set of performance properties. “The performance of a technology expressed how well the technology performs its capability of functional transformation.”⁸⁷⁸ For example, the claim term “biocompatible” can be described as “low variability, high purity, and no detectable biological reactivity as determined by biocompatibility tests.”⁸⁷⁹ This connotation-denotation model has permitted a continuous extension of claim meaning over time. However, its application is restricted by virtue of the fact

⁸⁷⁴ Carveth Read, *Logic* 240 (2007).

⁸⁷⁵ Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 Berkeley Tech. L.J. 1141, 1168 (2008). (“In metaphysical terms, the patent claim is thereby synonymous with the extension of the properties, or class. “A class is often thought of as the extension of a property (or concept), the collection of all those things. . . which have that property or fall under that concept.”)

⁸⁷⁶ Evans, *supra* note 59.

⁸⁷⁷ Lefstin, *supra* note 875. (“This structure corresponds to the concepts of intension and extension prevalent in classical logic and deriving ultimately from Aristotle; as the intension (meaning) of a definition grows richer, the extension (the number of objects to which it applies) becomes smaller.”)

⁸⁷⁸ Frederick Betz, *Managing Technological Innovation: Competitive Advantage from Change* 231 (3rd ed., 2011).

⁸⁷⁹ *Marine Polymer Technologies, Inc. vs. Hem Con, Inc.*, No. 10-1548 (Fed. Cir. Mar. 15, 2012) (en banc).

that the connotation is determined in the past context.⁸⁸⁰

It is the connotation of a claim term that is the “meaning”. There is a similar concept “figurative meaning”⁸⁸¹ in the Protocol questions formulated by Mr. Justice Hoffmann (as he then was). For the completeness and accuracy of explanation, the Protocol questions are again cited as a whole as the following:

“If the issue was whether a feature embodied in an alleged infringement which fell outside the primary, literal or acontextual meaning of a descriptive word or phrase in the claim (‘a variant’) was nevertheless within its language as properly interpreted, the court should ask itself the following three questions:

(1) Does the variant have a material effect upon the way the invention works?

If yes, the variant is outside the claim. If no?

(2) Would this (ie that the variant had no material effect) have been obvious at the date of publication of the patent to a reader skilled in the art? If no, the variant is outside the claim. If yes?

(3) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the

⁸⁸⁰ Craven, *supra* note 54. (“As noted above, this technique indisputably has permitted the continuous extension of the Commonwealth legislative power to moderately novel factual situations. On the other hand, its application is, at least in theory, strictly limited by virtue of the fact that the central idea of the provision in question—the connotation—is set by reference to the meaning of the relevant terms in 1900, and thus by reference to the historic intentions of the Founders.”)

⁸⁸¹ Joanna Thornborrow, Shân Wareing, *Patterns in Language: An Introduction to Language and Literary Style* 111 (1998) (“Figurative language use is one way in which the phenomenon of language change takes place, as words acquire metaphorical or metonymic meanings different from their original literal ones, and the new usages become absorbed into the language as commonplace.”) Literal versus figurative meaning, denotation versus connotation are two overlapping dichotomies. However, there is still difference between the two. “While the distinction between literal and figurative language operates at the level of the signifier, that between denotation and connotation operates at the level of the signified.” Daniel Chandler, *Semiotics: The Basics* 137 (2007). (“Contemporary commentators tend to describe the signifier as the form that the sign takes, and the signified as the concept to which it refers.”)

primary meaning was an essential requirement of the invention? If yes, the variant is outside the claim.

On the other hand, a negative answer to the last question would lead to the conclusion that the patentee was intending the word or phrase to have not a literal but a figurative meaning (the figure being a form of synecdoche or metonymy) denoting a class of things which include the variant and the literal meaning, the latter being perhaps the most perfect, best-known or striking example of the class.⁸⁸²

The finding of figurative meaning under the Protocol questions is not the direct goal of purposive claim construction. Whether a variant falls outside a scope is determined by considering its material effect and non-obviousness, as well as the patentee's intended strict compliance with literal meaning. By comparison, under the dynamic approach, the first and primary step is to ascertain the connotation of the term, *i.e.*, the essential qualities of the concept referred to. "The denotation of a term clearly depends upon its connotation....From the point of view of knowledge already achieved, the understanding of the connotation of a term is *prior to* its denotative use."⁸⁸³ Therefore, the dynamic approach adopts a pre hoc rather than post hoc reasoning, that is, whether a variant falls within or outside the scope is only determined *after* the connotation (or figurative meaning) has been established. A more detailed comparison between the dynamic approach and the Protocol questions will be conducted in next Section.

⁸⁸² *Improver Corporation v Remington Consumer Products Ltd* [1990] FSR 181, 189.

⁸⁸³ Morris F. Cohen, et.al., *An Introduction to Logic and Scientific Method* 32(2008). ("Whether we may apply the word 'ellipse' to some geometric figure is determined by the attributes included in the connotation of the term... We must know the connotation of 'amoeba' before we can apply it.")

Moreover, the Protocol questions are a rigid checklist. It is one of many ways to finally ascertain the figurative meaning of a claim term. For example, having “material effect on the way the invention works” may be one essential attribute of the concept, but this is not conclusive and has been proved inadequate in some cases.⁸⁸⁴ The House of Lords recognize the difficulties of the Protocol questions and move to a more general question: *what a person skilled in the art would have understood the patentee to be using the language of the claim to mean.*⁸⁸⁵ The House of Lords distinguished between the purposive construction principle and the guidelines for applying that principle.⁸⁸⁶ The purposive construction attempts to capture the more general concept of “a practical idea which the patentee has had for a new product or process.”⁸⁸⁷ According to this compulsory question, claims are construed from a perspective controlled by the intentions or purposes of the patentee at the time of filing (using PHOSITA as a reference point, as every approach does).

It would be useful to gain a deeper understanding of the relationships among the concepts of “ordinary meaning”, “patentee’s intent” and

⁸⁸⁴ *Kirin Amgen v Hoechst Marrion Roussel* [2004] UKHL 46 (“On the whole, the judges appear to have been comfortable with the results, although some of the cases have exposed the limitations of the method.”); *Merck v Generics (UK) Ltd* [2003] EWHC 2842 (Pat), at para 50 (“How does this approach marry up with the Improver questions? As the Court of Appeal said in *Pharmacia*, the Improver questions are “normally useful tools” but they may not be easy or appropriate to apply in every case. In the end one must return to look at the Protocol itself. There is nothing to suggest that Hoffmann J intended to put the three questions forward as a rigid checklist with three boxes, each of which needs to be ticked appropriately for there to be infringement.)

⁸⁸⁵ *Kirin-Amgen Inc v. Hoechst Marion Roussel Ltd* [2005] RPC 9.

⁸⁸⁶ *Id.* The House of Lords indicated that it was important to distinguish the Protocol questions from the *Catnic* principle. Lord Hoffman stated that while the former are “the bedrock of claim construction, universally applicable,” the latter are only guidelines for applying that principle that are more useful in some cases than others, and were not a substitute for trying to understand what a person skilled in the art would have understood the patentee to mean at the time of the claims.

⁸⁸⁷ *Id.* (“And he reads the specification on the assumption that its purpose is both to describe and to demarcate an invention - a practical idea which the patentee has had for a new product or process - and not to be a textbook in mathematics or chemistry or a shopping list of chemicals or hardware. It is this insight which lies at the heart of ‘purposive construction’. ...”)

“connotation,” which focuses respectively on the text, the author and the subject matter of the text. Under the purposive approach, claim terms are to be given the meaning intended by the patentee as understood by a PHOSITA at the time of filing. Under the ordinary meaning approach, claim terms are to be given their ordinary and customary meaning as understood by a PHOSITA at the time of the invention, *i.e.*, as of the effective filing date of the patent application. Under the proposed dynamic approach, claim terms may connote a particular meaning, “which theoretically remains constant, but denotes things that were not contemplated”⁸⁸⁸ at the time of filing.

In many cases, the “ordinary meaning”, “patentee’s intent” and “connotation” may converge,⁸⁸⁹ but when the language is relatively abstract, they “tend to come apart”.⁸⁹⁰ The former two concepts are more concrete and narrow. The “ordinary meaning” (how a PHOSITA *would have* commonly understood the word at the time of filing)⁸⁹¹ or “patentee’s intent” (how a PHOSITA *would have* understood the patentee intended to mean at the time of filing)⁸⁹² may be clues for “connotation”, but they are not conclusive

⁸⁸⁸Malbon, Justin, *The Race Power Under the Australian Constitution: Altered Meanings*, 21(1) Sydney Law Review 80 (1999) *See also*, Romary & Michelson, *supra* note 807 (“Indeed, claims reciting such technical terms may become enforceable by the patentee against unforeseen embodiments never even contemplated by the patentee in the specification.”)

⁸⁸⁹ Peter J. Smith, “*How Different Are Originalism and Non-Originalism*” 62 Hastings L. J., 707 (2011).

⁸⁹⁰ Huscroft & Miller, *supra* note 490. (“In many contexts, original meaning, original intention, and original application converge. However, where the words used in a constitution are relatively abstract, these three ideas tend to come apart.”)

⁸⁹¹*Kirin-Amgen v. Hoechst Marion Roussell*[2005] R.P.C. 9.(“‘Purposive construction’ does not mean that one is extending or going beyond the definition of the technical matter for which the patentee seeks protection in the claims. The question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean.”) *Kirin-Amgen v. Hoechst Marion Roussell* [2004] UKHL at47.(“And what principle would provide a reasonable degree of protection for third parties? Surely again, a principle which would not give the patentee more than the full extent of the monopoly which the person skilled in the art would think that he was intending to claim.”)*See also*, Catherine Colston& Jonathan Galloway, *Modern Intellectual Property Law* (2010).

⁸⁹²*Phillips v. AWH Corp.*, 415 F.3d 1313 (Fed. Cir. 2005).

evidence.⁸⁹³ As Jack Balkin points out, “we are not necessarily bound by either the intentions of the persons who framed the words, or by the general public expectation of how those words would be applied.”⁸⁹⁴ To fix claim meaning in the original context is believed to result in greater certainty. However, as taught by philosophical hermeneutics, the task of interpretation is never finished with the original expected application of meaning.

Even reading it broadly, the compulsory question under the purposive approach conflates both “semantic intention” (connotation) and “application intention” (denotation),⁸⁹⁵ while it is only the former that controls meaning.⁸⁹⁶ As a result of this conflation, the patentee’s intent might side with “denotation” or with “connotation” on different occasions.⁸⁹⁷ To avoid inconsistency, the dynamic approach takes one step further, clarifying and specifying the need for the identification of the “connotation” rather than “denotation” of language used in patent claims.

⁸⁹³ Fallon, Jr., *supra* note 722. (“Whether—and, if so, when—originally intended or expected applications of constitutional language conclusively establish its original meaning is obviously a crucially important question with implications for how myriad constitutional questions ought to be resolved”) Paul Brest, *Processes of Constitutional Decisionmaking: Cases and Materials* 918 (2006) (“Evidence of how people used words at a certain point in time is evidence of their original public meaning, but it is not conclusive evidence, because original public use conflates both the content of a concept and its expected application.”)

⁸⁹⁴ Jack Balkin, *Original Meaning and Original Application*
http://solum.blogspot.sg/2005_06_01_archive.html

⁸⁹⁵ Jamal Greene, *Selling Originalism*, 97 *Geo. L. J.* 657 (2009). (“it is not original expected application but original meaning-what Dworkin calls ‘semantic intention’—that controls.”); *see also*, Huscroft & Miller (ed), *supra* note 490, at 51 (“It has become widely agreed that ‘expectation’ or ‘application’ intentions are only indirectly relevant to constitutional interpretation, as evidence of semantic intentions.”)

⁸⁹⁶ *Id.* *See also*, George H. Taylor, *Critical Hermeneutics: The Intertwining of Explanation and Understanding As Exemplified in Legal Analysis*, 76 *Chi-Kent L. Rev.* 1101 (2000) (“Scalia indicates that his approach holds in common with Ronald Dworkin’s that both follow the ‘semantic intention’ of a text rather than ‘the concrete expectations of lawgivers.’ Scalia differ with Dworkin in adhering to an ‘originalist’ understanding of textual meaning while Dworkin permits meaning to evolve...”)

⁸⁹⁷ Larry Alexander, *All or Nothing at All? The Intentions of Authorities and the Authority of Intentions*, in *Law and Interpretation: Essays in Legal Philosophy* 357,369 (Andrei Marmor ed., 1995) (“Because the authorities’ exemplars may be inconsistent . . . with the true nature of the terms’ referents, the question is which did they intend to dominate in cases of such inconsistency. In some cases, perhaps, referents will dominate definitions and exemplars. In other cases, definitions or exemplars will dominate.”)

The dynamic approach distinguishes the recovery of claim meaning at the time of filing from the actual application of such meaning to current disputes. “A ‘meaning’ is not an idea that somebody has in mind. It is not a psychic content, but an ideal object which can be identified and re-identified by different individuals at different times as being one and the same.”⁸⁹⁸ As Professor Dan L. Burk advocates in his article *Dynamic Claim Interpretation* in 2012: “a dynamic interpreter might consider whether a particular construction of the claim will grant broad or narrow coverage to the patentee, and what such coverage might mean to competitors and to the industry in which the patent is situated.”⁸⁹⁹ Both Professor Burk’s dynamic approach (“Burk’s approach”) and the dynamic approach proposed by this thesis recognize the capacity of the claim text to accommodate technological change⁹⁰⁰— “with some potential for evolution.”⁹⁰¹ However, there are two main differences between them. Firstly, Professor Burk sees the value of dynamic interpretation in “repairing the biases of the governmental institution” and “curing dysfunctions of the Patent Office”⁹⁰² in light of technological change. By comparison, the proposed dynamic approach attempts to provide a normative framework on how particular claim terms ought to be read, by assessing whether the new item possesses all the essential attributes determined at the time of filing.

⁸⁹⁸ Kevin J. Vanhoozer et. al, *Hermeneutics at the Crossroads* 41 (2006).

⁸⁹⁹ Burk, *supra* note 37.

⁹⁰⁰ *Id.* (“Dynamic interpretation is tailored to the circumstance, rather than insisting every circumstance conform to a single approach.”) *See also*, Kirby, *supra* note 53. (“the meaning and content of the words take color from the circumstances in which the words must be understood and to which they must be applied.”)

⁹⁰¹ Jeremy Kirk, *Constitutional Interpretation and Evolutionary Originalism* 27 Fed L. Rev. 323 (1999)

⁹⁰² *Id.* (“for example, countering statutory trends originally intended to benefit politically favored industries that have since reached obsolescence in the ferment of technological change.”)

Secondly, Professor Burk criticizes the reliance on traditional “originalism” to find a fixed and determined correct meaning to a claim term.⁹⁰³ However, he does not perform deeper research on contemporary originalist theory. Indeed, the contemporary originalist theory is grounded in the view that originalism is compatible with the non-originalist metaphor of legal text as “living trees” that grow and change in response to social developments.⁹⁰⁴ As a result, Burk’s approach still cannot answer the question how a “subjective, ad hoc decision making”⁹⁰⁵ could achieve certainty to the public. In contrast, the proposed dynamic approach is constructed based on a moderate version of originalism, with the aim of mitigating the tension between certainty and flexibility in claim interpretation. Importantly, the proposed dynamic approach ensures that judges interpret “within the constraints of the text in addressing the problems of their time”.⁹⁰⁶ The next section proposes a modest guideline for carrying out the dynamic claim construction principle.

Section 2 Implementation guide for dynamic claim construction under infringement analysis

By definition, infringement is the violation of a right or privilege:

The main rule is that the infringing product or process includes all essential

⁹⁰³ (“While there is some superficial appeal to the certainty promised by originalism, reliance on the “plain” or “ordinary” or otherwise purportedly self-evident meanings of claims is more apt to deter innovation than is transparent, dynamic interpretation.”)

⁹⁰⁴ Grant Huscroft & Bradley W. Miller, *The Challenge of Originalism: Theories of Constitutional Interpretation* 65 (2011)

⁹⁰⁵ Burk, *supra* note 37.

⁹⁰⁶ Steven G. Calabresi & Livia Fine, *Two Cheers for Professor Balkin's Originalism*, 103NW. U. L. REV. 663,669 (2009).

elements of the claims. The omission of an inessential element or the inclusion of an inessential element will not avoid a finding of infringement. However, the omission of an essential element will defeat a case for infringement.⁹⁰⁷

Patent claim interpretation is closely related to the determination of infringement in patent cases. As US Circuit Judge Moore expounded, “Claim construction is the single most important event in the course of a patent litigation. It defines the scope of the property right being enforced, and is often the difference between infringement and non-infringement, or validity and invalidity.”⁹⁰⁸ Professor Christopher Cotropia pointed out that claim interpretation had a strong impact on the substantive scope of protection that an invention should be afforded.⁹⁰⁹ Where the litigating parties do not dispute any relevant facts regarding the accused product, the claim construction and infringement inquiries may collapse into one.⁹¹⁰ It is a well-known principle that very often, “once the judge had construed the claims as he did, he had answered the question of infringement.”⁹¹¹

This thesis proposes dynamic claim construction guidelines for infringement decisions. The previous Section has summarized the general principle of dynamic claim construction: *patent claim meaning is connotation of a term, which is defined by the essential attributes of the technical contents*

⁹⁰⁷ Christine Rossini, *English As a Legal Language* 251, 214(1998).

⁹⁰⁸ *Retractable Technologies v. Becton, Dickinson and Co.*, No. 2010-1402, 2011 WL 2652448 (Fed. Cir. 2011).

⁹⁰⁹ Cotropia, *supra* note 5.

⁹¹⁰ *See Gen. Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 983 (Fed. Cir. 1997) (“Where the parties do not dispute any relevant facts regarding the accused product . . . but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment.”).

⁹¹¹ *Kirin-Amgen Inc and Others v. Hoechst Marion Roussel Limited and Others* [2004] UKHL 46. *See e.g. Markman v. Westview Instruments, Inc.*, I, 52 F.3d 967, 999 (Fed. Cir. 1995) (in banc) (Newman, J., dissenting) (“Deciding the meaning of the words used in the patent is often dispositive of the question of infringement.”)

referred to by the term at the time of filing. Having ascertained the essential attributes of the technical contents referred to by the term at the time of filing, the infringement analysis is to decide whether a variant (*i.e.*, a modified feature of the claimed invention)⁹¹² falls within that connotative meaning.⁹¹³ Hence, the interpreter needs to explain whether the variant can be described as having those characteristics and belonging to the class (whether it falls in the denotation range of a given term). The following guidelines are a set of five propositions, which outline a framework for how to apply the general principle in practice. Subsequent paragraphs will explain in more detail each proposition. The dynamic claim construction approach can produce interpretive results that may become dispositive of the infringement issue.⁹¹⁴ It attempts to bridge the possible gaps between understandings of meaning between the earlier time of filing and the later time of interpretation, and to offer sufficient reasoning to justify the choice of meaning.

A. To preserve certainty, patent claim meaning, *i.e.* the connotation, remains constant from the time of filing, while the application of such meaning, *i.e.* the denotation, may change over time.

B. What a PHOSITA at the time of filing would have interpreted and applied the

⁹¹² Richard J. Hacon & Jochen Pagenberg, *Concise European Patent Law* 78 (2007) (“...a ‘variant’, that is, a product or process that differs from the embodiment conforming to that strict primary meaning of the claim (the variant being a potential ‘equivalent’).”)

⁹¹³ Lee, *supra* note 872. (“In applying a connotation–denotation analysis to determine whether a term should be given a dynamic interpretation, the first step is to establish the connotation of the term in question...Having identified the attributes and thus the essential meaning of the term, the court’s task is then to determine whether a particular scenario raised by a dispute falls within the essential meaning.”) *See also*, Zines, *supra* note 56. (“Logically, it requires two steps: first, determining the meaning of the subject matter...and secondly, whether the law can be described as one with respect to that subject matter as so defined.”)

⁹¹⁴ Robert Patrick Merges & John Fitzgerald Duffy, *Patent Law and Policy: Cases and Materials*, 906-907 (3d ed. 2002). *See also* Burk & Lemley, *supra* note 20 (“And whether the interpretation is done with or without knowledge of the effect on the outcome, the judge’s decision will likely predetermine the jury determination, or effectively take the decision away from the jury together, by selecting a claim interpretation so constrained that it leaves no room for more than a single outcome.”)

claim terms to mean, *i.e.* the original expected application of meaning, provides strong evidence of the meaning of patent claims.

C. In ascertaining the original expected application of claim meaning, one takes account of whether a PHOSITA could foresee probability of the claim term acquiring new denotation.

D. When original expected application conflicts with contemporary application of patent claim meaning, one has to decide which application is to be adopted.

E. Following Proposition D, when new denotations represent significant improvement over the original expected application, they fall outside the scope of the patent claim; if no significant improvement is found, then the claim term would be read broadly to encompass new denotations.

Determining connotation and denotation is not a straightforward task. Flexibility, rather than rigid formulation is required to assess the essential properties.⁹¹⁵ This thesis keeps in mind that there is no one-size-fits-all formula that will result in effectively generating meaning, thus, it provides only a modest method for achieving the dynamic principle.

A. To preserve certainty, patent claim meaning, i.e. the connotation, remains constant from the time of filing, while the application of such meaning, i.e. the denotation, may change over time.

⁹¹⁵ Lee, *supra* note 872 (“It is probably futile to try and lay down rigid guidelines for determining when the attributes or characteristics of a term are essential to its meaning.”) Clarence Irving Lewis, *Collected Papers* 107 (1970). (“It will be noted that, for any term, its connotation determines its comprehension; and conversely, any determination of its comprehension would determine its connotation, by determining what characters alone are common to all the things comprehended. In point of fact, however, there is no way in which the comprehension can be precisely specified except by reference to the connotation, since exhaustive enumeration of all the thinkable things comprehended is never possible.”)

