

DID PHILLIPS CHANGE ANYTHING?
EMPIRICAL ANALYSIS OF THE FEDERAL CIRCUIT'S CLAIM
CONSTRUCTION JURISPRUDENCE

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*For related studies, all data, and tools to assist in
evaluating judicial claim construction, see*

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ABSTRACT

The United States Court of Appeals for the Federal Circuit's role in the U.S. Patent system has never been so controversial. And at the center of the debate concerning the institutional structure of the patent system lies the Federal Circuit's 2005 en banc decision in Phillips v. AWH, representing that court's effort to resolve problems with perhaps the most important doctrine in the patent law—claim construction, or the interpretation of patent claims. Building on our prior work in this area, we report the results of an empirical study evaluating the jurisprudence of claim construction at the Federal Circuit. We find little to suggest that the Phillips opinion has had any measurable effect on the law of claim construction. Indeed, we find that the open-ended nature of the Phillips opinion, and its failure to resolve the longstanding split in claim construction jurisprudence, has undermined the Federal Circuit's efforts to develop a coherent and predictable jurisprudence. Accordingly, Phillips stands forth as an unfortunate example of poor decision-making by the court, and one which negatively impacts its overall role in the patent system.

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INTRODUCTION
THE DESIGN OF THE FEDERAL CIRCUIT

As we reach the twenty-fifth anniversary of the establishment of United States Court of Appeals for the Federal Circuit¹, that court has become, by far, the most powerful and influential force in the U.S. patent system. The significance of this development is impossible to overstate: even as the patent system has grown in economic importance, technological complexity, and public awareness, the administration of the entire enterprise increasingly depends upon the twelve active judges of the Federal Circuit.²

Conferring such dominating power on the Federal Circuit has long been justified by the premise that this centralization of legal authority will yield a clearer, more coherent, more predictable legal infrastructure for the patent system. Indeed, as a response to widespread dissatisfaction due to confusion and uncertainty under the decentralized administration of the patent law, the Federal Circuit was created to play this very role.³ And since its inception, the court—

¹ The Federal Circuit was created by the Federal Courts Improvement Act of 1982. See Pub. L. No. 97-164, 96 Stat. 25 (relevant provisions codified as amended in scattered sections of 28 U.S.C.).

² See Pub. L. No. 97-164, 96 Stat. 25 (authorizing up to twelve judges).

³ See Commission on Revision of the Federal Court Appellate System, *Structure and Internal Procedures: Recommendations for Change 15*, reprinted in 67 F.R.D. 195, 220 (1975); S. Rep. No. 275, 97th Cong., 2d Sess. 17 (1981), reprinted in 1982 U.S. Code Cong. & Admin. News 11, 14-15 [hereinafter S. Rep. No. 275] (merger of Court of Claims and Court of Customs and Patent Appeals (CCPA) provides more efficient administration of patent claims). Perhaps the seminal work considering the formation of the Federal Circuit and its theoretical basis is Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1 (1989).

with some assistance from the Supreme Court⁴—has moved aggressively in support of its widely-perceived mandate.

This Article—and the broader project of which it is a part⁵—investigates the obvious (and yet surprisingly ephemeral) question concerning the Federal Circuit’s role in the patent system: *Is it succeeding?* Has the mandate been fulfilled? Has this grand experiment in allocating judicial authority resulted in clearer, more consistent, more coherent rules surrounding patents? Utilizing a novel ten-year empirical study of judicial performance, we hope to provide some insights into this question.

In earlier, related, studies, we found that the Federal Circuit was a court in a period of significant transition—one driven by an ongoing effort to meet the requirements of its special mandate and important changes in court personnel.⁶ In this aspect of the project, we offer a more detailed look at the court’s recent efforts, via the *en banc* decision of *Phillips v. AWH*⁷, to revise its jurisprudence in the area of claim construction.



The balance of this Article moves in four parts. In Part II, we offer a brief overview of the concept of claim construction—the interpretation of patent claims, and sketch the recent history of claim construction jurisprudence at the Federal Circuit, noting how the *Phillips v. AWH* en banc decision was a response to the significant divisions concerning the methodological approach to claim construction highlighted by our first publication, *Is the Federal Circuit Succeeding?*⁸ In Part III, we outline the design and techniques used in empirical study conducted here. Part IV presents the results, and offers some analysis. Part V places these results in a normative context.

⁴ Note in particular the Supreme Court’s decision in *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996) [hereinafter *Markman II*], allocating the authority to interpret patent claims to judges. *Markman II*, of course, is central to the project described in this paper.

⁵ See The FedCir Project [<http://www.fedcir.org/>], which is an umbrella project incorporating this project—THE CLAIM CONSTRUCTION PROJECT, <http://www.claimconstruction.com/>

⁶ See generally R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105 (2004).

⁷ 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

⁸ See supra note 6.

II

THE PRELUDE TO PHILLIPS:
A RECAP OF RECENT CLAIM CONSTRUCTION HISTORYA. *An Introduction to Claim Construction*

By law, every patent must contain “claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”⁹ Claims are thus the touchstone of the patent grant, both establishing the boundaries of the patentee’s statutory right to exclude,¹⁰ and defining the scope of the invention for evaluation under the requirements of the Patent Act.¹¹ As Judge Giles Rich once famously noted, in patent law, “the name of the game is the claim.”¹²

Claim “construction,” then, is the process whereby the language found in the claims is, in essence, translated into a meaningful context—either to determine whether infringement has occurred (i.e., “Does the term ‘coupled’ allow for an electrical, rather than a physical connection?”¹³), or whether the patent claim itself is valid (i.e., “Is the ‘approximately round’ structure *obvious* in light of the prior art?”).

The straightforward, simple structure of the claim construction inquiry is deceptive, however. Claim construction is inherently one of the most difficult aspects of the patent law, fundamentally requiring that technological ideas— inventions—be captured (precisely!) by language, and later “de-translated” back into their technological essence by those other than the inventors. In an ideal world, patent claims might function approximately like the title documents to real property they weakly resemble, and thus have a clear and specific

⁹ See 35 U.S.C. § 112 (2006).

¹⁰ See 35 U.S.C. § 271 (2006) (defining infringement).

¹¹ See, e.g., 35 U.S.C. § 101 (subject matter requirement); § 102 (novelty requirement); § 103 (nonobvious requirement); § 112 (disclosure requirements).

¹² See Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims--American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990) (“The U.S. is strictly an examination country and the main purpose of the examination, to which every application is subjected, is to try to make sure that what each claim defines is patentable. To coin a phrase, the name of the game is the claim.”).

¹³ Yes. At least in U.S. Patent No. 5,202,835 (issued Apr. 13, 1993), entitled “Trolling Motor With Heading Lock.” See *Johnson Worldwide Assocs. v. Zebeo Corp.*, 175 F.3d 985 (Fed. Cir. 1999).

analytic framework. But in the real world, this is simply unachievable. Patents cover intangible concepts rather than physical locations or objects; the precision of realspace descriptions cannot be replicated for the products of human creativity. Further, patents often deal with technologies at leading edge of human knowledge, where the vocabulary will necessarily be less developed. Therefore, it would be difficult to overstate the inherent complexity—and difficulty—of patent claim construction.

In addition to its inherent difficulty, there are at least two other aspects of claim construction that make it notable (and worthy of extensive study):

Everyone is a consumer of claim construction. Claim construction is conducted by all players in the patent system: the U.S. Patent and Trademark Office must evaluate the claims in patent applications to determine patentability; private parties construe claims to evaluate potential infringement risk, or as part of an investment decision; and of course, the various courts construe claims to resolve disputes surrounding infringement and validity.

Claim construction is overwhelmingly the most critical patent issue in litigation. Claim construction is a key issue in virtually every patent case, and likely the dispositive issue in a majority of cases. Because virtually everything in a patent case turns on claim construction—whether infringement has occurred, whether the patent meets the disclosure requirements, or runs afoul of prior art—claim construction is often the single most important issue.

B. Claim Construction and Institutional Design

Even beyond its inherent complexity and clear centrality, perhaps the most important aspect of the modern practice of claim construction is how it enforces—and, indeed, extends—the particular institutional design of the patent system. As noted briefly above, this institutional design locates the Federal Circuit as the arbiter of virtually every important patent case: the sole appellate body for appeals from district courts related to patent cases, and the sole appellate body for challenging the decisions of the U.S. Patent and Trademark Office. And although the statutory framework plays a significant formal role in establishing the Federal Circuit's dominance,¹⁴ the role of claim construction cannot be overlooked.

¹⁴ See, e.g., See Federal Courts Improvement Act of 1982, Pub. L. 97-164, 96 Stat. 25 (April 2, 1982).

As we have analyzed extensively elsewhere,¹⁵ the Supreme Court in *Markman v. Westview Instruments (Markman II)* established that the question of patent claim construction (unlike the question of infringement), was *not* subject to the 7th Amendment’s jury trial right, and, further, that pragmatic reasons required that this analysis be conducted by judges, rather than juries.¹⁶ These “functional considerations” took two forms. The first was the Court’s expectation that judges – by virtue of their special skills and experience, as well as the “highly technical” nature of patent claim construction and the “special doctrines” developed by the courts for their interpretation – were simply more likely to be better at the task than “jurors unburdened by training in exegesis.”¹⁷ Second, the allocation of interpretive authority to judges was, the court suggested, likely to promote the goals of intrajurisdictional certainty and uniformity.¹⁸ From an institutional design perspective, the judges were placed at the forefront of the patent system by *Markman II*.

