21 Tex. Intell. Prop. L.J. 1

Texas Intellectual Property Law Journal
2013

Articles

A DYNAMIC FRAMEWORK FOR PATENT CLAIM CONSTRUCTION: INSIGHTS FROM A PHILOSOPHICAL HERMENEUTIC STUDY

Huang Yan

I. Introduction

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] Patent claims are written statements located at the end of the patent document that recite and define the boundaries of an invention. 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 ***2** 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 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. It is not surprising that the doctrines of

patent claim interpretation have received enormous attention in many jurisdictions during the last two decades.[4] There has been much debate in patent literature on the difficulties of patent claim interpretation, and the problems have intensified in recent years.

Although it has long been recognized that interpretive theory plays an important role in almost all areas of law--for example, legal literature is replete 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.[5] The lack of theory ***3** development may be due to the unique techno-legal nature of patent claims.[6] A patent claim is a legal instrument that contains technical information describing new advances, discoveries, and applications of principles and laws nature.[7] Patent law is in nature closely connected to the scientific and technological communities.[8] Therefore, 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.

In fact, studying interpretive theories is an illuminative way to know how judges justify the means of interpretation that they employ to decide patent cases.[9] 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.[10] Therefore, a sound basis for justifying the best path between competing, plausible interpretations is of utmost importance.[11] A recent study has shown that between the "initial understanding" of claim language and the ultimate ***4** "proper construction," there is a "black-box" process that lacks consistency and transparency.[12] Since patent claim construction serves as the basis for infringement decisions,[13] such a process will give interpreters broad discretion in determining the scope of protection.[14]

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";[15] "the claims are to be construed purposively--the inventor's purpose being ascertained from the description and drawings."[16] However, the questions are, how should the ordinary meaning of a key word be determined? How to give effect to the intent of the patentee? Professor William Twining has warned in the field of legal interpretation that the use of the terms like "ordinary meaning" and "purpose" should not be taken too much for granted.[17] While they "may be helpful in giving a general sense of direction . . . they are often not very helpful in drawing precise boundaries."[18] When judges use the legal terminologies such as "ordinary meaning" and "purpose" ***5** in claim construction, the first logical stage is to understand what they mean.[19]

This Article introduces two popular approaches selected for study, namely, the "ordinary meaning first" approach and the purposive approach, which prevail respectively in different jurisdictions including the United States and the United Kingdom. The interpretive theories underlying these approaches can be classified respectively as text-oriented interpretation and author-oriented interpretation. Each provides a theoretical basis for deriving the meaning of patent claims. However, while grasping meaning from written text or authorial intent may be a better fit for statutory or contract interpretation, a close examination of the claim construction reveals that there is an ongoing tension between ideas and words. The main reason is that a claim is a verbal portrayal of an invention.[20] The traditional theories for claim interpretation intensively focus on the "word meaning" rather than the "thing meaning," such as the ordinary meaning understood by a person of skill in the art,[21] or the purposive meaning understood by a person of skill in the art.[22] The short-hand concepts such as "ordinary meaning" and "objective intent" are likely to obscure the correct analysis, and may imply a tendency to disengage the connection between claim language and technological reality.[23]

It is the contention of this Article that modern philosophical hermeneutics helps us to reshape the principles for claim interpretation. Hermeneutics is the task ***6** of deciphering text.[24] Philosophical hermeneutics is especially relevant for law, which is grounded in the interpretation of authoritative texts from the past to resolve present-day disputes.[25] It holds that the interpretive process is full of individual subjectivity, creativity, and community involvement.[26] Based on the new theory, this Article proposes a dynamic framework for claim interpretation in the context of infringement.[27] Under the dynamic approach, a claim term conveys a practical and operational meaning.[28] This meaning "involves characterization of the [technical content] to which it is applied."[29] However, due to continuous ***7** technology change and development, a gap of understanding about what the technical content is may be formed between the context in which the invention was made and the current context in which new technologies emerge. According to philosophical hermeneutics, interpretation involves a "fusion of horizons"[30] where past and present are merged. A shared expression of the technical content is identified through a skilled person's expectation of properties at the time of the invention and his evaluation of properties at the time of interpretation.

Patent claim construction is the means to an end to determine an appropriate scope of protection.[31] In analyzing the infringement issue, interpreters can explore the implication of the gap of understanding technical properties between different contexts: whether the actual properties fall below, meet, or exceed the original expectation, and how these results affect the balance between the protection of monopoly rights and the diffusion of innovation.[32] The dynamic approach emphasizes the relatedness of language to reality, thereby strengthening the interpreter's engagement with the science and technological community and increasing the likelihood of acceptance of a decision. It also encourages the interpreter to make practical reasoning[33] on different understandings of the claim ***8** meaning between the past and present technology contexts, as well as their effects upon the determination of patent scope. The dynamic approach attempts to make the interpretive process more transparent and justifiable. Philosophical hermeneutics can hopefully bring fresh insights into the ongoing issues in claim interpretation.

II. Traditional Theories Underlying Claim Construction Approaches

The discernment of legal meaning is a familiar feature of law.[34] Judges must explain and justify why they have decided to interpret the claims through one set of inquiries rather than another.[35] In legal interpretation, it is always important to distinguish constitutive issues from epistemological issues. The constitutive question asks "what it is for an expression to have a certain meaning,"[36] which concerns the possibility of meaning, and the epistemological or evidential question asks "how do you know" the meaning of an expression,[37] which concerns our knowledge of meaning.

For a long time, the patent claims have been analogized both to statues and contracts.[38] The two main categories of traditional interpretive theories in the fields of statutory interpretation and contract interpretation are textualism and intentionalism. Textualism is the view that language conveys meaning "only because a linguistic community attaches common understandings to words and phrases, and relies on shared conventions for deciphering those words and phrases in particular contexts."[39] At epistemological level, the primary characteristic of ***9** textualism is its attention to the fact of textuality itself, that is, judges who interpret the legal text must seek and abide by the ordinary meaning in the text and should choose the letter of the text over its spirit.[40] Intentionalism is a theory of legal interpretation which holds that the legal texts such as contracts and statutes must be interpreted according to authorial intention.[41] Intentionalism posits the authorial intention as the constitutive basis for textual meaning.[42] It asserts "that the meaning of a text is identical to the meaning that its author intended it to communicate."[43] The two theories may achieve the same result in many cases,[44] however, they "will yield different verdicts when the hypothetical interpreter has access to evidence that trumps or supplements the linguistic evidence."[45]

Compared to interpretation of other legal texts, patent claim construction has its unique features, such as defining invention and providing public notice about the exact patent scope of exclusivity, the perspective of the person having ordinary skill in the art (PHOSITA),[46] the technical nature of the subject matter and ***10** the use of prosecution history,[47] the dynamic changes in technology,[48] etc. To determine the disputed meaning, interpreters not only describe the boundaries of the invention, but also make a commensurability assessment to construe the implied functional meaning of the patent claim, ensuring that the consequences of legal decisions will be fair in the specific context at hand.[49] To get a clearer concept of patent claim construction, first it is necessary to answer two questions: what constitutes the meaning of a patent claim, and what goes to prove that meaning?

A. Text-Oriented Interpretation

Under the "ordinary meaning first" approach, claim terms are given their "ordinary and accustomed" meaning--"Accordingly, a technical term used in a patent claim is interpreted as having the meaning a person of ordinary skill in the field of the invention would understand it to mean."[50] This approach can be summarized as the following:

(A) What a PHOSITA would understand a particular claim term, a, to mean.

The underpinning theory of this approach can be classified as text-oriented theory, because it takes the view that the claim text acquires an autonomous and independent meaning apart from the intention of the patentee.[51] Based on the text-oriented theory, the quest for the patentee's intent is considered inappropriate in identifying the meaning of a claim term, since "[t] o consider the inventor's intent would be to thwart the very objectivity the PHOSITA provides."[52] That is, a claim term itself has a meaning, not merely one given specifically to the term by the patentee.

The objective of interpretation is to find an ordinary meaning conveyed by the claim text. However, unlike other interpretations, this meaning is not a ***11** commonly understood public meaning in abstraction from any specific context.[53] As a result of the introduction of the PHOSITA, the meaning in the patent claim context is often technical and specialized. 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. It is believed that "[t]he inquiry into the meaning that claim terms would have to a person of skill in the art at the time of the invention is an objective one."[54]

The motivation for the choice of the text-oriented theory is the desire to further the public notice function of claims.[55] "[T]he function of claims is to enable everyone to know, without going through a lawsuit, what infringes the patent and what does not."[56] Meaning enters the public domain and is more accessible and comprehensible to the readers,[57] so that those who need to read patents would understand the scope of patent claims in a plain or straightforward manner.[58]

B. Author-Oriented Interpretation

The purposive approach requires the court to reconstruct the patentee's hypothetical objective intent to describe and demarcate the scope of protection.[59] "The task for the court is to determine what the person skilled in the art would have ***12** understood the patentee to have been using the language of the claim to mean."[60] This approach can be summarized as follows:

(B) What a PHOSITA would understand the patentee meant when he used the claim term, a, in specific circumstance.