Meaning is first and foremost “about” something.⁹¹⁶ For Gadamer, interpretation is always a matter of “coming to an understanding about something”.⁹¹⁷ The dynamic approach looks beyond the claim text’s literal meaning, and delves into the *Sache* or the subject matter itself,⁹¹⁸ *i.e.*, the essential attributes⁹¹⁹ of the technical solution referred to by the term at the time of filing. The dynamic approach recognizes the highly dynamic and complex nature of high-tech industry and adopts a more flexible method of technological evaluation, and it finds the technical performance properties to be more applicable parameters.

Under the dynamic approach, a claim term is construed as including within its content a denotation⁹²⁰ which it has acquired since the time of filing. The connotation of a word is the set of properties inherently associated with the word, and the denotation of a word is the object it refers to.⁹²¹ The denotation of “fastener”, for example, is the class of fasteners, such as a bolt, a

⁹¹⁶ Nini Prætorius, *Principles of Cognition, Language and Action* 124 (2000). A linguistic expression has implications or meaning in virtue of being about or referring to something else; that is to say, it has a meaning for someone, about something, in some particular situation or context, and the meaning of a linguistic expression is understood by a language user in virtue of his knowledge of what it refers to, and thus knowledge about that to which it refers.

⁹¹⁷ Gadamer, *supra* note 46, 180

⁹¹⁸ Davey, *supra* note 737, at 84. (“Though *Sachen* are more than their particular renditions, they nevertheless ground such renditions and allow them to point beyond themselves...interpretation enriches the *Sache*...”) Lorraine Code, *Feminist Interpretations of Hans-Georg Gadamer* 173 (2003). (“Interpretations are valid insofar as they succeed in bringing out the *Sache*, the meaning, of the interpreted text.”)

⁹¹⁹ Lee, *supra* note 872 (“Australian judges have used a multiplicity of phrases, speaking about identifying a term’s ‘really essential characteristics’, ‘fundamental conception’, ‘essential particulars’, ‘essential differentia’, ‘essential feature’ and ‘essential meaning.’”) Citing *Brewery Employés Union* (n 22) 560 (Isaacs J), and 535 (O’Connor J): “[T]he true line of inquiry is first to ascertain what were the essential characteristics of a “trade mark” in Australia, the time when the Constitution was passed, disregarding all conditions, qualifications, and attributes, which were not of its very nature and essence...”. See also *Grain Pool of Western Australia v Commonwealth* (2000) 202 CLR 479 (HC, Aust) 528, [123] (‘really essential characteristics’); *Re Patterson, ex parte Taylor* (2001) 207 CLR 391 (HC, Aust) 495, [312] (‘essential characteristics’); and *Shaw v Minister for Immigration and Multicultural Affairs* (2003) 218 CLR 28 (HC, Aust) 61, [94] (‘essential character’).

⁹²⁰ Charles J. G. Sampford & Kim Preston (ed.), *Interpreting Constitutions: Theories, Principles and Institutions* 14 (1996). (“...it is clear that a constitutional term is read as including within its embrace a new exemplification which falls within its overall meaning.”)

⁹²¹ Joseph Grcic, *Facing Reality: An Introduction to Philosophy Revised Edition* 15 (2009).

nail, a clip, *etc.*. Its connotations are the qualities that something must possess in order properly to be called a fastener.⁹²² The denotation of a term is determined by the range of things that possess the essential features or attributes specified in the connotation of the term.⁹²³

“A term may typically denote X which has qualities A, B, C, and D; Y has qualities A, B and C but lacks quality D. Does Y come within the term? Put in other ways: Is D part of the essence of the term? Is it within the connotation or definition of the term? If the answer is yes, then the term does denote Y. If, on the other hand, D is regarded as merely an “accidental” as distinct from an “essential” quality of the term it will denote Y.”

The distinction between an essential attribute and an accidental attribute is as follows: the essential attributes of a term are “those it has necessarily, those it could not have lacked. Its accidental attributes are those it has only contingently, those it might not have had.”⁹²⁴ For instance, in interpreting the meaning of “banking”, the method of transferring funds (such as electronic transfer) is merely an “accidental” as distinct from an “essential” feature (such as dealing in money).⁹²⁵

⁹²² John Reichert, *Making Sense of Literature* 38 (1977). (“Logicians define a word’s denotation as the class of all the things to which the word is correctly or regularly used to refer. And its connotation is the set of qualities that defines membership in that class.”)

⁹²³ Zines, *supra* note 56.

⁹²⁴ Richard L. Cartwright, *Some Remarks on Essentialism*, 65 *The Journal of Philosophy* 615-626 (1968). *See also*, Evans, *supra* note 59. (“The essential features are inherent in the thing. They are what makes it a thing of that kind – a member of a particular category. The accidental features are incidental to making it a thing of that kind.”)

⁹²⁵ Corcoran & Bottomley, *supra* note 841, at 68. *See also*, H. P. Lee & George Winterton, *Australian Constitutional Landmarks* 94 (2003) (“Thus in exploring the concept of “banking” in s.51 (xii) of the Constitution he comments: “The connotation does not change, the denotation may extend.” He amplifies this by observing: “Banking may take different forms in the course of time, but nothing which has not the essential attributes as understood in 1900 can fall within the power.”)

“Unlike connotation, denotation can expand or shrink over time.”⁹²⁶ Changes in denotation of patent claim term are often determined by technological factors. “What has caused the change of meaning is arguably not anything to do with language, but simply a change in the word’s denotation.”⁹²⁷ Patents are a direct outcome of the inventive process.⁹²⁸ One important goal of the patent system is to promote technological development by granting monopoly rights.⁹²⁹ Technological change brings explosive growth in information and technical knowledge unprecedented in human history,⁹³⁰ especially in the areas of micro-electronics, biotechnology and communication technologies. Technological change is believed to increasingly become the future norm.⁹³¹ Hence, claim interpretation needs to have the ability to respond to effects of technological change.⁹³² The dynamic approach fixes the connotation (“a definition of the term which elucidates its essential characteristics”⁹³³) at the time of filing; on the other hand, it seeks denotations (“the actual usage relevant to a term in the new context”⁹³⁴) at the time of

⁹²⁶ Lee, *supra* note 872; See also, Sonja Sickert, *What is Meaning?* 6 (2006). (“The denotation of a content word is the category, or set, of all its potential referents.”)

⁹²⁷ Nick Riemer, *Introducing Semantics* 373 (2010) (“For instance, since the advent of modern air transport, the verb fly can refer to travelling as a passenger in an aeroplane. This is a meaning that was obviously unavailable before the twentieth century. But it does not correspond to any change in the sense of fly itself: this is still arguably ‘travel through the air’.”)

⁹²⁸ Archibugu, D. & M. Pianta, *Measuring Technological Change Through Patents and Innovation Surveys*, *Technovation*, 16, 451-68.

⁹²⁹ U.S. CONST. art. I, § 8, cl 8. (“promote the Progress of...useful Arts, by securing for limited Times to...Inventors the exclusive Right to their ... Discoveries.”)

⁹³⁰ Irfan-ul-Haque et.al, *Trade, Technology, and International Competiveness*, Vol. 22, 163 (1995)

⁹³¹ *Patent System and Modern Technology Needs: Meeting the Challenge of the 21st Century* 35, Hearing Before the Subcommittee on Technology of the Committee on Science, U.S. House of Representatives, 140th Congress, Second Session, Vol. 4 (1996).

⁹³² Under the dynamic approach, such ability to respond to effects of technological change is subject to the foreseeability test in proposition C. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.* 493 F.3d 1368 (Fed. Cir. 2007) (“Hindsight is not foreseeability... Foreseeability is determined as of the time of the application. The unforeseen does not become foreseeable after someone later discovers it.”)

⁹³³ G Griffith, *Same-sex marriage*, Briefing Paper, NSW Parliamentary Library Research Service, No 3/2011, p. 20, viewed 17 January 2012

⁹³⁴ *Id.* (“For example, from a denotation perspective the word “vehicle” in 1900 would not have included “aircraft”; whereas from the perspective of connotation, if “vehicle” is defined as a means of conveying persons and goods then it could include “aircraft”, in 1900 and in 2011. Thus, as Zines concludes, “an

interpretation, which brings out fresh possibilities of meaning that had lain hidden in the past.⁹³⁵

B. What a PHOSITA at the time of filing would have interpreted and applied the claim terms to mean, i.e. the original expected application of meaning, offers strong evidence of the meaning of patent claims.

Patents provide notice of their boundaries, and inform future inventors of what is within the boundaries and what is not. Patent rights confer on inventors a limited monopoly in exchange for public disclosure and knowledge of their inventions. Therefore, it is important that the patent claim construction is fair as well as predictable,⁹³⁶ “on the one hand, some modicum of uncertainty is the ‘price of ensuring the appropriate incentives for innovation,’ ...at the same time, a patent must be precise enough to afford clear notice of what is claimed.”⁹³⁷ While claim texts remain constant, developments in technological knowledge might change the application of that fixed meaning to particular situations over time. Under the dynamic approach, the patent claim meaning is informed by, but not exhausted by, its original expected applications (how a PHOSITA would have understood its words and thought they should be applied) at the time of filing.⁹³⁸ Patent claim text cannot be read in isolation, the recovery of technological context can be greatly

aircraft although not within the denotation of the term 'vehicle' in 1900 was within its connotation because it is a means of conveyance even though that particular means did not exist in 1900.”)

⁹³⁵ Tatar, *supra* note 736, 106. (“Sache remains always as transcendental ground which asserts its truth in the dialogical process between the language of the text and that of the interpreter.”)

⁹³⁶ Bernard Chao, *The Infringement Continuum*, 35 *Cardozo Law Review* 1359 (2014) (“extremely broad claims offend our notions of fairness because they reward inventors for something that they did not invent.”)

⁹³⁷ *Nautilus, Inc. v. Biosig Instruments, Inc.* (S. Ct. No. 2013-0369) (2014). *See also, Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996) (quoting *McClain v. Ortmyer*, 141 U.S. 419, 424 (1891) (noting that a patent must “apprise the public of what is still open to them.”).

⁹³⁸ *McGinnis & Rappaport*, *supra* note 723.

enhanced by considering how the claim terms would have been applied at the time of filing (“the old denotation”).

Connotation of a term is more abstract and descriptive as it involves association with essential attributes of the term that is found in the content. On the other hand, denotations are different ways of explicating the content. Connotation can be better understood on the basis of existing denotations, which are very useful because “they caution modern interpreters against substituting their own preferred glosses on meaning for those that would have been widely held”⁹³⁹ at the time of filing. The existing denotations of a claim term at the time of filing include the following three forms:

(1) Exemplary, prototypes or best mode of the invention. Interpreters can extract essential attributes from the exemplary, prototypes or best modes of the invention provided in specification and drawings. An interpreter may not have an explicit notion of what defining characteristics of the term are at the first glance, yet still be able to recognize instances. By analyzing the existing instances at the time of filing, interpreters can capture the characteristics that are common and distinctive of the prototypes, exemplary or best modes.

(2) Prior art. Interpreters can determine the defining characteristics by assessing the objectives and purposes of the invention. The overall objective of an invention is to address and overcome specific scientific and technological hurdles. In general, prior art refers to “all the relevant technical knowledge available to the public anywhere in the world prior to the first filing date of the

⁹³⁹ McGinnis & Rappaport, *supra* note 723.

relevant patent application.”⁹⁴⁰ Prior art often reflects historical data and past performance trends. For example, in the field of chemistry, when the prior art has enabled methods of preparing the compound, a PHOSITA would therefore have understood that the patented invention is capable of achieving the same or greater effectiveness or potency than the prior art under certain conditions.⁹⁴¹ From the specification, interpreter will learn how the invention achieves a technical advantage over the prior art, and decide the essential properties of the technical concept referred to by the claim term.

(3) Technological limitation. It would also be helpful to analyze the inherent limits of technologies at a particular point of time,⁹⁴² “The appraisal of technology depends upon what is expected of it. A clear appraisal presupposes clarity concerning the limits of technology.”⁹⁴³ In recognition of the limitations, *e.g.* speed, memory capacity, density or storage limits, a PHOSITA can have a realistic understanding of what he can and cannot expect from the invention. A PHOSITA will not overestimate or underestimate the technical properties in the past context, which can reduce the distorting effects of hindsight bias.

C. In ascertaining the original expected application of claim meaning, one takes account of whether a PHOSITA could foresee probability of the claim

⁹⁴⁰World Intellectual Property Organization (WIPO), *Inventing the Future: An Introduction to Patents for Small and Medium-sized Enterprises* 47 (2006). http://www.wipo.int/freepublications/en/sme/917/wipo_pub_917.pdf (last visited Jan 1, 2012).

⁹⁴¹Chris P. Miller&Mark J. Evans, *The Chemist's Companion Guide to Patent Law* 246 (2010).

⁹⁴²Richard R. Nelson, *The Source of Economic Growth* 239 (2000). (“At any given point, progress was constrained by a particular bottle-neck known mainly by those experiencing it, yet each new solution shifted the focus to another technical constraint or phase of production.”)

⁹⁴³Peter-Paul Verbeek, *What Things Do: Philosophical Reflections on Technology, Agency, And Design* 39 (2005), quoting Karl Jasper, *The Origin and Goal of History* 98 (1953) (“The limits of technology lie in those presuppositions of all technological realizations which can never be overcome” and which are not susceptible to technological control.”)

term acquiring new denotation.

Expect means “to look forward to and rely on,”⁹⁴⁴ and technological expectations can more specifically be defined as “real-time representations of future technological situations and capabilities.”⁹⁴⁵ The original expected application of meaning not only reflects the then current conceptions of technology, but also the “tendency for every age to read the future as a fancier version of the present”,⁹⁴⁶ that is, the foreseeable range of applications at the time of filing. The rationale is to allow the patentee to cover his or her “general, yet clear, appreciation of industry and technology trends”⁹⁴⁷ and preserve original incentives. When a patentee foresees a probability of change of denotation, he or she expected such technological development to occur. The U.S. courts adopt the concept of foreseeability in determining whether patentees have surrendered coverage by amending their patent claims.⁹⁴⁸ There are critical differences between the foreseeability test under the dynamic approach and the principle of foreseeability adopted in the U.S. courts as a basis for rebutting the presumption of prosecution history estoppel.

The principle of foreseeability remains an important component of the prosecution history estoppel analysis. The U.S. Supreme Court described three grounds for rebutting a presumption of estoppel for amendments submitted during patent prosecution: 1) that the equivalent was unforeseeable, 2) that the

⁹⁴⁴ Bryan A. Garner, *A Dictionary of Modern Legal Usage* 340 (2001).

⁹⁴⁵ Mads Borup et al., *Sociology of Expectations in Science and Technology*, Vol. 18 *Technology Analysis & Strategic Management* 285–298(2006).

⁹⁴⁶ *Id.*

⁹⁴⁷ Shyamkrishna Balganes, *Foreseeability and Copyright Incentives*, 122 *Harv. L. Rev.* 1569, 1573 (2009)

⁹⁴⁸ Matthew J. Conigliaro, Andrew C. Greenberg, & Mark A. Lemley, *Foreseeability in Patent Law*, 16 *Berkeley Tech. L.J.* 1045 (2001).

amendment had only a tangential relation to the equivalent, or 3) that there was "some other reason" that suggested the patentee would not have reasonably been expected to describe the equivalent.⁹⁴⁹ The court recognized the vagueness of this inquiry, but stressed that it is a narrow avenue, made available only "not to totally foreclose a patentee from relying on reasons" other than the two discussed above. For example, shortcomings of language may be cited for why the patentee was prevented from describing the alleged infringing element during claim amendment. Notably, the principle of foreseeability is not a limitation on the application of the doctrine of equivalents. "There is not, nor has there ever been, a foreseeability limitation on the application of the doctrine of equivalents. It has long been clear that known interchangeability weighs in favor of finding infringement under the doctrine of equivalents."⁹⁵⁰

By comparison, the dynamic approach uses foreseeability test as a part of formation of expectation at the time of filing, and not an analysis for prosecution history estoppel. The timeframes of the foreseeability inquiries are therefore different. While the foreseeability test under the dynamic approach is

⁹⁴⁹ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U. S. 722 (2002). In using the words "some other reason," the Supreme Court indicated that the first two methods are merely specific ways to rebut the same broad presumption. Thus, the proper interpretation of the Supreme Court's language is that the first two methods are included within the broad, over-arching standard and the third is that Court's way of recognizing that other circumstances may also suffice to rebut the Festo II "presumption." This reading finds further support in the concluding sentence of this section of the opinion, wherein the Supreme Court summarizes the standard: "[t]he patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent."

⁹⁵⁰ *Ring & Pinion Service, Inc. v. ARB Corp. LTD.*, Case No. 13-1238 (Fed. Cir., Feb. 19, 2014) (Moore, J.). there was no dispute that all limitations were literally met in R&P's "Ziplocker" product except for the "cylinder means formed" element. The parties agreed, however, that the "Ziplocker" had an equivalent to the cylinder, albeit one that would have been foreseeable to a person having ordinary skill in the art at the time the patent application was filed. Accordingly, the parties entered a formal stipulation that the infringement analysis hinged on a discrete question of law: whether an equivalent is barred under the DOE because it was foreseeable at the time of the patent application.

assessed as of the time of filing, the principle of foreseeability is assessed as of the time of the amendment—references that are not prior art can be relevant. More importantly, under the principle of foreseeability, “an alternative is foreseeable if it is disclosed in the pertinent prior art in the field of the invention.”⁹⁵¹ For example, in *Festo*, while aluminum alloy piston sleeves were known in the prior art, the shielding nature of an aluminum alloy sleeve was not known at the time of the amendment.⁹⁵² The Federal Circuit held that aluminum sleeve was a foreseeable alternative to magnetizable sleeve and that prosecution history estoppel applies. In contrast, the dynamic approach is a feature analysis of the technical solution referred to by the claim term, as it investigates the essential features of the technical content, *i.e.* the capability to shield against magnetic field leakage. As a result, the then-existing knowledge in the field of the invention would not have deemed an aluminum alloy sleeve foreseeable at the time of filing, and therefore the variant did not fall within the original expected application.

The foreseeability test in the dynamic approach also differs from the second step of the Protocol Questions. The second step asks whether it would have been obvious to the person skilled in the art that the variant “worked in the same way as the invention.”⁹⁵³ The second step is not a question of whether the

⁹⁵¹ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 493 F.3d 1368, 1379 (Fed.Cir.2007) “Usually, if the alleged equivalent represents later-developed technology (e.g., transistors in relation to vacuum tubes, or Velcro® in relation to fasteners) or technology that was not known in the relevant art, then it would not have been foreseeable. In contrast, old technology, while not always foreseeable, would more likely have been foreseeable. Indeed, if the alleged equivalent were known in the prior art in the field of the invention, it certainly should have been foreseeable at the time of the amendment.”

⁹⁵² *Id.*

⁹⁵³ *Improver Corporation v. Remington Consumer Product Limited* [1990] F.S.R. 181.

variant is an obvious alternative to the thing denoted by the literal meaning.⁹⁵⁴

The Courts require that it be clear or apparent, just by looking at the variant, that it will work in the same way as the invention. It is not enough even for it to be highly likely that it will work if the variant needs to be tested to make sure.⁹⁵⁵

The difficulty of the second step lies in that “it is very seldom that it will be immediately apparent simply by looking at, say, a chemical or biological material, that it will work. There will always be a chance that even a slight change will result in a loss of activity.”⁹⁵⁶ It becomes more problematic when applied to cases of later-developed technologies, because a patentee could not have envisaged how the completely new technologies would work sometime in the future. Many important emerging technologies (such as genetic, cellular, or nano scale technologies) work at a level that cannot be seen.⁹⁵⁷ The courts have realized that the second step did not help in such cases.⁹⁵⁸ Comparatively speaking, the dynamic approach asks the question whether the new denotation is a foreseeable alternative: the patentee needs to demonstrate that it was possible for a PHOSITA to foresee or contemplate a new denotation at the time of filing. Foreseeability is the ability to see or know in advance,⁹⁵⁹ which is determined based on prior art rather than future art. The dynamic approach takes a more comprehensive approach to ascertain what is foreseeable and

⁹⁵⁴ Geoffrey Bayliss et. al, *The Role of Equivalents and Prosecution History in Defining the Scope of Patent Protection*, APPI UK Group Report Q175, retrieved from <http://www.aippi.org.uk/docs/Q175%5B1%5D.Report.doc> (last visited 13/1/2014)

⁹⁵⁵ *American Home Products v. Novartis Pharmaceuticals UK Ltd* [2002] RPC 8

⁹⁵⁶ *Bayliss et. el, supra* note 954.

⁹⁵⁷ William K. Hallman, *GM Foods In hindsight*, in Edna F. Einsiedel (ed.), *Emerging Technologies: From Hindsight to Foresight* 15 (2009).

⁹⁵⁸ *See, Kirin-Amgen Inc and others v. Hoechst Marion Roussel Limited and others* [2004] UKHL 46, [2005] RPC 169. *See also*, David Bainbridge & Claire Howell, *Law Express: Intellectual Property Law* (4th ed.)113 (2014) (“ It could not have been obvious to the skilled person as they had no concept of its existence and so the second Improver question is not appropriate in this sort of circumstance.””)