Significantly, the Federal Circuit has amplified the effect of *Markman II*, and effectively taken full control over the claim construction issue. In *Cybor v. FAS Technologies, Inc.*, the Federal Circuit declared the question of claim construction to be “purely legal,” and thus reviewed *de novo* on appeal.¹⁹ And while the *Cybor* decision has been among the most controversial in the Federal Circuit’s history, both within²⁰ and without²¹ the court, the Federal

¹⁵ See Wagner & Petherbridge, *Is the Federal Circuit Succeeding?*, *supra* note __, at xx.

¹⁶ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996)

¹⁷ *Id.* at 388.

¹⁸ The Court’s discussion noted that it was especially concerned with uniformity of treatment concerning a particular patent—one that presumably might be litigated nearly contemporaneously in multiple jurisdictions. By designating the interpretive issue as a matter of law, *Markman II* suggested that principles of *stare decisis* might serve to maintain intrajurisdictional uniformity prior to appellate review. See *id.* at 391 (noting that issue preclusion would be unavailable against new and independent infringement defendants). On this ground, however, the Court’s concerns seem overstated; the district courts have used their discretionary case management tools to largely avoid any potential intrajurisdictional conflicts concerning the same patent.

¹⁹ *Cybor Corp.*, 138 F.3d at 1456 (“[W]e therefore reaffirm that, as a purely legal question, we review claim construction *de novo* on appeal . . .”).

²⁰ Judge Mayer in particular has been consistently biting in his opposition to *de novo* review of claim construction and its effect on the institutional design of the patent system:

This court was created for the purpose of bringing consistency to the patent field. Instead, we have taken this noble mandate, to

Circuit has adhered to it, despite repeated opportunities to amend or overrule.²²

The Federal Circuit's current claim construction doctrine thus combines the rule of *Markman II* (judicial interpretation of patent claims) with the rule of *Cybor* (no deference to district court determinations on claim construction). Therefore, because claim construction is both (likely) the single most important issue in patent litigation, and the *Markman-Cybor* framework effectively delivers to the Federal Circuit the sole source of authority to determine claim construction, the Federal Circuit becomes virtually the sole arbiter of a significant fraction of patent disputes. (Albeit an arbiter that can take years and millions of dollars in trial costs to engage.)

Therefore, irrespective of one's view on the wisdom of the current institutional regime, there can be little dispute that the *Markman-Cybor* framework places the question of claim construction—more particularly, the Federal Circuit's success in developing the jurisprudence of claim construction—at center stage in any discussions of the institutional design of the patent system. Put another way, it may well be that the Federal Circuit's success (or lack thereof) in utilizing its dominant role in developing the law of claim construction, is an important signal for the success or failure of that Court as an institutional player.

reinvigorate the patent and introduce predictability to the field, and focused inappropriate power in this court. In our quest to elevate our importance, we have, however, disregarded our role as an appellate court; the resulting mayhem has seriously undermined the legitimacy of the process, if not the integrity of the institution.

Phillips v. AWH Corp., 415 F.3d 1303, 1330 (Fed. Cir. 2005) (Mayer, J., dissenting) (citations omitted). Judge Mayer was a vigorous opponent of *Cybor* from the outset. See, e.g., *Cybor v. FAS Techs.*, 138 F.3d at 1464-67 (Fed. Cir. 1998) (Mayer, CJ, dissenting).

²¹ For a strong argument that the *Cybor* approach is both inconsistent with *Markman II*, and normatively undesirable, see William H. Burgess, *Simplicity at the Cost of Clarity: Appellate Review of Claim Construction and the Failed Promise of Cybor*, 153 U. PENN L. REV. 763 (2004). See also, e.g., John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109 (2000); Craig Allen Nard, *Process Considerations in the Age of Markman and Mantras*, 2001 U. ILL. L. REV. 355 (2001); Christian A. Chu, *Empirical Analysis of the Federal Circuit's Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075 (2001).

²² See, e.g., *Phillips*, 415 F.3d at 1328 (declining to address the question the Court ordered to be briefed that presented the *Cybor* issue); see also *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039 (Fed. Cir. 2006) (order denying en banc review of *Cybor* question).

C. *Earlier Related Studies and Their Findings*

In *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, we undertook an empirically-based analysis of the Federal Circuit’s claim construction jurisprudence from *Markman II* (April 1995) through November 1, 2002.²³ The core strategy for this analysis was developed as follows:

1. Gathering all of that court’s opinions with a discernible analysis of claim construction;
2. Developing a coding scheme that was drawn from an analysis of the jurisprudence, the experiences of practicing lawyers, and the academic literature;
3. Categorizing (coding) each analysis according to that scheme; and,
4. Statistically analyzing the results to determine what patterns, if any existed.

The coding scheme that was developed for this project has as its core the distinction between two forms of claim construction methodology extant²⁴ in the jurisprudence:

1. The *procedural* approach, which gives primary weight to the claim language (and the ordinary meaning thereof, often derived from dictionaries); and,
2. The *holistic* approach, which interprets patent claims via an all-encompassing, open-ended reading of the claim language, patent disclosure, prosecution history, relevant dictionaries, and on-point expert testimony.

The choice of methodological approach to claim construction—one of the categories above—directly affects the results of litigation. The importance of the dichotomy was confirmed by an array of robustness analyses; for example, differences in methodological approach are present in 95 percent of claim construction disputes among Federal Circuit judges,²⁵ and are present in 75 percent of that court’s reversals of district courts’ claim construction analyses.²⁶

²³ 152 U. PA. L. REV. at 1145.

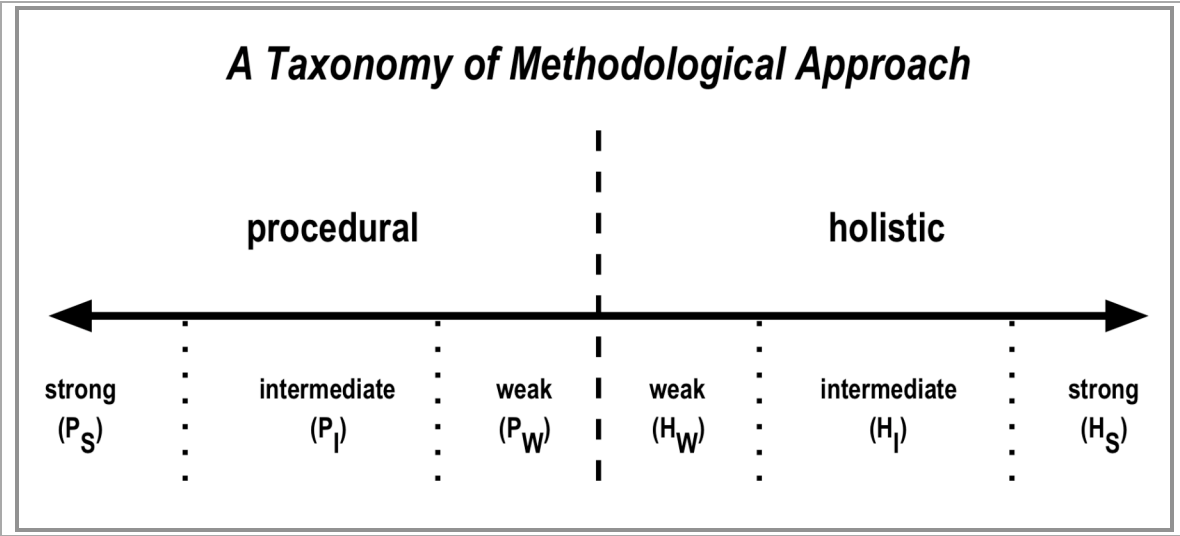
²⁴ *Id.* at 1133-45.

²⁵ *Id.* at 1144.

²⁶ *Id.* at 1145.

To systematically analyze the Federal Circuit’s claim construction jurisprudence, a method for scoring opinions according to methodological approach was developed.²⁷ This categorization scheme captured both general methodology and the strength of its form; broadly speaking, each of the two categories noted above had three possible strengths of analysis (strong, intermediate, and weak).²⁸ Thus there were six possible coding categories, depicted below in Figure 1.

Figure 1: Coding Scheme



The table in APPENDIX A offers additional details and some specific examples.

By coding all opinions in the dataset, a variety of empirical insights and results were made possible. Perhaps the most important finding was the confirmation of what many patent lawyers and scholars had been noting for years—that the Federal Circuit had developed two distinct approaches to claim construction, and utilized those interchangeably. The results in the initial project suggested that the Procedural approach was utilized in over 63 percent of the court’s opinions, with the Holistic approach being used about 37 percent of the time.²⁹ The trend, moreover, favored the Procedural approach.³⁰ In addition, we found that in many cases, the choice of methodological

²⁷ *Id.* at 1133-45.

²⁸ *Id.*

²⁹ See 152 U. PA. L. REV. at 1148 (Table 2).

³⁰ *Id.* at 1150-56.

approach could be empirically associated with individual judges,³¹ groups of judges,³² and even judicially-assigned panels.³³ (Indeed, in some cases, the likely methodological approach could be predicted with great certainty.)³⁴ In sum, the results in *Is the Federal Circuit Succeeding?* described a court that had yet to develop a fully coherent, consistent jurisprudence of claim construction³⁵—as well as one with significant splits among the judges themselves.

D. *The Phillips v. AWH Response*

The July 12, 2005 *Phillips v. AWH en banc* opinion, by its terms, was an effort by the Federal Circuit to “clarif[y]” its jurisprudence with respect to claim construction methodologies³⁶—in particular to discuss the relationship between the claim language, the specification, and dictionaries. In broad terms, the Court decided to “return” to the claim construction doctrine embodied (the court suggested) by the *Vitronics*³⁷ line of cases, and in particular to deprecate the more recent reliance in some cases upon dictionaries for evidence of an ordinary meaning. Thus, the *Phillips* case clearly addresses the basic methodological split identified in *Is the Federal Circuit Succeeding?*—the Procedural versus Holistic approaches.³⁸

As between these two methodological approaches, the *en banc Phillips* opinion clearly suggests that the Holistic approach is likely to be the better one, because of its close focus on the context of the claim language rather than the generalizable meaning of the terms used. The court criticizes the procedural approach (which it refers to by a notable case in that genre, *Texas Digital*³⁹) as error prone, and disconnected from the technological inquiry at the core of claim construction.

