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WHAT REVERSALS AND CLOSE CASES REVEAL ABOUT CLAIM CONSTRUCTION: THE SEQUEL

THOMAS W. KRAUSE AND HEATHER F. AUYANG

ABSTRACT

This article updates and elaborates on last year's *What Close Cases and Reversals Reveal About Claim Construction at the Federal Circuit*. Like the previous article, this article provides empirical insight into claim construction at the Federal Circuit, by approaching the question with two unique and distinct subsets of data: (1) "reversals" of all district court claim construction decisions since *Phillips v. AWH*, and (2) "close cases," or post-*Markman* claim construction cases that had dissents in which a currently-active judge participated. The past year's reversals data once again confirms that district courts persistently favor narrow claim interpretations in cases in which they will be reversed. From this, it follows that most "reversals" reflect a failure of the district courts to follow Federal Circuit claim construction principles, rather than arbitrary fact finding by the Federal Circuit. As a result, a rule that awards more deference to district court claim constructions will likely create greater unpredictability, as district courts might be affirmed even if their decisions are not consistent with the Federal Circuit's claim construction principles. The "close cases" data continues to document vast differences in approach among Federal Circuit judges in their approaches to claim construction. This article is particularly timely in light of the Supreme Court's grant of certiorari in *Teva v. Sandoz*, where the Court will consider the Federal Circuit's standard of review of district court's claim construction.

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CONSTRUCTION: THE SEQUEL

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CONSTRUCTION: THE SEQUEL

THOMAS W. KRAUSE AND HEATHER F. AUYANG*

I. INTRODUCTION

This article updates and elaborates on last year's *What Close Cases and Reversals Reveal About Claim Construction at the Federal Circuit*.¹ As it did last year, the data speaks largely for itself, and speaks quite loudly at that: district court decisions still show an unmistakable bias toward narrowing interpretations, and Federal Circuit judges still fall into at least three distinct camps as to claim construction approach. Also as it did last year, the data continues to suggest that giving more deference to district court claim construction will likely make things worse, not better.

In a twist, we are starting this year's article with "reversals" rather than "close cases." The reason for this is two-fold. First, the "reversals" data is actually more important to the question currently pending before the Supreme Court in *Teva v. Sandoz*² than is the "close cases" data. Because the "close cases" data is so fun to look at, and because it came first in the paper last year, the "reversals" data did not get the attention it deserved. We remedy that this year by putting the reversals data up front. Second, there was a tendency among commentators last year to conflate the two studies. By reversing the order this year, we hope to drive home the fact that these are two very different and completely independent studies.

II. BACKGROUND

The "reversals" study is a study of all reversals from district court decisions since *Phillips v. AWH*³ (153 cases, since July 2005); the "close cases" study is a study of all post-*Markman*⁴ claim construction cases

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¹ Thomas W. Krause & Heather F. Auyang, *What Close Cases and Reversals Reveal About Claim Construction at the Federal Circuit*, 12 J. MARSHALL REV. INTELL. PROP. L. 583 (2013).

² *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363 (Fed. Cir. 2013), *cert. granted*, No. 13-854, 2014 WL 199529 (Mar. 31, 2014).

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

⁴ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

that had dissents in which a currently-active (including senior status⁵) judge participated (105 cases, since August 1996). Although the datasets are completely independent (albeit slightly overlapping⁶), the studies have much in common: (1) they both focus on the nearly-always-outcome-determinative question of whether a judge or judicial body interprets a claim in a broadening or narrowing manner; (2) they both bring to light differences in the way different judges approach claim construction; and (3) they are both relevant to the question of whether more deference should be accorded to district court claim constructions. Despite the similarities, it is imperative that readers keep the two studies separate, because they approach the question from completely different angles.

Our initial article was published in July 2013, and we followed it up with a Guest Post on Patently-O,⁷ and had a brief back-and-forth on Professor Hal Wegner's list.⁸ The feedback we received was almost uniformly positive, but there were some recurring questions. Accordingly, prior to discussing the updated data, we will review the methodology for each study and address issues that were raised in response to its publication last year.

III. REVERSALS STUDY

A. *Why Study Only Reversals?*

The point of confining a study to “reversals-only” is that doing so provides the best chance of gaining insight into the specific mistakes that district courts make when they make mistakes. To be sure, in any given reversal, it is possible that the “mistake” was made by the

⁵ Our use of the term “active” in last year's article was misconstrued by one commentator to refer to active-status judges as opposed to senior status judges. The study this year and last year includes senior status judges, since they continue to play an active and important role in deciding these cases.

⁶ The overlap between the datasets—i.e. reversals with dissents—is a body of thirty-five cases. These are noted, but are not independently studied.

⁷ Thomas W. Krause & Heather F. Auyang, *Guest Post: Why Lighting Ballast Won't Solve Claim Construction*, PATENTLYO (July 26, 2013), <http://patentlyo.com/patent/2013/07/guest-post-why-lighting-ballast-wont-solve-claim-construction.html>.