⁹⁵⁹ Dirk Meissner et. al., *Science, Technology and Innovation Policy for the Future: Potentials and Limits of Foresight Studies* 32 (2013) (“future oriented instrument”)

what is not can be readily anticipated.⁹⁶⁰ A person skilled in the art should be held to a standard of foresight indexed to the scientific community rather than the general public.

D. When contemporary application of patent claim meaning conflicts with that expected by the PHOSITA at the time of filing, one has to decide which application to be adopted.

Patent claims are read across the dimension of time, as there is often long temporal distance between the time of filing and the time of interpretation. “Patents necessarily involve new ideas, and the process of assigning terms to describe those new ideas is not static.”⁹⁶¹ Although the patent claim term remains the same, the passing years often will have changed the denotations covered by that term, so that the contemporary application of the term may differ from the original application of the term earlier. As the dynamic principle states, meaning of a claim term is its connotation at the time of filing. An overbroad interpretation risks “conferring on the patentee the benefit of inventions that he had not in fact made.”⁹⁶² From time to time, continuous technology change and development may in some circumstances extend the denotations of the claim term without altering its connotation. Therefore, the denotation of the term, which is the class of objects to which the term can be applied, must always be examined at a particular point in time.⁹⁶³ An interpreter’s current understanding of the denotation may be different from

⁹⁶⁰ Alan L. Porter et. al., *Technology Future Analysis: Toward Integration of the Field and New Methods*, 71 *Technological Forecasting & Social Change* 287–303 (2004).

⁹⁶¹ Lemley, *supra* note 7.

⁹⁶² *Free World Trust c. Électro Sant éInc.*, 2 R.C.S. 1024 [2000].

⁹⁶³ Stokes, *supra* note 774.

that in the past, *i.e.* the range of possible objects that a term refers to may change over time. Hence, when the original expected application is the same as what a PHOSITA would have interpreted and applied the claim terms in light of present technological context, the original expected application shall be followed.

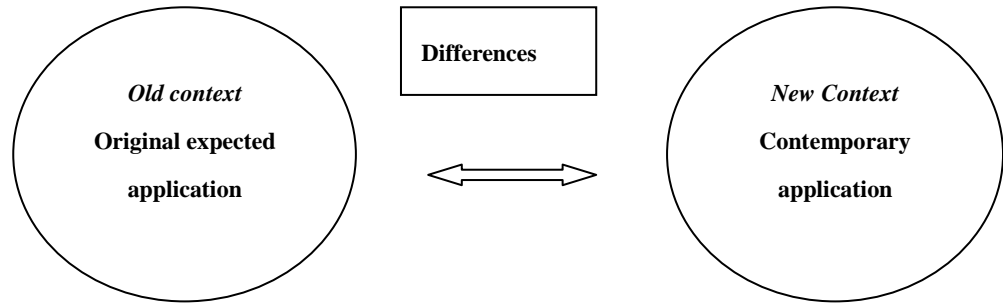
However, while the original expected application guides and constrains interpretation, it is a concrete application of meaning rather than meaning itself, therefore it is not conclusive and not always to be followed. “The linguistic meaning of a text is one thing, and expectations about the application of that meaning to future cases are a different thing.”⁹⁶⁴ Interpreters shall keep in mind that the expected applications are not exhaustive, but rather, they could fluctuate, depending on the changing technological context.

“The connotation being given, the denotation is thereby limited but not fixed. Things which lack any essential attribute, specified or implied in the connotation, are *excluded from* the denotation; but what is included in the denotation, and what not, depends also on what happens to exist; since the class of things denoted—as distinguished from what the term comprehends—is confined to existents.”⁹⁶⁵

Figure 2 Possible differences between the original and contemporary application of claims

⁹⁶⁴ Solum, *supra* note 788, 25.

⁹⁶⁵ Clarence Irving Lewis, *The Modes of Meaning*, in Leonard Linsky (ed.), *Semantics and the Philosophy of Language: A Collection of Readings* 54(1952).



Unforeseeable technological changes can be accommodated by the proposed connotation–denotation framework. The denotations include new and different items with that essential meaning. Interpreters determine infringement by assessing whether the variant possesses all the essential attributes. Interpreters are bound to the connotation, that is, the essential meaning of a term, but are not confined to the denotation that a term had at the time of filing. The connotation-denotation framework introduces flexibility into patent claim interpretation. It suggests that a patentee (from the eyes of a PHOSITA) may not always envision all denotations which fall within the scope of a claim term,⁹⁶⁶ thus allowing the claim term to refer to variants not contemplated by the patentee at the time of filing. When the contemporary application of a claim term is different from that expected by the PHOSITA at the time of filing, one has to decide which denotation should be adopted.

E. Following Proposition D, when new denotations represent significant improvement over the original expected application, they fall outside the scope of the patent claim; if no significant improvement is found, then the claim term would be read broadly to encompass new denotations.

⁹⁶⁶ Chao, *supra* note 936 (“...claims may also cover after-arising technology that could not be envisioned at the time the patent was filed. This happens in two ways. First, claims may cover unforeseen variations of the invention. For example, photographs are now routinely sent via e-mail. The ‘647 patent might cover a computer that automatically recognizes the faces in a photo and indexes the photos accordingly. Second, claims can cover competitors that add something unforeseen to the invention, like the many features of HTC’s smart phone.”)

As concluded in previous paragraphs, a connotation is the set of attributes or properties shared by all and only the objects within the term's extension, and denotations of the term is the thing or set of things to which the term refers. Due to technological changes, a variant may possess in common the essential qualities, *i.e.* the performance properties in the context of dynamic interpretation; however, its level of performance can be different from the claimed invention. For example, a contemporary denotation contains the same performance properties such as elasticity and temperature resistance as the claimed invention, but they can achieve greater efficiency or enhanced functionality.⁹⁶⁷ Patentee is not required to predict all future developments which enable the practice of his invention,⁹⁶⁸ and patent claim may encompass unanticipated applications. Therefore, when the improvement is minor, the new denotation still falls within the scope of claim protection. However, when the new denotation⁹⁶⁹ represents significant improvement over the original expected application, that is, it has proven its value in achieving a higher level of performance, it will fall outside the scope of claim protection. The rationale behind this proposition is that when "the improver's contribution dominates the value of the improved technology," patent law should maintain incentives for inventors to significantly improve on existing

⁹⁶⁷ Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175 (2011) ("improving" a patented invention entails creating a technology that serves a similar technical objective as the existing invention, but does so with greater efficiency or enhanced functionality.)

⁹⁶⁸ *Hughes Aircraft Company vs. The United States*, 717 F.2d 1351 (1983).

⁹⁶⁹ Lee, *supra* note 967. ("Substantial improvement" is, of course, a difficult concept to define and would generally arise where the value of the improvement clearly dominates the value of the underlying patent in some new technology. Such improvement is most likely to arise where an improved invention "transforms" an existing patented technology rather than simply incrementally modifying it

patented technologies.⁹⁷⁰

Under the first Protocol question in the UK purposive approach, if the court finds that the variant does not have a material effect on the way in which the invention works, this is the end of matter; there is no infringement.⁹⁷¹ However, this first step has been criticized as unnecessary and not useful because it rather begs the question what the invention described in the patent claims is.⁹⁷² For example, in *Australia mud company* case,⁹⁷³ the claims of the innovation patent referred to “An orientation device”. The controversy was whether the term “device” as used in the patent claims could encompass a core orientation tool in two or more separate and separated parts or whether it was limited to a unitary tool comprised of a single piece. The Australian Federal Court reasoned that “It may be argued, however, that the benefits provide examples of why a two part device is a material variation on a one part device. But this question rather begs the question whether the invention described in the Patent is constituted of one part or two parts. Once it is determined that the invention described in the Patent does not include a two part device, then no question of material variation arises.”⁹⁷⁴ Under the dynamic approach, the focus of claim construction is on what a PHOSITA at the time of filing would have interpreted and applied the claim terms to mean, *i.e.* the original expected application. However, since connotations are not exhausted by its denotations,

⁹⁷⁰ See, e.g., Lemley, *Economics of Improvement*, supra note 31, at 1012-13; Robert Merges, *Intellectual Property Rights and Bargaining Breakdown: The Case of Blocking Patents*, 62 TENN. L. REV. 75 (1994) *Boyden Power-Brake Co. v. Westinghouse*, 170 U.S. 537 (1898).

⁹⁷¹ Lionel Bently & Brad Sherman, *Intellectual Property Law*, 644 (2014).

⁹⁷² *Australian Mud Company Pty Ltd v. Coretell Pty Ltd* [2010] FCA 1169. This case is a good reminder that the Improver question of ‘material variation’ is not a substitute for construction.

⁹⁷³ *Id.*

⁹⁷⁴ *Id.*

the original expected application is not to be followed when circumstances provide a strong reason (such as the case of substantial improvement) for the interpreter to adopt the new denotation. The evaluation of the performance properties is not the first step, and it only comes in when contemporary application of the claim term conflicts with that expected by the PHOSITA at the time of filing, such as when after-arising technology is present.

The dynamic claim construction has some similarities with the “reverse doctrine of equivalents.”⁹⁷⁵ The reverse doctrine of equivalents asks the following question: is the allegedly infringing product or process so far changed in principle that, despite literal readability, it performs the function of the claimed invention in a substantially different way?⁹⁷⁶ The U.S. Supreme Court has ruled that:

“[A] charge of infringement is sometimes made out, though the letter of the claims be avoided. The converse is equally true. The patentee may bring the defendant within the letter of his claims, but if the latter has so far changed the principle of the device that the claims of the patent, literally construed, have ceased to represent his actual invention, he is as little subject to be adjudged an infringer as one who has violated the letter of a statute has to be convicted,

⁹⁷⁵ *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.* 339 U.S. 605 (1950). (“[W]here a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee’s action for infringement.”)

⁹⁷⁶ *Peter Gabor Kalman v. Kimberly-Clark Corporation*, 713 F.2d 760 (Fed. Cir. 1983). In this case, Appellant argued that “despite literal readability of the asserted claim language on the Berlyn filter process and device,” there can be no infringement under the law because “there is no infringement of the true spirit and scope of the invention made by Kalman.” The Federal Circuit disagreed and pointed out that Berlyn had not “so far changed the principle of the device that the claims of the patent, literally construed, have ceased to represent [Kalman’s] actual invention.”

when he has done nothing in conflict with its spirit and intent.”⁹⁷⁷

However, in practice the courts rarely apply the reverse doctrine of equivalents,⁹⁷⁸ because “[i]f a court finds that an accused product is literally described by a patent claim, it is difficult to convince that court that the accused product is still ‘changed in principle’ compared to the patentee’s invention.”⁹⁷⁹ As a result, the genuine improvers can rarely be exempt from liability of infringement. By comparison, the dynamic construction does not have the rigid word/thing (literal/figural) dichotomy, and does not need to first decide whether the claim text to be taken literally or not. There is only the subject matter, *i.e.*, the concept referred to by the term, which is waiting to be interpreted. In determining infringement, the interpreters not only assess whether the variant possesses a particular set of essential attributes connoted by the claim text, but also consider its value and significance in relation to the original invention, which encourages the valuable improvements on a patented product or process.

Take the *Hughes* case⁹⁸⁰ for example. The Hughes invention claims “means disposed on said body for providing an indication to a location

⁹⁷⁷ *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537, 568 (1898) (citations omitted).

⁹⁷⁸ *Tate Access Floors Inc. v. Interface Architectural Resources, Inc.*, 270 9F.3d 1357, 1368 (Fed. Cir. 2002). (“Not once has this court affirmed a decision finding noninfringement based on the reverse doctrine of equivalents. And with good reason: when Congress enacted 35 U.S.C. § 112, after the decision in *Graver Tank*, it imposed requirements for the written description, enablement, definiteness, and means-plus-function claims that are coextensive with the broadest possible reach of the reverse doctrine of equivalents. Even were this court likely ever to affirm a defense to literal infringement based on the reverse doctrine of equivalents, the presence of one anachronistic exception, long mentioned but rarely applied, is hardly reason to create another.”)

⁹⁷⁹ Alan L. Durham, *Patent Law Essentials: A Concise Guide* 149 (2004) (“...in practice the ‘reverse doctrine’ has proven to be far less potent than its counterpart. Cases won on the reverse doctrine of equivalents are exceedingly rare.”) Andrew Wasson, *Protecting the Next Small Thing: Nanotechnology and the Reverse Doctrine of Equivalents*, 2004 Duke L. and Tech. Rev.10 (2004) (“Even so, it cannot be overlooked that the overwhelming majority of courts acknowledge the existence of the reverse doctrine of equivalents but find it inapplicable to the cases before them”)

⁹⁸⁰ *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1353 (Fed. Cir.1983).

external to said body of the instantaneous spin angle position of said body about said axis and the orientation of said axis with reference to a fixed external coordinate system”. The Hughes invention taught an on-board sun sensor that transmitted sun pulses back to earth so that the ground crew could simulate the rotation of the satellite and calculate spin rate, sun angle and ISA position. The accused infringing satellites do not provide any indication of ISA to the earth, and the calculations are wholly done by an on-board computer. The Federal Circuit found infringement under the doctrine of equivalents. Under the dynamic approach, the connotation of “means disposed on said body for providing an indication”, *i.e.*, the calculation capacity, remains constant, while its denotations can change over time. The use of on-board computer which is contemporarily accepted as a new denotation of the claim term, was not feasible at the time patentee filed his applications and therefore unforeseeable and unexpected to a PHOSTA at the time of filing. The original expected application is then inconsistent with the contemporary application, and the interpreter needs to decide which application to be adopted. Under such circumstance, the interpreter has to move on to evaluate the contribution of the new denotation, *i.e.*, “on-board computer” in relation to the original invention. The interpreter would probably find that the former performs the function of a significant calculation unrelated to ground personnel,⁹⁸¹ which is more advanced and efficient than the original invention, therefore non-infringement would be found.

⁹⁸¹ *Id.*(Davis, Circuit Judge, concurring in part and dissenting in part.)

Section 3 The distinguishing features of the dynamic approach

Three theories of meaning underlying the existing approaches have been discussed in this thesis, namely, the ordinary use-based theory, the intention-based theory and the content-based theory. These interpretive theories have different focuses:

i. The ordinary use-based interpretation: The ordinary use-based theory holds that the meaning of the words corresponds to the ordinary meaning used in the given community of speakers in a specific context. Interpretations of patent claim are to be guided by the commonly accepted meaning of the terms used by a PHOSITA at the time of the invention or filing.

ii. The intention-based interpretation: meaning is dependent on the patentee's objective intent, which was seen through the objective eyes of the hypothetical skilled person. Thus, in order to understand the claim text, the interpreter has to make his best estimate of the skilled person's best estimate of what the patentee intended at the time of filing.⁹⁸²

iii. The content-based interpretation: meanings are constructed rather than fixed. An interpreter will structure his own understanding of the subject matter, combining the textual information with the new information in light of the present context.

These interpretive theories provide bases on how meanings could be assigned to the claim texts. Some existing claim interpretation approaches

⁹⁸² Turner, *supra* note 245.

focus on the realm of the past in ascertaining what *meaning* is: they speculate what a person having ordinary skill in the art *would have* understood the term at the time of invention, or what the person skilled in the art *would have* understood the patentee to be using the language of the claim to mean. However, the pursuit of meaning within a past context in patent claim interpretation is often unfruitful, as it is not satisfactory for resolving disputes that arise in the changing context. The content-base approach pays attention to the interpreter's construction of subject-matter in the modern context, but the frequent invoking of the doctrine of equivalents may undermine certainty and predictability of patent law. Therefore, the existing approaches have not provided sufficient reasons to explain the differences between original and contemporary application of the claim text.

A. The dynamic construction is highly context-sensitive.

According to Gadamer, the “potentialities of meaning” are held within a *Sache*, *i.e.*, the content or the subject matter, which makes understanding possible across different time periods.⁹⁸³ Therefore, interplay between the past and the present is demanded.⁹⁸⁴ The dynamic approach is not a one-time test that

⁹⁸³ Davey, *supra* note 737, 71, 72. (“Both past and forgotten determinations of meaning as well as unrealized future potentialities of meaning are held within a *Sache*. Following Heidegger, Gadamer describes these aspects of meaning as “the withheld”. It is, in part, the withheld dimension of a *Sache*'s meaning that lends it its weight and depth. Furthermore, it is because we experience the nature of a *Sache* against the backdrop of previously experienced or expected aspects of a subject matter that “permits (us) to recognize its independent otherness.”) *See also*, George H. Taylor et al., *Gadamer and Ricoeur: Critical Horizons for Contemporary Hermeneutics* 82 (2011) (“A hermeneutics focused solely on defining meaning as a static phenomenon... without paying attention to what hinders understanding, is also one that remains indifferent to the concrete conditions of communication...”)

⁹⁸⁴ Gadamer, *supra* note 46, at 293. (“The circle of understanding... is neither subjective nor objective, but describes understanding as the interplay of the movement of tradition and the movement of the interpreter.”) Allan C. Hutchinson, *Work-in-Progress: Gadamer, Tradition, and the Common Law*, 76 *Chi.-Kent L. Rev.* 1015 (2001). *See also* Philippe Eberhard, *The Middle Voice in Gadamer's Hermeneutics: A Basic Interpretation with Some Theological Implications* 80 (2004) (“although we are limited in our own perspective, the limits can be transcended — to the extent that we can open ourselves up

focuses on either the past or the present context. It pays attention not only to the original technological background at the time of filing, but also the changed context in a particular scientific or technological field at the time of infringement. These are the two worlds that philosophical hermeneutics requires to look at: the world in which the text was written and the world in which the text is engaged.⁹⁸⁵

The evolving context is vital to the understanding of technical terms.⁹⁸⁶ For instance, there are rapid technological changes in some of the industries such as information technology, biotechnology and pharmaceutical industry.⁹⁸⁷ The necessity of analyzing the contextual information depends on the nature of patents:

Patent litigation is different. It is more complicated, more time-consuming and more mentally taxing because typically the patent being litigated is a successful advancement of some science or technology. So, the judge has to understand that background just to get the factual basis of the problem and then deal with the

to various perspectives, and in this way better understanding can be achieved...Horizons are many, and they interact with each other.”) R. Lanier Anderson, *Truth and Objectivity in Perspectivism*, 115 *Synthese* 1-32 (1998) (“Whether full theoretical unification is ultimately possible or not, a ‘variety of perspectives’ is necessary for objectivity...the information made available through a ‘variety of perspectives’ outside the one to which we are currently more or less beholden, can reveal the limitations of our own perspective, and point our way along the incremental road toward better ones.”) See also, Amanda L. Tyler, *Continuity, Coherence, and the Canons*, 99 *NW. U. L. Rev.* 1389, 1404. (2005).

⁹⁸⁵ Amy Volda, *Exploring a Technological Hermeneutic: Understanding the Interpretation of Computer-mediated Messaging Systems* 35 (2008).

⁹⁸⁶ Lyle Campbell, *Historical Linguistics: An Introduction* 268 (2004) (“In the wake of automobiles and aeroplanes, fly and drive have taken on new meanings. There are countless such examples, of words whose meanings have changed due to sociocultural and technological changes in the world around us.”)

⁹⁸⁷ Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition* 83 (2011) (“For example, software patents often cover “very abstract conceptual innovations” that can’t be simply described given our current understanding of the area, and can be claimed in “unique ways.”) <http://www.ftc.gov/opa/2011/03/patentreport.shtm> (last visited Sept 26, 2012). See also, Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?* 17 *Berkeley Tech. L.J.* 1155, 1185-96 (2002)

legal aspects.⁹⁸⁸

The results of a recent empirical study show that the United States Federal Circuit uses non-technical analysis⁹⁸⁹ for the majority of claim construction issues on appeal. The basic criterion for the non-technical analysis is that the issues are connected to the asserted patents but do not require any technical understanding of the patent claims or how the invention works. The court “focused on grammatical issues, turned to dictionaries or specifications for definitions, or performed superficial comparisons of the prior art or drawings.”⁹⁹⁰ However, linguistic interpretation alone often cannot resolve the issues of construction.⁹⁹¹ It has been noticed that “a textualist, inward-looking approach to claim construction deprioritizes contextual factors such as expert testimony and industry dynamics that speak to an invention’s substantive technological contribution.”⁹⁹²

By comparison, the dynamic approach does not merely rely on the linguistic arguments, but focuses on describing precisely the technological features and properties of the subject matter. The admission and use of extrinsic

⁹⁸⁸Rachel M. Zahorsky, *Patent Pending*, 96 ABA J. 15(2010) (statement of Judge James F. Holderman).

⁹⁸⁹Holly Lance, *Not So Technical: An Analysis of Federal Circuit Patent Decisions Appealed from the ITC*, 17 Mich. Telecomm. Tech. L. Rev. 243 (2010). The results of this empirical study indicate that the majority of the issues on appeal at the Federal Circuit are not technical in nature (or are not analyzed in a technical manner). The author pointed out that while identifying claim construction issues was relatively easy, determining a clear division between “technical” and “non-technical” claim construction issues was considerably more difficult. To some extent, all claim construction analyses are arguably technical, because they involve a close reading of the patent and at least a cursory understanding of the invention. What differentiates “technical analysis” of claim constructions from the “non-technical” analysis is the level of depth of the analysis.

⁹⁹⁰*Id.*

⁹⁹¹Chiang & Solum, *supra* note 38.