As discussed in the last section, the text-oriented interpretation asks (A) What a PHOSITA would understand a particular claim term, a, to mean. The meaning expressed in (A) must be distinguished from the one characterized in (B). Comparatively speaking, the former reflects the most common acceptance of word usage in the pertinent field among the scientific and technological community. It favors textual interpretation, which carves out a narrower and more formalistic role for interpreters.[61] The latter is concerned with what the PHOSITA would have understood the patentee to be using the words to mean in case-specific circumstance, notwithstanding what others might have intended in those circumstances.[62] Based on the intent-oriented theory, patentee's intention 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 to be ambiguous but in every case and at every stage of interpretation."[63] It is believed that the reliance on ordinary meaning will "frequently misperceive some speaker's intention, or misapply some background purpose or goal . . . ."[64]

To stay objectified, intent-oriented interpretation does not question the subjective states of mind,[65] but usually ascertains the patentee's objective intent by establishing "some rational basis" within the knowledge and experience of a skilled person in the art.[66] Like the text-oriented interpretation, the intent-oriented ***13** interpretation also looks for the "codes" or "maps" of the claim text in order to ascertain what the patentee stated by using a.[67] However, the intent-oriented interpretation is not limited to the explicit meaning of a claim text,[68] and it is expected to rescue the claim meaning from absurdity and errors. First, the disputes on whether the text is clear or ambiguous do not occupy much of the interpreter's attention.[69] Second, it does not treat the claim text as "a mere place holder for concocting plausible inferences about purpose,"[70] but seeks to identify what the patentee is implying in the broader context of the invention.[71] Interpreters will investigate the nature of the invention and methods of its performance so as to determine what the patentee implied when he used a in that circumstance.[72] It has ***14** been declared that "[t]he 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."[73]

III. Critical Analysis of the Traditional Theories in Claim Construction

Although the traditional theories specify some goals to be pursued and identify their preferred sources of evidence, there still remain a number of unresolved issues. (1) The text-oriented theory presumes that there is a conventional usage of a word among the scientific and technological community, i.e., what a PHOSITA would understand a to mean. But in some cases, the ordinary meaning fails to capture the distinctiveness of the invention and would yield no conclusions about the scope of protection. (2) The intent-oriented theory presumes that meaning is the patentee's objective intent, i.e., what a PHOSITA would understand the patentee meant when he used a on that occasion. However, it is not only hard to find and identify the objective intent, but also unsatisfactory to regard the scope of protection as merely what the patentee communicated.

Interpreters often need to assess the effects of a particular interpretation.

A. Deficiencies of the Text-Oriented Theory

The text-oriented theory places a particular emphasis on the ordinary meaning of disputed patent claim language that might better serve a public notice function. However, patent claims are also required to "distinctly claim[] the subject matter which the applicant regards as his invention."[74] The real dispute between the parties often concerns the distinctiveness of the invention, and results in not-so-ordinary meaning of the claim term. Interestingly, the parties in these cases did not dispute the "ordinary meaning" initially understood by a PHOSITA,[75] they ***15** nonetheless disagreed over what that "ordinary meaning" really means in order to differentiate between the claimed invention and the defendant's technology. As a result of refinement, the constructed meanings finally adopted by the judges are often more descriptive and specific than the ordinary meanings commonly understood by a PHOSITA.

Because the ordinary meaning fails to reveal the distinctiveness of the invention, the interpreters sometimes must have to further explain "what that construction means,"[76] and this may bring the potential for delay, uncertainty and expense of litigation. To reach the final construction, the actual reasons may be varied, including but are not limited to: the final meaning is inherently implied by the general ordinary meaning;[77] the final meaning is capable of avoiding contradiction with other parts of the specification;[78] the final meaning can preserve the validity of the claim.[79] After fine-tuning of the interpretation, the final meanings are already not the ordinary meanings initially grasped by a PHOSITA.

B. Deficiencies of the Author-Oriented Theory

The intent-oriented theory emphasizes the objective intention rather than the subjective intention of the patentee,[80] holding "that a patent [claim] is written in order to communicate a practical purpose, namely the disclosure of a new invention, how to carry it out and the scope of the legal monopoly claimed."[81] The communicative content of a patent claim, i.e., "a practical purpose", is what the ***16** claim text means to a PHOSITA.[82] To construe the meaning of a claim term, the patentee needs not intend strict compliance with the term. Rather than a real fact, the objective intent is an artificial construct.[83] Yet there is a constitutive question that the intent-oriented theory must answer: whether the meaning of a patent claim is precisely what the patentee successfully communicates to the PHOSITA. In fact, the communicative content can diverge from the meaning of the patent claim. To define the invention based on the meaning of claims, judges must advance goals such as promoting fairness, fostering predictability, encouraging and rewarding inventiveness, enhancing consumer welfare, etc. The proper interpretation of the terms of a patent claim does not pertain only to the patentee's communicative content or what the patentee was trying to accomplish. The objective intent is an important factor in the determination of claim meaning, but identifying the objective intent needs not be the sole aim of interpretation.[84] The real problem is not asking whether the patentee intended a certain result,[85] but whether the result is legally justifiable given the specific context of the interpretive question.

When the intent-oriented theory asserts that "[m]eaning [c]annot [b]e [a] utonomous from [i]ntent,"[86] it assumes that as soon as meaning was formed by an author, it was reserved in the originating historical moment. However, absent an express statement of intent, evidence of the patentee's objective intent with the limitation of patent scope is often incomplete or obscure. After all, the intent-oriented 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."[87] The same is true in purposive interpretation, as ***17** analysis of the Kirin-Amgen decision illustrates: "It is good that Lord Hoffmann is telling us what to do (viz, answer the crucial question and not the Improver questions), but he does not tell us how to do it in these specialized cases."[88]

The objective intention leads to the implication of a term. Because there are no fixed rules for how to draw implications from the claim text, the finding of objective intent by a hypothetical skilled person is inherently contestable. Firstly, the objective intent of the patentee is central to the determination of desired scope of protection,[89] but some patentees themselves simply have no intent on limiting the claim scope. In cases where there is no direct and express information about such intent,[90] the objective intent is a fictional construct, and two judges may reach two opposing but plausible results.[91]

Secondly, judges "can allow or disallow evidence by adopting a broader or narrower interpretation of what counts as the parties' 'objective' intent."[92] "[Y]ou 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."[93] Judges look at all the "objective" evidence,[94] such as the claims, specifications, the way the invention works, etc., and then declare whether there is intent to restrict the scope of claims or not. It will be difficult for an interpreter to offer convincing ***18** justification for the claim that a certain interpretation is the only correct meaning that corresponds to the patentee's communicative intention.[95]

IV. Application of Philosophical Hermeneutics to Claim Construction

The theories of patent claim interpretation all aim to answer two questions: What is the meaning, and what justifies it? While the first question is constitutive in character, the second is an epistemic one. Patent claim interpretation must not only show the distinctiveness of the inventions, but also define the proper scope of legal protection in response to changing technology.[96] Therefore, the meaning of a patent claim is neither the conventional usage of the term in the technological community nor the patentee's communicative intention. As noted by Matthew Fisher, the language of the patent claim does little to indicate either what the patentee intended to convey or what the skilled addressee would interpret the words used to mean:

> Our familiarity with words breeds complacency for we feel we instinctively 'know' what they denote and therefore expect others to use them in the same manner to convey the same meaning. In the majority of cases this is unproblematic, but with patents--entities given boundary and form by the words used to describe their subject matter--the repercussions of mis-communication are acute.[97]

Patent claim interpretation is a way of establishing the relationship between the word and the thing.[98] It is more justified to consider meaning of a claim as an "object" with particular parameters. However, it does not mean the object is whatever perception the interpreter has in the current technology environment. Due to the gap between the time of the invention and the time of interpretation, practical ***19** reasoning is needed to explain (1) what facts make it the case that there is a meaning that PHOSITAs will converge on, and (2) what meaning ought to be attributed to the disputed claim terms.[99]

Since its emergence in the seventeenth century, the Latin word hermeneutica, which means to interpret, to understand the meaning of texts, has referred to the "art of interpretation."[100] Philosophical hermeneutics perceives meaning as an ideal object that lies behind what is said. "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."[101] Interpretation is a matter of trying to understand the substance of what is being addressed, which is the common ground between the past text and the present situation. Gadamer's ontological philosophical hermeneutics is closely linked with legal interpretation, allowing a dynamic approach to adapt legal texts to changed circumstances.

Claim interpretation needs to settle how understanding claim meaning is possible, and what we should do in order to understand a claim. Languages are by nature imprecise,[102] and the claims of a patent are considered to "constitute one of the most difficult legal instruments to draw with accuracy."[103] In patent claim interpretation, interpreters want to grasp what the claim says and what it refers to, i.e., the Sache.[104] "An initial way of grasping a Sache is to conceive of it as the ***20** object or thing that a [claim term] refers to or is concerned with."[105] It is important, however, not to confuse a Sache with an idea or a physical object. "[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 reidentified by different individuals at different times as being one and the same."[106] On one hand, claim interpretation is a descriptive interpretation, as the contents have certain distinctive properties.[107] It tells the public what the inventions are. On the other hand, claim interpretation does not restrict itself to descriptive facts. It also answers the normative question about what kinds of properties provide justifications. Therefore, interpreters can trace the "'factualness' . . . of language back to its 'relation to the world,"'[108] and find the way to articulate the text's meaning with their own knowledge and belief.[109]

Philosophical hermeneutics helps to answer three questions: (1) What is claim meaning? The way of grasping meaning is to conceive of it as an ideal object that a claim term refers to. (2) How to construe meaning? Interpreters will find suitable parameters to characterize the technical properties and bridge gaps between the perceived properties at different contexts. (3) How does the constructed meaning become dispositive of infringement cases? The decision-making is based on practical reasoning of the implications of these gaps for the adoption and diffusion of innovation.