Although the *Phillips* majority makes clear its preference for the open-ended Holistic analysis, it does not, interestingly, declare *Texas*

³¹ *Id.* at 1156-62.

³² *Id.*

³³ *Id.* at 1162-70.

³⁴ See <http://predictor.claimconstruction.com/>.

³⁵ See 152 U. PA. L. REV. at 1171-79.

³⁶ 415 F.3d 1303, 1312.

³⁷ 90 F.3d 1576 (Fed. Cir. 1996).

³⁸ 415 F.3d at 1310.

³⁹ 415 F.3d at 1319-24. *Texas Digital* is available at 308 F.3d 1193 (Fed. Cir. 2002).

Digital (or any other case) to be overruled or otherwise in error. Instead, the opinion takes pains to clarify the “anything goes” nature of claim construction:

*"[T]here is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence. ... The sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law. In [prior caselaw], we did not attempt to provide a rigid algorithm for claim construction, but simply attempted to explain why, in general, certain types of evidence are more valuable than others."*⁴⁰

Despite the lack of clear guidelines, the *Phillips* court was confident that its new-old approach was an improvement, in part because the court seemed to downplay the complexities inherent in claim construction:

"The line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms."

*"Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those [disclosure] goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive. The manner in which the patentee uses a term within the specification and claims usually will make the distinction apparent."*⁴¹

Thus, the *Phillips en banc* decision, by attempting to clarify the divergent methodological approaches, provides an excellent opportunity to observe the success—or lack thereof—of this effort. Indeed, during the two years since *Phillips* issued, the Federal Circuit has issued more than 134 opinions with an observable claim construction analysis,⁴² which offers the possibility of conducting a pre-*Phillips* versus post-*Phillips* comparison of the jurisprudence.

⁴⁰ 415 F.3d at 1324.

⁴¹ 415 F.3d at 1323.

⁴² This is near the average of about 71 opinions per year during the period of the overall dataset (from May 15, 1996 to April 15, 2007).

III STUDY DESIGN AND METHODOLOGY

As noted briefly above, the basic strategy of this study is to systematically categorize (or “code”) judicial opinions falling within a defined range, and utilize the data that results from the coding to empirically analyze the nature of the jurisprudence. This is both a widely-accepted technique (generally falling under the description of “content analysis”), as well as one with which the authors are familiar. The following sections briefly describe the study design and methodology used here.

A. *About Content Analysis*⁴³

Content analysis refers to the systematic reading and analysis of texts.⁴⁴ As such, it differs from more traditional forms of legal scholarship in that it seeks an objective understanding of a body of law, rather than an interpretation of judicial opinions that are viewed as symbolic or important. According to Hall & Wright, “[s]ystematic content analysis allows scholars to verify, analyze, or refute the empirical claims about caselaw that are implicit or explicit in all branches of legal scholarship.”⁴⁵

While there are a variety of ways to approach content analysis, the genre typically includes the basic strategy used here: selecting cases, coding cases, counting case contents, and analyzing case coding.⁴⁶ The range of possible analyses include: examining connections between case outcome and external influences, examining relationships among the factors present in a case that might show order or be predictive of a particular outcome, or as reported in this

⁴³ For a more detailed description of content analysis and its techniques, see Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 *Tex. L. Rev.* __ (2007), at 20-22.

⁴⁴ See Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, SSRN.

⁴⁵ *Id.* at 10

⁴⁶ *Id.*

Article, testing empirical claims concerning the nature and affect of doctrine.⁴⁷

There are, to be sure, important caveats to choosing judicial opinions as a dataset, the most important of which affect not only content analysis, but also more traditional interpretive forms of legal scholarship. These include unobserved reasoning, selection bias, and strategic behavior.⁴⁸ Analyzing the content of judicial opinions relies on the assumption that facts and reasoning that appear in an opinion accurately reflect those from the underlying case. A situation that may not always be true given that opinion authors are generally concerned with justifying their conclusion “by showing that it proceeds from accepted sources by legitimate, properly argued steps.”⁴⁹ Judicial opinions are also subject to selection bias at several levels. Some types of disputes may be less likely to reach trial; others that reach trial may be less likely to generate opinions. Of those that are tried, some will not be appealed, but when appealed may not generate an opinion.⁵⁰ Others may generate only an unpublished opinion,⁵¹ which may affect the scope or depth of analysis that the court will provide. And even when opinions are published, they are subject to strategic behavior. The litigation choices of the parties can impact the facts that make it into a case; litigants, having different expectations for the outcome may contend that the same governing doctrinal principle controls a case, making it more likely that the court will address that principle in any opinion it might author.

There is little question that these potential limitations exist to some degree in the study underlying this Article. We believe, however, that given the methodologies used, the benefits outweigh the limitations, and the insights gained are worth exploring—although the study’s inherent limitations must be kept in mind.

B. Database Construction

The dataset used in this study includes all observable Federal Circuit claim construction analyses during the time period from May

⁴⁷ *Id.*

⁴⁸ See Wagner & Petherbridge, *supra* note __, at 1128-1130.

⁴⁹ Edward L. Rubin, *The Concept of Law and the New Public Scholarship*, 89 MICH. L. REV. 792, 801 (1991).

⁵⁰ See, e.g., Fed. Cir. R. 36 (summary affirmance).

⁵¹ See, e.g., Fed. Cir. R. 47.6 (Nonprecedential Opinion or Order)

15, 1996 to April 15, 2007.⁵² Potential cases were collected via the use of various searches in the Lexis Federal Circuit database (“CAFC”). Each case was analyzed during the coding process to determine whether it met the inclusion criteria: an observable claim construction analysis. A total of 785 opinions met these criteria; of these, 712 opinions were opinions for the court.⁵³

Each opinion meeting the inclusion criteria was coded for twenty-two fields, a complete listing of which is provided in Appendix B. All fields except for the “Methodology” field (which contained the procedural-versus-holistic coding noted above) were coded by custom computer software developed for this purpose. The Methodology field was human-coded.

C. *Testing for Reliability*

All human coding was done by multiple independent coders. Because of the need to utilize as many coders as possible, a web-based coding system was built for this application.⁵⁴ The system allows coders to log in via a unique username and password, whereupon they are presented with a list of cases to code, via pull down menus. After a case is coded by multiple coders, the project manager can review all codes entered for each case, determine the final coding, and submit the case into the public database. Because the dataset was built (and coded) in stages since mid-2002, the number of coders has ranged from a minimum of two to a maximum of seven.⁵⁵

All discrepancies among coders were identified, tracked, tabulated, and corrected. In general, we found the reliability of the coding system to be good, with inter-rater agreement (on the broad Procedural/Holistic distinction) ranging from 93 percent (during pre-*Phillips* time periods) to 90 percent (during the post-*Phillips* time period). The agreement among coders for the more fine-grained

⁵² May 15, 1996 was chosen because it is the date that the first Federal Circuit claim construction analysis was issued after the *Markman II* case on April 23, 1996. April 15, 2007 was chosen because the data collection for this segment of the project needed to be finished in time to conduct analysis.

⁵³ Note that we use *opinions* as the basic unit of analysis rather than *cases*, though we distinguish in the analysis between opinions for the court (*i.e.*, sole or majority opinions), and alternative opinions (concurrences or dissents). Therefore, multiple opinions in a case can meet the inclusion criteria.

⁵⁴ See <http://staff.claimconstruction.com/>

⁵⁵ The coders in this study were all attorneys with significant exposure to Federal Circuit doctrine, most with technical backgrounds and admitted to practice before the U.S. Patent Office.

coding was somewhat less good: 72 percent in pre-*Phillips* jurisprudence, and less than 60 percent in post-*Phillips* jurisprudence. This last number—about 60 percent of inter-rater agreement—suggests that the post-*Phillips* coding on the fine-grained categories is relatively unreliable—though the coding on the broader distinction remains reasonably consistent with the earlier dataset.

IV RESULTS

*A. The Phillips Effect, Part 1: Aggregate Results*⁵⁶

Table 1 describes the overall frequency distribution of the Federal Circuit’s claim construction methodologies (including all opinions for the court since May 15, 1996, where the methodological approach is expressed in binomial form—that is, where the strong/intermediate/weak categories are collapsed).

Table 1: Frequency of Methodologies (all court opinions, binomial, n = 712)

	Procedural	Holistic
N	467	245
%	65.6%	34.4%

Table 1 shows that the Procedural approach remains predominant, though not overwhelmingly so. This is consistent with our earlier results and reveals that the Federal Circuit opinions authored after November 1, 2002,⁵⁷ have not changed the overall frequency distribution of the competing methodologies. While this is a significant observation, it may be masking the impact of the *Phillips*

⁵⁶ Unless otherwise specified, the results in the following section reflect opinions written *for the court only*; alternative opinions (dissents, concurrences) otherwise in the dataset were omitted.

⁵⁷ See Wagner & Petherbridge, *Is the Federal Circuit Succeeding*, *supra* note ___ at 1145, 1148.

opinion. For example, if the *Phillips* opinion selected a particular claim interpretation methodology, it might not be revealed by the overall frequency distribution due to the large number of datapoints in the dataset that derive from pre-*Phillips* opinions. In effect, the weight of the earlier datapoints might be operating to mask the impact of *Phillips*.