⁹⁹²Lee, *supra* note 35. (“Phillips and its literalist approach to claim construction have also been widely criticized. Commenting on earlier cases that ultimately culminated in Phillips, Craig Allen Nard has characterized this inward-looking claim construction methodology as “hypertextualist.”)

evidence such as expert testimony⁹⁹³ is important for assessing performance properties. The dynamic approach is fact intensive⁹⁹⁴ and provides an empirical guidance. Patent claim construction must somehow balance the need to adapt the claim text to the rapidly evolving technological environment while maintaining the stability of boundaries of monopoly.⁹⁹⁵ The end goal is to preserve original meaning despite changes in context.⁹⁹⁶

B. *The dynamic construction is explanatory.*

The dynamic approach frankly presents the possible gaps between understandings of meaning in different time frames. Such gaps signal the need for interpreters to offer sufficient reasoning to justify the application of meaning to new context. To fill this gap, the interpreter has to “neutralize or accommodate the effect that changing context may have on meaning”.⁹⁹⁷ Patent claim construction must provide practical reasoning⁹⁹⁸ to explain whether a term should be accorded its modern meaning or the meaning as it

⁹⁹³ *Markman*, 52 F.3d 980. (“Extrinsic evidence may demonstrate the state of the prior art at the time of the invention. It is useful ‘to show what was then old, to distinguish what was new, and to aid the court in the construction of the patent.’”) See also, Laura K. Mullendore, *Patent Claim Construction: A Sliding-Scale Standard of Review*, 28 REV. LITIG. 241, 252-53 (2008) (“The more fact-dominated the claim construction is, the more deferential the review should be; the more law-dominated the construction is, the more independent the review should be.”)

⁹⁹⁴ Greg Reilly, *Improvably Granted: Why the En Banc Federal Circuit Chose the Wrong Claim Construction*, 80 The University of Chicago Law Review Dialogue 43 (2013). Available at SSRN: <http://ssrn.com/abstract=2264876> (“A holding that claim construction, in full or part, is entitled to the deferential review given to fact questions may then be used as evidence that the proper claim construction methodology should emphasize factual inquiries, like the abstract meaning to a skilled person in the field. But the substantive legal doctrine should decide the standard of re-view, not the other way around.”)

⁹⁹⁵ Casey, *supra* note 20.

⁹⁹⁶ Lessig, *supra* note 799. (“For if contextualism is correct, and a change in context is ignored, the reader may rewrite the writer’s original meaning.”)

⁹⁹⁷ Dennis J. Goldford, *The American Constitution and the Debate over Originalism* 82 (2005).

⁹⁹⁸ Twining & Miers, *supra* note 15. (“...practical reasoning is concerned with giving and evaluating reasons for and against acting or deciding in a certain way.”); Richard A. Posner, *The Problems of Jurisprudence* 71 (1993) (“Practical reason involves setting a goal... and choosing the means best suited to reaching it”). For discussions of practical reasoning, see Nicholas Rescher, *Practical Reasoning and Values*, 16 Philosophical Quarterly 121-136 (1966); Eskridge & Frickey, *supra* note 761; Farber, *supra* note 757; Eileen A. Scallen, Classical Rhetoric, *Practical Reasoning, and the Law of Evidence*, 44 AM. U. L. REV. 1717 (1995).

might have been understood at the time of framing. The dynamic construction opens up the possibility of legitimately considering later-developed technologies by means of the distinction between the fixed connotations and the variable denotations: the claim terms not only denote the objects of the respective classes, but also connote their essential attributes. The advantage is that the connotation of a word “circumscribes all the possibilities within a subject’s past and future understanding”,⁹⁹⁹ so the meaning is not tied to the original expected application of the text, “but is permitted to evolve in response to both linguistic and social change”.¹⁰⁰⁰

Claim interpretation is not reducible to a single means (either patentee’s intent or ordinary usage) to achieve the goal—courts may too quickly abandon other possible argumentations without explanation. When there is a range of potential answers that may be thought of as lying along a spectrum, and interpreters may weigh competing meanings tacitly and unreflectively. The dynamic approach requires giving substantive reasons and overt articulations in the claim construction process, “as opposed to disengagement and dismissal of competing interpretations without explanation.”¹⁰⁰¹ At the foundation of the dynamic approach is the pragmatic notion that no single source is adequate for

⁹⁹⁹ Davey, *supra* note 737, at 78. (“...some traits of a thing lie outside our explicit awareness, either because we have not experienced them or because we are not attending to them These “unattended to” or unknown traits constitute a penumbra that may be called a unifying background, which is always present in and gives our experience the quality of being of a specific object or subject matter.”)

¹⁰⁰⁰ Ruth Sullivan & Elmer Driedger, *Sullivan and Driedger on the Construction of Statutes*, 4th ed., 105(Toronto: Butterworths, 2002). *See also*, Randal N.M. Graham, *Right Theory, Wrong Reasons: Dynamic Interpretation, the Charter, and Fundamental Laws*, 34 SCLR (2d) 169. 107 (2006).

¹⁰⁰¹ John Tobin, *The Right to Health in International Law* 115 (2012). (“There is ... a better chance to uncover biases and blind spots when a variety of alternative narratives are competing to tell the story ... as opposed to a narrow range of official stories which are received without questioning and perceived as authoritative doctrine... Interpretation essentially becomes an act of persuasion, the effectiveness of which is influenced by the depth and rigor of its analysis.”)

all interpretive issues.¹⁰⁰² An essence of the dynamic approach, as described by Professor Daniel Farber, is an “eclectic mix” of sources of evidence such as the text, purpose, public policy, and history of an instrument.¹⁰⁰³ It requires an interpretive methodology that will enhance the persuasiveness and transparency of the interpretation to be offered.¹⁰⁰⁴

Some might object that the proposed dynamic approach overstates the need for revealing the hidden discretion behind the rhetoric. One view is that “every court regularly uses formalistic rhetoric”, and “everyone knows that patent scope is actually discretionary”, but “that is something practiced by virtually every court and every judge.”¹⁰⁰⁵ This criticism has disregarded the important realities about the nature of the patent rights.¹⁰⁰⁶ The essential nature of the patent right is the power to exclude others from the invention.¹⁰⁰⁷ “The patent applicant, in drafting claims, is trying to walk a thin line of fashioning a claim sufficiently narrow that it is not invalid over the prior art, but at the same time trying to obtain a sufficiently wide scope of protection

¹⁰⁰² Richard K Gardiner, *Treaty Interpretation* 142 (2008) Section 3 Article 31 of the Vienna Convention on the Law of Treaties: “a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the term of the treaty in their context and in the light of its object and purpose.”

¹⁰⁰³ Daniel A. Farber, *Statutory Interpretation and the Idea of Progress*, 94 *MICIL. L. Rev.* 1547. (1996). See also, Daniel A. Farber, *The Inevitability of Practical Reason: Statutes, Formalism and the Rule of Law*, 45 *Vand. L. Rev.* 533, 534 (1992) (criticizing formalism and advocating an approach to statutory interpretation based on “practical reason”). Richard K Gardiner, *Treaty Interpretation* 142 (2008). (“all various elements, as they were present in any given case, would be thrown into the crucible, and their interaction would give the legally relevant interpretation.”)

¹⁰⁰⁴ Tobin, *supra* note 1001, at 100. (“Interpretation essentially becomes an act of persuasion, the effectiveness of which is influenced by the depth and rigor of its analysis.”)

¹⁰⁰⁵ Tun-Jen Chiang, *Formalism, Realism, and Patent Scope*, 1 *IP Theory* 88(2010) (“Moreover, like many other areas of law, the formalist rhetoric cloaks what in actuality is a great deal of pragmatic discretion. Rumors of Federal Circuit exceptionalism in this regard, it would appear, have been greatly exaggerated.”)

¹⁰⁰⁶ See, e.g., *Smith Int’l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1581 (Fed. Cir. 1983) (“The very nature of the patent right is the right to exclude others. Once the patentee’s patents have been held to be valid and infringed, he should be entitled to the full enjoyment and protection of his patent rights. The infringer should not be allowed to continue his infringement in the face of such a holding.”)

¹⁰⁰⁷ Thomas F. Cotter, *Refining the Presumptive Illegality Approach to Settlements of Patent Disputes Involving Reverse Payments: A Commentary on Hovenkamp, Janis & Lemley*, 87 *Minn. L. Rev.* 1789 (2002). (“For better or worse, patents exist, and they reflect a legislative judgment that their benefits exceed their costs.”)

that may include coverage of future devices.”¹⁰⁰⁸ It is crucial to strike a balance between the monopoly granted to the inventor and the public interest,¹⁰⁰⁹ such as consumer welfare, competition and national development prospects.¹⁰¹⁰

Therefore, the need for transparency in claim construction is great in order to ensure that the scopes of monopoly are appropriately given for correct reasons and to the correct parties.¹⁰¹¹ Since there is no such thing as pure objectivity, legal certainty is best achieved through more structured, open and transparent reasoning and argumentation of meaning.¹⁰¹² This is also true in the context of claim construction, the best way to achieve accuracy and predictability in selecting a level of abstraction for patent scope is to make the process more transparent, and increase the amount of available

¹⁰⁰⁸ Osenga, *supra* note 81. *See also*, *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. (2001)). (“The jurisprudence of claim construction reflects the difficult balance between a patentee’s exhortation that courts should read the claims broadly and unlimited to the specific embodiments shown in the specification, and the rule that claims should be construed sufficiently narrowly to preserve their validity.”)

¹⁰⁰⁹ William R. Hubbard, *Efficient Definition and Communication of Patent Rights: The Importance of Ex Post Delineation*, 25. Santa Clara Computer & High Tech. L.J. 327, 371–372 (2009) (“a certain amount of uncertainty is often unavoidable, or even desirable.”) The author gave three reasons for his conclusion: First, uncertainty regarding patent scope often stems from the indeterminacy inherent in any effort to describe, with words, the full scope the patentee’s inventive contribution. Second, for a variety of good reasons, patents must be broadened beyond the specific details of the discovery of the inventions covered by the patents. Third, even if some uncertainty could be removed by requiring patent applicants to provide more robust information regarding patent scope, it is often inefficient to do so.

¹⁰¹⁰ *Id.*

¹⁰¹¹ Golden, *supra* note 127. (“More predictable, coherent, and transparent claiming rules and practices may provide the best hope for those of limited means to establish clear patent rights through the patent application process itself, a far cheaper process than patent litigation”)

¹⁰¹² Elina Paunio & Susanna Lindroos-Hovineimo, *Taking Language Seriously: An Analysis of Linguistic Reasoning and Its Implications in EU Law*, 16 European Law Journal 395-416 (2010). (“The theoretical starting-point is that of open-endedness of language: no means exists to definitely pin down the meaning of words. Defining the meaning of words in a legal context is necessarily a matter of choice involving evaluative considerations.”) *See also*, Andrew E. Taslitz, *Interpretive Method and the Federal Rules of Evidence: A Call for a Politically Realistic Hermeneutics*, 32 Harv. J. On Legis. 329, 353-95 (1995) (“When a court is forced to articulate the real reasons behind its decisions, it must wrestle with those reasons...if the ‘real’ reasons for a decision are candidly stated, the author faces the challenge of articulating those reasons in a way that will be persuasive to others and to herself.”)

information.¹⁰¹³

¹⁰¹³ Chiang, *supra* note 129

PART IV: APPLYING THE DYNAMIC CLAIM CONSTRUCTION TO PATENT INFRINGEMENT CASES

CHAPTER 8 IN DEFENSE OF THE DYNAMIC APPROACH

The dynamic approach focuses on the interrelation between meaning and application, and pays attention to the application of patent claim texts in both the original and the current scientific-technological context. The proposed approach is not without its difficulties. This Chapter appraises possible criticisms that such a connotation-denotation model would face, and gives responses in defense of the proposed dynamic approach. One possible criticism is that there is great difficulty in determining what the essential attributes of a general term are, which introduces a great deal of subjectivity and uncertainty into claim interpretation. A second possible criticism is that it is impossible for the dynamic approach to both remain stable and change over time, just like “one can’t have one’s cake and eat it too.” It may be argued that ascertaining claim meaning is unworkable and the determination of claim scope would be better resorted to policy judgments of fairness. Despite the above criticisms, the distinction between connotation and denotation is still a useful tool for adjusting the meaning of claim terms to changed circumstances. This Chapter further discusses the relationship between the specification and claims under the dynamic approach. By assessing the subject matter of claims, dynamic approach pays more attention to the correspondence between the claims and the specification.

Section 1 Possible criticisms of the dynamic approach

A. *The dynamic approach lacks of ex ante certainty and predictability.*

Because patent claims define the exact scope of the exclusive rights granted for an invention, the boundaries of patentable subject matter have been delineated before anyone can take any action with regard to the associated patent rights.¹⁰¹⁴ The dynamic approach pays less attention to the semantic aspects of a word, but focuses on identifying the “implied” or “hidden” meaning of the patent claims. “The connotation is the general idea or attribute of which the denotation is the set of instances.”¹⁰¹⁵ The first challenge for dynamic claim construction is to distinguish between connotation and denotation. It has been criticized that such distinction can be “highly artificial,”¹⁰¹⁶ as most words combine both the denotative and the connotative aspects.¹⁰¹⁷

Moreover, as the level of abstraction for the claim terms is hard to identify, there may be concerns that the determination of connotation or denotation is closely tied to subjectivity and becomes result-driven

¹⁰¹⁴ Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. Chi. L. Rev. 719 (2009).

¹⁰¹⁵ Morris Lazerowitz & Alice Loman Ambrose, *Philosophical Theories* 147 (1976).

¹⁰¹⁶ Stephen A James, *Originalism and Constitutional Interpretation in Australia: The Way Backwards*, J. Neville Turner, Pamela Williams (ed.), *The Happy Couple: Law and Literature* 310 (1994). (“The connotation is fixed, the denotation changing. Of course, this distinction can, at times, be highly artificial.”) *See also*, *R v Federal Court of Australia; Ex parte WA National Football League* [1979] HCA 6; (1979) 143 CLR 190, 234 (Mason J) (‘Adamson’s Case’) in *Re Wakim; Ex parte McNally* [1999] HCA 27; (1999) 198 CLR 511, 552 (McHugh J). Justice McHugh noted ‘[t]he distinction between meaning and denotation is not without its difficulties’: at 552. *See also* Zines, *supra* note 56, at 19; *Eastman v The Queen* [2000] HCA 29; (2000) 203 CLR 1, 80–1 (Kirby J). Justice Kirby doubted the coherence of the distinction.

¹⁰¹⁷ Michael Losonsky, *Linguistic Turns in Modern Philosophy* 161 (2006) (“One can denote only an object and nothing else, or one can also denote along with it other things, such as its properties.”) *See also*, S. Eng, *Analysis of Dis/agreement - with Particular Reference to Law and Legal Theory* 180 (2003). (“Defining through specification will always (by definition) at the same time say something about the denotation, namely that the concept criteria are to a greater or lesser degree found again in the individual things that the concept covers.—The things thus have definitional properties.”)

approach.¹⁰¹⁸ Due to the complex traits of the subject matter, sometimes we recognize it by this and sometimes by that characteristic, or group of characteristics.¹⁰¹⁹ The dynamic approach is not a straightforward method since there are no explicit or rigid formulas to decide whether an attribute is essential or accidental.¹⁰²⁰ The proponents of traditional approaches will most likely criticize the dynamic approach for its lack of ex ante certainty.¹⁰²¹ They may have concerns about the public notice function of patent claims: under the dynamic interpretation, the public will never be sure exactly what the claim will be deemed to protect.¹⁰²² The connotation-denotation model seems to want to have its cake and eat it—a claim term “is changeless yet changing.”¹⁰²³

In response to the criticism, it should be first noted that although reasonable ex ante certainty is necessary to give confidence to the public about

¹⁰¹⁸ Geraldine Chin, *Technological Change and the Australian Constitution*, 24 Melb. U. L. Rev. 609 (2000).

¹⁰¹⁹ Otto Jespersen, *The Philosophy of Grammar*, 68 (2006) (“What qualities are connoted by the word “dog”? In this and in a great many other cases we apply class-names without hesitation, though very often we should be embarrassed if asked what we “mean” by this or that name or why we apply it in particular instances.”)

¹⁰²⁰ Lee, *supra* note 872. (“This is by no means always a straightforward task, and it is probably unrealistic to try and articulate rigid rules for determining whether a particular attribute is an essential characteristic of a term.”) See also, Corcoran & Bottomley, *supra* note 841. (“does not provide a method for determining what was an essential feature as opposed to a merely accidental feature of a term in 1900 or at any other time.”)

¹⁰²¹ John M. Golden, *Construing Patent Claims According to Their “Interpretive Community”: A Call for an Attorney-plus-Artisan Perspective*, 21 Harv. J. Law & Tech. 321, 369-70 (2008) (“Relative certainty regarding a patent’s scope can promote the development and dissemination of related technology by providing a sense of security both to investors in patent rights and to investors in activities that might be vulnerable to charges of patent infringement. Greater certainty may also facilitate licensing that promotes efficient levels of inventive and productive activity. Parties may be more likely to avoid expensive litigation and agree to licensing terms if they can first agree on a patent’s scope.”)

¹⁰²² Vermeule, *supra* note 91. (“Inflexible, rule-bound behavior can be the best response to a decision-making problem, or to a setting for institutional design, in which the decision-maker has very poor information or a very low capacity to process the information that is received. The absence or unreliability of information, or the decision-maker’s poor processing capacity, makes a wide and flexible repertoire of behavior a bad bet...in the face of severe uncertainty, interpretive doctrine should at least be manageable, stable, and cheap.”)

¹⁰²³ Henry Alan Finlay, *To Have But Not to Hold: A History of Attitudes to Marriage and Divorce in Australia 1858-1975*, 291 (2005). Citing P H Lane in *The Australian Federal System* (2nd Ed.) 1107-20 (1979).

what is protected and to what extent, a perfect ex ante certainty is difficult to attain, especially when it is in conflict with the ex post emergence of technological developments.¹⁰²⁴ It has been pointed out that the familiar “metes and bounds” analogy to patent claims is a legal fiction, which is “at best, unhelpful and, at worst, misleading.”¹⁰²⁵ The intangible object of intellectual property rights cannot be determined with clear-cut physical boundaries in the manner of real property.¹⁰²⁶ The boundaries remain fuzzy even if the literal meanings are relatively precise and clear with low-tech inventions.¹⁰²⁷ For example, in construing the terms such as *a baffle*,¹⁰²⁸ *a channel assembly and bolt*¹⁰²⁹ or *a flagpole*,¹⁰³⁰ courts might be still in dispute over the understanding of common words used.

¹⁰²⁴ Schwartz, *supra* note 130. (“What seems worse, as recently shown in an empirical study, the data does not reveal any evidence that judges with more claim interpretation experience fare better on subsequent appeals. It does not appear that the more patent cases handled by a district court judge, the less often his or her decision is reversed.”)

¹⁰²⁵ Saulsbury, *supra* note 205. *See also*, Lee, *supra* note 35. (“critic might object that substantive claim construction would undermine certainty, predictability, and the public function of claims. However, the simple response is that the current system does not provide much certainty anyway.”)

¹⁰²⁶ Burk & Lemley, *supra* note 5. Jay Dratler, *Intellectual Property Law: Commercial, Creative, and Industrial property* 9(1991). The U.S. Copyright Act delineates the subject matter of copyright as “original works of authorship fixed in any tangible medium of expression.” 17 U.S.C. § 102(a).

¹⁰²⁷ James Bessen & Michael J. Meurer, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk* 201 (2008).

¹⁰²⁸ *Phillips v. AWH Corp.*, (Phillips II), 376 F.3d 1382, 1383 (Fed. Cir. 2004) (en banc). when the same case was reviewed en banc in *Phillips II*, the Federal Circuit reviewed the same factual evidence and used a very similar claim interpretation methodology, but determined that the district court and the Federal Circuit panel had misconstrued the claim.

¹⁰²⁹ *Ancon Ltd v. ACS Stainless Steel Fixings Ltd* [2009] EWCA Civ 498. The accused infringing product has all the features of claim 1 other than that the head of the fixing “has a generally elliptical cone shape.” Justice Patten of the High Court found that the phrase “generally elliptical cone shape” was used by the patentee as a description for all three embodiments of the patent, and he went on to reason that “it can have no other meaning.” *Ancon Ltd v. ACS Stainless Steel Fixings Ltd* [2008] EWHC 2489 (Pat). On appeal, Lord Justice Jacob gave a completely different interpretation of the patentee’s intent on the same phrase. Lord Jacob found that a skilled man would see that the purpose of the shape is to achieve the camming action into the corners of the channel. Therefore, the shape of the top of the bolt, which did not come into contact with the channel, was immaterial to this. Because of the redefinition of the patentee’s intent of using that phrase, the appeal was allowed.

¹⁰³⁰ *Vari-Deals 101 (Pty) Ltd v. Sunsmart Products (Pty) Ltd* [2007] SCA 123. The patent at issue was related to a method (and to its resultant product) of keeping the material of the flag extended in any type of weather conditions by using a flexible pole to apply tension to the material. One main dispute focused on the word “engage” used in claim 1 of the patent: “... (iii) Being adapted to engage at least a portion of the upper periphery of a piece of material...” Judge Southwood and Judge Claassen gave different construction of the term “engage”. The SCA agreed with the latter, inter alia having regard to the circumstance that the word “engage” has a special technical meaning of “to interlock with or to fit into a corresponding part.” *See also*, Dario F. Tanziani, *South Africa: Patents - Validity and Infringement – Purposive Construction*, 30 E.I.P. R. 16-21 (2008).