⁸ Hal Wegner, *Lighting Ballast Empirical Studies on Cybor De Novo Claim Construction (con'd): The Krause & Auyang Study*, LAIPLA (Sept. 29, 2013), <http://www.laipla.net/lighting-ballast-empirical-studies-on-cybor-de-novo-claim-construction-cond-the-krause-auyang-study/>; Letter from Thomas W. Krause & Heather Auyang to Harold C. Wegner, *RE: Of Possible Interest in Connection with Lighting Ballast* (Sept. 29, 2013), available at <http://www.laipla.net/wp-content/uploads/2013/09/KrauseAuyangClarification.pdf> (clarifying confusion that may have resulted from Professor Wegner's description of the article).

appellate panel, and not the district court.⁹ But such cases are almost certainly the exception, not the rule: in most cases, the three-judge panel of the specialized appellate tribunal will be better than a single generalist district court judge at applying the appellate court's rules of claim construction. As we mentioned last year, the fact that most claim construction reversals are unanimous lends further support to the propriety of assuming that a "reversal" reflects an error by the district court.¹⁰

Perhaps the cleanest way of understanding why it is appropriate and desirable to focus only on reversals is to recognize that affirmances will yield little or no information as to how district courts err, because, by virtue of having been affirmed, the district court in an affirmance most likely correctly applied Federal Circuit claim construction doctrine.¹¹ Thus, if the goal is to determine how district courts err, the focus must be on cases in which some authority—in this case the Federal Circuit—finds that the district courts have erred.

Finally, any rule of deference should be aimed at fixing results in cases where the district court was reversed—i.e., cases in the dataset that we studied.¹² Thus, anyone advocating for deference should be prepared to defend the position that some of these reversals should, in fact, have been affirmances. And if there is a systematic bias that influences the results in these cases—as our study shows there is—that militates against giving more deference to district courts.

B. Reversal Rates and Affirmances

Of course, focusing only on reversals makes it impossible to definitively use our data to calculate a "reversal rate." We have left that task to others, but for now, note that our data—which, after all, gives the raw quantity of reversals for a given year—is generally

⁹ This point—that perhaps the appellate body got it wrong in some of the cases—was the only recurrent criticism of our "reversals" methodology. We hope the explanation below responds to that critique. In any event, there is no plausible alternative dataset to look at for a study focused on district court errors.

¹⁰ For critics of the Federal Circuit, our comment that "unanimous cases" are often "correct as a matter of law" (Krause & Auyang, *supra* note 1, at 584)—a comment we made in connection with the "close cases" study—seems to have raised a red flag. Obviously, if one believes that the Federal Circuit's law of claim construction is incorrect, then it is small consolation that the judges often apply that law unanimously. But that misses the point; we have to assume that there is a body of claim construction principles to be applied. If three out of three of the widely disparate judges on the Federal Circuit believe that the district court misapplied those principles, the district court probably did so.

¹¹ It would in any event be a very arduous, subjective, and ultimately pointless task to try to ferret out cases in which the district court erred but was nevertheless affirmed.

¹² Needless to say, a new rule of "deference" that would change district court decision-making in such a way that cases that today are being affirmed would, under the new rule of deference, be reversed, would be distinctly suboptimal. For a scenario in which that could happen, read on.

consistent with studies that determine reversal rates. For the reader's convenience, below is a table comparing the reversal rates calculated by Professors Anderson and Menell for years 2005–2011 (and cited by the Federal Circuit in its en banc *Lighting Ballast* opinion) with our raw reversals:¹³

TABLE 1

| Year | Reversal Rate | Raw Reversals |
|------|---------------|---------------------|
| 2005 | 31.3% | 26 |
| 2006 | 21.6% | 16 |
| 2007 | 24.8% | 18 |
| 2008 | 31.1% | 23 |
| 2009 | 16.5% | 10 |
| 2010 | 21.7% | 18 |
| 2011 | 20.4% | 15 |
| 2012 | -- | 20 |
| 2013 | -- | 14 |
| 2014 | -- | 6 (in first 3 mos.) |

Based on this, one can say that the claim construction reversal rate has been fairly steadily in the 20–25% range over the years since *Phillips*.¹⁴ Although the Anderson-Menell study itself in some places seems to suggest that a reversal rate in this range may be acceptable (and may reflect informal deference to district courts), its authors nevertheless suggest that giving more deference to district courts will improve claim construction, and one of them filed a brief with the Federal Circuit characterizing these reversal rates as “alarming.”¹⁵

One question about our study that did not arise—but probably should have—is what percentage of the time district courts went narrow (or broad) in cases that resulted in affirmances. This would tell us whether or not district courts’ results in cases that would be

¹³ J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1, 40–41 (2014). The source of the data from Professors Anderson and Menell reported above corresponds exactly to ours in the sense that it consists of cases in which a reversal, remand, or vacation occurred based on the district court’s claim construction. Anderson and Menell also provide claim-by-claim reversal rates, and reversal rates that include cases in which the district court was found to have erred on claim construction, but was nevertheless affirmed. See *id.* at 40 n.244; Kimberly A. Moore, Markman *Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 238 (2005) (describing these three possible datasets for studying claim construction).

¹⁴ The dip to 16.5% in 2009 was clearly an aberration, as the rate rebounded in subsequent years.