First of all, claim interpretation is extracting a set of parameters from the descriptive details of the invention to identify the main features of the content, which can be called "feature generation." The description of the content is to see the harmony of all details with the whole as the criterion of correct understanding.[110] "Hermeneutic circle" is a central idea in hermeneutic

thinking. The hermeneutic circle refers to the constant "movement between one part of a text and ***21** its total meaning," namely, relating parts to wholes, and wholes to parts.[111] Collection and identification of specific or particular parameters in the patent documents shed light on the overall understanding of the content.[112] The purpose of this hermeneutic content analysis is to "convey the meaning of the texts which is 'unfolded' via an interpretative reading."[113] It sharpens our awareness of the more empirical meaning behind the claim language.

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.[114] It is also inappropriate to simply differentiate substantial or insubstantial changes, because a so-called "minor change" or "immaterial difference" (which are poorly defined) may prove to be very important to the growth and development of technology.[115] While some technological improvements are simple and easy to observe and understand, some are difficult to ***22** discern.[116] For example, in the field of software, some added performance is obvious when the product is observed, but the means by which the performance is achieved cannot be readily discerned. "[T]echnical knowledge is generated largely with the intention to have something working in practice or to achieve some level of technical performance."[117] The "performance parameter"[118] is the most common and familiar parameter in technology assessment, which will be best suitable for describing different types of inventions in different industries. The set of properties include the performance properties and other unique properties (e.g., the potential environmental and safety implications of the invention).

Secondly, the rapid changes in science and technology over time generate tension between the meaning produced by the patentee within the original context (at the time of the invention), and the meaning perceived by the interpreter within the current context (at the time of interpretation).[119] According to the concept of fusion of horizons, it is improper to privilege either the perspective of the text or the patentee and marginalize another.[120] The goal of interpretation is not regarded ***23** as static and fixed but variable and evolving.[121] Thus, interplay between the past and present is demanded:[122]

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 lend [sic] 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."[123]

An interpreter possesses a pre-understanding or preconception of a text because of his historical conditions.[124] For example, the expected performance properties at the time of the invention may not reflect the maximum achievable performance in a new technological context. Performance properties can be determined by the following three steps: the first step is to identify the target technical problem to be solved by a disputed claimed feature; the second step is to identify the technical evaluation criteria for the solutions to such a problem; the third step is to assess the capabilities of the technical content against the technical evaluation criteria for the solutions to the target problem.[125] The expected properties of the technical content in the original context and its actual properties in ***24** the current context both need to be taken into consideration. Hence a bridge can be built between the time of the invention and the time of interpretation.

V. Infringement Analysis Under the Dynamic Framework

A justified approach must explain how the constructed meaning becomes dispositive of the infringement case. By definition, infringement is the violation of a right or privilege,[126] and whether a patent is infringed is determined by interpretation of the claims:

> The main rule is that the infringing product or process includes all essential 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.[127]

As instructed by philosophical hermeneutics, the meaning of a claim term, i.e., the Sache, consists of technical properties perceived by a PHOSITA. The fusion of horizons means that the interpreter sees the relevance of past meaning in light of his current situation, which involves not just adopting past meaning, but evaluating it in reference to the modern context. Judges need to further compare the patented invention with its contemporary alternatives, i.e., the allegedly infringing product or process. To decide whether an essential element is omitted or an inessential element is included, judges have to conduct a

comparison between the unique technical properties of the invention and those of the allegedly infringing product or process.

The determination of patent scope represents a balance of the protection of rights and the diffusion of knowledge. "The process of adoption of an innovation over time is referred to as diffusion."[128] Patent laws are designed to promote the diffusion of knowledge and reward innovators.[129] The challenge of patent law is to reward inventors on the one hand and promote the diffusion of innovation on the other. A too-strong patent protection actually may delay the diffusion of new ***25** innovations and technology rather than enhance it.[130] Therefore, in making a decision about what the scope ought to be, judges must ensure that the scope of protection indeed promotes the diffusion of innovation.[131]

The dynamic claim interpretation presents gaps that exist in perceiving the technical properties of the invention at different time scales, and the patent infringement decision will be determined by the impact these gaps have on the innovation process ("gap effect").[132] The discrepancy between the expected properties of the technical content and the observed properties of an existing product has an impact on the decision to adopt a substitute technology by a PHOSITA, such as deciding whether to move from the patented invention to a substitute product or process that is already available.

The acceptance or adoption of a technology can be determined from the confirmation of expectations about the technology:[133] the higher the satisfaction, the higher the attitude toward adoption.[134] For example, when the actual performance of the technical content is below the expected performance, a new technology that can achieve the expected performance may be a substitute or a complement to the patented invention.[135] Under this circumstance, providing a strong legal protection to the patented invention would hamper the adoption of new technology. The main purpose of an inquiry on actual versus expected performance is to seek a balance between the protection and diffusion of innovation.

When the actual performance of the technical content meets or exceeds the expected performance, a PHOSITA within the current technological context will be ***26** satisfied with the patented invention, and will not be willing to shift to an alternative technology unless it has unique properties that are lacking in the invention. Besides the main performance properties, there are other factors affecting the decision of technology adoption. For example, an allegedly infringing technology may not improve the performance properties such as increasing productivity or accuracy in application, but it has the capability to reduce environmental side effects, such as reducing residues that may harm the environment or enhancing soil and water conservation or energy efficiency.[136] Therefore, if the allegedly infringing technology has unique attributes, preventing the PHOSITA from using it will impede the diffusion of innovation. However, if the allegedly infringing technology has no unique properties absent in the invention, the protection of the patented invention will adequately reward the patentees.

VI. The Distinguishing Factors of the Dynamic Approach

Different interpretive theories have different focus points:

1. The text-oriented interpretation: the patent claim text is hypostasized "as an authorless entity"[137] that can sustain itself throughout the future. To interpret the patent claim means to grasp the technology community's consensus, i.e., the ordinary meaning from the point of view of a skilled person when the text was created.

2. The author-oriented interpretation: meaning is dependent on the patentee's objective intent, which was fixed 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."[138]

The interpretive theories provide bases on how meanings could be assigned to expressions. The dynamic claim interpretation favors a dynamic view of meaning. It takes the meaning of a claim term to be a limited set of properties associated with that claimed feature, i.e., an empirical meaning that a linguistic term is used to convey. "The starting point for the formation of the word is the substantive content (the species) that fills the mind. The thought seeking ***27** expression refers not to the mind but to the thing."[139] The interpretive process is context-sensitive, value-laden, and technology-rich.

First, the traditional claim interpretation approaches create a static view on what meaning is: either the normal usage of the term within the technological community or the patentee's objective intent should govern interpretation. However, the pursuit of meaning within a static context in patent claim interpretation is often unfruitful. As claim construction analysis is usually dispositive of the infringement issue in patent litigations, looking for a static meaning at the time of the invention is not

satisfactory for resolving disputes that arise in a changing context. By comparison, the proposed dynamic approach provides sufficient reasons to explain the gaps between original and contemporary understandings of meaning. On the one hand, the interpreter investigates the PHOSITA's expectations of the technical properties at the time of the invention. On the other hand, the interpreter evaluates the current properties of the invention at the time of interpretation. The PHOSITA's understanding of the invention may change as a result of increased knowledge and advances in technology. Dynamic interpretation provides an interpreter with a way to explicitly articulate "how broad a scope is appropriate" in a dynamic technological context, avoiding implicit evaluations.

Second, the traditional approaches emphasize objectivity and the importance of value-neutral analysis. At best, the evaluation of balance or fairness is embedded in the concepts of "equivalents,"[140] "substantial difference,"[141] or "material effect."[142] These concepts have two major problems: first, they may be ***28** suitable for analyzing simple mechanical devices,[143] but they are not a good fit for analyzing complex and sophisticated technologies.[144] Second, they simply divide the technological changes into "substantial" /"material" and "insubstantial" / "immaterial."[145] The actual situation is far more complex--differences can often be found.[146] The claimed feature may be technologically superior, inferior, or equivalent to the allegedly infringing device.[147] Since claim interpretation is regarded as a means to the end of determining the scope of protection, it is concerned with what ought to be included and what ought to be excluded.[148] The ***29** interpretive result is heavily influenced by an interpreter's comprehensive evaluation of fairness.[149] The dynamic approach holds that the practical implications, i.e., enhancing or hindering knowledge diffusion and innovation, are the real concerns in claim construction and the determination of infringement. Through the determination of patent scope, the interpreter assigns appropriate weight to the interests of the original inventors and those of the follow-on inventors, giving practical reasoning that "draw on a plurality of values and considerations."[150]

Last but not least, the dynamic approach is distinctive in its technology-rich analysis. The results of a recent empirical study show that the United States Federal Circuit uses non-technical analysis[151] 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.[152] By comparison, the dynamic approach allows interpreters to understand claim meaning in a scientific manner. The original expectation/current evaluation inquiry focuses on the technical contents throughout the entire interpretive process. Interpreters gather and analyze information contained in the patent documents to provide a thorough understanding of the claimed invention. In contrast to the non-technical analysis, technical analysis considers target problems and evaluation criteria, performance and ***30** technical constraints. The necessity of the contextual information depends on the nature of patents.[153]

VII. Conclusion

This Article has examined patent claim interpretation from a new perspective of interpretive legal theories. Traditional interpretive theories that attach a fixed and static meaning to the claim terms do not fit well with the dynamic nature of claim construction. Philosophical hermeneutics' two major contributions to patent claim interpretation are its dynamic view of meaning and its substantive inquiry directed toward problem solving. This Article proposes dynamic claim interpretation to uncover the empirical meaning of the claim terms, i.e., a claim term is defined by a set of properties. To interpret is to construct an empirical description of the properties, including the performance properties as well as other unique properties that have social, economic and environmental implications. Patent claim construction is dispositive of the infringement issue. The gaps between the expectation of the properties at the time of the invention and the evaluation of the properties at the time of interpretation have implications for the adoption and diffusion of innovation.