To obtain a better view of whether the *Phillips* opinion affected the court’s claim interpretation methodology, we compared the rate of each methodological approach across two segments of the entire dataset, using the date of the *Phillips* decision (July 12, 2005) as a dividing line.⁵⁸

Table 2: Frequency of Methodologies, Pre- and Post-Phillips (court opinions, binomial)

		Procedural	Holistic
<i>Pre-<u>Phillips</u></i>	N	393	203
	%	65.9%	34.1%
<i>Post-<u>Phillips</u></i>	N	74	42
	%	63.8%	36.2%

Table 2 appears to confirm that there was little significant pro-Holistic change in the frequency distribution of the different claim construction methodologies between November, 2002, and July 12, 2005.⁵⁹ What is particularly remarkable in Table 2, however, is the frequency distribution post-*Phillips*. As can be seen, the difference in rate of application of the methodological approach was very small: about two percent.⁶⁰ Given that the procedural approach to claim

⁵⁸ As noted, *supra*, the federal circuit issued 134 opinions with an observable claim interpretation analysis during the period following *Phillips* and ending on April 15, 2007. Of these, 116 were opinions for the court.

⁵⁹ Compare Wagner & Petherbridge, *supra*, at 1148 (63.1-percent Procedural/36.9-percent Holistic) with Table 2 “Pre-*Phillips*” (65.9-percent Procedural/34.1-percent Holistic).

⁶⁰ And statistically insignificant. That is, using the χ^2 test, we cannot reject the null hypothesis ($p = .683$) that the post-*Phillips* results were independent of the *Phillips* decision. Compare also Wagner & Petherbridge, *Is the Federal Circuit*

interpretation was largely disparaged in the *Phillips* opinion, this result is quite interesting.

Because the post-*Phillips* data (116 opinions for the court) is much smaller—in both time covered and quantity—than the pre-*Phillips* data (682 opinions for the court), it is possible that this fact is masking what would otherwise be significant differences. To investigate this, we compared the methodological approach in two segments of the dataset using a symmetric sub-set of the data,⁶¹ with the *Phillips* opinion again serving as the dividing point (and, here, the center) of the analysis. Table 3 shows the comparative frequency of methodologies.

Table 3: Frequency of Methodologies, symmetric about Phillips (court opinions, binomial)

		Procedural	Holistic
<i>Pre-Phillips</i>	N	79	37
	%	68.1%	31.9%
<i>Post-Phillips</i>	N	74	42
	%	63.8%	36.2%

Table 3 is supportive of the observation that Federal Circuit opinions did not become significantly more Holistic between the end of the period studied in *Is the Federal Circuit Succeeding?* and the *Phillips* opinion. Like Table 2, Table 3 shows that the observed frequency distributions leading up to the *Phillips* opinion and those following the *Phillips* opinion are quite similar. That is, the observed differences are small, and statistically insignificant.⁶²

Succeeding, supra note __ at 1148 (63.1-percent Procedural/36.9-percent Holistic) with Table 3 “Post-*Phillips*” (63.8-percent Procedural/36.2-percent Holistic).

⁶¹ As shown in Table 3, the symmetric subset included the 116 opinions of the court leading up to *Phillips* and the 116 opinions of the court that followed (until April 15, 2007).

⁶² Using the χ^2 test, we cannot reject the null hypothesis ($p = .683$) that the post-*Phillips* results were independent of the *Phillips* decision.

Tables 2 and 3 thus present something of a puzzle: why would there be virtually no change in the way that the court utilized the methodological approach to claim construction, even after the *en banc* treatment of the issue in *Phillips*? We discuss this issue further in Section __ below.

B. *The Phillips Effect, Part 2: Methodological Trends*

The next area of inquiry is the effect, if any, that *Phillips* has had on the *trends* of the methodological approach to claim construction. Note that because of the lack of temporality of court opinions – they do not issue on a regular or systematic schedule related to the calendar – we use lagged averages as the method of analysis. A lagged average looks backwards at the court’s jurisprudence for a specified number of opinions by the court (here, we use a 20-case lagged average), thus providing a means of determining the recent-average methodological approach at any given point in the dataset. Because the opinions are distributed over time in the dataset (though, as noted above, they are not evenly distributed), changes in the lagged average thus reflect changes in the jurisprudence over time.

Figure 2 below provides an overall view of the dataset, expressed in terms of a 20-case lagged average of methodological approach. The vertical axis describes the percentage of court opinions coded *Procedural*; that is, the higher the datapoint, the more procedural the jurisprudence. A linear trend line is provided.

Figure 2: Trends of Claim Construction Jurisprudence at the Federal Circuit, 1995–2007
(court opinions, 20-case lagged average, n = 712)⁶³

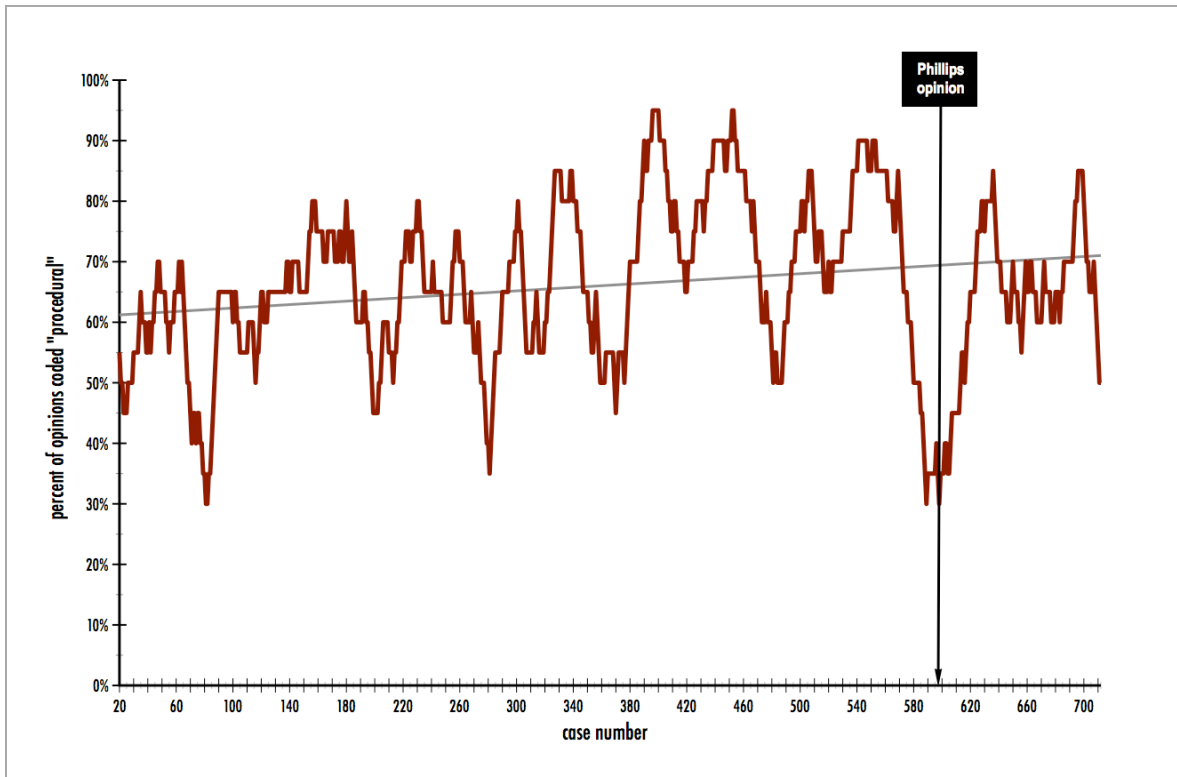


Figure 2 shows a number of things concerning the court’s claim construction jurisprudence. First, the long-run overall trend remains directed toward the procedural approach, consistent with our earlier findings.⁶⁴ Second, note the wide variance over time; the 20-case lagged average ranges from more than 90-percent procedural to less than-25 percent procedural. Finally, as might have been expected, something jurisprudentially significant appears to happen to the jurisprudence at or near the *Phillips en banc* opinion in July 2005.

As shown in Figure 2, there is a dramatic reduction in Procedural opinions around the time of the *Phillips en banc* opinion. This suggests at least two avenues for additional inquiry:

1. Whether the overall trend line depicted in Figure 2 might be masking a shorter term trend in claim construction

⁶³ The trends in methodological approach reported in Figure 2 are based on binomial characterization.