¹⁵ Brief of Professor Peter S. Menell as Amicus Curiae Supporting Appellee at 3, 12, *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 774 F.3d 1272 (2014) (No. 2012-1014).

reversed differed significantly in terms of narrowing percentage from their results in cases that would be affirmed. Because we did not look at affirmances, we cannot provide a definitive answer to this question based solely on our own data. Nevertheless, a draft study by Professor Christopher Cotropia, which was first circulated after our original study, provides a basis for a rough answer: district courts went narrow at about the same rate for affirmances (78%) as for reversals (74%).¹⁶ Thus, for any given case, a district court will “go narrow” at least 74% of the time. The Federal Circuit, by contrast, has a noticeably lower “go narrow” rate—about 64%.¹⁷ This disparity is responsible for the relatively high reversal rate.

C. *Why Deference Is Not the Solution to the High Reversal Rate*

It stands to reason that if the Federal Circuit were required to defer to district courts more, the reversal rate would go down. But those who advocate the “deference solution” are merely addressing the symptom, without making any serious attempt to understand the underlying disease. This is clearly bad medicine, especially when there is a readily available body of cases—reversals—that can be studied to determine what is causing the symptom.

In determining the root cause of the high reversal rate, there are two possible hypotheses to test: either (1) the Federal Circuit, when it reverses the district courts, is arbitrarily substituting its own “factual” findings for those of by the district courts (the “Arbitrary Federal Circuit Hypothesis”); or (2) the district courts that are being reversed are not faithfully applying established claim construction principles (the “Erring District Court Hypothesis”). There is no logical reason for preferring one hypothesis over the other—without considering any data, either is possible. Yet, perhaps because deference offers such an

¹⁶ Christopher A. Cotropia, *Is Patent Claim Interpretation Review Deference or Correction Driven?*, 2014 BYU L. REV. (forthcoming 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2265962. Professor Cotropia found that from 2010 to 2013, “in 314 decisions, the Federal Circuit choose a narrow construction in 175 cases, a broad construction in 97 cases, an unclear construction in 20 cases, and a neither construction in 22 cases.” *Id.* at 8. Because our study excludes cases that Professor Cotropia identified as “unclear” and “neither” (cases that involve section 112(f) or 112(b), *see id.* at 6), this suggests that there were 272 affirmances and reversals during this period. Based on our finding of sixty-seven reversals during the same period, that suggests there were 205 affirmances. Because fifty of our sixty-seven *reversals* were in a broadening direction, this leaves forty-seven (i.e., 97 minus 50) *affirmances* in which the Federal Circuit “went broad.” That means that the Federal Circuit, and hence the district court, “went narrow” in the other 160 of the 205 affirmances, for a “go narrow” rate of about 78.0%. Although this rate was derived from the four-year period 2010–2013, we believe it is likely a good approximation of the rate over our broader period of study, given that there were no obvious abnormalities in the 2010–2013 data compared to the 2005–2009 data.

¹⁷ This number is likewise solely from Professor Cotropia’s data—the Federal Circuit went narrow in 175 of 272 cases from 2010–2013, for a “go narrow” rate of 64.3%.

easy solution to the high reversal rate, those who advocate deference seem to uniformly assume that the problem must be arbitrary fact finding by the Federal Circuit, as opposed to failure to follow established principles by the district courts.¹⁸ Our study focuses on the very data that enables one to responsibly choose between these hypotheses, and comes to the conclusion that the Erring District Court Hypothesis better fits the data. Policy arguments for deference—all of which implicitly accept the Arbitrary Federal Circuit Hypothesis—are therefore based on a false premise. Instead of granting more deference to district courts (i.e., beyond the informal deference they already get), the focus of any effort to improve the uniformity and predictability of claim construction should be on helping district courts avoid making the kinds of mistakes they have been making,¹⁹ and creating uniformity among the Federal Circuit judges.

Even without consideration of the reversals data, there is good reason to question the Arbitrary Federal Circuit Hypothesis. Last year, we issued the following challenge:

Although a strong legal case can be made that district courts *should* receive a measure of deference on subsidiary factual issues, it is very unclear that giving such deference to district courts would change the result in any given case. As already shown in connection with the close cases, a perceived need for more deference does not seem to be driving the differences between Federal Circuit judges in claim construction cases. Moreover, proponents of the “deference to district courts” approach have very few—if any—cases to offer in which a district court’s claim construction was based on a determination that the district court judge was better qualified to make than a panel of three Federal Circuit judges.²⁰

Despite this challenge, and despite all the briefing in *Lighting Ballast* and *Teva v. Sandoz*, we have yet to hear of a case where a district court was even arguably reversed on claim construction based on the Federal Circuit’s disagreement as to a finding on one of these subsidiary factual issues. The closest case we have seen is *Teva* itself, which neatly illustrates the problem with a rule of heightened, formal

¹⁸ See, e.g., Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1058 (2003) (advancing the general view that the Federal Circuit’s modification of district court claim construction is high due to lack of the requisite deference, even if in some instances the district court’s error was over a legal principle such as “failure to use a particular canon of claim construction properly”).