Footnotes

1 35 U.S.C. §112 (2006) ("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."); Convention on the Grant of European Patents art. 69, Oct. 5, 1973, 1065 U.N.T.S. 254 ("The extent of the protection...shall be determined by the terms of the claims."); Patents Act, 1977, c. 37, §125(1) (U.K.) (providing that an invention for which a patent has been granted is "specified in a claim"). For the evolution of the role of patent claims in defining the scope of protection, see, for example, 4 Donald S. Chisum, Chisum on Patents, §18.02 (1993); Robert C. Kahrl, Patent Claim Construction §1.01 (2004); David J. Brennan, The Evolution of English Patent Claims as Property Definers, 4 Intell. Prop. Q. 361, 361-99 (2005).

[2] Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. (Festo VIII), 535 U.S. 722, 731 (2002).

[3] There have been discussions on the differences between interpretation and construction of patent claims. For example, in the U.S. case Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995), the Circuit Judge Newman made an effort to distinguish these two terms in her dissenting opinion that, "findings of meaning, scope, and usage have been called the 'interpretation' of disputed terms of a document, as contrasted with the 'construction' or legal effect of a document." Markman, 52 F.3d at 1000 (Newman, J., dissenting). In that case, the majority eliminated the suggested distinction between "interpretation" and "construction." Id. at 976 n.6 (majority opinion). This thesis will use the two terms interchangeably.

[4] See, e.g., Christopher A. Cotropia, Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms, 47 Wm. & Mary L. Rev. 49 (2005); 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 (2007); Nicholas Fox, Divided by a Common Language: A Comparison of Patent Claim Interpretation in the English and American Courts, 26 Eur. Intell. Prop. Rev. 528 (2004); Peter Lee, Substantive Claim Construction as a Patent Scope Lever, 1 IP Theory 100 (2011); Wendy Lim, Towards Developing a Natural Law Jurisprudence in the U.S. Patent System, 19 Santa Clara Computer & High Tech. L.J. 561 (2003); Jonathan L. Moore, A Patent Panacea? The Promise of Corbinized Claim Construction, 9 Chi.-Kent J. Intell. Prop. 1 (2010); Lee Petherbridge, The Claim Construction Effect, 15 Mich. Telecomm. Tech. L. Rev. 215 (2008); Nicholas Pumfrey et al., The Doctrine of Equivalents in Various Patent Regimes--Does Anybody Have It Right?, 11 Yale J.L. & Tech. 261 (2009); David Sanker, Phillips v. AWH Corp.: No Miracles in Claim Construction, 21 Berkeley Tech. L.J. 101 (2006); Brad Sherman, Patent Claim Interpretation: The Impact of the Protocol on Interpretation, 54 Mod. L. Rev. 499 (1991).

[5] The most relevant works are Craig Allen Nard's A Theory of Claim Interpretation, 14 Harv. J.L. & Tech. 2 (2000), and Kelly Casey Mullally's Patent Hermeneutics: Form and Substance in Claim Construction, 59 Fla. L. Rev. 333, 337 (2007) ("Despite the importance of claim interpretation, theoretical scholarship has largely neglected its methodology."). See also Dan L. Burk & Mark A. Lemley, Quantum Patent Mechanics, 9 Lewis & Clark L. Rev. 29, 34 (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.'"); Dan L. Burk, Dynamic Claim Interpretation, in Intellectual Property And The Common Law (Shyam Balganesh ed., 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_ id=2005251; Cotropia, supra note 4, at 49 ("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."); Kelly Casey Mullally, Legal (Un)certainty, Legal Process, and Patent Law, 43 Loy. L.A. L. Rev. 1109, 1136 (2010) (discussing the role of claim construction in the uncertainty of patent law).

[6] Timothy R. Holbrook, Patents, Presumptions, and Public Notice, 86 Ind. L.J. 779, 779 (2011) ("Patents are peculiar legal instruments in that they contain both technical and legal information. This Janus-like nature of the documents 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.").

[7] Greg R. Vetter, Open Source Software and Information Wealth, in Intellectual Property and Information Wealth 421, 429 (Peter K. Yu ed., 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 134 (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.").

[8] Walker, supra note 7, at 40. 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." Id.

[9] James Boyd White, 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."); Anthony D'Amato, The Effect of Legal Theories on Judicial Decisions, 74 Chi.-Kent L. Rev. 517, 527 (1999) ("To persuade a judge, we should try to discover what her theories are.").

[10] Jeffrey A. Lefstin, Claim Construction, Appeal, and the Predictability of Interpretive Regimes, 61 U. Miami L. Rev. 1033, 1035 (2007).

[11] See 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, 988 (2010) (discussing "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").

[12] Peter S. Menell et al., Patent Claim Construction: A Modern Synthesis and Structured Framework, 25 Berkeley Tech. L.J. 711, 740 (2010) ("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., Inc. v. Dell, Inc., 659 F.3d 1376, 1380 (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 noninfringement."); Paul M. Janicke & LiLan Ren, Who Wins Patent Infringement Cases?, 34 AIPLA Q.J. 1, 24 (2006) (stating that summary judgment or settlement occurs over 80% of the time based upon the claim construction ruling, suggesting that claim construction is dispositive over 80% of the time).

[14] Robert P. Merges & Richard R. Nelson, On the Complex Economics of Patent Scope, 90 Colum. L. Rev. 839, 841 (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....[T]he legal principles and objective evidence often leave considerable room for discretion. There has been surprisingly little theoretical discussion of how to exercise this discretion.").

[15] Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

[16] Mayne Pharma PTY Ltd. v. Pharmacia Italia SPA, [2005] EWCA 137, [5] (Civ) (Eng.).

[17] William Twining & David Miers, How to Do Things with Rules: A Primer of Interpretation 150 (5th ed. 2010) ("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.").

[18] Id. at 160.

[19] Nard, supra note 5, at 3. The author studied the theories of claim interpretation in the United States courts. Id. at 2?3. The author gave three reasons for 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. Id. at 3.

[20] Autogiro Co. of Am. v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967) ("A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled.... Things are not made for the sake of words, but words for things.").

[21] Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) ("[W] ords of a claim 'are generally given their ordinary and customary meaning.'"); Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004) ("The inquiry into the meaning that claim terms would have to a person of skill in the art at the time of the invention is an objective

one.").

22 Cephalon Inc. v. Orchid Europe Ltd., [2011] EWHC 1591, [33] (Pat) (Eng.) ("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. The principles were summarized by Jacob LJ in Mayne Pharma v Pharmacia Italia [2005] EWCA 137 (Civ) 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." (quoting Virgin Atl. Airways Ltd. v. Premium Aircraft Interiors UK Ltd., [2009] EWCA 1062, [5] (Civ) (Eng.))).

23 Peter Lee, Patent Law and the Two Cultures, 120 Yale L.J. 2, 7 (2010) ("[F]ormalism is an inherently 'inquiry-truncating' methodology that reduces the degree to which lay judges must engage with technological subject matter."); Nard, supra note 5, at 7. ("[A] legitimate theory of claim interpretation should embrace the technologic context and industry custom of which the claimed invention is a part.").

24 Hans-Georg Gadamer, Truth and Method 175 (Joel Weinsheimer & Donald G. Marshall trans., 2d ed. 2004). Hermeneutics is "[t]he art or technique of understanding and interpretation." Id.

25 Francis J. Mootz III, Nietzschean Critique and Philosophical Hermeneutics, 24 Cardozo L. Rev. 967, 967 (2003) ("Lawyers and judges spend much of their time interpreting authoritative legal texts within the context of evolving social settings that also must be interpreted."). See also Francis Lieber, Hermeneutics and Practical Reason 155 (stating that "[i]t 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 use terms 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.").

26 Louise A. Hitchcock, Theory for Classics: A Student's Guide 135 (Routledge 2008) ("Gadamer's theory...involves a critique of Enlightenment thought, with its ideal of the objective interpreter who remains detached from all cultural influences that threaten to prejudice one's understanding and thus, can be said to stand outside of history....One of the implications of the notion of prejudice is that an objective past cannot be recovered.").

27 Claim construction is also used to determine whether the patent is invalid for failing to meet the conditions and requirements of patentability. That is, the invention is a "novelty", involves an "inventive step", and is "industrially applicable" compared to the prior art. U.S. Patent and Trademark Office, Manual of Patent Examining Procedure § 1801, Basic Patent Cooperation Treaty (PCT) Principles (8th ed. 2001), available at http:// www.uspto.gov/web/offices/pac/mpep/documents/1800_1801.htm. Due to the volume of work that will be required as well as the time involved, this thesis will focus on the claim 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 (2d 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.").

28 Sebastián Urbina Tortella, Legal Method and the Rule of Law 59 (2002) ("[H]idden aspects of the text that were unknown by the author, can be disclosed by the present interpreter."); Marcelo Dascal, Hermeneutic Interpretation and Pragmatic Interpretation, 22 Phil. & Rhetoric 239, 241 (1989) ("Semantics, even if it goes as far as to expose the semantic structure underlying 'the linguistic form of a text as a whole,' is essentially concerned with what is explicitly said and meant in the text. But this is insufficient, because 'linguistic expressions...always fall short of what they evoke and communicate;...in speaking there is always implied a meaning that is imposed on the vehicle of the expression, that only functions as a meaning behind the meaning'....Hermeneutics is concerned with such implied or implicit meanings, as is pragmatics.").