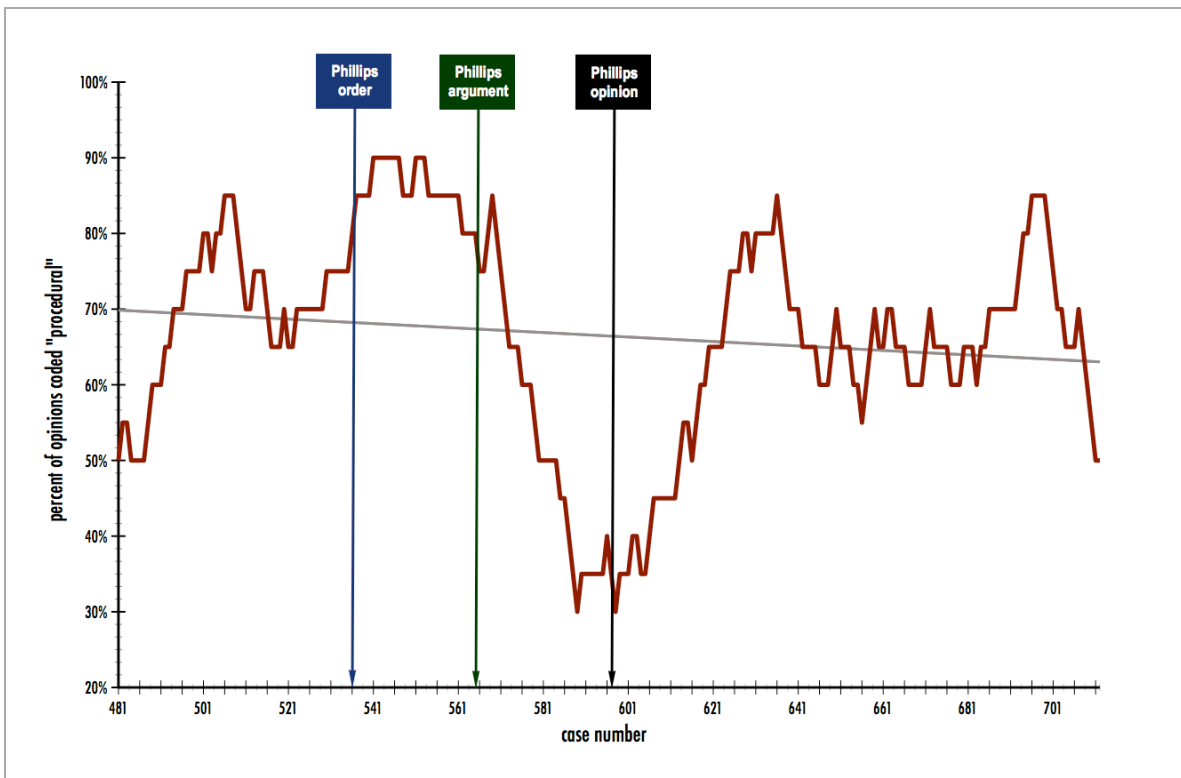
⁶⁴ See Wagner & Petherbridge, *Is the Federal Circuit Succeeding?*, *supra* note __, at 1148-56.

jurisprudence around the time of the *Phillips en banc* opinion.⁶⁵

2. And, whether the apparent changes in methodological approach surrounding the publication of the opinion suggested that something interesting happened around that time that deserves a closer look.

To better understand the trends in methodological approach surrounding the *Phillips en banc* opinion, we examined the twenty-case lagged average of the same symmetric subset of opinions described in Table 4, above.⁶⁶ Figure 3 below shows the methodological trends in this, more focused, view.

Figure 3: Claim Construction Jurisprudence at the Federal Circuit, Pre- and Post-Phillips
(court opinions, symmetric about Phillips, 20-case lagged average, n=231)⁶⁷



Reported in Figure 3 is the location in the dataset of important dates with respect to *Phillips*: the date that the order granting en banc

⁶⁵ As before, of particular concern is the impact the large number of pre-*Phillips* opinions may have on this trend.

⁶⁶ See *supra*, Part IV A.

⁶⁷ The trends in methodological approach reported in Figure 3 are based on binomial characterization.

treatment was issued (July 21, 2004), the date of the oral argument (February 8, 2005), and the date of the opinion (July 12, 2005).

Figure 3 offers a very different picture from Figure 2. To begin with, the overall trend in claim construction methodology has been re-directed (albeit slightly) in favor of the Holistic approach. This is shown in Figure 3, by the reversed (compared to Figure 2) trend line. A move in favor of the Holistic methodology during this time frame is consistent with what one would have expected, given the pro-Holistic *Phillips* opinion.⁶⁸

Importantly, Figure 3 shows a very substantial change in average methodological approach between the oral argument and the publishing of the *Phillips en banc* opinion. This is of course consistent with the hypothesis that the en banc opinion in *Phillips* was meant to deprecate the Procedural approach, in favor of the Holistic approach. Yet somewhat remarkably, the graph also shows a return in average claim construction methodology to nearly the pre-*Phillips* equilibrium of about 60-70 percent procedural. Moreover, while it is likely too soon to say definitively, the average claim construction methodology appears to be stabilizing at or near the pre-*Phillips* average.⁶⁹ (This observation is consistent with the overall numbers reported in Tables 2 and 3, above.) This circumstance poses a challenge to the conclusion that *Phillips* has changed the law. That is, the graphs confirm and illuminate what the simple aggregate numbers showed in Tables 3 and 4: that *Phillips* has, at least on this measure, had relatively little effect on the caselaw. More specifically, and in view of Figures 2 and 3, it appears that *Phillips did in fact correspond with a significant change in the jurisprudence, but that the change was relatively short-lived*. Finally, it appears that the change occurred *before* the *Phillips* opinion was issued,⁷⁰ and that after the opinion was issued, the return to the pre-*Phillips* equilibrium began occurring.

C. Why didn't Phillips Change the Law?

Taken together, the results reported in Sections IV.A and IV.B above are puzzling: Why was there so little change in the jurisprudence, when *Phillips* clearly attempted to favor one methodological approach over the other? Why do we see a significant, but temporary, change in the caselaw? Why is the timing of the case at odds with what one would expect? As a set of brief,

⁶⁸ See supra Section II.D.

⁶⁹ Roughly 65-percent procedural. See Figure 3.

⁷⁰ See Figure 3.

preliminary answers, we think there are at least five possible explanations for these results, as follows.

1. *The Non-Binding Nature of the Phillips Opinion.*

One possibility is that these results reflect the open-ended nature of the *Phillips en banc* opinion itself, which allows both methodological approaches to exist.⁷¹ As one of us has written before, “the new rule is that there are no rules.”⁷² Thus, judges with existing views on the correct methodological approach are not required, under the terms of *Phillips*, to deviate from them. This is consistent with the similarity between pre- and post-*Phillips* results. However, there is reason to think this explanation is not complete. For example, judging by the post-*Phillips* opinions, the proceduralist⁷³ judges are not as consistently procedural as in the past.⁷⁴ Moreover, some of the Holistics and swing judges⁷⁵ have recently authored more procedural opinions.⁷⁶ Thus, another way to understand the consequences of the open-ended nature of the *Phillips* opinion is that judges no longer feel constrained when authoring opinions to rely⁷⁷ on a particular approach, or perhaps more practically, to reveal or appear to emphasize a particular approach.

2. *The Federal Circuit’s Decision-Making Process*

The results might reflect the way that the *Phillips* decision was made by the Federal Circuit. That is, one might assume that the legal result of *Phillips* (the choice of the Holistic approach over the Procedural approach) was made at or slightly before the oral argument: that is, when the judges of the court began to focus on the question. There is then a significant (here, about six-months) time lag before that result is announced. But the judges (and their clerks) know

⁷¹ For example, besides holding that there “is no magic formula or catechism for conducting claim construction,” 415 F.3d at 1324, the court additionally states that “we do not intend to preclude the appropriate use of dictionaries. Dictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation [citations omitted],” *id.* at 1322.

⁷² See R. Polk Wagner, *Phillips Analysis, Part 1: The New Rule is There are No Rules*, PolkWagner.com (July 15, 2005), at http://www.law.upenn.edu/blogs/polk/archives/2005/07/phillips_analys.html

⁷³ See 152 U. PA. L. REV. at 1158-61.

⁷⁴ [judge data in appendix]

⁷⁵ See 152 U. PA. L. REV. at 1158-61.

⁷⁶ [judge data in appendix]

⁷⁷ Or, perhaps, to show reliance.

the result; and begin issuing opinions reflecting the new legal framework—much more Holistic, much less Procedural. But the *Phillips en banc* opinion—the actual prose—turns out to be less substantial than expected. That is, it leaves open the availability of even the strongest of Procedural approaches, and pointedly eschews any strict guidance concerning methodologies. (Given the voting patterns in the en banc majority, it would not be surprising if the opinion was written explicitly to try to capture unanimity.) Thus, once the opinion issues, and the new framework applies, the judges and parties find that Phillips doesn't mark much of a change from earlier caselaw.

3. *A Results-Oriented Court*

These results may expose a view at the Federal Circuit that the jurisprudence of claim construction is, in essence, meaningless. Under this hypothesis, the post-*Phillips* rebound to at or near the pre-*Phillips* average methodological distribution may reflect either (1) the views of the persons who actually drafted the opinion, which expression is not going to be much altered because the court sees it as irrelevant, (2) the ease or convenience of conveying a particular claim construction in a particular set of circumstances,⁷⁸ or (3) a decision on claim construction masking (or avoiding) a more difficult decision according to some other doctrine, such as invalidity or the doctrine of equivalents. That is, it may be that claim construction is used by the Federal Circuit as a general-purpose tool for reaching the “right” results in each case; the flexibility and discretion provided by the post-*Phillips* claim construction regime makes this particularly useful. In our view this is a troubling interpretation of Phillips, not the least because it renders claim construction methodology even more (intentionally?) opaque.

4. *Patent Drafting Drives the Results*

The post-*Phillips* rebound to at or near the pre-*Phillips* average methodological distribution may reflect less about the law, and more

⁷⁸ In view of the signaling prospect discussed in paragraph 4 this might mean that once you start with the claims you are more likely to not move too far from their plain import in an analysis. The farther one gets from the meaning of the claim language, the more likely it might be that one could make a technical or factual mistake. Also, the more one relies on the written description or the file wrapper, the more information external to the claims must be mastered and applied. In cases where the written description and file history are confused, ambiguous, or otherwise of poor quality, the court may not feel comfortable relying on them. For safety and efficiency purposes then, staying nearer to the ordinary art established meaning of the words of a claim may be more a more satisfying and reproducible intellectual exercise for the court.

about the way patents are drafted. In other words, maybe about two-thirds of patents⁷⁹ are drafted in a way that is amenable to interpretation from a careful analysis of the claim language, while about one-third require a broader, more open-ended inquiry. Thus the court adapts its methodological approach to the patent at hand. This may mean that absent a change in the law mandating a particular methodological approach, the rate of each methodological approach is relatively immune to change.