¹⁹ In our previous article we suggested a possible algorithm for claim construction. We stand by that suggestion, and reiterate that any algorithm that provides consistency (whether ours or not) would be better than the status quo, where district courts do not have a clear roadmap to follow.

²⁰ Krause & Auyang, *supra* note 1, at 601.

deference.²¹ In that case, the district court chose one of three possible definitions, and on that basis determined that the claim was not indefinite.²² While it can be argued that the Federal Circuit *should* have deferred to the district court in *Teva*, it would be a mistake to use the circumstances in *Teva* to argue for a rule that the Federal Circuit must defer to district courts on definitional questions in all cases. Under such a regime, a district court wishing to insulate itself from Federal Circuit review might simply make it clear that its claim construction was based on factual determinations—*e.g.*, “I find that a person with ordinary skill in the art would have interpreted the term X, in year Y to mean Z.” After that determination is made, the district court would check for disavowal or lexicography,²³ and if none were to be found, could simply adopt “Z” as the interpretation of the disputed term. In that case, the Federal Circuit would have little choice but to adopt the district court’s interpretation on appeal.

That seems to be a bad path to follow. Claim construction almost always involves a choice between competing definitions, with the correct definition only becoming clear upon careful review of all of the intrinsic evidence. If district courts start “announcing” the “only” meaning up front in this way (and thereby exclude other candidate definitions), their rulings would be grounded less in the specification and prosecution history than in which party’s starting definition the district court preferred. This could circumvent the normal claim construction process, and, inevitably, cause claim construction overall to become less predictable. In fact, if deference to district courts causes more district courts to begin deciding cases by “announcing” the “only” meaning, then a district court, knowing that it will receive deference, might arrive at the interpretation at a much earlier stage in the process. Under this regime, even the kinds of cases that are currently unanimous affirmances could result in different rulings.

Apart from *Teva* itself (an indefiniteness case), pro-deference advocates have not identified any particular case that would support the Arbitrary Federal Circuit Hypothesis. As shown below, our data—which was gathered based on a close examination of the body of cases most relevant to choosing between the competing hypotheses: those in which district courts and the Federal Circuit disagreed—strongly supports the Erring District Court Hypothesis.

²¹ See *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363, 1369, 1375 (Fed. Cir. 2013) (affirming-in-part and reversing-in-part the district court on indefiniteness under 112(b)), *cert. granted*, No. 13-854, 2014 WL 199529 (Mar. 31, 2014). Although *Teva* does include a clear claim construction issue, we have excluded it from our reversals study on the basis that it is primarily a § 112(b) case. See Krause & Auyang, *supra* note 1, at 598 n.29 (explaining reasons for excluding § 112(b) cases from “reversals” data).

²² *Teva Pharm.*, 723 F.3d at 1368, 1370.

²³ *Phillips v. AWH Corp.*, 415 F. 3d 1303, 1316 (Fed. Cir. 2005) (*en banc*).

D. Reversals Data

The centerpiece of the reversals data is the following chart, and the change from last year can be seen from the corresponding Table.

FIGURE 1
CLAIM CONSTRUCTION REVERSALS POST-*PHILLIPS*: BROADENING VS. NARROWING

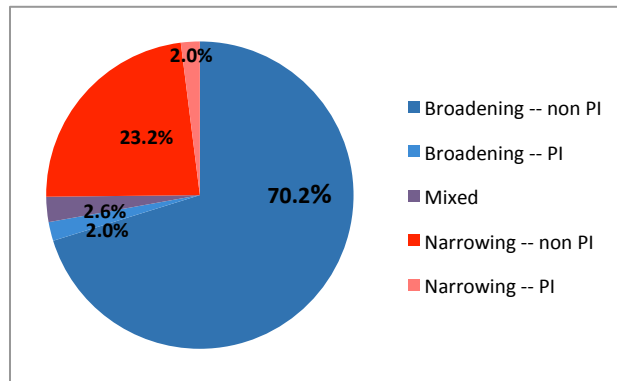


TABLE 2

| | Broad | Narrow | Broadening Rate |
|-----------|-------|--------|-----------------|
| 7/05-4/13 | 95 | 36 | 72.5% |
| 5/13-3/14 | 14 | 2 | 87.5% |
| Tot. | 109 | 38 | 74.1% |

The reversals data that has accumulated since our last report—data from May 2013 through March 2014—continues the overall trend we observed last year. Indeed, it is even more pronounced. Of the sixteen reversals, fourteen were in a broadening direction. In twelve of the fourteen that did not involve preliminary injunctions, the district court was, by virtue of the narrow construction, able to enter a judgment of non-infringement.²⁴ In other words, district courts are continuing to err on the side of construing claims narrowly, and this enables them to enter a judgment of non-infringement and thereby avoid the burden of a trial.

²⁴ There were four stipulated judgments of non-infringement, and eight summary judgments of non-infringement. For purposes of the charts, these are all denoted “SJ NI.”

Thus, the data continues to show a systematic bias on the part of district courts to construe claims in a narrowing direction, in a way that all three judges on the Federal Circuit panel typically find to be incorrect, but which enables the district court to dispose of the case before it. As shown in Figure 2 and Table 3, in about 74% of the cases, the claim construction chosen by the district court enabled it to dispose of the case without conducting a trial.