29 William T. Parry & Edward A. Hacker, Aristotelian Logic 101 (1991). Linguistic expressions have the meanings they do because they stand for things; what they mean is what they stand for. See also Michael Gasser, How Language Works: The Cognitive Science of Linguistics 2.1-2 (3d ed. 2006), available at http://www.indiana.edu/~hlw/book.html ("One function of words is to 'point' at things....Things are characterized by a set of relatively stable properties.").

30 Gadamer, supra note 24, at 306. The horizon is the range of vision that includes everything that can be seen from a particular

vantage point. “Fusion of horizons” is crucial to Gadamer’s theory of understanding. In fact the “horizon of the present is continually in the process of being formed because we are continually having to test all our prejudices. An important part of this testing occurs in encountering the past and in understanding the tradition from which we come.” Id. See also Wolfgang Iser, How to Do Theory 37 (2006) (“Thus fusion of horizon is marked by a duality: it interweaves past and present, and simultaneously upholds difference.”).

[31] Fulton Co. v. Powers Regulator Co., 263 F. 578, 580 (2d Cir. 1920) (“Strictly speaking, infringement of a patent is an erroneous phrase; what is infringed is a claim, which is the definition of invention, and it is the claim which is the cause of action.”).

[32] Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006) (“The purpose of a patent claim is to define the precise scope of a claimed invention, thereby ‘giv[ing] notice both to the examiner at the U.S. Patent and Trademark Office during prosecution, and to the public at large, including potential competitors, after the patent has issued.’...For that reason, claims are interpreted with an eye toward giving effect to all terms in the claim.” (quoting Johnson & Johnston Assocs. v. R.E. Serv. Co., 285 F.3d 1046, 1052 (Fed. Cir. 2002))); Datamize L.L.C. v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citing Chimie v. PPG Indus. Inc., 402 F.3d 1371, 1379 (Fed. Cir. 2005)) (“[C]laims perform the fundamental function of delineating the scope of the invention....”); Burk & Lemley, supra note 5, at 50 (“This is apparent in the Markman process. Lawyers propose interpretations of claim terms with an eye toward the outcome they will produce. Judges sometimes try to construe claims in a vacuum, but increasingly want to know why it matters which word they choose.”); Edmund W. Kitch, The Nature and Function of the Patent System, 20 J.L. & Econ. 265, 268 (1977) (discussing the gap between the scope of the patent as claimed and the physical embodiment of the patent).

[33] Richard A. Posner, The Problems of Jurisprudence 71 (1990) (“Practical reason involves setting a goal...and choosing the means best suited to reaching it.”). For discussions of practical reasoning see E. W. Thomas, The Judicial Process: Realism, Pragmatism, Practical Reasoning and Principles 315 (2005); William N. Eskridge, Jr. & Philip P. Frickey, Statutory Interpretation as Practical Reason, 42 Stan. L. Rev. 321 (1990); Daniel A. Farber, The Inevitability of Practical Reason: Statutes, Formalism, and the Rule of Law, 45 Vand. L. Rev. 533 (1992); Nicholas Rescher, Practical Reasoning and Values, 16 Phil. Q. 121 (1966); Eileen A. Scallen, Classical Rhetoric, Practical Reasoning, and the Law of Evidence, 44 Am. U. L. Rev. 1717 (1995).

[34] Dennis Patterson, What Is Legal Interpretation? Interpretation in Law, 42 San Diego L. Rev. 685, 686 (2005).

[35] Robert C. Post, Theories of Constitutional Interpretation, 30 Representations 13, 29-32 (1990) (“Because judges must be able to justify their decisions, they must also be able to justify the means of interpretation that they employ to reach those decisions, particularly if their choice affects the ultimate result or significance of a case.”).

[36] Christopher Peacocke, Holism, in A Companion to the Philosophy of Language 227, 236 (Bob Hale & Crispin Wright eds., 1999).

[37] John L. Pollock, Procedural Epistemology--At the Interface of Philosophy and AI, in The Blackwell Guide to Epistemology 383, 385 (John Greco & Ernest Sosa eds., 1999).

[38] Phillips v. AWH Corp., 376 F.3d 1382, 1384 (Fed. Cir. 2004) (Rader, J., 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?”). For further discussion, see 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); Crissa A. Seymour Cook, Constructive Criticism: Phillips v. AWH Corp. and the Continuing Ambiguity of Patent Claim Construction Principles, 55 U. Kan. L. Rev. 255 (2006); Timothy R. Holbrook, Substantive Versus Process-Based Formalism in Claim Construction, 9 Lewis & Clark L. Rev. 123 (2005).

[39] John F. Manning, Textualism and the Equity of the Statute, 101 Colum. L. Rev. 1, 109 (2001). See also John Perry, Textualism and the Discovery of Rights, in Philosophical Foundations of Language in the Law 105, 105 (Andrei A. Marmor & Scott Soames eds., 2011) (“[T]he content of a statute--basically, what actions it mandates, forbids, or protects--is determined by the original meaning of the text of the statute. The original meaning is determined by the words of the text and the meanings they were commonly understood to have had at the time of enactment.”); Frederick Schauer, Statutory Construction and the Coordinating Function of

Plain Meaning, 1990 Sup. Ct. Rev. 231, 231-32 (1990) ("The Justices may not read Foucault or talk to Derrida, but they read the newspapers and talk to each other, giving them an understanding of the idea of plain meaning that they can then apply to the construction of statutes.").

[40] Stanley Fish, There Is No Textualist Position, 42 San Diego L. Rev. 629, 630 (2005).

[41] Lawrence Adam Beyer, Legal Theory: Intentionalism, Art, and the Suppression of Innovation: Film Colorization and the Philosophy of Moral Rights, 82 Nw. U. L. Rev. 1011, 1112 (1988).

[42] Fish, supra note 40, at 632 ("[T]ext alone, no matter how long and dense, can never yield meaning."). See also Larry Alexander & Saikrishna Prakash, ''Is That English You're Speaking?" Why Intention Free Interpretation Is an Impossibility, 41 San Diego L. Rev. 967, 968 (2004) (discussing how there can be no such thing as intention-free meaning).

[43] Jeffrey Goldsworthy, Moderate Versus Strong Intentionalism: Knapp and Michaels Revisited, 42 San Diego L. Rev. 669, 669 (2005). See also Fish, supra note 40, at 645 ("[A] text means what its author intends.").

[44] Grant Huscroft & Bradley Miller, The Challenge of Originalism: Theories of Constitutional Interpretation 49 (2011) ("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.").

[45] Andrei Marmor & Scott Soames, Philosophical Foundations of Language in the Law 141 (2011) ("In some cases of this sort, the public language meaning of the contract is ambiguous or non-specific, and so taken by itself yields no result. The hypothetical interpreter who sets out to impute legal intentions to the parties may have access to evidence that goes beyond this public language meaning, which may support an attribution of intentions that resolves the case....In other cases of this sort, the public language meaning of the contract provision may be sufficient to determine an obligation on textualist principles, but the hypothetical interpreter will have access to information which supports a different set of obligations.").

[46] Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) ("[T]he 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."' (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998))).

[47] Menell et al., supra note 12, at 823-24 ("The substantive law of claim construction can be analogized to interpretation of other texts, but various nuanced features--the perspective 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 interpretation.").

[48] Mark A. Lemley, The Changing Meaning of Patent Claim Terms, 104 Mich. L. Rev. 101, 102 (2005) ("Both the knowledge of the PHOSITA in a particular field and the meaning of particular terms to that PHOSITA will frequently change over time.").

[49] Cass R. Sunstein, Justice Breyer's Democratic Pragmatism, 115 Yale L.J. 1719, 1719-20 (2006).

[50] Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1372 (Fed. Cir. 2001) (giving "claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art").

[51] Paul Ricoeur, Interpretation Theory: Discourse and the Surplus of Meaning 34-37 (1976). See also E. D. Hirsch, Jr., Validity in Interpretation 11 (1967) ("Textual meaning is a public affair.").

[52] Kristen Osenga, Linguistics and Patent Claim Construction, 38 Rutgers L.J. 61, 105 (2006) (stating the author's belief that "[a] more appropriate mechanism for claim construction might instead be akin to textualism").

[53] 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.").

[54] Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004).

[55] Note, Textualism as Fair Notice, 123 Harv. L. Rev. 542, 557 (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 beforehand. 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.").

[56] Giles S. Rich, Extent of Protection and Interpretation of Claims--American Perspectives, 21 Int'l Rev. Indus. Prop. & Copyright L. 497, 501 (1990). "To coin a phrase, the name of the game is the claim." Id. at 499, quoted in Hilton Davis Chemical Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1539 (Fed. Cir. 1995) (Plager, J., dissenting), rev'd, 520 U.S. 17 (1997).

[57] Clark D. Cunningham et al., Plain Meaning and Hard Cases, 103 Yale L.J. 1561, 1565 (1994) (reviewing Lawrence M. Solan, The Language of Judges (1993)). See also Neil MacCormick, Rhetoric and the Rule of Law 126 (2005) (stating that textualism is widely embraced on a principle that the language in the legal text ought to be readily understood by the audience "in as straightforward and immediately comprehensible a way as possible").

[58] See, e.g., Markman v. Westview Instruments, Inc., 517 U.S. 370, 390 (1996) ("[T]he public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights." (quoting Merrill v. Yeomans, 94 U.S. 568, 573 (1877))); Gen. Elec. 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." (internal quotation marks omitted)).

[59] ConvaTec Ltd. v. Smith & Nephew Healthcare Ltd., [2011] EWHC 2039, [[50] (Pat) (Eng.) ("[I]t 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.").