5. *Jurisprudential Time Lag*

The results reflect the cases appealed to the Federal Circuit. That is, most cases in our post-Phillips dataset were litigated at district courts under the pre-Phillips regime, so aspects of that jurisprudence are embedded in the cases. Thus, the similarity with pre-Phillips cases.

6. *Failure of the Study*

The results may reflect problems with the design of the study itself. Perhaps it is simply too early to discern any patterns, and more data is needed. Perhaps, too, the coding scheme is missing the essential post-Phillips change.⁸⁰

In reality, of course, the true answer is probably some combination of the above. Hypothesis 2, we believe, is the one analysis which can explain virtually all of the current data patterns. But Hypothesis 6 is almost certainly partially correct—more data would allow the patterns, if any, to become clearer.

In any event, the most important aspect of our results is this: at least to date, the *Phillips en banc* opinion has not yielded any significant observable effects on the claim construction jurisprudence of the Federal Circuit.

D. If Phillips Didn't Change the Law, What Did It Do?

Even if the Phillips *en banc* opinion did not change the law, it may well have had an important impact in clarifying or stabilizing the jurisprudence. And although the measurement of jurisprudential stability or clarity is an uncertain business at best, we offer here an analysis of two potentially-useful measures of jurisprudential

⁷⁹ Appealed patents—and by logical extrapolation all patents.

⁸⁰ If for example, *Phillips* is encouraging “procedural appearing” opinions, that are by the current design of the study undetectably not.

stability – the rate of disagreements among panel members concerning claim construction analysis, and the rate that questions of claim construction are being appealed.

1. *Reduce Disputes Among Federal Circuit Judges?*

One measure of jurisprudential clarity is whether judges can apply the doctrine in a way that is relatively undisputed by their colleagues on the court. Under this theory, the rate of concurrences or dissents (what we designate as “alternative opinions”) should be inversely correlated with the clarity and coherence of the doctrine.

Table 4 below shows the rate of alternative opinions for three groupings of the data: all cases, the pre-Phillips cases, and the post-Phillips cases.

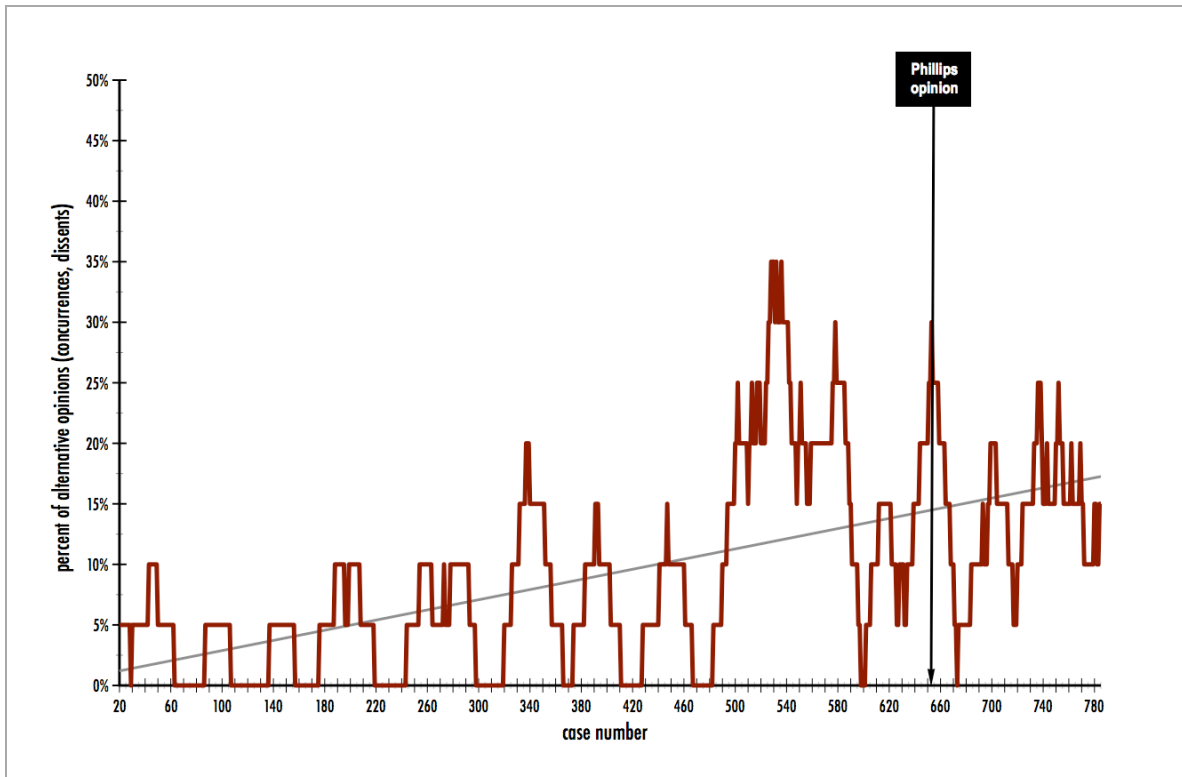
Table 4: Alternative Opinions (Concurrences/Dissents) on Claim Construction

	Alternative Opinions	Rate of Alternative Opinions (Percent of Total)
<i>All cases, 1995-2007</i>	73	9.5%
<i>Pre-<u>Phillips</u></i>	55	8.4%
<i>Post-<u>Phillips</u></i>	18	13.4%

According to our results, *Phillips* has not reduced the rate of disputes concerning claim construction by the judges of the Federal Circuit. If anything, it may have increased it.

Figure 4 shows how this rate of alternative opinions has varied across time, using a 20-case lagged average.

*Figure 4: Rate of Alternative Opinions on Claim Construction
(20-case lagged average, n = 785)*



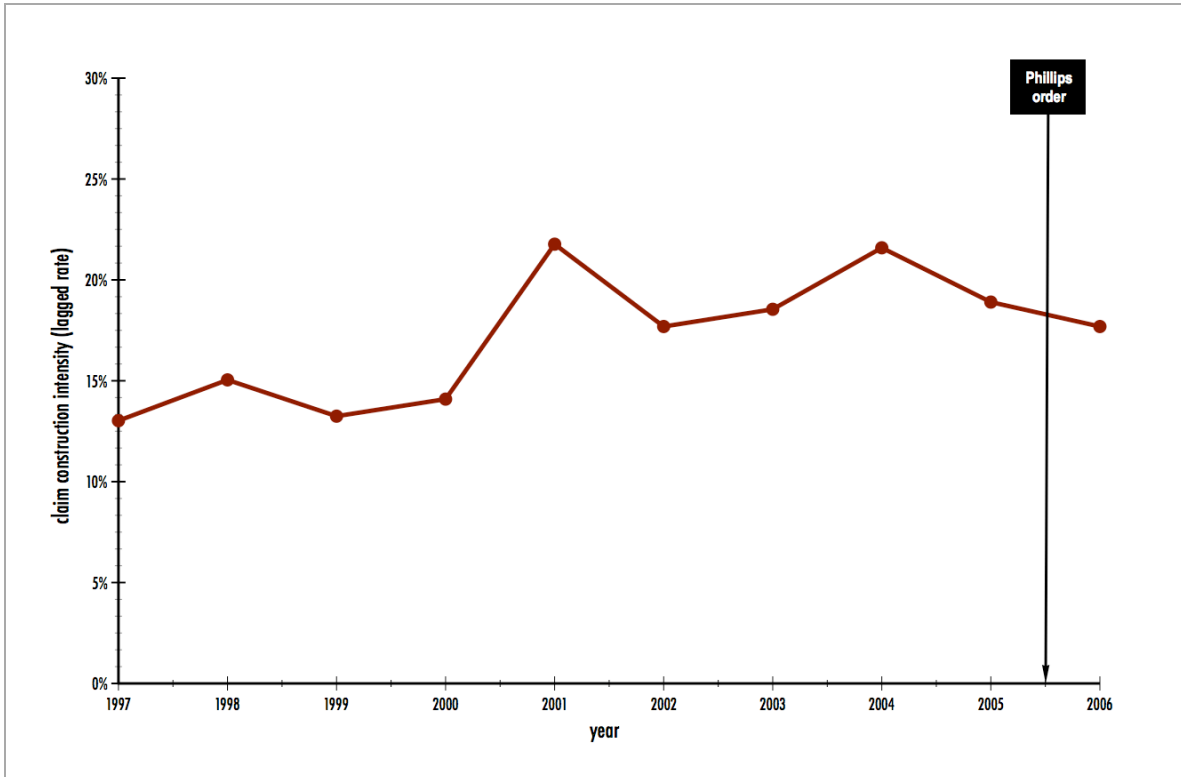
2. Reduce Appeals on Claim Construction?

Another possible measure of stability and clarity is the rate at which issues of claim construction get appealed to the Federal Circuit, with the theory being that the rate of appeals is—as with the rate of disagreements—inversely related to the clarity, stability, and predictability of the doctrine.⁸¹

The data (Figure 5) shows that the intensity (or share) of claim construction among patent appeals has been generally rising in our dataset. Given the data available at this time, we cannot draw any clear conclusions about the effect of *Phillips*, if any.

⁸¹ See generally Bruce L. Hay & Kathryn E. Spier, *Settlement of Litigation*, in 3 NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 442, 443 (Peter Newman ed., 1998); George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 16 (1984).