FIGURE 2
 CLAIM CONSTRUCTIONS REVERSALS POST-*PHILLIPS*: SJ VS. TRIALS

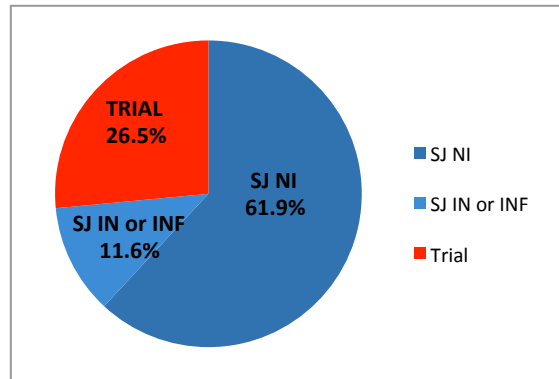


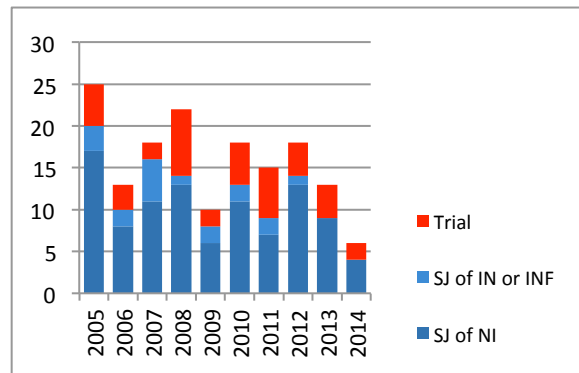
TABLE 3

| | Trial | No Trial | No Trial Rate |
|-----------|-------|----------|---------------|
| 7/05-4/13 | 36 | 96 | 72.7% |
| 5/13-3/14 | 3 | 12 | 80% |
| Tot. | 39 | 108 | 73.5% |

If district courts actually are (consciously or unconsciously) erring in the direction that allows them to grant summary judgment (as opposed to making the best possible judgment about claim construction), then a ruling that claim construction includes factual findings that are entitled to deference will probably introduce more arbitrariness—and a distinct pro-defendant bias—into claim construction. In other words, if the explanation for the high reversal rate is district court error, then increased deference to district courts is exactly the wrong solution, even if it might happen to reduce the reversal rate.

Figure 3 gives a year-by-year breakdown.

FIGURE 3
CLAIM CONSTRUCTION REVERSALS: SJ VS. TRIALS BY YEAR



While the data is somewhat variable over the years, there is no clear post-*Phillips* trend. The raw reversals have ranged between thirteen and eighteen cases per year, excluding the anomalously high 2008 and anomalously low 2009, which, if averaged, would yield a two-year rate of sixteen cases per year. The 2014 data only includes cases decided through March 31, 2014; if the 2014 trend continues, 2014 could see more than twenty reversals.

Finally, the large majority (77.1%) of reversals are still unanimous. As noted last year, this suggests that for the most part, there is little doubt that reversals represent errors by the district court, especially in the absence of any evidence (as noted above) of arbitrary fact finding by the Federal Circuit.

FIGURE 4
CLAIM CONSTRUCTION REVERSALS POST-*PHILLIPS*: UNANIMOUS VS. CLOSE

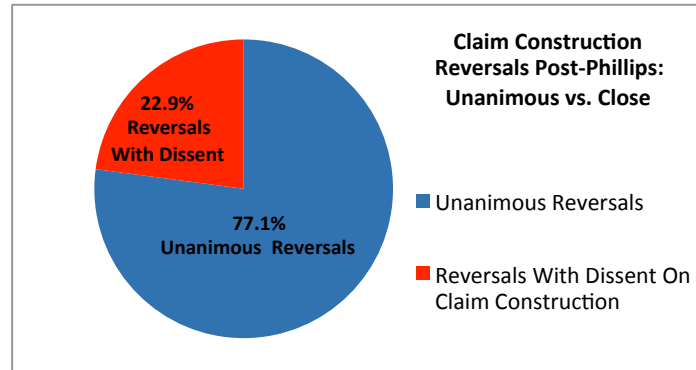


TABLE 4

| | Unanimous | w/Dissent | Dissent rate |
|-----------|-----------|-----------|--------------|
| 7/05-4/13 | 104 | 33 | 24.1% |
| 5/13-3/14 | 14 | 2 | 12.5% |
| Tot. | 118 | 35 | 22.9% |

IV. CLOSE CASES

Although various studies in the past have looked at individual Federal Circuit judge behavior, ours appears to be the first to have detected any real, results-affecting differences between the judges. The most famous prior study was that by Petherbridge and Wagner, in which the authors painstakingly demonstrated, for each Federal Circuit judge, whether decisions written by that judge were written in a “proceduralist” or a “holistic” manner.²⁵ From this, they were able to predict, for half of the judges, based on the identity of the author, whether a given opinion would be written in a proceduralist or a holistic manner.²⁶ They did not, however, correlate this choice in writing style to a difference in results among cases.²⁷ Anderson and Menell likewise studied individual judges, and were able to report that

²⁵ R. Polk Wagner & Lee Petherbridge, *Is The Federal Circuit Succeeding? An Empirical Assessment Of Judicial Performance*, 152 U. PA. L. REV. 1105, 1130 (2004).