“We really can’t come up with any objective meaning of patent claim terms, perhaps we should begin rethink the whole enterprise of peripheral claiming and the process of claim construction that accompanies it.”¹⁰³¹ Legal certainty requires a balance between stability¹⁰³² and flexibility,¹⁰³³ and it is best achieved through more structured, open and transparent reasoning and argumentation of meaning.¹⁰³⁴ Rapid technological changes create new opportunities and challenges, which may not be contemplated by the patentee at the time of filing. To provide a convincing conclusion of meaning, claim construction needs sufficient reasoning to mediate between the original and modern context.¹⁰³⁵ The connotation and denotation model has important analytic value. It clearly points out that the connotation, *i.e.*, the associative or suggestive meaning of a claim term, is fixed at the time of filing, yet it is open to new circumstances, since the denotation, *i.e.* the subjects which possess these attributes,¹⁰³⁶ can change over time. Ensuring a balance between *ex ante* certainty and *ex post* adaptability is more important than addressing merely one aspect of the two. Given the complexity of the claim construction in promoting the goals of both certainty and fairness, it is critical that a claim

¹⁰³¹ Burk & Lemley, *supra* note 5.

¹⁰³² Jerzy Wróblewski & Aulis Aarnio, *Meaning and Truth in Judicial Decision* 103 (1979) (“The stability of meaning is conceived as an essential element in assuring legal security, stability and certainty in the application of law.”)

¹⁰³³ Elina Paunio, *Beyond Predictability - Reflections on Legal Certainty and the Discourse Theory of Law in the EU Legal Order*, 10 *German Law Journal* 11, 1469 (2009).

¹⁰³⁴ Elina Paunio & Lindroos Hovinheimo, *Taking Language Seriously: An Analysis of Linguistic Reasoning and Its Implications in EU Law*, 16 *European Law Journal* 395-416 (2010). (“The theoretical starting-point is that of open-endedness of language: no means exists to definitely pin down the meaning of words. Defining the meaning of words in a legal context is necessarily a matter of choice involving evaluative considerations.”) *See also*, Andrew E. Taslitz, *Interpretive Method and the Federal Rules of Evidence: A Call for a Politically Realistic Hermeneutics*, 32 *Harv. J. On Legis.* 329, 353-95 (1995) (“When a court is forced to articulate the real reasons behind its decisions, it must wrestle with those reasons...if the ‘real’ reasons for a decision are candidly stated, the author faces the challenge of articulating those reasons in a way that will be persuasive to others and to herself.”)

¹⁰³⁵ Eskridge, *supra* note 50, at 9. (“the meaning of a statute is not fixed until it is applied to concrete circumstances, and it is neither uncommon or illegitimate for the meaning of a provision to change over time.”)

¹⁰³⁶ John Lyons, *Semantics: Introduction: Some Basic Terms and Concepts* 176 (1977).

construction is substantively justified and carried out within a consistent framework.

B. The dynamic approach is conservative and claim construction should be a policy lever

There may also be criticism of the dynamic approach from another angle. Some believe that linguistic ambiguity is not the major concern for patent claim construction, and the disputes over the claim scope arise due to policy disagreements among judges.¹⁰³⁷ A more moderate approach proposes that “where traditional interpretative methodologies do not yield a clear answer, courts should consider the technological contributions of a patented invention and the competitive dynamics of a particular industry when construing claims.”¹⁰³⁸ That is, in certain circumstances, policy considerations weigh in favor of objective inquiry into the linguistic meaning of a text, such as providing public notice of what is covered by the patent or encouraging competitors to innovate.¹⁰³⁹ The proponents of such approach will probably criticize the dynamic approach for discarding policy judgment and trying to fix connotation at the time of filing, which points in a rather conservative direction.

¹⁰³⁷ Chiang & Solum, *supra* note 38. (“The final take-away is that the uncertainty will persist until judges reach normative agreement about claim analysis policy (or such normative agreement is imposed from above, such as by Congress). We do not have any suggestions about how to force life-tenured judges to reach policy consensus. But understanding the nature of the problem is a predicate to finding a solution.”)

¹⁰³⁸ Lee, *supra* note 35. (“considering substantive and policy factors as claim construction ‘tiebreakers,’ courts can conscientiously construe claims broadly or narrowly so as to best promote technological progress”)

¹⁰³⁹ Jessica C. Kaiser, *What's that Mean? A proposed claim construction methodology for Phillips v. AWH Corp.*, 80 Chi.-Kent L. Rev. 1009 (2005). See also, Lee, *supra* note 35 (“...this Essay argues that policy considerations should guide this discretion in productive directions.”)

There is no dispute that there are public policy issues behind claim construction, such as balancing “interests in certainty with fairness and preservation of the expectations of the inventive community.”¹⁰⁴⁰ However, judges do not have policy-making power during patent claim construction. Patent claim construction principles or rules should provide consistent theoretical and practical guidance for choosing among competing meanings, rather than leaving the “choice” to interpreters’ unfettered discretion. By comparison, the dynamic approach is of the view that language itself has the capability to “absorb and generate endless novelty and changes.”¹⁰⁴¹ According to philosophical hermeneutics, the past and present horizons are firmly integrated rather than separated:

“As in legal hermeneutics, the work that an interpreter seeks to understand is a work that has already been understood from within particular social cultural and historical contexts and has been conceived of in terms of particular concerns and issues. The work the interpreter confronts is, to this extent, a work as it has been handed down to the interpreter within a cultural and literal tradition, just as a law has been interpreted and reinterpreted within a legal tradition. At the same time, interpreters must understand the meaning of the text handed down to them and they do so from within their own historical situation and the issues or situations it involves. To this extent, they are oriented from within a present, historically constituted set of circumstances toward a text that has already been interpreted within the tradition to which they belong and which they are now to interpret in light of their own situation.”¹⁰⁴²

¹⁰⁴⁰ Holbrook, *supra* note 457.

¹⁰⁴¹ Chris Lawn, *Wittgenstein and Gadamer* 30 (2004).

¹⁰⁴² Bruce Krajewski, *Gadamer's Repercussions: Reconsidering Philosophical Hermeneutics* 90 (2004).

Within the connotation-denotation framework, the dynamic approach confers discretion to the interpreter by granting the power to determine whether the variant can be classified as a denotation. To understand the essential attributes of the technical content, the interpreters need to consider evidence outside the four corners of the claim, such as the scientific and technological constraints and development in the real-world context. Interpreters apply particular words and phrases to facts and circumstances that were or may have been outside the contemplation of the inventors. “[M]eaning is not determined once and for all at the moment of origin but must be reassessed as the meaning is applied to new circumstances.”¹⁰⁴³

However, under the dynamic approach, a word’s range of connotation is fixed at the time of filing to enhance certainty and predictability. This is because any properties added to the connotation may diminish the denotation, conversely, if there is a decrease in the connotation (an elimination of some of the properties), the denotation of a term may increase.¹⁰⁴⁴ If the claim is to be construed at the time of infringement, the meaning of a term would “exist in a sort of quantum superposition, collapsing to a particular meaning fixed at a particular point in time only when the interpreter makes the decision to look.”¹⁰⁴⁵ Distinction between denotation and connotation is a technique by

¹⁰⁴³ George H. Taylor, *Law and Creativity*, in *Philosophy and American Law*, Francis J. Mootz, III (ed.) 81 (2009).

¹⁰⁴⁴ Robert Baum, *Logic*, 534 (3rd ed.) (1989). (“An increase in the intension of a definition (the adding of properties) will either diminish the denotation (extension) or leave it unchanged. Conversely, if there is a decrease in the connotation (intension) — that is, an elimination of some of the properties named by the definiens — the denotation of a term can only increase or remain unchanged; it cannot thereby be diminished.”)

¹⁰⁴⁵ Lemley, *supra* note 7.

which the court adjusts the meaning of terms to changed circumstances,¹⁰⁴⁶ which enables us to overcome the difficulties involved in combining certainty with the capacity for growth.

C. The dynamic approach incurs cost and time in claim interpretation.

Under the dynamic approach, the interpreter is expected to provide sufficient justification for the choice of meaning in response to the changing technological context. To understand the properties of the technical content, the interpreters need to consider evidence outside the four corners of the claim in order to better ascertain its meaning, such as the scientific and technological development. One possible criticism is that there are considerable obstacles to applying the dynamic approach in real-world contexts, because such information is costly to produce, collect, and comprehend.¹⁰⁴⁷ The conventional approaches prefer reading the claim text at a fixed point of time in the past to simplify “information inputs”.¹⁰⁴⁸ For a long time, it is believed that formalistic jurisprudence is more efficient in patent adjudication by identifying bright-line rules as opposed to broader, more flexible standards or extraneous considerations.¹⁰⁴⁹

¹⁰⁴⁶ H. P. Lee & Peter A. Gerangelos, *Constitutional Advancement in a Frozen Continent: Essays in Honour of George Winterton* 287 (2009).

¹⁰⁴⁷ Cotropia, *supra* note 397.

¹⁰⁴⁸ Peter Lee, *Patent Law and The Two Cultures*, 120 *Yale L.J.* 2 (2010). (“Given the inherent complexity of technology, the limitations of language, and the doctrinal standard for evaluating patents, simplifying informational inputs is not a promising solution.”) *See also*, Cotropia, *supra* note 5. (“The discussion will focus on how changes in interpretation methodology affect patent scope... Interpretation methodologies can be highly effective levers, having the ability to inject patent policy at the most basic level of the patent process.”)

¹⁰⁴⁹ *See, e.g.*, Mullally, *supra* note 32. (“conventional wisdom that formalism’s chief virtue is its production of certain results”); John R. Thomas, *Formalism at the Federal Circuit*, 52 *Am. U. L. REV.* 771 (2003); Holbrook, *supra* note 457; Arti K. Rai, *Engaging Facts and Policy: A Multi-institutional Approach to Patent System Reform*, 103 *Colum. L. Rev.* 1035, 1040 (2003); Adam Mossoff, *Exclusion and*

In fact, the method of retrieving technical and legal information is in accordance with practice—because this is the way how patent documents are read by a person having ordinary skill in the art.¹⁰⁵⁰ Patent documents are “truthful demonstration of scientific and technical achievements.”¹⁰⁵¹ The structure and the language of the patent documents are specific and tailored to suit the legal and technical purposes of the patent. “The amount of information contained in patent documents is immense. They contain practically everything that represents contribution to the knowledge of mankind in the field of technology back to the end of the nineteenth century and can, properly used, serve as a very valuable source of technical information.”¹⁰⁵² The executive management of companies, researchers, scientists, product designers, economists, university students, inventors and patent agents¹⁰⁵³ will read the detailed and complete information to find out the scope of patent protection. Therefore, an appropriate judicial claim interpretation must represent the most comprehensive way of understanding the complex nature of patent documents.

At first glance, the dynamic approach is more information consuming because it requires analysis of scientific and technological development rather than semantic parsing. Interpreters not only explore the original expected meaning of application and current meaning of application from the eyes of a

Exclusive Use in Patent Law, 22 Harv. J. L. & Tech. 321, 374 (2009) (suggesting that conceiving of patents as a right to exclude contributes to enforcing them by rules rather than standards).

¹⁰⁵⁰ Breton A. Bocchieri, *When is Extrinsic Evidence Really “Extrinsic”?* 48 IDEA 523(2008). Patents embody “a plethora of scientific principles that may be beyond the express record of the patent documents”.

¹⁰⁵¹ Thomas T. Gordon & Arthur S. Cookfair, *Patent Fundamentals for Scientists and Engineers* 51 (2000).

¹⁰⁵² Ulf Jansson, *Patent Documents as a Source of Technological Information*, WIPO/IP/ET/00/9 8 (2000), http://www.wipo.int/edocs/mdocs/sme/en/wipo_ip_et_00/wipo_ip_et_00_9.pdf (last visited August 10, 2011)

¹⁰⁵³ *Id.*

PHOSITA, but also use reason to explain and justify the equivalent meaning. However, with sufficient reasoning, a proper claim construction is substantively justified and carried out in a fair and efficient manner. Claim construction that lacks explanation may lead to costly appeals. For example, the statistical evidence indicates that in the United States, from the date of *Markman* until June 30, 2007, 32.4% of the terms were “wrongly” construed by the lower court. Also, 38.2% of cases had at least one term “wrongly” construed. Moreover, 30.0% of the cases had to be reversed, vacated or remanded because of an erroneous claim construction.¹⁰⁵⁴ Here “wrongly construed” was defined as “Federal Circuit determined that the district court claim construction was wrong (even if it did not actually result in reversal of the judgment) on a term-by-term basis.”¹⁰⁵⁵

In her celebrated article *Crystals and Mud in Property Law*,¹⁰⁵⁶ Carol M. Rose found that while “crystal rules” are often believed to give confidence at the outset of transactions in preventing the members of a society from encroaching on one another’s property, the “muddy rules” such as the post hoc discretionary judgments have great advantages in facilitating an efficient and fluid transaction. Because the dynamic approach directly integrates new information nowadays into interpretation, the sufficient reasoning of the choice of a claim meaning will effectively resolve the disputes in patent litigations.

¹⁰⁵⁴ Schwartz, *supra* note 130.

¹⁰⁵⁵ Moore, *supra* note 5.

¹⁰⁵⁶ Carol M. Rose, *Crystals and Mud in Property Law*, 40 *Stan. L. Rev.* 577(1988); *See also*, Dan L. Burk, *Muddy Rules for Cyberspace*, 21 *Cardozo L. Rev.* 121(1999); Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 117 *Yale L.J. Pocket Part* 87 (2007).

Section 2 Correspondence between the specification and claims under the dynamic approach

Very often, claim language is broader than the specification,¹⁰⁵⁷ as the specification depicts particular embodiments of the invention.¹⁰⁵⁸ It is a well-established rule of patent law that the claims of a patent must always be interpreted by reference to the description and drawings in the body of the specification.¹⁰⁵⁹ This Section will show that the dynamic approach is also consistent with this rule.

Under the U.S. jurisdiction, correspondence between the specification and claims is required by 37 CFR 1.75(d)(1), which provides that claim terms must find clear support or antecedent basis in the specification so that the meaning of the terms may be ascertainable by reference to the specification.¹⁰⁶⁰ Section 14 (3) Patents Act 1977 UK provides that “the specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.”¹⁰⁶¹

¹⁰⁵⁷ Chiang, *supra* note 129. (“...claim language is inherently generalized compared to the specification.”)

¹⁰⁵⁸ Kahrl, *supra* note 1, 5-21. (“the most important function of the specification is to provide a detailed description of the invention so as to permit a person skilled in the art to practice the invention, and in performing that function, to set forth the best mode known by the inventor for carrying out his invention.”)

¹⁰⁵⁹ Article 69, EPC (“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.”)

¹⁰⁶⁰ 2173. *Claims Must Particularly Point Out and Distinctly Claim the Invention [R-9]*,

<http://www.uspto.gov/web/offices/pac/mpep/s2173.html>

¹⁰⁶¹ Patents Act 1977 (UK) s 14 (3). Manual of Patent Practice, Section 14, 14.58 “S.14(3) is one of the provisions which is intended to have, as nearly as practicable, the same effect as the corresponding provisions of the EPC, PCT and CPC. A.83 EPC and A.5 PCT require the invention to be disclosed “in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.”) <http://www.ipo.gov.uk/practice-sec-014.pdf>

The requirement of disclosure is a basic tenet of modern patent law,¹⁰⁶² but its application has subtle distinction in different jurisdictions.¹⁰⁶³ For example, the U.S. law requires inventors to provide a complete and adequate written description of the invention (written description), sufficient to enable any person skilled in the art to which it pertains to make and use that invention (enablement),¹⁰⁶⁴ and the best mode by which to practice the invention known to the inventor at the time of the application filing (best mode).¹⁰⁶⁵ But some patent systems such as Europe do not require disclosure of the inventor's best mode,¹⁰⁶⁶ and the U.K. 1977 Act eliminated the best mode disclosure requirement but left the patent system with a sufficiency doctrine.¹⁰⁶⁷

The correspondence between the claims and the specification requires

¹⁰⁶² Sivaramjani Thambisetty, *The Evolution of Sufficiency* in *Common Law*. LSE Legal Studies Working Paper No. 6/2013 (2013). Available at SSRN: <http://ssrn.com/abstract=2212064> or <http://dx.doi.org/10.2139/ssrn.2212064>

¹⁰⁶³ Aniruddha Sen, *Clear and Complete Disclosure in Biotechnology Patent Applications – A Comparison of the Laws in the USA, Europe and India*, 2 *Hanse L. Rev.* 91 (2006).

¹⁰⁶⁴ Article 83 of the European Patent Convention states that an application must disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Sufficiency is considered by the examiner during examination of a patent application and the requirement of Article 83 must be complied with in order for a patent to be granted. Under the patent law in the United States, the patent specification must be complete enough so that a person of "ordinary skill in the art" of the invention can make and use the invention without "undue experimentation". *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) postured the question: is the experimentation needed to practice the invention undue or unreasonable? *AK Steel Corp. v. Sollac*, 344 F.3d. 1234, 1244 (Fed. Cir. 2003). The Court of Appeals for the Federal Circuit has explained that the enablement requirement is met "when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation."

¹⁰⁶⁵ 35 U.S.C. § 112. "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention."

¹⁰⁶⁶ TRIPS, art. 29, ¶ 1 ("Members shall require that an applicant for a patent disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art . . ."); see also Mark Janis, *On Courts Herding Cats: Contending with the "Written Description" Requirement (and Other Unruly Patent Disclosure Doctrines)*, 2 *WASH. U. J.L. & POL'Y* 55, 55-56 (2000) ("It is equally unsurprising that enablement is one of the international minimum standards for Trade-Related Aspects of Intellectual Property Rights ("TRIPs")- compliant patent systems."). Article 83 requires that a patent application "disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art." While Article 83 does have this enablement requirement, it does not require that the patent applicant disclose the best mode of producing the patented invention. Holbrook, *supra* note 176.

¹⁰⁶⁷ Lucas V. Greder, Note: *What Do We Do Now? How the Elimination of the Best Mode Requirement Minimizes Adequate Disclosure and Creates A Potentially Unenforceable Fact Pattern* 3 *CYBARIS* 104 (2012). Lord Hoffman articulated *Biogen* "that the specification must enable the invention to be performed to the full extent of the monopoly claimed." *Biogen v. Medeva*, [1997] RPC 1, ¶63.

determining “what degree of scope is requested” and “whether it should be permitted”.¹⁰⁶⁸ In patent litigation, if a patentee had successfully sought a wide claim meaning to encompass the allegedly infringing technology, he may still lose the case due to the failure to show that the scope of the claims was enabled,¹⁰⁶⁹ or the disclosure was sufficient and adequate,¹⁰⁷⁰ etc.:

“In summary, where the claims literally read on embodiments that are not described in specification, the Federal Circuit sometimes imports the limitation directly into the claim during the claim construction exercise, despite vehement denials that it is doing such a thing. The court sometimes holds that the written description is inadequate to support the claim, thus resulting in invalidity, either directly under paragraph one of § 112 or indirectly due to intervening prior art. The court sometimes holds that the scope of enablement is too narrow, likewise resulting in an invalid patent under paragraph one of § 112. The court may also hold that the claim does not set forth that which the inventor regards as his or her

¹⁰⁶⁸ Chiang, *supra* note 129.

¹⁰⁶⁹ See *Wang Labs., Inc. v. America Online, Inc.*, 197 F.3d 1377, 1383 (Fed. Cir. 1999) (“Claim should be construed, when feasible, to sustain their validity.”) *Sitrick v. Dreamworks, LLC*, 516 F.3d. 993 (Feb. 1, 2008) The defendants urged the district court to adopt the narrow construction that the patent claims only covered video games (and therefore, their use of ReVoice with movies alone would not be infringement). Instead, the court construed the claims broadly, as Sitrick requested, covering both video games and movies. The court found that because the district court had construed the claims to cover both video games and movies (as the plaintiff had argued), the patents had to enable both embodiments.

¹⁰⁷⁰ “The requirement of sufficiency under U.K. patent law essentially parallels the U.S. requirements of enablement, written description, and best mode.” Irah H. Donner, Book Review, 27 *Geo. Wash. J. Int’l L. & Econ.* 565 (1993-94) (reviewing Brian C. Reid, *A Practical Guide To Patent LAW* (1993)). *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co.*, No. 2008-1248 (Fed. Cir. 2010). Federal Circuit has confirmed in an en banc decision that patents must meet both written description and enablement requirements under 35 U.S.C. §112 (1975). The Court stated that “the level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology.” Section 72(1)(c) of the Patents Act 1977. According to that section, a patent may be revoked on the ground that its specification “does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art”. *Biogen vs. Medeva* [1997] R.P.C. 1. Biogen’s patent for recombinant DNA coding for a polypeptide having hepatitis B virus (HBV) antigen specificity was held by the House of Lords in 1996 to be insufficiently enabled by its specification, not because of any inability for the described invention to deliver all the promised results, but because the same claimed results could be produced by different means which owe nothing to the teaching of the patent or any principle it disclosed. *Generics Ltd v Lundbeck A/S* (2009) UKHL 12. The House of Lords affirmed the validity of a patent for a chemical product – an isolated stereoisomer – supported by a method of producing the product, but protecting the chemical product as such independent of the method by which it was made.

invention, thus invalidating it under paragraph two of § 112.”¹⁰⁷¹

The defendants to any broadly drafted claims will not only raise the enablement defense in hope of finding some technology that is covered by the claims but not enabled, but also use the enablement defense to show that the plaintiff failed to enable the defendant’s particular variation of the technology,¹⁰⁷² especially where the involved field of technology is relatively new and unpredictable. For example, in *ALZA Corp. v. Andrx Pharmaceuticals, LLC*,¹⁰⁷³ the patent is directed to a method for treating Attention Deficit Hyperactivity Disorder (“ADHD”) through a methylphenidate (“MPH”) drug dosage form that has an ascending release rate over an extended period of time. Plaintiff successful sought and obtained a broad claim construction so that two types of extended release tablets were covered, *i.e.*, osmotic form and non-osmotic form. However, the asserted claims of the patent were found invalid for lack of enablement because the specification only enabled osmotic dosage forms. The U.S. Federal Circuit noted that the field of ascending release dosage forms was not mature at the time of the patent filing and was thus a “breakaway” from the prior art.¹⁰⁷⁴

It has been pointed out that enablement analysis, “while conceptually

¹⁰⁷¹ Robert Harmon, *When a Patent Claim is Broader Than the Disclosure: The Federal Circuit's Game Has No Rules*, 1 J. Marshall Rev. Intell. Prop. L. 21 (2001)

¹⁰⁷² Bernard Chao, *The Shifting Battleground: Focusing on Enablement*, 34 New Matter 2 (2009).