*Figure 5: Claim Construction Intensity
(lagged rate of claim construction decisions per patent appeal)⁸²*



On balance, then, we are unable to confirm—at least on these measures, and with the data available—that *Phillips* has had a significant impact on the stability and predictability of the Federal Circuit’s claim construction jurisprudence.

⁸² In this figure, *claim construction intensity* is defined as the number of Federal Circuit cases with claim construction decisions, divided by the one-year lagged patent appeals filed. The one-year lag is intended to account for the pendency of appeals at the Federal Circuit. Note that the intensity number likely significantly understates the importance of claim construction jurisprudence, because the number of appeals filed is much higher than the number of decisions issued by the Court. The numbers of patent appeals are provided by the Federal Circuit, and are available here: <http://www.fedcir.gov/pdf/Patent%20filings%20historical.pdf>

V

IS THE FEDERAL CIRCUIT SUCCEEDING? REVISITED:
THE LESSONS OF PHILLIPS?

The empirical analysis presented here suggests—strongly—that the *Phillips* decision has to date not had any significant measurable effect on either the jurisprudence of claim construction at the Federal Circuit, or on our (admittedly imperfect) measures of stability and predictability of the doctrine. The question of “why” this appears to be the case is (as we discussed above) unclear, though we offered several possible hypotheses.⁸³ Beyond the need for a satisfactory explanation for these empirical observations, however, the Federal Circuit’s *en banc* opinion in *Phillips* also has important normative implications, both for the course of the patent law, and for the future of that court itself. In our view, the Federal Circuit’s decision in *Phillips*, and its explanation of the decision, was deeply unfortunate—likely the worst possible option available to the court—and will have ongoing negative consequences for the law of claim construction, the patent system, and the court itself.

A. *Wrong Choice Number One: Embracing the Holistic Methodological Approach.*

As we have argued elsewhere, the procedural approach to claim construction analysis clearly dominates the alternative, holistic approach—because it is the procedural approach which best supports the public notice function of patent claims.⁸⁴ This function, at its most basic, requires that the claim language convey clear and useful information about the scope of the patent grant. This aspect of patent claims—as the ultimate definition of the metes and bounds of a patentee’s rights—is a fundamental tenet of the modern patent system, and must be respected.⁸⁵ In economic terms, patent claims seek to resolve an information cost problem with respect to publicly conferred rights to exclude others from the marketplace: by delineating the borders between protected and unprotected subject

⁸³ See *supra* Section IV.C.

⁸⁴ See, e.g., Wagner & Petherbridge, *supra* note __, at __. See also *Brief of Amicus Curiae Patent Law Professors R. Polk Wagner & Joseph Scott Miller, Phillips v. AWH*, No. 03-1269 (Fed. Cir. Sept. 20, 2004).

⁸⁵ Giles S. Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990) (“To coin a phrase, the name of the game is the claim.”).

matter, claim language addresses what would otherwise be a paralyzing information-cost problem, namely, uncertainty and unpredictability about the scope and location of patent rights.⁸⁶ Put more simply, absent clarity and predictability, the public notice function of patent claims cannot be achieved.

There can be little dispute that the public notice function of claims is best served when the meaning of claim language is readily apparent to patent readers. Conversely, the public notice function is worst served when litigation is required to interpret even the most banal of claim terms. The question, then, is how to construct a methodological approach that yields the former at the expense of the latter.

An approach to patent claim construction which firmly embraces the commonly-understood meaning of words, and places the burden on the patent applicant to clearly explain any deviations from the ordinary meaning is the most likely to yield claim language (and thus claim construction decisions) that comport well with the public notice function of claims. The procedural approach, which presumptively applies the ordinary meaning—perhaps from relevant technical, scientific, or general-purpose dictionaries, or perhaps via experts in the field—to disputed claim language, and yet fully embraces any clear, specific, and objective reasons to deviate from the ordinary meaning, makes transparent the analytic process underlying claim construction. By contrast, holistic approach embraced by the Federal Circuit in *Phillips*, which suggests that “what matters is for the court to attach the appropriate weight to be assigned to those sources [or claim meaning] *in light of the statutes and policies that inform patent law*”, offers nothing concerning guidance, and results in a standardless, ad-hoc determination of claim meaning.⁸⁷

We also think that the procedural approach best aligns the incentives of patentees and the public. That is, under a procedural claim construction regime, a patent applicant would understand with reasonable certainty the meaning that the courts were likely to attach claim terms—the ordinary meaning, unless the patentee clearly

⁸⁶ See generally R. Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960) (discussing uncertainty about the boundaries of rights as an impediment to socially-desirable transactions). See also R. Polk Wagner, *Reconsidering Estoppel: Prosecution History and the Failure of Festo*, 151 U. PA. L. REV. 159, 222-225 (discussing information-cost problems in patent law); R. Polk Wagner, *Of Patents and Path-Dependency: A Comment on Burk and Lemley*, 18 BERKELEY TECH. L. J. 1, 18-20 (noting the benefits of clarity in patent rights); Kimberly A. Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation*, 79 N.C. L. REV. 889, 928 (2001) (discussing costs attending unpredictability and uncertainty about patent claim scope)

⁸⁷ See 415 F.3d at 1324.

provided some other definition. Thus the patent applicant would bear the burden (and have the knowledge of this burden) of affirmatively providing a clear definition of the claim language, or accepting the presumptive ordinary meaning. Thus, the incentives would prompt patent applicants to say *more* about their inventions, and to clarify, as much as possible, the meaning of claim terms. By contrast, the Phillips holistic approach, which contemplates an open-ended search for “contextual” meaning in the patent document and prosecution history, encourages patent applicants to either (a) say as little as possible about their inventions, for fear that descriptive matter would be “discovered” as providing a contextual meaning altering the scope of the claims, or (b) obfuscate the meaning of the claim language as much as possible, by offering multiple, contradictory “contexts” in which claim language could be understood, thus leaving the scope of the claim uncertain (until million of dollars of litigation, of course).

Third, the procedural approach best utilizes the skills of both the technologists (PHOSITAs) and the non-technologist decision-makers (such as judges). Patent documents are written for a technical audience, and as such the focus must remain on what the relevant technologists would understand the language to mean. Phillip’s methodological approach, the drawing of subjective inferences by parsing the often-complex language of a patent specification, for example, is a task that—while uniquely lawyerly in nature—seems a relatively poor fit for judges in the modern patent environment.⁸⁸ By contrast, the procedural approach leverages the skills of courts in implementing and enunciating clear rules based on the available clear, specific, and objective evidence of the meaning of language. Under the procedural approach, the knowledge of technologists determines the meaning (presumptively, the ‘ordinary meaning’), while the lawyers and judges implement and execute the interpretive procedure. Under *Phillips*, the judges play the role of technologists, and operate without any meaningful legal restrictions.

We do not suggest that the procedural approach is free from flaws—or, as the *Phillips* opinion derided, a “magic formula or catechism for conducting claim construction”.⁸⁹ Far from it: claim construction is inherently a difficult process, and no methodological approach can eliminate that. And certainly the procedural approach has problematic aspects. An “ordinary meaning” is not synonymous with a “undisputed meaning,” of course. Even the most precise of

⁸⁸ In this context, the *Phillips* opinion’s statement that this process can be conducted by judges “with reasonable certainty and predictability if the court’s focus remains on understanding how a person of ordinary skill in the art would understand the claim terms” seems plainly unreasonable. See 415 F.3d at 1323.

⁸⁹ See 415 F.3d at 1323.

technical dictionaries will often have an array of definitions for key terms. Used improperly, the procedural approach might indeed allow for claim constructions that are wholly divorced from the invention-at-issue. But these problems, although real, pale in comparison to the damage wrought by the pervasive uncertainty, perverse incentives, and technological amateurishness created by the *Phillips* embrace of the holistic approach.

B. Wrong Choice Number Two: The “Anything Goes” Phillips Opinion.

Although we have little doubt that the court chose unwisely in embracing a holistic approach in *Phillips*, the court compounded this mistake by issuing an opinion in the case that, while firmly embracing the holistic methodological approach, fails to provide any meaningful legal framework whatsoever. In Section II.D. above we noted the pervasive “anything goes” nature of the *Phillips* approach to claim construction analysis, wherein judicial decision-makers are commanded to attach “appropriate weight” to the complex and contradictory information offered as part of modern claim construction analysis.

The results presented in Section IV above demonstrate the largely content-free nature of the *Phillips* opinion: notwithstanding the clear choice in favor of a more holistic approach, we find no measurable difference in the court’s overall jurisprudence.⁹⁰ Furthermore, it seems clear that the *Phillips* opinion did not resolve disputes among the members of the Federal Circuit concerning claim construction analysis: Table 4 and Figure 4 reveal that, if anything, the rate of disagreement has risen.

Taken together, the open-ended nature of the *Phillips* language, the data showing no measurable jurisprudential effect, and the failure to resolve disagreements among the judges makes reasonably clear that the *Phillips* opinion—perhaps written to secure as many votes as possible—has utterly failed in advancing the Federal Circuit’s management of claim construction doctrine, and has most likely made it worse.

⁹⁰ See Figures __, Tables __.