²⁶ *Id.* at 1163, 1170.

²⁷ *See id.* at 1141 (“It is important, however, to understand that the choice of methodological approach does not necessarily predict typical generalized descriptions of claim interpretation results. For example, even a strongly procedural approach will yield interpretations that can be described as both ‘broad’ and ‘narrow.’”)

after *Phillips*, in addition to the overall decrease in reversal rate, the reversal rates of individual judges went down as well.²⁸

Accordingly, our close cases study may be the first empirical proof of the widely-held notion that claim construction at the Federal Circuit can be panel dependent. That does not mean that every claim construction case is a shot in the dark—after all, the solid majority of claim construction cases are unanimous. But it does suggest that practitioners should become familiar with the differences between the judges, and may wish to adjust their presentation at oral argument based on the composition of the panel.

One recurring reaction to our study of “close cases” was that our selection of cases for dissents for study may have introduced a “selection bias.” Not so. Our “close cases” are the subset of claim construction cases that were “close” in terms of a completely objective criterion—whether there was a dissent. To be sure, there might be some “unanimous” cases that were in fact “close”—in the sense that one or more members of a unanimous panel might have thought a given case was a close call—but these cases are simply undetectable and cannot possibly be studied in an empirical manner.²⁹

As indicated below, the significance of the data for any one judge depends on how many close cases the judge participated in. It seems fairly clear to us that if a judge has participated in more than fifteen cases (as ten of the judges have), the information gleaned about that judge from studying close cases is likely to be real. For judges deciding five or fewer cases, however, it is probably premature to draw any conclusions from the data. As in the past year, we also present judge-specific charts, which show how each judge voted over time. The charts can be used to detect trends for individual judges.

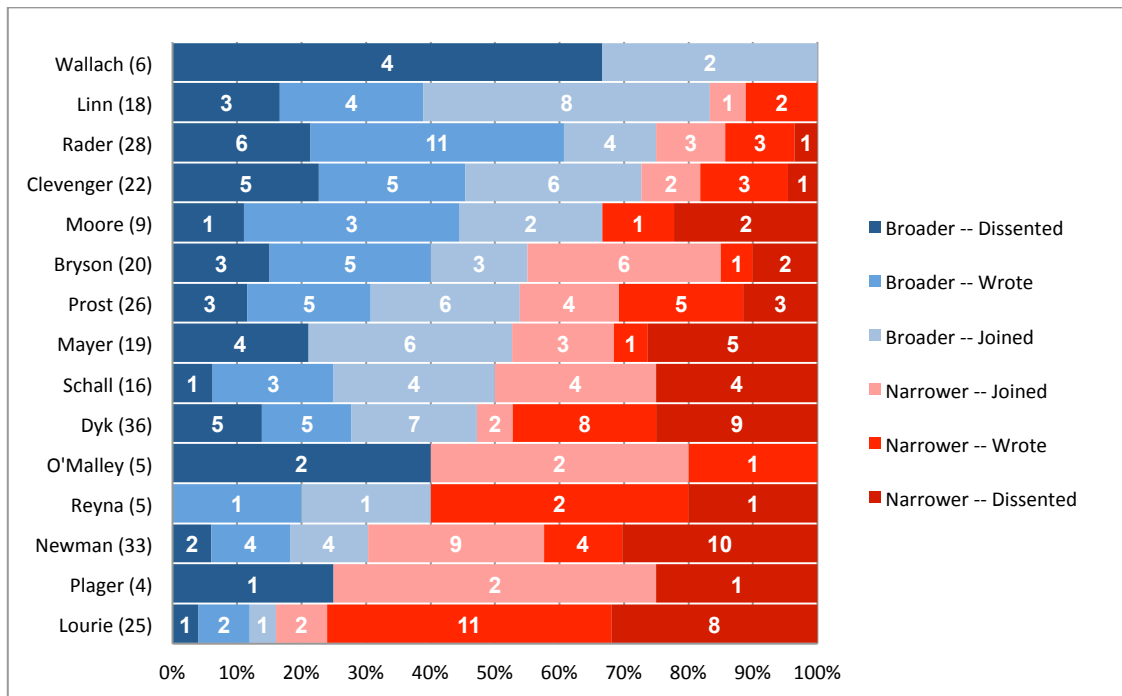
We start with the bar charts, which show the voting behavior of all judges, across four different metrics: broader/narrower (Fig. 5), less spec/more spec (Fig. 6), pro-affirm/pro-reverse (Fig. 7), pro-patent/anti-patent (Fig. 8). Table 5 in the appendix shows, by judge, how the data changed from last year to this year.

²⁸ Anderson & Menell, *supra* note 13, at 49–50.