[60] W L Gore & Assocs. GmbH v. Geox SPA, [2009] EWCA 794, [4] (Civ) (Eng.).

[61] Aharon Barak, Purposive Interpretation in Law 283 (2007).

[62] Gerald L. Bruns, Intention, Authority, and Meaning, 7 Critical Inquiry 297, 300 (1980) ("[T]o interpret correctly means to stand in place of the author.").

[63] Ruth Sullivan, Statutory Interpretation, 194 (2d ed. 2007).

[64] Frederick Schauer, Statutory Construction and the Coordinating Function of Plain Meaning, 1990 Sup. Ct. Rev. 231, 252 n.83 (1990).

[65] A case indicating the exclusion of external evidence is Ranbaxy Laboratories Limited v. Warner-Lambert Company, [2005] 1 I.R. 193 (Ir.), decided by 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 U.S. Patent and Trademark Office, the European Patent Office, and the Danish Patent Office, were admissible in these proceedings for the purposes of patent claim construction. Ranbaxy, 1 I.R. 193. 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." Id. With this strict "objective purpose" test, the appeal was dismissed. Id.

66 Occlutech GmbH v. AGA Med. Corp., [2009] EWHC 2013, [49] (Ch) (Eng.) ("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."); Kirin-Amgen Inc. v. Hoechst Marion Roussel Ltd., [2004] UKHL 46, [35] (appeal taken from Eng.) ("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."). The objectification of author's intent is popular in contract interpretation. See, e.g., Sirius Int'l Ins. Co. (Publ) v. FAI Gen. Ins. Ltd., [2004] UKHL 54, [18] (appeal takn from Eng.) ("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 a reasonable person, circumstanced as the actual parties were, would have [in mind]...."). See also Investors Comp. Scheme v. West Bromwich Bldg. Soc'y, [1997] UKHL 28 (appeal taken from Eng.) ("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.").

67 Barak, supra note 61, 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." Id.

68 Rockwater Ltd. v. Technip France SA, [2004] EWCA 381, [41j] (Civ) (Eng.) ("[P]urposive 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."); Whirlpool Corp. v. Camco Inc., [2000] 2 S.C.R. 1067, para. 49 (Can.) ("[P]urposive 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....").

69 Hammar Maskin AB v Steelbro N.Z. Ltd. [2010] NZCA 83. 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 (i.e., 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. Id. The decision followed the judgment in Lucas v Peterson Portable Sawing Sys. Ltd. [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. The claims are to be interpreted by reference to the object and description in the body of the specification.").

70 John F. Manning, What Divides Textualists from Purposivists?, 106 Colum. L. Rev. 70, 89 (2006).

71 Hammar Maskin AB v Steelbro N.Z. Ltd. [2010] NZCA 83 at para [48] (stating that 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 Sys. Ltd. [2006] 3 NZLR 721 (SC) (stating that Catnic was applied in New Zealand through to the Peterson v Lucas litigation).

72 Whirlpool Corp. v. Camco Inc., [2000] 2 S.C.R. 1067 (Can.) ("While 'purposive construction' is a label introduced into claims construction by Catnic...the approach itself is quite consistent in my view, with what was said by Dickson J. the previous year in Consolboard...on the topic of claims construction ...'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 Corp. v Remington Consumer Prod. Ltd. [1990] F.S.R. 181, 182 (stating that the Catnic established principle is that patents are to be read in a "purposive" manner and the first question the court should ask is whether "the variant [has] a material effect upon the way the invention works"').

73 Michael D. Pendleton, A Defence of Purposive Construction, 22 Eur. Intell. Prop. Rev. 342, 342 (2000).

74 35 U.S.C. §112 (2006) ("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.").

75 Cordis Corp. v. Boston Scientific Corp., 658 F.3d 1347, 1356 (Fed. Cir. 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 Eng'g Ltd. v. Magotteaux Int'l S/A, 657 F.3d 1264, 1276 (Fed. Cir. 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 Labs., Inc. v. Am. Online, Inc., 197 F.3d 1377, 1381 (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.").

76 Cordis Corp., 658 F.3d at 1356 ("We therefore do not review the construction itself, and instead focus on what that construction means. Based on the ordinary meaning of the construction as given to the jury, it is apparent that the construction requires multiple 'waves.'").

77 Id. "Accordingly, the terms 'crest' and 'trough,' as used in district court's claim construction, implicate changes of direction, with the curve extending beyond the point of inflection." Id.

78 AIA Eng'g Ltd., 657 F.3d at 1276. The Court attempted to avoid such contradictions when possible and noted that "[c]onstruing 'solid solution' as having the same meaning as 'ceramic composite"' avoided the problem. Id.

79 Wang Lab. Inc., 197 F.3d at 1382 ("[I]t 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.").

80 Barak, supra note 61, 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); Noël Carroll, Interpretation and Intention: The Debate Between Hypothetical and Actual Intentionalism, in The Philosophy of Interpretation 75, 76 (Joseph Margolis & Tom Rockmore eds., 2000) (explaining that 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 actual intention").

81 Duncan Curley & Hiroshi Sheraton, The Lords Rule in Amgen v TKT, 27 Eur. Intell. Prop. Rev. 154, 155 (2005). See also Convatec Ltd. v. Smith & Nephew Healthcare Ltd., [2011] EWHC 2039, [50] (Pat) (Eng.) ("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.").

82 Mark Greenberg, Legislation as Communication? Legal Interpretation and the Study of Linguistic Communication, in Philosophical Foundations of Language in the Law 217 (Andrei A. Marmor & Scott Soames eds., 2011). See also Gideon Rosen, Textualism, Intentionalism, and the Law of the Contract, in Philosophical Foundations of Language in the Law 130, 132 (Andrei A. Marmor & Scott Soames eds., 2011) (defining communicative intentions as "the intention to cause certain beliefs or expectations in their audience in a characteristic way").

83 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 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."'); Jerrold Levinson, Intention and Interpretation: A Last Look, in Intention and Interpretation 221, 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.").

[84] Michael Hancher, Three Kinds of Intention, 87 MLN (Comparative Literature Issue) 827, 851 (1972).

[85] Gregory Leyh, Toward a Constitutional Hermeneutics, 32 Am. J. Pol. Sci. 369, 379 (1988) ("Texts and their histories do not exist 'out there' in the past awaiting the disinterested recovery of their objective meaning.").

[86] Alexander & Prakash, supra note 42, at 977.

[87] Stanley Fish, Intention Is All There Is: A Critical Analysis of Aharon Barak's Purposive Interpretation in Law, 29 Cardozo L. Rev. 1109, 1144 (2008).

[88] Paul Quan Kaih Shiuh & Teo Guan Siew, Interpreting Patent Claims: Some Thoughts on the UK Kirin-Amgen Decision, 18 Sing. Acad. L.J. 203, 231 (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." Id. at 221.

[89] 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 be a 'self-inflicted' wound." Robert H. C. MacFarlane & Adam Bobker, Understanding Construction at Trial, Managing Intell. Prop. (Can. IP Focus 2006), Feb. 01, 2006, at 1, 4.

[90] Stephen Davies, The Philosophy of Art 119-120 (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.

[91] See Barak, supra note 61, at 303 ("[W]hen there is no credible information about that intent...then the interpreter abandons legislative intent in favor of the fundamental values of the system.").

[92] Gregory Klass, Intent to Contract, 95 Va. L. Rev. 1437, 1455 (2009). See also Ricoeur, supra note 51, at 76 ("If the objective meaning is something other than the subjective intention of the author, it may be construed in various ways.").

[93] Michael Robertson, The Impossibility of Textualism and the Pervasiveness of Rewriting in Law, 22 Can. J.L. & Juris. 381, 386-87 (2009). See also Tremper Longman III, Literary Approaches to Biblical Interpretation, in 3 Foundations of Contemporary Interpretation 91, 110 (Moisés Silva ed., 1996) ("[T]he interpretive key is thought to lie outside of the text itself in its origin or background.").

[94] Lord Bingham of Cornhill, A New Thing Under the Sun? The Interpretation of Contract and the ICS Decision, 12 Edinburgh L. Rev. 374, 380 (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." Id.

[95] Richard A. Posner, Statutory Interpretation--In the Classroom and in the Courtroom, 50 U. Chi. L. Rev. 800, 817 (1983) ("[T]he 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."). See also Frank B. Cross, The Theory and Practice of Statutory Interpretation 96 (2009) ("It is difficult to imaginatively reconstruct intent when circumstances have changed so dramatically.").

[96] 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.").

[97] Matthew Fisher, The Tyranny of Words: Patent Claim Construction in the UK and US, 36 Common L. World Rev. 262, 262 (2007).

[98] Richard Robinson, Definition 16, 20 (1950) ("The purpose of real definition, on the other hand, is 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."); 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, 502-03 (2008) ("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." (internal citation omitted)).

[99] Michael J. Meurer & Craig Allen Nard, Invention, Refinement and Patent Claim Scope: A New Perspective on the Doctrine of Equivalents, 93 Geo. L.J. 1947, 1969-70 (2005). It has been criticized that the goal of bringing objectivity to patent claim cases through formalistic legal rules is a costly illusion.

[100] Jean Grondin, Introduction to Philosophical Hermeneutics 1 (1994). See also Jean Grondin, Sources of Hermeneutics 19 (1995) ("[T]he latin word hermeneutica did not emerge until the 17th century when it was first introduced by a theologian from Strasbourg, Johann Dannhauer, as a necessary requirement of all the sciences that rely on the interpretation of texts....").