¹⁰⁷³ *ALZA Corp. v. Andrx Pharmaceuticals, LLC*, Case No. 09-1350 (Fed. Cir., Apr. 26, 2010) (Prost, J.).

¹⁰⁷⁴ *ALZA Corp. v. Andrx Pharmaceuticals, LLC*, No. 09-1350 (Fed. Cir. Apr. 26, 2010). *See also, MagSil Corp. v. Hitachi Global Storage Technologies, Inc.*, No. 11-1221 (Fed. Cir. Aug. 14, 2012) The Federal Circuit determined that the open ended claim language of “at least 10%” covered all changes from 10% to infinity and that the specification could not enable such broad claim language. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371, 1373 (Fed. Cir. 2007) The Federal Circuit agreed with the district court’s finding that two patents asserted by Liebel-Flarsheim Company and Mallinckrodt, Inc. are invalid for lack of enablement. *Sitrick v. Dreamworks, LLC, et al.*, 516 F.3d 993 (Fed. Cir. 2008), the Federal Circuit granted summary judgment of invalidity on the grounds that the asserted patent claims covered both video games and movies but were enabled only as to video games.

simple, is legally and factually complex,”¹⁰⁷⁵ because “whether a disclosure is enabling can shift over time; as the knowledge of the PHOSITA shifts, an identical disclosure may shift from not being enabled to being enabled.”¹⁰⁷⁶ The judicial practice in enablement analysis is not consistent and provides no guidelines for identifying such situations.¹⁰⁷⁷ In other cases, the courts warned that the possible invalidity should not be used by the district court to construe the claims narrowly.¹⁰⁷⁸

The correspondence between the specification and the claim is critical under the dynamic approach. Firstly, the dynamic approach follows the theme that “the interpretation of patent claims depends more upon the advance made by the inventor than upon the words used.”¹⁰⁷⁹ It always looks at the properties or attributes of the technical content in a claim, and is less bounded by the broad, plain meaning. It is particularly necessary for interpreters to fully articulate the technological properties of the concept behind the claim term manifested by description on the preferred embodiments. Because of its functional view, the dynamic approach can pay more attention to the relationship and relative breadth between the claims and the specification.

¹⁰⁷⁵ Holbrook, *supra* note 176.

¹⁰⁷⁶ *Id.*

¹⁰⁷⁷ Robert Harmon, *When a Patent Claim is Broader Than the Disclosure: The Federal Circuit's Game Has No Rules*, 1 J. Marshall Rev. Intell. Prop. L. 21 (2001)

¹⁰⁷⁸ *The Saunders Group, Inc. v. Comfortrac, Inc.*, Case No. 06-1576 (Fed. Cir., June 27, 2007) the Federal Circuit held that the district court erred in applying the maxim that claims should be construed to preserve their validity and also erred in concluding that if claims 1 and 16 were construed broadly, they would not be enabled because the specification only described a pneumatic cylinder having at least one pressure activated seal.

¹⁰⁷⁹ *Cole v. Malleable Iron Fittings Co.*, 70 F.2d 686 (1934) (Judge Learned Hand). *See also, Markman v. Westview Instruments, Inc.*, 52 F.3d 976 (Fed. Cir. 1995) (en banc) According to the Federal Circuit, the purpose of claim construction is to “determin[e] the meaning and scope of the patent claims asserted to be infringed.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”).

Secondly, the dynamic approach has a dynamic value, for it not only investigates the meaning of application in the original text but also exploits the potentials of the claim language in the new context. The emphasis has shifted from the claim text and the patentee's intent at the time of filing to the interpreter's understandings in a contemporary scientific-technological context. By ascertaining the technical properties of the subject matter, the dynamic construction leaves a greater extent of discretion to the interpreter to define claim scope by matching such scope to the "invention" contributed, "without extending those benefits for an invention that the applicant may not have conceived and certainly has not enabled."¹⁰⁸⁰ To strike a balance between protecting original and subsequent innovations in the present context is a fundamental key for determining an optimal patent scope.¹⁰⁸¹ This is to avoid giving interpreters "unfettered power to err twice — both in construing claims so broad as to exceed the scope of the rest of the specification and then to invalidate those claims because it reads the specification as failing to 'support' this court's own broad conception of the claimed subject matter."¹⁰⁸² Although "enablement analysis is distinct from claim construction, and is not normally

¹⁰⁸⁰ *Chiron Corp. v. Genentech, Inc.*, Nos. 03-1158, 03-1159, 2004 WL 612854 (Fed. Cir. Mar. 30, 2004). at 214 414 514 614 (J. Bryson, concurring). ("I think that the proper approach, suggested in the concurring opinion in Hogan and in Plant Genetic Systems, is to address cases of new technology by construing claims, where possible, as they would have been understood by one of skill in the art at the time of the invention, and not construing them to reach the as-yet-undeveloped technology that the applicant did not enable. That approach preserves the benefits of patent protection for the invention that the applicant has actually conceived and enabled...")

¹⁰⁸¹ Saulsbury, *supra* note 205. ("a patent system entails an unavoidable tradeoff between incentivizing pioneering inventions and subsequent improvements; though the prospect of a broad patent may provide stronger incentives for creation and commercialization of new developments, its scope reduces incentives for other inventors to improve upon that work") Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 Texas Law Review 989-1084 (1997) ("Improvers are free to use material that is in the public domain because the copyright or patent has expired. They are free to skirt the edges of existing intellectual property rights, for example by ... "designing around" the claims of a patent.)

¹⁰⁸² *Ariad Pharms. Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1365 (Fed. Cir. 2010) (J. Radar, dissenting).

addressed at the claim construction stage,”¹⁰⁸³ it will be helpful for interpreters to take into consideration of the breadth of the claims and compare that against what the specification enabled.

¹⁰⁸³ Phillips, 415 F.3d 1303, 1227.

CHAPTER 9 SOME TESTING CASES

In this Chapter, three selected cases will be tested under the dynamic claim interpretation, including the *Dealertrack* case¹⁰⁸⁴, the *Napp Pharmaceutical* case,¹⁰⁸⁵ and the *Renda* case.¹⁰⁸⁶ The first case includes numerous appeals and cross-appeals in the US Federal Circuit, and one of the issues was whether the term “communication medium” written in 1995 encompassed Internet in the context of computer-related inventions. The narrow claim construction of the term in the district court was reversed and an ordinary meaning was adopted by the appellate court. The second case involves the purposive construction of claim terms “spheroids” and “a spheronising agent” in the UK courts. The question was whether the PHOSITA at the time of filing had intended to restrict “spheroids” to “granules” only, and “a spheronising agent” to “non-water soluble materials”. In the third case, the Supreme People’s Court of China construed the claim term “at least two layers of glass fiber cloth”, holding that the Higher People’s Court had wrongly applied the law of patent claim construction and the doctrine of equivalents. The deficiencies of the existing approaches are discussed respectively, and the dynamic claim construction approach is applied to the above three cases to fully articulate reasons for the determination of the claim scope. Notably, the dynamic claim construction of the three cases happens to reach the same outcomes as the final decisions issued by the appellate courts, but it does not necessarily imply that every final ruling

¹⁰⁸⁴ *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012).

¹⁰⁸⁵ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* [2009] EWCA Civ 252.

¹⁰⁸⁶ *Da Lian Xin Yi Jian Cai You Xian Gong Si yu Da Lian Ren Da Xin Xing Qiang Ti Jian Cai Chang* [*Dalian Xinyi Building Materials Limited Company v. Renda Building Materials Factory*], No. 1 (2005) of the No. 3 Civil Tribunal, the Supreme People’s Court. The English translation is based on, <http://www1.lawinfochina.com/case/display.asp?db=2&id=250&keyword=> (last visited on Oct 30, 2010).

is correct and every decisions of the first instance courts is wrong. These case studies are just a way of showing how dynamic claim construction operates, and because of the author's limit of technological knowledge, the analyses do not guarantee the accuracy of the outcomes.

Section 1The Dealertrack Case

A. Confusions with ordinary meaning in claim construction

The '841 patent is directed to a computer-aided method and system for processing credit applications over electronic networks. Dealertrack sued David L. Huber and Finance Express, LLC for infringement of the '841 patent by their FEX system, and sued Route One for infringement by its Credit Aggregation System ("CAS") and its Messenger system. Because each of the asserted claims included "a communications medium" and the allegedly infringing products all pass communications through the "Internet", the claim construction was crucial to the infringement decision. Bolded below are the terms at issue in the claim construction discussion from the '841 patent:

"7. A computer based method of operating a credit application and routing system, the system including a central processor coupled to ***a communications medium*** for communicating with remote application entry and display devices, remote credit bureau terminal devices, and remote funding source terminal devices, the method comprising: selectively receiving credit application data from a remote application entry and display device; selectively obtaining credit report data from at least one remote credit bureau terminal device;..."

"The ordinary and customary meaning of a claim term is the meaning that

the term would have to a person of ordinary skill in the art in question at the time of the invention.”¹⁰⁸⁷ To construe meaning of a claim term, a court “must look at the ordinary meaning of the words in the context of the written description and the prosecution history.”¹⁰⁸⁸ The rationale behind this approach is that words have a generally known and commonly accepted meaning in a given field. In this case, under the ordinary meaning approach, the interpretive question is: what the skilled person would have commonly understood the claim “*a communications medium*” to mean at the time of the invention.

A patent claim construction is often outcome determinative for the infringement decision. The district court granted summary judgment of non-infringement based on its construction of the term “communications medium” as excluding the Internet.¹⁰⁸⁹ The district court based this narrow construction on the specification’s explicit description of a communications medium with several examples—a wide area network, local area network, satellite communications network, commercial value added network (VAN), ordinary telephone lines, and private leased lines – that were perhaps not recognized as the “Internet” when the ’841 patent was filed. Moreover, there was a post-allowance examiner’s amendment deleting the phrase “the Internet” from the list of examples in the specification and cancelling the claims specifically directed to the Internet. The examiner did not provide reasons for the amendment. The district court reasoned that where a specification set out several examples like this, it was reasonable to assume that the list is exhaustive

¹⁰⁸⁷ *Phillips v. AWH Corp.*, 363 F.3d 1313 (Fed. Cir. 2004) (citing *Innova/Pure Water, Inc. v. Safari Water Filtration System, Inc.*, 381 F.3d 1111 (Fed. Cir. 2004)).

¹⁰⁸⁸ *Id.* (citing *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005)).

¹⁰⁸⁹ *DealerTrack, Inc. v. Huber*, 657 F. Supp. 2d 1152 (C.D. Cal. 2009) (“Dealertrack I”).

and thus the non-listed Internet was excluded.¹⁰⁹⁰ On appeal, the Federal Circuit disagreed with such narrow interpretation and went with Dealertrack's broader construction. The Federal Circuit decided that the examples listed in specification were merely "preferred embodiment(s) . . . presented by way of example and should not be construed as limiting the inventive concept to any particular physical configuration."¹⁰⁹¹

The difficulty is that when technologies evolve, the understanding of the claim term at the time of interpretation may be different from the original understanding at the time of the invention or the time of filing. Where there are a number of plausible meanings for a claim term, due to a lack of sufficient explanation or reasoning for choice of meaning, a judge may construe the disputed claim term in either narrow or broad terms depending on his own choice of two canons, *i.e.*, avoiding importing claim limitations from the specification versus construing patent claims in light of the specification.¹⁰⁹² While the specification supports each claim and drawing in detail description and illustrates exemplary embodiments of the invention,¹⁰⁹³ it does not

¹⁰⁹⁰*Id.* ("Although illustrated as a wide area network, it should be appreciated that the communications medium could take a variety of other forms, for example, a local area network, a satellite communications network, a commercial value added network (VAN) ordinary telephone lines, or private leased lines. . . . The communications medium used need only provide fast reliable data communication between its users.") The district court noted that though "it is improper for a court to limit a patent to its preferred embodiment, it is reasonable to assume that when a patent supplies a long list of examples like here, the list is exhaustive."

¹⁰⁹¹*Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012). ("The specification stated that a "communications medium" need only provide fast reliable data communication between its users;...")

¹⁰⁹² The Federal Circuit has long acknowledged that "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." *ComarkCommuns., Inc. v. Harris Corp.*, 156 F.3d 1182, 1186-87 (Fed. Cir. 1998); *See also Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533 (Fed. Cir. 1987). *Phillips v. AWH Corp.*, 363 F.3d 1313 (Fed. Cir. 2004) ("To avoid importing limitations from the specification into the claims, it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so.")

¹⁰⁹³*SuperGuide Corp. v. DirecTV Enter., Inc.*, 358 F.3d 870 (Fed. Cir. 2004) ("Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment

necessarily encompass every conceivable and possible future embodiment of his invention.¹⁰⁹⁴ On one hand, reading everything expressed in the specification into the claims would impose unnecessary restrictions on interpretation of meaning;¹⁰⁹⁵ on the other hand, a broad interpretation does not explain why an invention should not be limited to only that which the inventor actually contemplated at the time of filing.¹⁰⁹⁶ Judge Plager has identified this problem in *Retractable Techs., Inc. v. Becton, Dickinson & Co.* that, “the claims cannot go beyond the actual invention that entitles the inventor to a patent” and that “the [patentee’s] obligation [was] to make full disclosure of what is actually invented, and to claim that and nothing more.”¹⁰⁹⁷ The search for the ordinary

appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”) *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (“Interpretation of descriptive statements in a patent’s written description is a difficult task, as an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment.”)

¹⁰⁹⁴ *S.R.I. Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121, 227 USPQ 577, 586 (Fed.Cir.1985).The law “does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention.”

¹⁰⁹⁵ *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 957 (Fed. Cir. 1983); *See also, SRI International v. Matsushita Electric Corp.* 775 F.2d 1107 (Fed. Cir. 1985). (“If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims.”); *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, (Fed. Cir. 2004). (“Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”); *Liebel-Flarsheim Co. v. Medrad, Inc.* 358 F.3d 898 (Fed. Cir. 2004). (“Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’”); *Intervet Inc. v. Merial Limited*, No. 2009-1568 (Fed. Cir., 2010) (“Construing the claims in light of the specification does not, however, imply that limitations discussed in the specification may be read into the claims.”)

¹⁰⁹⁶ *Arlington Indus, Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246 (Fed. Cir. 2011). Judge Rader, writing for the majority, held that the district court erred by importing a “split” limitation into its constructions of “spring steel adaptor.” In his dissent, Judge Lourie writes: “the basic mandate is for claims to be interpreted in light of the specification of which they are a part because the specification describes what the inventors invented....The specification is the heart of the patent. In colloquial terms, you should get what you disclose.” The majority answers that “[t]he ... dissent-in-part characterizes the specification as the ‘heart of the patent’ and, using ‘colloquial terms,’ states that ‘you should get what you disclose.’ This devalues the importance of claim language in delimiting the scope of legal protection. ‘Claims define and circumscribe, the written description discloses and teaches.’ *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1347 (Fed.Cir.2010) (en banc).

¹⁰⁹⁷ *Retractable Technologies, Inc. vs. Becton, Dickinson & Co.*, No. 10-1402 (Fed. Cir. July 8, 2011). *Marine Polymer Technologies, Inc. vs. HemCon, Inc.*, No. 10-1548 (Fed. Cir. Mar. 15, 2012) (en banc). The majority opinion upheld the District Court’s claim construction as being supported by intrinsic evidence. Accordingly, the District Court was correct in interrogating the specification to ascertain the

meaning at the time of the invention has not provided us with sufficient reason to accept a meaning among plausible alternatives.

B. Application of the dynamic construction to the term “communications medium”

Under the dynamic approach, the meaning of a claim term is its connotation, which can be identified by a set of essential features. The approach is dynamic in the sense that over time, a claim term is read as including within its scope a new exemplification which falls within its overall meaning.¹⁰⁹⁸ At the time of infringement, a variant based on after-arising technology falls within the meaning of the term if, and only if, it possesses all of the essential attributes that define that term.¹⁰⁹⁹ The goal is to accommodate technological change to provide guidelines for determining the claim meaning.

In this case, although the “Internet” was in existence as of the priority date of the ’841 Patent, both parties admitted that “achieving appropriate levels and qualities of service through the Internet for the credit application and routing system of the ’403 Patent would have been problematic.”¹¹⁰⁰ When reading the disputed term “communications medium” literally rather than functionally, the

proper meaning of the term in the claim. The dissenting judges disagreed with District Court's claim construction, being more convinced by the claim differentiation argument that the meaning of the term “biocompatible” was broader than it was interpreted by the District Court's claim construction. Once again, this case illustrates one of the consequences of the difficulties inherent in applying the Federal Circuit's rubrics regarding whether the claims are being construed in light of the specification or the majority is importing limitations from the specification into the claims.

¹⁰⁹⁸ Sir Anthony Mason, *The Interpretation of A Constitution in a Modern Liberal Democracy*, in Sampford & Kim Preston (ed.) *supra* note 920, 14.

¹⁰⁹⁹ Evans, *supra* note 59. (“the meaning of a constitutional term (its connotation) is determined by a set of necessary and sufficient features. A person, purpose or activity falls within the meaning of the term if, and only if, it possesses all of the ‘essential features’ or ‘essential characteristics’ that define that term.”)

¹¹⁰⁰ The ’841 Patent claims priority to and incorporates by reference U.S. Patent No. 5,878,403 (“’403 Patent”).

reliability or the security of the data transferring network would not be considered as a limit on what constituted a “communications medium.”¹¹⁰¹ The so-called “ordinary meaning” is very easily interpreted broadly to cover the internet technology. However, there is no such rigid word/thing dichotomy under the dynamic approach. It directly focuses on the subject matter itself to ascertain the essential attributes of the technical solution referred to by the term at the time of filing, and then decide whether the variant can be described as one with respect to that subject matter as so defined. The analysis will follow the propositions under the framework of dynamic claim interpretation.¹¹⁰²

A. *To preserve certainty, patent claim meaning, i.e. the connotation, remains constant from the time of filing, while the application of such meaning, i.e. the denotation, may change over time.* The essential attributes can be measured by the performance properties of the technical content. The denotation is the class of objects which have these essential features. According to the independent claim 7, the technical content, *i.e.* “a communications medium” was designed to couple to the system for “communicating with remote application entry and display devices, remote credit bureau terminal devices, and remote funding source terminal devices.” The specification requires that the communications medium be both reliable and secure, “[t]he communications medium used need only provide *fast reliable* data communication between its users,” ‘817 Patent col.18 ll.8-9. Therefore, the

¹¹⁰¹ *Dealertrack, Inc. vs. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012) (As for security, that aspect of the Internet is addressed merely as an object of the invention, and there is no indication in the patent that the security of the data transferring network was understood by ordinary artisans to be a limit on what constituted a “communications medium.”)

¹¹⁰² The propositions under the dynamic approach are stated in the pages from 194 to 195.

patentee uses the term “communications medium” to connote a meaning that implies a minimum performance level of reliability and security of data communication. While the connotation remains the same, the denotation may expand as new examples are discovered or invented, or as existing technological capabilities become more fully exploited over time.¹¹⁰³

B. *What a PHOSITA at the time of filing would have interpreted and applied the claim terms to mean, i.e. the original expected application of meaning, provides strong evidence of the meaning of patent claims.* The performance properties including the capabilities in the reliability and complexity of the data transfer.¹¹⁰⁴ It is undisputable that although the Internet was a fairly well known data-transferring network in 1995, it was somewhat problematic, *i.e.*, neither reliable nor secure, as of the 1995 filing date. “Things which lack any essential attribute, specified or implied in the connotation are excluded from the denotation.”¹¹⁰⁵ Since the specification required that the “communications medium” be both reliable and secure, and the Internet was neither of these as of 1995, a PHOSITA at the time of the invention or filing would not include “Internet” within the claim scope. The application of the term (its denotation) as understood at the time of filing, *i.e.*, a narrow meaning excluding the Internet, represents the “prima facie meaning,”¹¹⁰⁶ but it is not conclusive.

¹¹⁰³ Stokes, *supra* note 774.

¹¹⁰⁴ P. V. S. Rao, *Perspectives In Computer Architecture* 419 (2004) .

¹¹⁰⁵ L. Linsky, *Semantics and the Philosophy of Language: A Collection of Readings* 54 (1952).

¹¹⁰⁶ Jeremy Kirk, *Constitutional Interpretation and a Theory of Evolutionary Originalism*, 27 FED. L. REV. 323 (1999) (“When context-dependent criteria are involved, an element of the essential meaning requires reference to the particular circumstances of when and where the question is considered to ascertain what is encompassed.”)

C. *In forming the original expected application of claim meaning, one takes account of whether a PHOSITA could foresee probability of the claim term acquiring new denotation.* Although the Internet at the time of filing did possess the essential properties such as reliability and security, in order to ascertain the expected application of claim meaning at the time of filing, the dynamic approach will also ask at the time of filing, whether a PHOSITA could foresee the probability of the claim term “communications medium” acquiring a new denotation as the Internet. There is undisputed evidence in the record that in 1995 the Internet was a network for transferring data. According to expert testimony, in 1995 the Internet was the world’s largest wide area network. Moreover, the 841’ patent in dispute claims priority to and incorporates by reference 403’ patent, which includes “the Internet” as an example of a “communications medium”. From the above evidence, a PHOSITA could foresee the Internet becoming more reliable and secured and qualified as a denotation of the claim term.