²⁹ See Daniel E. Ho & Kevin M. Quinn, *How Not to Lie with Judicial Votes: Misconceptions, Measurement, and Models*, 98 CAL. L. REV. 813, 850–51 (2010) (disposing of criticisms regarding the exclusion of unanimous decisions in empirical studies of judicial review).

A. Overview Charts

FIGURE 5
CLOSE CASES: BROADER VS. NARROWER



To review, this chart is based on the fact that for any given “close case,” there was a dispute about whether to construe the claim broadly or narrowly. The chart thus reports, for each judge, “broadening” and “narrowing” votes, further broken down by whether the judge wrote the majority opinion, joined the majority opinion, or dissented. The shades of blue on the left side of the chart represent broadening votes, the shades of red on the right side represent narrowing votes.

As was the case last year, Judges Moore, Clevenger, Rader, Linn, and Wallach still have broadening rates in excess of 66%. In this group, it is interesting that Judge Wallach went from 4–0 to 6–0, which tends to suggest that he might soon become the strongest voice in favor of a claim-based approach on the Court.³⁰

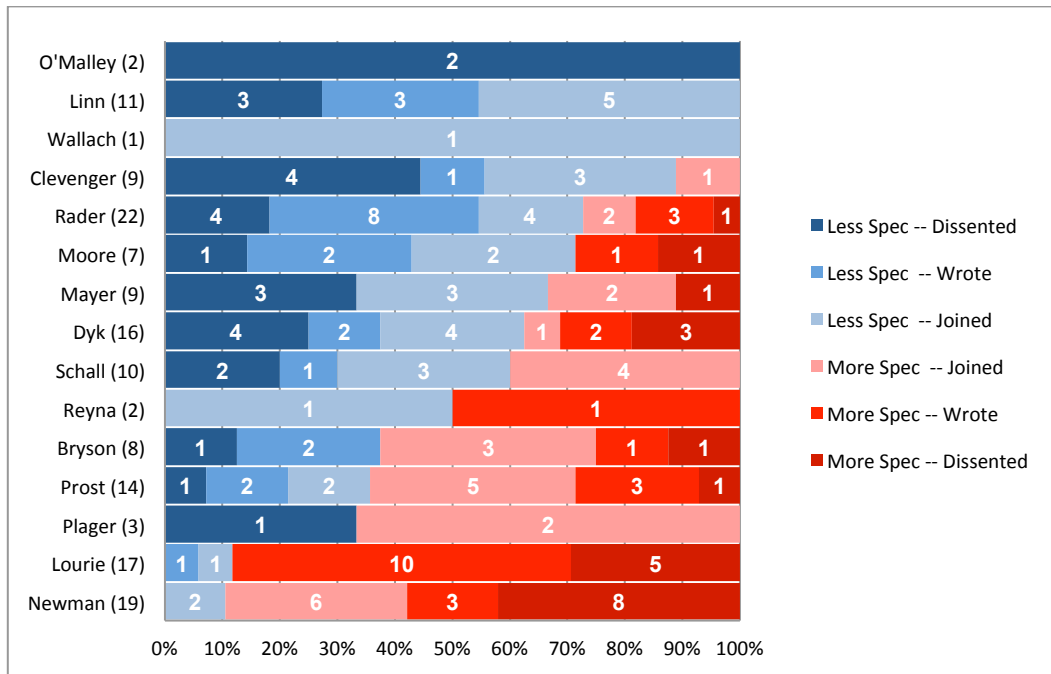
³⁰ Krause & Auyang, *supra* note 1, at 595. In our previous article, we posited that the difference between judges could be explained by the notion that some judges adhere to an “actually invented” standard, while others employ a claim-based approach. *Id.*

At the opposite pole are Judges Lourie and Newman with narrowing rates in excess of 66%. Although Judge Plager has voted in three of four cases in a narrowing direction, for a 75% narrowing rate, and he has also endorsed Judge Lourie’s “actually invented” approach,³¹ it may be premature to place him definitively in the same camp as Judges Lourie and Newman at this stage.

The middle bloc consists of Judges Bryson, Prost, Mayer, Schall, and Dyk. These judges have voted between 47% and 55% in a broadening direction.

Finally, Judges O’Malley and Reyna have voted in a broadening direction two out of five times (40%), so that they are between the middle bloc and the Lourie-Newman camp. Given that they have only been on five cases each, it is premature to assign them to either of these camps, and it would also not make sense to create a separate camp just for them.