[101] Paul Ricoeur, Existence and Hermeneutics, in The Conflict of Interpretations: Essays in Hermeneutics 3, 13 (Don Ihde ed., Kathleen McLaughlin trans., Northwestern University Press 1974). See also Günter Figal, The Doing of the Thing Itself: Gadamer's Hermeneutic Ontology of Language, in The Cambridge Companion to Gadamer 102, 118 (Roben J. Dostal ed., 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.'").

[102] Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 731 (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.").

[103] Topliff v. Topliff, 145 U.S. 156, 171 (1892).

[104] The Semiotics of Law in Legal Education 8 (Jan M. Broekman & Francis J. Mootz III eds., 2011). Sache is translated as "matter under discussion" or "the things themselves." See Hans-Georg Gadamer, Philosophical Hermeneutics 77 (David E. Linge ed., trans., 2008) (Bringing a thing into language is not a diminishment of the being of the thing, but a kind of realization of it. As Gadamer puts it: "In the end, the true being of things becomes accessible precisely in their linguistic appearance....").

[105] Nicholas Davey, Unquiet Understanding: Gadamer's Philosophical Hermeneutics 70 (2006).

[106] Nicholas Wolterstorff, Resuscitating the Author, in Hermeneutics at The Crossroads 35, 41 (Kevin J. Vanhoozer et al. eds., 2006).

[107] Günter Radden, Aspects of Meaning Construction 10 (2007) ("Whichever scenario is evoked as the listener's meaning construction, it is based on a general principle according to which things may stand for one or some of their properties."). See also Umberto Eco, A Theory of Semiotics 163 (1979) ("To give the meaning of an expression...is to give general directions for its use to refer to or mention particular objects and persons ....").

[108] Figal, supra note 101, at 118.

[109] Gadamer, supra note 24, at 379. ("To reach an understanding in a dialogue is not merely a matter of putting oneself forward and successfully asserting one's own point of view, but being transformed into a communion in which we do not remain what we were.").

[110] Chris Lawn, Gadamer: A Guide for the Perplexed 47 (2006) ("We cannot know the correct reading of a passage in a text unless we know, roughly, the text as a whole; we cannot know the text as a whole unless we know particular passages.").

[111] Chris Lawn & Niall Keane, Gadamer Dictionary 103 (2011). See also Paul Diesing, How Does Social Science Work?: Reflections on Practice 110 (1992) ("The goal of interpretation is to produce a reading of the text that fits all important details into a consistent, coherent message, one that fits coherently into the context...."); Gadamer, supra note 24, at xxxii ("[I]deas are formed through tradition, especially through the hermeneutic circle of whole and part, which is the starting point of my attempt to lay the foundations of hermeneutics ....").

[112] See Dzeguze, supra note 4, at 488 (arguing that the court should have a complete record to "arrive at a construction consistent with the fullest appreciation of the invention's true scope").

[113] Qualitative Research in Work Contexts 7 (Catherine Cassell & Gillian Symon eds., 1994) (using the following defining characteristics for qualitative content analysis: "a focus on interpretation rather than quantification; an emphasis on subjectivity rather than objectivity; flexibility in the process of conducting research; an orientation towards process rather than outcome; a concern with context--regarding behavior and situation as inextricably linked in forming experience; and finally, an explicit recognition of the impact of the research process on the research situation"); Wilfried Bos & Christian Tarnai, Content Analysis in Empirical Social Research, 31 Int'l J. Educ. Res. 659, 661 (1999).

[114] See generally Dan L. Burk & Mark A. Lemley, The Patent Crisis and How the Courts Can Solve It 58 (2009); John C. Miller, The Handbook of Nanotechnology: Business, Policy, and Intellectual Property Law 68 (2005); Yusing Ko, An Economic Analysis of Biotechnology Patent Protection, 102 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); Mark A. Lemley, Patenting Nanotechnology, 58 Stan. L. Rev. 601 (2005); Megan E. Lyman, Judicial Fitness for Review of Complex Biotechnology Issues in Patent Litigation: Technical Claim Interpretation, 23 J. Nat'l Ass'n 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; Georgios I. Zekos, Nanotechnology and Biotechnology Patents, 14 Int'l J.L. & Info. Tech. 310 (2006).

[115] Stephen J. Kline & Nathan Rosenberg, An Overview of Innovation, in The Positive Sum Strategy: Harnessing Technology for Economic Growth 275, 282 (Ralph Landau & Nathan Rosenberg eds., 1986) ("A large part of the technological innovation that is carried out in industrial societies takes the form of very small changes, such as minor modifications in the design of a machine that will enable it to serve certain highly specific end-uses better, or that make it easier and therefore cheaper to manufacture; or improving the performance characteristics of a machine by introducing a harder metal, or a new alloy with a higher melting point....").

[116] Ove Granstrand, The Economics and Management of Intellectual Property: Towards Intellectual Capitalism 119 (2000). Based on various extent of hidden technical knowledge, inventions are separated into three categories: "naked idea inventions, black box inventions and unobserved inventions." James J. Anton, Hillary Greene & Dennis A. Yao, Policy Implications of Weak Patent Rights, in Innovation Policy and the Economy 1, 6 (Adam B. Jaffe, Josh Lerner & Scott Stern, eds., 2006). "A naked idea invention is one where the critical invention is easily observable in the product or process that embodies that invention." Id. "A black box invention is an invention for which the added performance is obvious when the product or service is observed, but the means ... by which the performance is achieved cannot be readily discerned ...." Id. An unobserved invention is an invention that allows an existing product or process to be manufactured or carried out for a greatly-reduced cost, such as cost-reducing process inventions. Id.

[117] Granstrand, supra note 116, at 119.

[118] Frederick Betz, Managing Technological Innovation: Competitive Advantage from Change 230 (3d ed. 2011) ("Technical progress can be measured in the improvements of its performance--technology performance parameters.").

[119] Lemley, supra note 48, at 106 ("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.").

[120] Menell et al., supra note 12, at 740-42. 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.

[121] Sir Ian McTaggart Sinclair, The Vienna Convention on the Law of Treaties 131 (2d ed. 1984) ("An even more dynamic variant of the teleological approach is the so-called theory of 'emergent purpose' whereby the object and 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.'"); 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-understandings of the object than the historically earlier interpreters.").

[122] Gadamer, supra note 24, at 293 (stating that 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"). This Gadamer called the "effective history" of a text. Id. at 300. He wrote that "we are always situated within traditions, and this is no objectifying process--i.e., we do not conceive of what tradition says as something other, something alien. It is always part of us, a model or exemplar." Eduardo J. Echeverria, Gadamer's Hermeneutics and the Question of Relativism, in Hermeneutics at the Crossroads 51, 67 (Kevin J. Vanhoozer et al. eds., 2006) (quoting Gadamer, supra note 24, at 282). According to Gadamer, people constantly participate in tradition and reconstruct it as they rely upon it. Tradition is not a dead past, instead, it is "the medium in which we swim, in which we stand, and through which we exist. To belong to a tradition means to be historically situated within, and by, that tradition." Brad Sherman, Hermeneutics in Law, 51 Mod. L. Rev. 386, 389 (1988).

[123] Davey, supra note 105, at 72-73 (quoting Gadamer, supra note 24, at 442).

[124] Georgia Warnke, Hermeneutics, Ethics, and Politics, in The Cambridge Companion to Gadamer 79, 95 ("If 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....[W]e must acknowledge our lack of neutrality, our pre-conceptions and our biases.").

[125] Betz, supra note 118, at 231 ("The performance of a technology expresses how well the technology performs its capability of functional transformation.").

[126] Christine Rossini, English as a Legal Language 250-51 (2d ed. 1998).

[127] Id. at 214.

[128] Competition Policy and Patent Law Under Uncertainty: Regulating Innovation 153 (Geoffrey A. Manne & Joshua D. Wright eds., 2011).

[129] Carmen Matutes, Pierre Regibeau & Katharine Rockett, Optimal Patent Design and the Diffusion of Innovations, 27 RAND J. Econ. 60, 61 (1996) ("Protecting ideas has traditionally been outside the scope of a patent because it overly restricts the flow of information necessary to the progress of science. On the other hand, protection that is too narrow can eliminate the reward to socially significant innovation. In practice, different countries have chosen different points on the tradeoff between promoting the diffusion of knowledge and rewarding innovators...."). See also Free World Trust v. Électro Santé, [2002] 2 S.C.R. 1024, para. 42 (Can.) (stating that the dual function of the patent system is "to advance research and development and to encourage broader economic activity"); Casenote Legal Briefs, Patent Law: Keyed to Courses Using Adelman, Rader, and Thomas's Cases and

Materials on Patent Law 3 (3d ed. 2009) ("[T]he Constitution did not give inventors any right to the patentability of any individual invention, but rather empowered Congress to secure to inventors an exclusive right for a limited time for the stated purpose of promoting the useful arts.").

130 Phillip McCalman, International Diffusion and Intellectual Property Rights: An Empirical Analysis, 67 J. Int'l Econ. 353, 353-54 (2005).