To ignore the changing context will increase the likelihood of hindsight bias: a tendency to consistently exaggerate what could have been expected in retrospect.¹¹⁰⁷ The dynamic approach counterbalanced the undesirable hindsight bias effect by providing a justification in reality: the interpreter would consider that the development of internet technology as relevant. According to The Internet Encyclopedia, web portal technology was novel in the mid-1990s, but by 2001 several vendors were offering stable solutions.¹¹⁰⁸ The interpreter will

¹¹⁰⁷ Thomas Gilovich et al., *Heuristics and Biases: The Psychology of Intuitive Judgment*, 113 (2002).

¹¹⁰⁸ Hossein Bidgoli (ed.). *The Internet Encyclopedia*, vol.3, 219 (2003).

find out that there is a change of context that may allow for a new application of meaning.

In the new context where Internet has matured in most of the markets across the world and online commerce, it possesses all the essential attributes of “communications medium”. Therefore, the original expected application is consistent with the contemporary application of patent claim meaning, the claim term will encompass the Internet. One does not need to move on to evaluating technological contribution.

There may be concern that an alleged infringer would not be infringing the patent in the mid-1990s but that after around 2001 the patent owner could now sue successfully for infringement. In fact, in the real world of technology, when the variant has not met the required performance level, it can hardly be applied in industry and hence here is a low probability of litigation. Under the dynamic approach, the connotation delineates its “potential referents”¹¹⁰⁹ by providing a finite list of features that captures all relevant properties. The scope of potential referents depends on whether the claim term embodies abstract concepts or not.¹¹¹⁰ In this case, a broad meaning will be the proper construction and the “internet” can be captured within the connotation of the claim term.

Where there is no genuine dispute over any relevant facts regarding the accused infringing product, the broad construction is outcome-determinative

¹¹⁰⁹ Sebastian Lößner, *Understanding Semantics* (2nd ed.) 24 (2013).

¹¹¹⁰ Lee, *supra* note 872.

for question of validity or infringement in the litigation. It is important that a patent claim construction strikes an appropriate balance between certainty and fairness. The reason for the broad interpretation is not because of the ordinary meaning of the text. In fact, given the limitation of internet technology, a PHOSITA at the time of filing would have a narrower understanding of the ordinary and customary meaning of the term “communications medium”. The reason of meaning expansion is to give protection and recognition of contribution made by the inventor to the art. The dynamic approach justifies the adoption of a broader meaning by explaining the performance properties in different time frames. Although the dynamic approach arrives at the same outcome as the ordinary meaning approach in the Federal Circuit (“communications medium” is a “network for transferring data, including the Internet”),¹¹¹¹ the former gives substantive reasons why the chosen meaning is more proper and thereby reduce discretion and opacity.

Section 2 The Napp Pharmaceutical Case

A. Indeterminacy of patentee’s intent under purposive construction

The two patents in suit, the European Patent (UK) Nos. 722730 (“730”) and 1258246 (“246”)¹¹¹² in the name of Napp Pharmaceutical Holdings Limited (“Napp”), were concerned with a 12-hour controlled release form of oxycodone. The controlled release formulations were the subject of

¹¹¹¹ *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012). (“vacate the district court’s summary judgment of non-infringement and remand to the district court to determine infringement in the first instance applying these constructions.”)

¹¹¹² *Ratiopharm GMBH v. NAPP Pharmaceutical Holdings Ltd* [2008] EWHC 3070 (Pat) (“With certain exceptions to which I will have to return in the context of the objection of added matter, the disclosure of 730 and 246 is substantially the same. That is because 246 was divided out of 730. For the purposes of introducing the case it is sufficient to review the contents of 730.”)

independent claim 6 and claims dependent thereon. Claim 6 of 730 is cited as follows:

“A controlled release oxycodone formulation for administration to human patients, comprising:

(a) an analgesically effective amount of *spheroids* comprising oxycodone or a salt thereof and *a spheronising agent*;

(b) each spheroid being coated with a film coating which controls the release of the oxycodone or oxycodone salt at a controlled rate in an aqueous medium.”

Ratiopharm GmbH and Sandoz Limited (“Ratiopharm/Sandoz”) were the generic medicine parties who made the alleged infringing product the Cimex tablets, which was “a tablet which contains, embedded in excipients, small particles made up of a number of layers.”¹¹¹³ One of the disputed issues was whether the Cimex tablets comprised “spheroids” or a “spheronising agent”.¹¹¹⁴ How the terms “spheroids” and “a spheronising agent” would be interpreted became dispositive to the outcome of the infringement litigation. In a broad sense, the term “spheroid” simply meant a generally spherical particle, and “a spheronising agent” was anything that would assist in the process of making a spheroid. In a narrow sense, the term “spheroid” in the claim could be limited to “granules”, and “a spheronising agent” referred only to

¹¹¹³ *Id.*

¹¹¹⁴ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* [2009] EWCA Civ 252 (The Court noted that “there were a surprisingly large number of issues raised on the appeal”: A. “Spheroid” and “spheronising agent” (Claim 6 of 730, claim 4 of 246); B. “Film coating which controls the release” (claim 6 of 730) and “coating on said matrix controlling the release of said oxycodone salt” (claim 1 of 246); C. The in vitro dissolution parameters of claim 1 of 246))

non-water soluble materials (such as microcrystalline cellulose).¹¹¹⁵ Ratiopharm/Sandoz contended that the Cimex particles were not granules, and therefore were not spheroids within the definition in the patents, and the water-soluble HPMC in the Inner Layer served as a binder and was not “a spheronising agent.”

Obviously there was disagreement over intent and purpose in claim construction in this case. Both the Patents Court and the Court of Appeal expressly relied on the purposive construction. As for the term “spheroid”, it was easier to come to an agreement on a broad interpretation because the patentee acknowledged in the specification that different processes of spheronisation exist. “He would have no reason to suppose that the patentee wanted to exclude any of them.”¹¹¹⁶ However, while Mr. Justice Floyd in the Patents Court applied a narrow definition to the term “a spheronising agent” and found non-infringement, the U.K. Court of Appeal determined that it was wrong for him to find that HPMC as used in the Cimex product was not “a spheronising agent” within the meaning of the claims, and finally ruled that generic-drug makers had infringed the patents.

Mr. Justice Floyd adopted a narrow interpretation because in discussing “a spheronising agent”, the specification dealt expressly only with the

¹¹¹⁵ *Ratiopharm GMBH v. NAPP Pharmaceutical Holdings Ltd* [2008] EWHC 3070 (Pat).

¹¹¹⁶ *Id.* (“In my judgment the skilled reader would have no reason to think that the term “granule” was being used in any particularly limited sense. He would know that a wide range of processes exist for arriving at a spheroidal particle by agglomerating smaller particles.”) *See*, Hong Wen & Kinam Park, *Oral Controlled Release Formulation Design and Drug Delivery: Theory to Practice* 328 (2011) (“Multiparticulate unites may be beads or pellets formed by the extrusion spheronisation process, by direct pelletization in rotor fluid bed, or by coating drug onto nonpareil sugar or microcrystalline cellulose beads.”)

extrusion-spheronisation process.¹¹¹⁷ For example, in the specification “[0041] ... In particularly preferred embodiments of this aspect of the invention, the present dosage form comprises film coated spheroids containing active ingredient and *a non-water soluble spheronising agent* ...” Hence, Justice Floyd agreed that the term was limited to materials (such as microcrystalline cellulose) which were incorporated to give the material the correct degree of plasticity in an extrusion/spheronisation process.¹¹¹⁸ By comparison, a water soluble polymer such as HPMC¹¹¹⁹ is known as an agent for producing spheroids in, for example, the rotorgranulation process. Justice Floyd shared his concern that some of the claims were apparently “very poorly drafted”:¹¹²⁰

The difficulty of construction arises because this is a product, not a process claim. In that connection it is somewhat odd that the claim to spheroids includes a requirement for a spheronising agent – it is rather like saying that a pot of tea includes a tea-making agent. Whatever role is inherent in the definition of that term, it will have been fully performed by the time that one has a product. To put it bluntly: if you have succeeded in obtaining spheroids, why should it matter how you got there?

Regarding the intent of the patentee, he went on to reason that “[t]he problem for Napp is that some meaning has to be given to the term. It cannot be the case that one can assume that a spheronising agent is present just

¹¹¹⁷ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* [2009] EWCA Civ 252.

¹¹¹⁸ *Ratiopharm GMBH v. NAPP Pharmaceutical Holdings Ltd* [2008] EWHC 3070 (Pat). (“The Examples in the patents are all of controlled release matrix formulations: there is no example of a coated spheroid.”)

¹¹¹⁹ *Id.* (“active ingredient together with binder sprayed on to pre-manufactured sugar core”)

¹¹²⁰ *Id.* For example, in construing claim 4 of the invention, Justice Floyd commented that “Claim 4 is very poorly drafted”.

because a spheroid has been made. Something more must be meant.”¹¹²¹

Therefore, the term should be construed to be limited to agents “which have assisted in making a sphere out of something that is not a sphere.”¹¹²²

However, on appeal, the Court of Appeal decided that Justice Floyd erred in excluding HPMC, as “there is no purposive reason to limit” the meaning of the terms. The Court of Appeal reasoned that because HPMC was suitable for four out of the five spheronisation processes¹¹²³ known at the priority date for producing spheroids for a controlled release formulation, it fell within the definition of the claim and infringement was found.

As discussed before, one of the problems of the purposive approach is that when the patentee’s intent is absent, unclear or incomplete, the way of ascertaining the hypothetical intent (from the perspective of a PHOSITA) is deployed in a rather ambiguous manner,¹¹²⁴ especially in the context of complex high technologies. Moreover, the meaning of the claim text is not always exclusively determined by the patentee’s intention alone,¹¹²⁵ for example, the interpreters may also conduct a balance analysis between

¹¹²¹ *Id.* (“If the process has started with a sphere, it makes no sense to speak of any ingredients which are used after that point as spheronising agents. Just about anything you choose after that point will fit Napp’s definition.”)

¹¹²² *Id.*

¹¹²³ *Napp Pharmaceutical Holdings Ltd v. Ratiopharm GmbH* [2009] EWCA Civ 252. Extrusion/spheronisation is but one way in which to make a spheroid. The other four processes are: (1) fluidised-bed granulation; (2) rotor granulation; (3) extended wet granulation; and (4) non-pareil beads (the Cimex process).

¹¹²⁴ Carlos Spoerhase, *Hypothetischer Intentionalismus: Rekonstruktion und Kritik*, *Journal of Literary Theory* 1.1 (2007) (“the concept of the hypothetical is contrasted with that of the actual... the relationship between hypothetical intentionalism and actual intentionalism is unspecified”)

¹¹²⁵ Goldsworthy, *supra* note 486. (“Intention alone is not sufficient for a text to be meaningful - something else is needed as well.”) *See also*, Jorge J. E. Gracia, *A Theory of Textuality: The Logic and Epistemology* 115 (1995) (“there is no determinate intended meaning of which an author is fully aware prior to the production of a text except in cases where the author intends to translate one text into another and thus to express the meaning of one text through some other text. But the situation cannot be applied to all cases and therefore cannot substantiate the view that the author’s intention always determines the meaning of a text;... it is a well-known fact that often authors use signs in their texts that do not express the meaning they are supposed to have intended.”)

innovator and generic drug companies during patent claim construction. A more consistent and justifiable framework is needed for patent claim construction.

B. Application of the dynamic construction to the disputed term

The following paragraphs will illustrate how the disputed term “a spheronising agent” would be interpreted under the dynamic claim construction. Due to the limitations of the author’s technological knowledge, the analysis is just an example of showing how the term may be interpreted in an alternative way from the purposive approach, and does not warrant a perfectly correct result. In the context of complex technologies such as pharmaceutical technology, biotechnology and information technology *etc.*, it is of particular importance to carefully differentiate the essential attributes of the disputed term and its accidental attributes, *i.e.* to characterize the subject matter of “a spheronising agent”, which has not been sufficiently specified in detail by the courts under the purposive approach. Justice Floyd generally concluded that the term was intended to be used in the sense of “agents which have assisted in making a sphere out of something that is not a sphere”,¹¹²⁶ but the Court of Appeal thought he erred in construing on such basis.

The dynamic approach focuses on the essential properties of the subject matter itself at the time of filing. Spheronisation is a form of pelletization,¹¹²⁷ which is the technique of converting plastic extrudates or particles that were

¹¹²⁶ *Ratiopharm GMBH v. NAPP Pharmaceutical Holdings Ltd* [2008] EWHC 3070 (Pat).

¹¹²⁷ David B. Troy & Paul Beringer (ed.), *Remington: The Science and Practice of Pharmacy* 903 (2006).

formed otherwise into a rounded spherical or spheroidal shape.¹¹²⁸ There are two ways of incorporating drugs into pellets: either as drug layers or as matrix systems.¹¹²⁹ As for the former, active ingredients can be layered onto inert cores such as sugar spheres (non-pareil), and as for the latter, active ingredients and other excipients are mixed via direct pelletization in rotary fluid bed systems or extrusion spheronisation, the excipients include binders, fillers and disintegrants.¹¹³⁰

To characterize “a spheronising agent” specifically, proper parameters must be selected. According to the common knowledge in the field of spheronisation:¹¹³¹

The ability of an agglomerated material to be spheronized depends mainly on its rheology. Extrudates must break into shorter pieces and those as well as other agglomerates must have the right amount of plasticity to deform by impact and during rolling. The rheology can be adjusted by the addition of binders and lubricants or more wetting agent (usually water)...perfectly spherical particles are often not required... the function of the spheronizer equipment is to reduce the size of long extrudates into short cylinders with rounded edges.

Therefore, during extrusion-spheronization, “a spheronising agent” is to provide flexibility so as to ensure all tablets made from the same formulation are of the same shape and size because they also represent the dosage form.¹¹³²

¹¹²⁸ Wolfgang Pietsch, *Agglomeration Processes* 245 (2008)

¹¹²⁹ Hong Wen & Kinam Park, *Oral Controlled Release Formulation Design and Drug Delivery: Theory to Practice* 118 (2011). In the specification at issue, the two processes were called “a controlled release matrix” and “film coated spheroids”.

¹¹³⁰ *Id.*

¹¹³¹ Pietsch, *supra* note 1128, at 245.

¹¹³² *Id.*, at 251.

The specification of the 730 patent describes that: “The spheronising agent may be any pharmaceutically acceptable material that together with the active ingredient can be spheronised to form spheroids. Microcrystalline cellulose is preferred.” Microcrystalline cellulose (MCC) is one of the most widely used pelletization agents in the pharmaceutical industry.¹¹³³ It has particular characteristics such as “less water-holding capacity, narrow liquid range providing the correct rheology for extrusion-spheronization, addition of binder required to obtain efficient mechanical strength.”¹¹³⁴ Therefore, the term “a spheronising agent” connotes an essential attribute of giving the mass of material the right degree of plasticity or viscosity. The plasticity or viscosity expresses the resistance of the material against flow or permanent deformation.¹¹³⁵ It may denote a range of effective alternative spheronising aids such as Crospovidone, carrageenan, chitosan, pectinic acid, glycerides, β-CD, and cellulose derivatives.¹¹³⁶

The allegedly infringing product Cimex is made from sugar crystals, that is, by coating so called non-pareil sugar beads with the drug, and adding the barrier on top. The sugar spheres (non-pareil) are the inert cores, and active ingredients can be layered onto inert cores in two ways: (1) Spray a solution or suspension containing both drugs a binding agent onto inert cores; (2) Layer drug powders onto inert cores directly.¹¹³⁷ Under the dynamic approach, the

¹¹³³ Toma Mihai Chitu *et al*, *Rheology, Granule Growth and Granule Strength: Application to the Wet Granulation of Lactose–MCC Mixtures*, 208 *Powder Technology* 2, 441-453(2011).

¹¹³⁴ SP Jain *et al.*, *Alternative Extrusion-spheronization Aids*, in *Issues in Pharmacology, Pharmacy, Drug Research, and Drug Innovation: 2011 Edition* 1170 (2012)

¹¹³⁵ Roelof Houwink & Roelof Houwink, H. K. De Decker, *Elasticity, Plasticity and Structure of Matter* 59, 61 (1971) (“The general term used for such type of flow in older literature is ‘plastic flow’.”)

¹¹³⁶ Jain, *supra* note 1134.

¹¹³⁷ Hong Wen & Kinam Park, *Oral Controlled Release Formulation Design and Drug Delivery: Theory*

question is whether “hydroxypropylmethyl cellulose (HPMC)” can be identified as a denotation having the essential attributes as defined, *i.e.*, whether HPMC has the properties of giving the mass of material the right degree of plasticity or viscosity.

Without defining the essential attributes of “a spheronising agent”, Justice Floyd focused on other functional properties of HPMC. He recognized that the hydration and gel forming abilities of HPMC can be used to prolong the drug release of the active ingredient.¹¹³⁸ The parameter for assessing such properties is the diffusional release rates of HPMC.¹¹³⁹ However, at the same time, HPMC is, like several other types of cellulose derivatives— “cellulose derivatives in general add plasticity”¹¹⁴⁰—well known for its technological application as a viscosity, and rheology-regulating agent and can be obtained in various viscosity degrees.¹¹⁴¹ HPMC polymers offer different solubility and gelling properties, “which are critically dependent on the degree of substitution, hydroxypropyl content, molecular weight, and temperature.”¹¹⁴² Since HPMC possesses the essential attributes as defined, it can be identified as a denotation of “a spheronising agent” by a PHOSITA at the time of filing. As the original expected application provides strong evidence for claim meaning, without changes of denotations over time, a PHOSITA will determine that the variant falls within the connotative meaning of the disputed term.

to *Practice* 118 (2011).

¹¹³⁸ Veeran Gowda Kadajji & Guru V. Betageri, *Water Soluble Polymers for Pharmaceutical Applications*, 3 Polymers, 1972-2009 (2011). (“...two mechanisms, drug diffusion through the swelling gel layer and release by matrix erosion of the swollen layer.”)

¹¹³⁹ S. Kamel et al., *Pharmaceutical significance of cellulose: A review*, eXPRESS Polymer Letters Vol.2, No.11 (2008) 758–778, Available online at www.expresspolymlett.com

¹¹⁴⁰ Michael J. Rathbone et al., *Modified-Release Drug Delivery Technology*, Volume 1, 265(2003)

¹¹⁴¹ Ziad El-Rassi, *Carbohydrate Analysis by Modern Chromatography and Electrophoresis* 587 (2002)

¹¹⁴² Jürgen Siepmann, *Fundamentals and Applications of Controlled Release Drug Delivery* 86 (2012).

One thing to be noted under the dynamic construction is that the connotation is determined at the time of filing. Pharmaceutical patents may be categorized as claiming (1) drug substances or active ingredients; (2) pharmaceutical formulations or compositions; and (3) methods of use.¹¹⁴³ “Claim for the formulation” means a claim for a substance that is a mixture of medicinal and non-medicinal ingredients in a drug and that is administered to a patient in a particular dosage form.¹¹⁴⁴ For example, formulation scientists investigate controlled release, bio-availability improvement, and different modes of administration such as capsules, tablets, gel *etc.*. Unlike chemical-compound patents that usually claim a new active, formulation patents typically apply a known formulation technology to an already-patented substance.¹¹⁴⁵ The patents at issue in this case are directed to a formulation that enables delivery of a known drug.¹¹⁴⁶ Therefore, from the perspective of a PHOSITA at the time of the invention, the properties of spheronising agents in assisting in the process of making a spheroid were well-known. It is justifiable to apply a broad construction to the disputed term. As HPMC as used in the generic Cimex product was a type of “spheronising agent” within the meaning of the claims, infringement would be found.

Interestingly, Napp also filed a patent infringement suit as regards the

¹¹⁴³ 1 C.F.R. 314.53(b) requires NDA holders to list these categories of patents in the FDA’s Orange Book.

¹¹⁴⁴ Patented Medicines (Notice of Compliance) Regulations, SOR/93-133, S 2, <http://laws.justice.gc.ca/eng/regulations/SOR-93-133/page-1.html#docCont>

¹¹⁴⁵ Hao Yin, *A New Formula for Analyzing Formulation-Patent Obviousness*, 83 Temp. L. Rev. 829 (2011) (“formulation patents can be categorized as combination patents, which are more susceptible to validity challenges.”)

¹¹⁴⁶ *Ratiopharm GMBH v. NAPP Pharmaceutical Holdings Ltd* [2008] EWHC 3070 (Pat). Mr Justice Floyd acknowledged that he had initially approached the case with an expectation of surprise if a controlled release version of a known drug, such as oxycodone, turned out to be inventive; “After all,” he said, “controlled release technology is a technology of potentially universal application... Unless there is some specific technical difficulty to overcome (and none is suggested here), why does making a controlled release version of a known analgesic warrant a patent?”