C. *Wrong Choice Number Three: Phillips cannot be squared with Cybor.*

In *Is the Federal Circuit Succeeding?* we argued that the Federal Circuit’s approach in *Cybor* was not only defensible, but likely the correct approach. In broad strokes, we argued that the *Markman II* decision by the Supreme Court, which allocated interpretive authority to judges on the basis of “functional considerations,” in essence creates a mandate for the Federal Circuit to develop the law of claim construction in a way that enhances uniformity and certainty.⁹¹ Under this view, the *Cybor* decision is correct on institutional design grounds: by taking control of the law of claim construction, the Federal Circuit could best manage the development of “rules and tools” that would lead to *Markman II*’s mandate for uniformity and certainty. That is, by enabling the Federal Circuit to act in claim construction cases without deference to the district courts, we suggested:

Instead of viewing de novo review as an invasive mechanism by which the appellate court can put its stamp of approval on every decision, it can be viewed as a means to an end: a tool with which to develop and enforce rules governing claim construction. That is, if the de novo review process allows the Federal Circuit to establish clear guidelines for the interpretation of patent claims, certainty and efficiency would be enhanced, not diminished. Clear rules would allow district court judges to implement claim constructions with greater confidence, allow the parties to better evaluate their chances of success (both post-judgment and pre-litigation), and, perhaps most significantly, result in patentees drafting clearer claims even prior to a patent’s issue.⁹²

However, our embrace of the *Markman-Cybor* framework was conditional – contingent upon the Federal Circuit actually developing a reasonably coherent, clear, and predictable doctrine of claim

⁹¹ See Wagner & Petherbridge, *supra* note __ at __. For example, in suggesting that judges were likely to be better at construing claims, the Court cited “special doctrines” relating to construction embedded in the law. See *Markman II*, at 389. Further, *stare decisis* – that is, the existence (and development) of legal rules – anchored the Court’s argument that judicial decision-making in this context would enhance uniformity and certainty. See *id.* at 391. Thus, *Markman II*’s functionalist approach was largely based on the theory that allocating the interpretive task to judges would extend and enhance the development of legal rules guiding the construction of patent claims.

⁹² See *id.* at __. This point – that patent rules are best considered as *ex ante* incentive-based mechanisms, is a point one of us has made elsewhere. See generally R. Polk Wagner, *Reconsidering Estoppel: Patent Administration and the Failure of Festo*, 151 U. PA. L. REV. 159 (2002).

construction. Absent this active management, the premise of the *Markman II* mandate, and thus the premise of *Cybor*, falls away.⁹³

As of 2002, when our earlier dataset closed, we were reasonably upbeat about the Federal Circuit's progress on this front, concluding that:

*[M]any findings [in this study] are unquestionably encouraging, suggesting that the court's effort to meet its mandate is both well underway and moving in the right direction. The picture of the Federal Circuit that emerges, we submit, is of a court in broad transition. Driven in part by new appointments and an effort to respond to its special mandate, a new Federal Circuit is emerging – one that appears to be more rules-driven and more consistent than before. It is too early to be sure, but the findings here, perhaps bolstered by the procedural and jurisprudential reforms we derive from the results, suggest that the Federal Circuit's unique position in the judiciary may yet be vindicated.*⁹⁴

Unfortunately, our interpretation of the results of this study are not nearly so encouraging. Given what we've found, we view *Phillips*, both normatively and in fact, as a large step backwards for the Federal Circuit (and, by extension, the patent law). That is, we find a law of claim construction that is virtually unchanged in some important respects, but simultaneously less transparent and predictable. The debates within the Court continue, as does the very substantial split in methodological approach.

More troubling, however, is the damage that *Phillips* has done to the goal of *Markman II* (and, indeed, the Federal Circuit itself). When it defined for itself a role as the ultimate decision-maker on claim construction, the Federal Circuit, in our view, also embraced the need to develop clear and coherent legal rules for claim construction. By failing to do so—and, in *Phillips*, actually embracing an “anything goes” approach to claim construction—the court has betrayed the premise of *Cybor*, that claim construction was a legally-defined process, subject to coherent legal limits. This, we think is untenable. Either claim construction is a deeply fact-based technological question: (“How would a person of skill in the art understand the scope of this patent, given all the information available?”) or it is a carefully-delineated legal framework. If it is the latter, then we think that the Federal Circuit is best suited to establish and maintain that structure, on a *de novo* basis. But if it is the former, then there is little justification for failing to give deference to district courts. Thus, in *Phillips*, we fear

⁹³ See Wagner & Petherbridge, *supra* note __, at __ (making this point).

⁹⁴ *Id.* at 1179.

that the Federal Circuit sounded the death knell for the promise of *Markman II*—a clearer, more coherent, and more predictable law of claim construction.

CONCLUSION

Phillips v. AWH lies at the center of the debate concerning the intuitional structure of the patent system and the role the Federal Circuit should play. In the post-*Markman* era, claim construction represents that court's most important example of what might be best understood as the "muscular" theory of the Federal Circuit: a court that stands astride the U.S. patent law, managing the jurisprudence in a way that builds confidence in the coherence, stability and predictability of a complex regime that is increasingly under political scrutiny.

Unfortunately, *Phillips* does not—at least to date—represent the Federal Circuit's finest hour. We find little here to suggest that the avowed goal of *Phillips*—to resolve the court's methodological disputes over claim construction—has been met in any measurable way. And we also find that the open-ended nature of the *Phillips* opinion, and its failure to resolve the longstanding split in claim construction jurisprudence, has undermined the Federal Circuit's efforts to develop a coherent and predictable jurisprudence.



APPENDIX A: CODING DETAILS

Binomial Categories	Procedural			Holistic		
	Strong (Ps)	Intermediate (Pi)	Weak (Pw)	Weak (Hw)	Intermediate (Hi)	Strong (Hs)
Detailed Categories	Expresses rigid process.	Framework of formal process established.	Difficult to discern the form of analysis.	Difficult to discern the form of analysis.	Acknowledgement of process, but not used.	No discussion of process.
Textual Description & Coding Instrument	Ordinary meaning controls, absent express definitions, etc.	Departure along some dimension: no talk of presumption, extensive discussion of specification.	Some discussion / hint of process.	Little or no discussion of process or ordinary meaning.	Specification / prosecution history is clearly dispositive.	Immediate use of specification or prosecution history.
Example Cases	<i>Johnson Worldwide Assocs. v. Zabcro Corp.</i> , 175 F.3d 985 (Fed. Cir. 1999)	<i>Instituform Techs. v. Cat Contr.</i> , 99 F.3d 1098 (Fed. Cir. 1996)	<i>Ethicon Endo-Surgery v. United States Surgical Corp.</i> , 93 F.3d 1572 (Fed. Cir. 1996)	<i>Litton Sys. v. Honeywell Inc.</i> , 87 F.3d 1559 (Fed. Cir. 1996)	<i>Harris Corp. v. IXYS Corp.</i> , 114 F.3d 1149 (Fed. Cir. 1997)	<i>O.I. Corp. v. Tekmar Co.</i> , 115 F.3d 1576 (Fed. Cir. 1997)
	<i>Neomagic Corp. v. Trident Microsystems Inc.</i> , 87 F.3d 1062 (Fed. Cir. 2002)	<i>Micro Chem. Inc. v. Great Plains Chem. Co.</i> , 194 F.3d 1250 (Fed. Cir. 1999)	<i>Key Pharms. v. Hercon Lab. Corp.</i> , 161 F.3d 709 (Fed. Cir. 1998)	<i>DSC Communs. Corp. v. Pulse Communs. Inc.</i> , 170 F.3d 1354 (Fed. Cir. 1999)	<i>Aqua-Aerobic Sys. v. Aerators Inc.</i> , 211 F.3d 1241 (Fed. Cir. 2000)	<i>Wang Lab. Inc. v. America Online Inc.</i> , 197 F.3d 1377 (Fed. Cir. 1999).
	<i>CCS Fitness Inc. v. Brunswick Corp.</i> , 309 F.3d 1373 (Fed. Cir. 2002)	<i>3M v. Chemque Inc.</i> , 303 F.3d 1294 (Fed. Cir. 2002)	<i>Brassica Protection Products LLC v. Sunrise Farms</i> , 301 F.3d 1343 (Fed. Cir. 2002)	<i>Viskase Corp. v. American Nat'l Can Co.</i> , 261 F.3d 1316 (Fed. Cir. 2001)	<i>Cultor Corp. v. A.E. Staley Manufacturing Co.</i> , 224 F.3d 1328 (Fed. Cir. 2000)	

APPENDIX B: DATABASE FIELDS

#	Field ID	Description	Form	Coding	Notes
1	Serial	serial number	[integer]	Machine	<i>unique record identifier</i>
2	Title	case title	text	Machine	
3	Docket	case docket numbers	[xx-xxxx]	Machine	<i>may have multiple dockets</i>
4	Citation	full citations	text, citation format	Machine	
5	LEXIS_Cite	LEXIS Citation	[xxxx U.S. App. LEXIS xxxxxx]	Machine	
6	Date	date issued	[date]	Machine	
7	Published	publication status	[yes no]	Machine	
8	Cert_Denied	was certiorari denied	[yes no]	Machine	
9	Case_Below	title & court below	text	Machine	<i>incomplete, especially before 2002</i>
10	LEXIS_Cite_Below	LEXIS Citation Below	[xxxx U.S. Dist. LEXIS xxxxxx]	Machine	<i>incomplete, especially before 2002</i>

#	Field ID	Description	Form	Coding	Notes
11	Disposition	case outcome	[affirmed reversed vacated mixed]	Machine	
12	Judge1	Judge assigned	text	Machine	
13	Judge2	Judge assigned	text	Machine	
14	Judge3	Judge assigned	text	Machine	
15	Author	author of court's opinion	text	Machine	
16	Opinion_Type	type of opinion	[sole majority]	Machine	
17	Author	author of alternative opinion	text	Machine	<i>may not be present</i>
18	Opinion_Type	type of opinion	[concur dissent]	Machine	<i>may not be present</i>
19	Author	author of alternative opinion	text	Machine	<i>may not be present</i>
20	Opinion_Type	type of opinion	[concur dissent]	Machine	<i>may not be present</i>
21	Methodology	Methodological approach used	[Ps, Pi, Pw, Hw, Hi, Hs]	Human	