131 Allan C. Hutchinson, Evolution and the Common Law 173 (2005) ("Gadamer is telling lawyers that interpretation is an inevitably active and therefore political process. Lawyers cannot avoid working with and among the social forces that make interpretation both possible and problematic."); Dan L. Burk & Mark A. Lemley, Policy Levers in Patent Law, 89 Va. L. Rev. 1575 (2003). See also Cotropia, supra note 4, at 130 ("When courts are faced with choices between methodologies, they are also facing patent policy choices."). For other discussions, see Adam B. Jaffe & Josh Lerner, Innovation and Its Discontents: How Our Broken Patent System Is Endangering Innovation and Progress, and What to Do About It (2004); Julie E. Cohen & Mark A. Lemley, Patent Scope and Innovation in the Software Industry, 89 Cal. L. Rev. 1 (2001); Brian Kahin, Patents and Diversity in Innovation, 13 Mich. Telecomm. & Tech. L. Rev. 389 (2007); Qin Shi, Patent System Meets New Sciences: Is the Law Responsive to Changing Technologies and Industries?, 61 N.Y.U. Ann. Surv. Am. L. 317 (2005); Robert Hunt & Brian Kahin, Reexamining the Patent System, Issues Sci. & Tech., Sept. 21, 2008, at 32, 34.

132 Mark A. Lemley, The Economics of Improvement in Intellectual Property Law, 75 Tex. L. Rev. 989, 993 (1997) ("Intellectual property is fundamentally about incentives to invent and create.").

133 Anol Bhattacherjee, Understanding Information Systems Continuance: An Expectation-Confirmation Model, 25 MIS Q. 351, 355 (2001) (proposing the expectation-confirmation model to describe user's behavior in adopting and continuing to use an information system).

134 Chuan-Hoo Tan et al., When Counterfactual Thinking Meets the Technology Acceptance Model: An Investigation, in Organizational Dynamics of Technology-Based Innovation: Diversifying the Research Agenda 507, 509 (Tom McMaster et al. eds., 2007).

135 Paul Stoneman & Paul Diederen, Technology Diffusion and Public Policy, 104 Econ. J. 918, 926.

136 David Zilberman, Introduction to Flexible Incentives for the Adoption of Environmental Technologies in Agriculture 1, 2 (Frank Casey et al. eds., 1999) ("The reasons for the support of environmentally friendly products may include concern for personal and environmental health, [or] concern for animal rights...."). See also Peter Mulder, The Economics of Technology Diffusion and Energy Efficiency 3 (2005) ("Technological change plays a crucial role in both developing alternative energy sources and realizing energy efficiency improvements, and...in ameliorating the conflict between economic growth and environmental quality.").

137 Ricoeur, supra note 51, at 30.

138 Jonathon D. C. Turner, Purposive Construction: Seven Reasons Why Catnic Is Wrong, 21 Eur. Intell. Prop. Rev. 531, 533 (1999).

139 Gadamer, supra note 24, at 425 ("In fact there is no reflection when the word is formed, for the word is not expressing the mind but the thing intended.").

140 According to Graver Tank, the "theory on which [the doctrine of equivalents] is founded is 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.'" 339 U.S. 605, 608 (1950) (quoting Union Paper-Bag Mach. Co. v. Murphy, 97 U.S. 120, 125 (1877)). See also Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. (Festo VIII), 535 U.S. 722, 732 (2002) ("It is true that the doctrine of equivalents renders the scope of patents less certain....Each time the Court has considered the doctrine, it has acknowledged this uncertainty as the price of ensuring the appropriate incentives for innovation, and it has affirmed the doctrine over dissents that urged a more certain rule."); Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 41-42 (1929) ("There is a substantial identity,

constituting infringement, where a device is a copy of the thing described by the patentee, 'either without variation, or with such variations as are consistent with its being in substance the same thing.'" (quoting Burr v. Duryee, 68 U.S. 531, 573 (1863))).

141 Dawn Equip. Co. v. Ky. Farms, 140 F.3d 1009, 1015-16 (Fed. Cir. 2001) ("To determine equivalence under the doctrine of equivalents, this court applies the 'insubstantial differences' test, recognizing the admitted short-comings of that test. See, for example, the Supreme Court's critical assessment of that test in Warner-Jenkinson: 'the insubstantial differences test offers little additional guidance as to what might render any given difference "insubstantial."" " (quoting Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 40 (1997))).

142 Improver Corp. v. Remington Consumer Prods. Ltd., [1990] F.S.R. 181, 182 (Eng.) ("Does the variant have a material effect upon the way the invention works? If yes, the variant is outside the claim." (quoting Catnic Components Ltd. v. Hill & Smith Ltd., [1982] R.P.C. 183, 242 (Eng.))).

143 Warner-Jenkinson, 520 U.S. at 39-40 (recognizing that though the triple-identity test may be "suitable for analyzing mechanical devices, it often provides a poor framework for analyzing other products or processes"). Of course, even with simple terms in mechanical cases, the court has had difficulty agreeing on claim construction. See Dorel Juvenile Grp., Inc. v. Graco Children's Prods., Inc., 429 F.3d 1043, 1047 (Fed. Cir. 2005) (Newman, J., dissenting) (showing that it was difficult to reach a consensus on a simple mechanical invention--a child's car seat--and the term "removably attached/secured").

144 Genentech, Inc. v. Wellcome Found. Ltd., 29 F.3d 1555, 1567-68 (Fed. Cir. 1994); Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1581 (Fed. Cir. 1991); Amgen v. Chugai Pharm. Co., 927 F. 2d 1200, 1217-18 (Fed. Cir. 1991); Hormone Research Found. v. Genentech, Inc., 904 F.2d 1558, 1564 (Fed. Cir. 1990). See also James Bessen & Michael J. Meurer, Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk 201 (2008) (arguing that software patents differ in that the abstractness of software technology inherently makes it more difficult to limit abstract claims in software patents).

145 Michael T. Nguyen, The Myth of "Lucky" Patent Verdicts: Improving the Quality of Appellate Review by Incorporating Fuzzy Logic in Jury Verdicts, 59 Hastings L.J. 1257, 1258 (2008) ("Uncertainty pervades the law, but a particular concept of patent law--the doctrine of equivalents-- incorporates uncertainty as a core element."). "Asking five jurors to define what 'substantially the same' means will yield five different, uncertain responses." Id. at 1258 n.8. See also Ellen A. Peters et al., Judicial Panel Discussion on Science and the Law, 25 Conn. L. Rev. 1127, 1145 (1993) ("Honest to God, I don't see how you could try a patent matter to a jury. Goodness, I've gotten involved in a few of these things. It's like somebody hit you between your eyes with a four-by-four. It's factually so complicated." (quoting Judge Alfred V. Covello, U.S. District Judge, D. Conn.)).

146 In Warner-Jenkinson, the government argued for the Doctrine of Equivalents as set out in Graver Tank. Amicus Brief for U.S. at 13, Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17 (1997), 1996 WL 172221 ("As the court observed in Graver Tank, '[o]utright and forthright, duplication is a dull and very rare type of infringement.' Patentees should be protected against imitations that involve only colorable or trivial deviation from the literal terms of the patent claims, and not placed 'at the mercy of verbalism."' (quoting Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 607 (1950))). See also Warner-Jenkinson, 520 U.S. at 35 (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." (quoting Union Paper-Bag Mach. Co. v. Murphy, 97 U.S. 120, 125 (1877))).

147 Lemley, supra note 132, at 1005 ("Sometimes these changes will actually improve the existing product or make its production more efficient, and therefore contribute to social value. Other changes may be value-neutral (that is, the new product may be just as good or as efficient as the existing product), or they may actually be inefficient (producing less useful products, or products that cost more than the existing ones).").

148 R. Jay Wallace, Practical Reason, The Stanford Encyclopedia of Philosophy (Nov. 6, 2008), http://plato.stanford.edu/archives/sum2009/entries/practical-reason. See also Martin P. Golding, Legal Reasoning 55 (2001) ("Practical reasoning supplies an appropriately situated person with a reason for taking action....[A] specific action is mandated, which is expressed in the 'ought' of the conclusion. The conclusion supplies such a person with a reason for doing a specific thing."); Joseph Raz, Practical Reasoning 11 (Joseph Raz ed., 1978) ("[T]he main task of the theory of practical reason is to establish what one has (prima facie) reason for doing and how to resolve conflicts of reasons and establish that which one should do all things

considered."); Steven J. Burton, Law as Practical Reason, 62 S. Cal. L. Rev. 747, 784-85 (1989) (discussing how practical reason should be approached as a discourse of justifications for action); Nancy Levit, Practically Unreasonable: A Critique of Practical Reason, 85 Nw. U. L. Rev. 494, 496 (1991) (reviewing Richard A. Posner, The Problems of Jurisprudence (1990)) ("[P]ractical reason theorists have turned their attention to justifying methods of judicial decisionmaking.").

149 Eileen A. Scallen, Classical Rhetoric, Practical Reasoning, and the Law of Evidence, 44 Am. U. L. Rev. 1717, 1732 (1995) ("[W]e sometimes get carried away by our theorizing and our search for the universal, the certain, and the predictable. We fail to remember that we are engaged in a process of justification that is, at the core, rhetorical, contextual, and fluid.").

150 David G. Duff, Interpreting the Income Tax Act--Part 2: Toward a Pragmatic Approach, 47 Can. Tax J. 741, 792 (1999).

151 Holly Lance, Not So Technical: An Analysis of Federal Circuit Patent Decisions Appealed from the ITC, 17 Mich. Telecomm. & Tech. L. Rev. 243, 259 (2010) ("The results of this 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 "[w]hile identifying claim construction issues [was] relatively easy, determining a clear division between 'technical' and 'non-technical' claim construction issues [was] considerably more difficult." Id. at 255. "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." Id.

152 Id. at 256. The court "focused on grammatical issues, turned to dictionaries or specifications for definitions, or performed superficial comparisons of the prior art or drawings." Id.

153 Rachel M. Zahorsky, Patent Pending, 96 A.B.A. J. 11, 11 (2010) ("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 legal aspects." (quoting Judge James F. Holderman, U.S. Dist. Judge, N.D. Ill.)).