German counterpart of patent 730 and 246 in Germany, and a final decision holding non-infringement was reached by the Landgericht in Mannheim on August 2008 (Judges Kircher, Lehmeier and Lembach).¹¹⁴⁷ Different approaches may ultimately lead to very different results. This reminds us of the difficulty of interpretative task in *Epilady* case. “Both the German and English courts interpreted the same patent, operated under an approximately identical set of facts, utilized a uniform standard of interpretation—Protocol on the Interpretation of Article 69 of the EPC—and still managed to come up with two polar decisions.”¹¹⁴⁸ If the proposed dynamic approach is applied to the *Epilady* case, first, the interpreter must delineate the properties that make up the connotation of the term “helical spring”. Second, the interpreter must decide whether the elastic rubber rod used in the Remington depilatory device falls within the connotation of the term “helical spring” described in the claim. The interpreter will not be bound by the literal meaning of “helical spring”, *i.e.* its conventional use as mechanical energy buffer.¹¹⁴⁹ Instead, he will investigate the essential properties possessed by the term, such as having an arcuate form, defining a convex side whereat the windings are spread apart and defining a concave side whereat the windings are pressed together.¹¹⁵⁰ He will decide that the essential performance properties of the term are a certain level of

¹¹⁴⁷ *Id.* The Court of Appeal’s finding of infringement contrasts with decisions in Germany where the German designation of the patents were found to be not infringed. The Court of Appeal briefly explained two reasons, first, “As regards the Dusseldorf decision it appears to have overlooked the fact that claim 1 of 246 is not limited to the four elements (a) to (d).” Second, “as regards the Mannheim decision, the claim of 730 is rather different from that we have considered.” The Court of Appeal concluded that “We are not persuaded by either of these decisions, even though we give great respect to the decisions of the German courts.”

¹¹⁴⁸ John P. Jr. Hatter, *The Doctrine of Equivalents in Patent Legislation: An Analysis of the Epilady Controversy*, 5 *Ind. Int’l & Comp. L. Rev.* 461 (1994-1995).

¹¹⁴⁹ *Id.* (“atypical use of the spring... seeming justified the broad interpretation of the words ‘helical spring’ used in claim one of the Improver patent.”)

¹¹⁵⁰ EP0101656, European publication server, <https://data.epo.org/publication-server/document?iDocId=5452861&iFormat=3>

elasticity and efficiency.¹¹⁵¹ Accordingly, the interpreter will very likely tend to give a broad interpretation of the term, which may result in patent infringement.

Section 3 The Renda Case

A. Lack of limit on the expansion of patent rights through the doctrine of equivalents

Renda Building Materials Factory v. Dalian Xinyi Building Materials Limited Company was selected as one of the 100 typical intellectual property cases that had a great influence on China in the last three decades.¹¹⁵² The patent in dispute is a utility model patent granted on the “concrete thin-walled tubular member”. Renda Factory was the licensee under the contract on the exclusive license of the patent in question and granted an exclusive use. The independent claim of the patent was as follows:

A concrete thin-walled tubular article, which was composed of a tube and the bottoms at both ends of the closed tube, and whose features lie in that each bottom of the tube was overlaid with *at least two layers of glass fiber cloth*, and every two layers of glass fiber cloth were stuck together with a layer of sulphoaluminate cement inorganic cementing (hereinafter referred to as SCIC) material or ferrialuminate cement inorganic cementing (hereinafter referred to as FCIC) material; the surface on either side of a bottom of the tube was also covered with a layer of SCIC material or FCIC material. Likewise, the said tube

¹¹⁵¹ Epilady Germany II ,Düsseldorf Court of Appeals, November 21, 1991,23 IIC 838 (1993).

¹¹⁵² TianLipu (ed.), *Ying Xiang Zhong Guo De Yi Bai Ge Zhi Shi Chan Quan An Li [One Hundred Intellectual Property Cases That Have Influenced China]* (2009). Patent Case 002: *Da LianXin Yi JianCai You Xian Gong Si yu Da LianRen Da Xin Xing Qiang Ti JianCai Chang [Renda Building Materials Factory v. Dalian Xinyi Building Materials Limited Company]*, No. 1 (2005) of the No. 3 Civil Tribunal, the Supreme People’s Court. The English translation is based on, <http://www1.lawinfochina.com/case/display.asp?db=2&id=250&keyword=> (last visited on Oct 30, 2010).

was overlaid with *at least two layers of glass fiber cloth*, and every two layers of glass fiber cloth were stuck together with a layer of SCIC or FCIC material; both the interior and exterior surfaces of the tube were also covered with a layer of SCIC material or FCIC material.¹¹⁵³

The allegedly infringing product had the following features: in the tube, a layer of glass fiber cloth was embedded between two layers of CIC materials, and the bottoms at both ends of the closed tube were also composed of CIC materials, without any glass fiber cloth. The allegedly infringing product was different from the claimed invention in mainly two aspects: first, there was one less layer of glass fiber cloth in the tube, and second, there was no glass fiber cloth at the bottom of the tube. Therefore, the construction of the claim term “at least two layers of glass fiber cloth” is crucial.¹¹⁵⁴

As previously discussed, under the constructionist approach, and the “content” (the technical solution) not only includes explicitly described technical content at the time of filing, but also embraces equivalents at the time of infringement. As a result, this approach has a greater tendency to expand the scope of patent protection by invoking the doctrine of equivalents. In this case, the Intermediate People’s Court of Dalian Municipality (hereinafter referred to as “Intermediate Court”) found that the technical content, *i.e.*, “at least two layers of glass fiber cloth,” had the properties of reinforcing intensity and reducing weight. The “one layer of glass fiber cloth” and “no layer of glass fiber

¹¹⁵³ *Da Lian Xin Yi Jian Cai You Xian Gong Si yu Da Lian Ren Da Xin Xing Qiang Ti Jian Cai Chang [Dalian Xinyi Building Materials Limited Company v. Renda Building Materials Factory]*, No. 1 (2005) of the No. 3 Civil Tribunal, the Supreme People’s Court. The English translation is based on, <http://www1.lawinfochina.com/case/display.asp?db=2&id=250&keyword=> (last visited on Oct 30, 2010).

¹¹⁵⁴ *Id.*

cloth” performed the substantially same function in substantially the same way with substantially the same result as the technical content, and therefore, it was considered as an equivalent to the claim term at the time of infringement. On appeal, the Higher People’s Court of Liaoning Province (hereinafter referred to as “Higher Court”) sustained the judgment of the first instance which has become legally effective.¹¹⁵⁵

However, Xinyi Company insisted that the judgment was wrong and submitted the case to the Supreme People’s Court (hereinafter referred to as “Supreme Court”) for re-examination. In 2005, the Supreme Court delivered the final decision holding that the Higher Court had wrongly applied the law of patent claim construction, and the original judgment was reversed:

...there is no layer of glass fiber cloth in the bottom of allegedly infringing product. Obviously, the allegedly infringing product is not the same as the technical features recorded in the claims. Because the accused product has no layer of glass fiber cloth in the bottom, but the invention claimed more than two layers of glass fiber cloth, their means are not equivalent, too.¹¹⁵⁶

In the final decision, the Supreme Court particularly warned against the abuse of the rule against surplusage and the doctrine of equivalents. The strong opposing opinions from the defendant’s legal counsel and the reversing judgment from the Supreme People’s Court have shown the dubiousness of the claim interpretation. It is interesting to compare it with the 2001 *Ningbo*

¹¹⁵⁵*Da LianXin Yi JianCai You Xian Gong Si yu Da LianRen Da Xin Xing Qiang Ti JianCai Chang [Dalian Xinyi Construction Materials Co. Ltd. v. Dalian Renda Wall Materials Factory]*, No. 67, Final Decision, Intellectual Property Tribunal, Higher People’s Court of Liaoning Province (2004)

¹¹⁵⁶*Da LianXin Yi Jian Cai You Xian Gong Si yu Da Lian Ren Da Xin Xing Qiang Ti JianCai Chang [Dalian Xinyi Construction Materials Co. Ltd. v. Dalian Renda Wall Materials Factory]*, No. 1 of the No. 3 Civil Tribunal, the Supreme People’s Court(2005).

Oriental Movement Factory v. Jianguyin Jinling Hardware Co. Ltd case,¹¹⁵⁷ where the Supreme People's Court overturned both the infringement decisions from the High People's Court and the Intermediate People's Court, and first applied the doctrine of equivalents. Some scholars found that while the 2001 *Ningbo Oriental Movement Factory* case encouraged the application of the doctrine of equivalents in lower courts, the 2005 *Renda* case turned to warn against abuse of the application of the doctrine. The Chief Justice in the latter case also sat in the panel of three in the previous case.¹¹⁵⁸ Patent claim construction needs to balance fair protection policy against legal certainty policy. It is wise for the Supreme People's Court to critically re-examine the evolution of the doctrine of equivalents to prevent improper use, but the change of policies will significantly reduce the predictability of individual patent cases and increase the reversal rate.¹¹⁵⁹ Without restrictions and conditions for ascertaining the meaning of the claim term, the expansion of claim scope by embracing equivalents is inevitable.

B. *The application of dynamic construction to the disputed terms*

The disputed terms of this case are as follows: (1) "each bottom of the tube was

¹¹⁵⁷ *Ning Bo Shi Dong Fang JiXinZong Chang su Jiang Yin Jin Ling Wu Jin Zhi Pin You Xian Gong Si* [*Ningbo Oriental Movement Factory v. Jianguyin Jinling Hardware Co. Ltd*], No. 1, 3rd Civil Tribunal, The Supreme People's Court (2001) relevant case discussions in Part I Chapter 3.

¹¹⁵⁸ Wu Yuhe & Wang Gang, *Deng Tong Yuan Ze Zai Zhong Guo* [*The Doctrine of Equivalents in China*], 2007:1 *ZhongGuoZhuan Li Yu Shang Biao* [*China Patents & Trademarks*], 26.

¹¹⁵⁹ *Zhang Jian Hua yu Shen Yang Zhi Lian Gao Ceng Gong Nuan Ji Shu You Xian Gong Si* [*Zhang Jianhua vs. Shenyang Direct Connected Heating System Co Ltd*], No.83, Civil Tribunal, Supreme People's Court. (2009), revoking No.10, Civil Tribunal 4, Final Decision, Higher People's Court of Liao Ning Province (2003), and No.85, Civil Tribunal 4, 1st Instance, Intermediate People's Court of Shen Yang (2002); *Cheng Du You Ta Zhi Yao You Xian Gong Si su Jiang Su Wan Gao Yao Ye You Xian Ze Ren Gong Si* [*Chengdu Youta Pharmaceutical Company Ltd vs. Jiangsu Wangao Pharmaceutical Company Ltd*] No.158, Civil Tribunal, Supreme People's Court (2010), revoking No.63, Civil Tribunal, Final Decision, Higher People's Court of Si Chuan Province (2010), and No.249, Civil Tribunal, 1st Instance, Intermediate People's Court of Shen Yang (2007).

overlaid with *at least two layers of glass fiber cloth.*” (2) “Likewise, the said tube was overlaid with *at least two layers of glass fiber cloth.*” While the constructionist approach devotes much attention to comparing and evaluating the technological properties of the allegedly infringing product at the time of infringement (such as whether it performs substantially the same function in substantially the same way to obtain the same result), the dynamic approach insists that connotation of words employed in the patent claims does not change. The adaptation of claim meaning to the new scientific-technological context is important, however, it is equally important to preserve the meaning of the claim text in the original context. Nothing which has not the essential attributes as understood at the time of filing can fall within the connotation. The dynamic approach helps to enhance certainty of patent claim construction, and is able to avoid arbitrary expansion of the scope of patent rights

A. *To preserve certainty, patent claim meaning, i.e. the connotation, remains constant from the time of filing, while the application of such meaning, i.e. the denotation, may change over time.* Under the dynamic approach, the interpreter seeks the connotation of the words (the essential attribute of the concept referred to) as understood at the time of filing. It was clear that in the original scientific-technological context before the filing date, there was already a five-layer structure for the tubular wall consisting of three layers of cement embedded with two layers of glass fiber cloth. The claimed invention was advantaged at using at least two layers of the tubular wall to achieve the effect of expanding cavity, reducing weight and reinforcing the tensile strength. The interpreter will carefully identify the essential attributes of the disputed terms in

the claim. (1) The term “*at least two layers of glass fiber cloth*” in the tubular wall refers to glass fiber cloth in the tubular wall with a specific performance level of expanding cavity, reducing weight and reinforcing the tensile strength of the concrete tube. (2) The term “*at least two layers of glass fiber cloth*” at the bottoms of both ends refers to glass fiber cloth having a specific performance level of reinforcing the tensile strength, sound insulation and cement-slush prevention. While the connotation of a word remains unchanged, flexibility is introduced into claim construction by way of its denotation which may enlarge or shrink with development of science and technology.

B. *What a PHOSITA at the time of filing would have interpreted and applied the claim terms to mean, i.e. the original expected application of meaning, provides strong evidence of the meaning of patent claims.* The doctrine of equivalents is expansive in nature by stretching beyond the literal wording of the patent claim. Interpreters ask whether the allegedly infringing product performs substantially the same function in substantially the same way to achieve substantially the same result. Whereas the first instance and the High People’s Court were obviously persuaded by the plaintiff’s argument that there was equivalency between the two, the Supreme People’s Court found that they differed in the substance. The disconnection between the rulings provides another example of the difficulties inherent in applying the doctrine of equivalents even to cases involving simple cases of mechanics.

By comparison, the dynamic approach adopts a more cautious and conservative stances by paying heavy attention to the original expected

application of meaning at the time of filing. The denotation of a term is the class of all actual things to which the term applies, and the members of this class have certain common attributes.¹¹⁶⁰ In this case, Variant 1 is “one less layer of glass fiber cloth in the tube”, and Variant 2 is “no glass fiber cloth at the bottom of the tube.” Variant 1 could not fulfill the technological purpose of expanding cavity, reducing weight or reinforcing the tensile strength of the concrete tube; and Variant 2 could not achieve the technological effect of reinforcing the tensile strength, sound insulation and cement-slush prevention.¹¹⁶¹ They hence did not possess the essential attributes as so defined, and would not be identified by a PHOSITA as a denotation of the disputed claim term at the time of filing.

C. In forming the original expected application of claim meaning, one takes account of whether a PHOSITA could foresee probability of the claim term acquiring new denotation. While the connotation remains fixed, the denotation may expand with the development of fiber glass fabric technology, for example, an enhancement in strength, weight or flexibility such as a new reinforcement medium. However, in the present case, there is no such technological change or development. Renda Building Materials Factory argued that at the time of filing, there existed only the non-alkali-proof glass fiber, and the use of alkali-proof glass fiber having anti-corrosive quality was not adopted until 1999. But there was evidence that alkali-resistant glass fiber

¹¹⁶⁰ Michael Losonsky, *Linguistic Turns in Modern Philosophy* 129 (2006). (“First, when a term has a connotation, the connotation determines its denotation.”)

¹¹⁶¹ *Da LianXin Yi Jian Cai You Xian Gong Si yu Da Lian Ren Da Xin Xing Qiang Ti JianCai Chang [Dalian Xinyi Construction Materials Co. Ltd. v. Dalian Renda Wall Materials Factory]*, No. 1 of the No. 3 Civil Tribunal, the Supreme People’s Court(2005).

cloth had been widely applied in industry as prior art before the filing date. Hence there is no change of denotation of the disputed term. Since the original expected application is consistent with current application of patent claim meaning, one does not need to evaluate the contribution of the variants. The variants cannot be classified as denotations of the claim term, and therefore fall outside the scope of patent protection, then no infringement will be found.

CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

CONCLUSIONS

This thesis has examined patent claim interpretation from a new perspective of theories of meaning. The overall goals of this thesis are as follows: first, to critically evaluate the existing theories adopted by different approaches; second, to introduce a new theory and propose a proper interpretation of claims in the context of patent infringement. In order to fulfill the goals stated above, the thesis addresses the following research questions: (a) what are the current claim interpretation approaches? (b) What are the interpretive theories underpinning these approaches? (c) Are these theories helpful in describing and guiding the claim interpretation practice? (d) What is the alternative interpretive theory and how can it improve claim interpretation?

This thesis devotes attention to the dynamic nature of claim construction and assesses the tension between the past and present in understanding knowledge of science and technology. To mediate the debate over fixed versus evolving claim meaning, it is necessary to explore the relationship between the concept of “*meaning*” (what the words mean in that context) and the concept of “*application*” (how this meaning will be applied in a particular situation). Philosophical hermeneutics’ major contribution to patent claim interpretation is its dynamic view of meaning. According to Gadamer, legal interpretation must be faithful to the original meaning of the text, but it must also take account of the changes in different contexts. “Analogously, interpretation attempts to grasp the original meaning of a text but always from within a present horizon

of meanings. Interpretation ‘applies’ the original text within a tradition which has, in the meantime, moved on.”¹¹⁶² From the modern philosophical literature, one proposed legal interpretation model is to draw the distinction between the meaning of a term (its connotation) and its application (its denotation):¹¹⁶³ “The application, denotation, reference, or extension of a term is comprised of all the things in the world (or all possible worlds) that it denotes or refers to; its meaning, connotation, sense, or intension consists of the criteria or the function that determine its denotation.”¹¹⁶⁴

This thesis proposes the dynamic claim interpretation to uncover the connotation of the claim terms, *i.e.* a claim term is defined by a particular set of properties. To interpret is to conduct a feature analysis of these properties. When science and technology develop, the denotation of the technical contents may change over time. There are possible gaps between the application of the claim text at the time of filing and the application at the time of infringement. Claim interpretation is neither bound by the original expected meaning of application, nor necessarily extended to the current meaning of application. The dynamic approach requires interpreters to overtly and consistently provide sufficient explanation and justification in applying the claim text to changing circumstances. In order to preserve certainty in claim interpretation, a contemporary interpreter need not restrict the denotation of a claim term to the things they denoted at the time of filing, but rather fix its connotation. The

¹¹⁶² David West, *Continental Philosophy: An Introduction* 121 (2010). (“Application is such a significant model of hermeneutics because it entrenches Gadamer’s view of understanding as a creative, productive and yet highly disciplined activity.”)

¹¹⁶³ Evans, *supra* note 59.

¹¹⁶⁴ Huscroft & Miller, *supra* note 490, at 63. (“The distinction can explain quite dramatic changes in the operation of a constitution.”)

dynamic approach stresses the need for both legal certainty and flexibility in patent claim construction.

Patent claim construction is often outcome-determinative of the infringement and validity issues. The core issue is often whether there is a narrow or broad interpretation of the patent claim. Thus, the first step of determination of essential properties is critical for ascertaining the scope of protection. The second step is to decide whether a modified feature of the claimed invention possesses all the essential qualities as so defined. The dynamic claim interpretation is highly context-sensitive and explanation-based. It will hopefully promote open articulation and elaboration of the choice of meaning among several plausible competing interpretations, and thereby enhances the consistency and persuasiveness of judicial decisions.

FUTURE RESEARCH DIRECTIONS

Although this thesis has provided an alternative solution to patent claim interpretation, there is a variety of open issues and future challenges that require further research.

First, the perspective of philosophical theories of meaning is becoming increasingly important in analyzing “meaning” in the patent context. This is due to the need for justification and legitimacy in legal judgments.¹¹⁶⁵ Philosophical theories of meaning provide us with “an account of the forms of inference which we generally employ in our linguistic practices”, through

¹¹⁶⁵ Patterson, *supra* note 26, at 14.

“semantic completeness and soundness proofs”.¹¹⁶⁶ It has long been recognized that conceptual studies and rational justification can be closely related in particular cases.¹¹⁶⁷ The absence of a firm theoretical basis for patent claim construction approaches may result in ongoing uncertainty throughout the patent litigation process. Application of these theories to patent claim construction is an invaluable aid to a clearer and more comprehensive understanding of the claim interpretation enterprise.

Second, the contemporary debates between originalism and living constitution¹¹⁶⁸ deserve continued attention as they provide a comprehensive understanding of the possible mediation between the past and the present. The practical payoffs of the debate give us a better understanding of the use of language as evolving, changing and adapting in patent claim construction. The legal theories and approaches will help to explain the choice of claim meaning in light of changed circumstances and conditions. They will also help the interpreters to reason and justify their decisions in a coherent and integrated framework.

Third, a holistic consideration of text, purpose, policy and fairness is necessary with further research in interpretive legal theories in other areas of law. For example, the modern trend towards a “crucible” approach in interpreting legal texts such as constitutions, statutes, contracts and treaties

¹¹⁶⁶ Norman Daniels, *Justice and Justification: Reflective Equilibrium in Theory and Practice* 73 (1996).

¹¹⁶⁷ Robert S. Summers, *Legal Philosophy Today—An Introduction*, in Robert S. Summers (ed.), *Essays in Legal Philosophy* 6 (1968).

¹¹⁶⁸ For general discussion, see e.g., Dennis J. Goldford, *The American Constitution and the Debate Over Originalism* (2005); Robert Robert William Bennett & Lawrence B. Solum, *Constitutional Originalism: A Debate* (2011). Huscroft & Miller, *supra* note 490. Jack M. Balkin, *Living Originalism* (2011).

could be followed. The crucible approach has been described as follows: “All various elements, as they were present in any given case, would be thrown into the crucible, and their interaction would give the legally relevant interpretation.”¹¹⁶⁹ It would be helpful to study how interpreters actually resolve the conflicts among different components (text, intent, context and policy *etc.*) during the legal interpretation process. It would be also helpful to clarify the uniqueness of the patent claim interpretation in the substantive inquiry of the technological context.

Finally, the assessments and comparisons of the patent claim interpretation principles should be continually undertaken in a global perspective. The world is getting smaller, and international, multinational, transnational, and multi-domestic businesses rapidly expand. Patents, although territorial in nature, play an important role in promoting a company’s business interests in the worldwide marketplace. Therefore, in order to reduce costs and remove obstacles to business operations, it is necessary to move towards a consistent interpretation for the same patent in different jurisdictions, which can strengthen the public confidence in the patent systems. Patent claim interpretation is a fundamental issue in global patent litigations.

¹¹⁶⁹ Gardiner, *supra* note 1002, at 9.

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