FIGURE 6
 CLOSE CASES: LESS VS. MORE SPECIFICATION

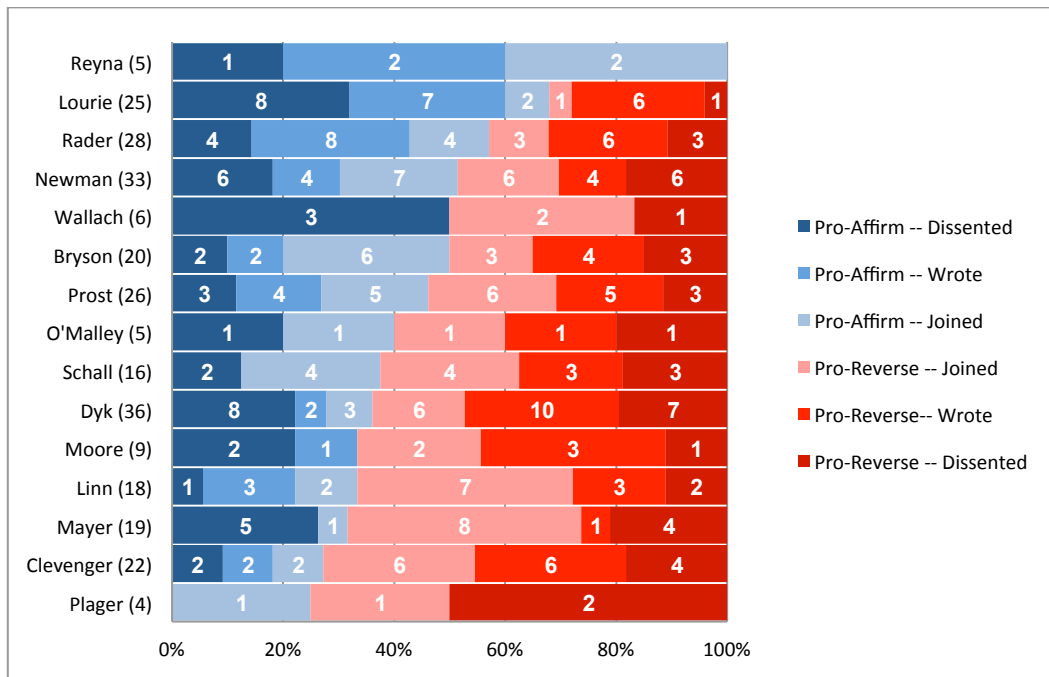


³¹ *Id.*

This chart tracks votes in which there was a clear dispute on whether something in the specification should be read to limit the scope of the claims. Thus, “less spec” (shades of blue) votes typically refuse to limit the claims based on the specification, whereas “more spec” votes would typically import a limitation from the specification to the claim. This data is essentially a subset of the broad/narrow data.

There do not appear to be any remarkable changes in this data, which largely tracks the broad/narrow data. Although Judge O’Malley’s two dissents in a less-spec direction place her at the top of the bar chart, it is far too early to tell if these dissents point to anything distinctive about her decision-making tendencies.

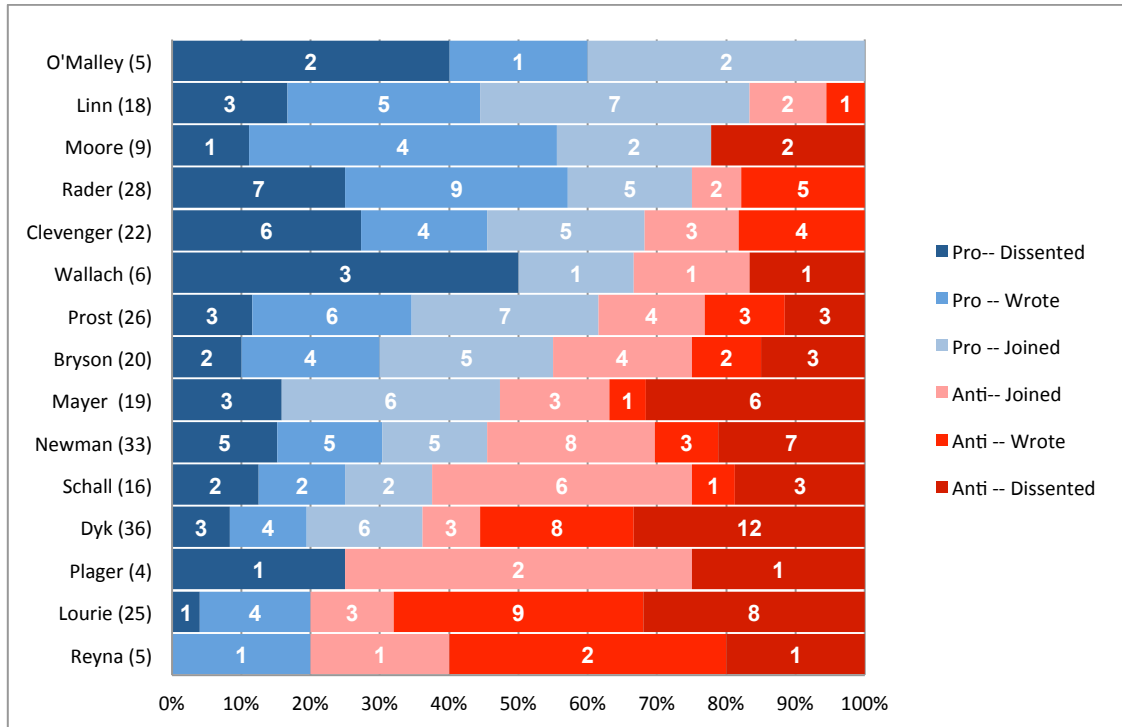
FIGURE 7
 CLOSE CASES: PRO-AFFIRM VS. PRO-REVERSE



This chart is based on the fact that for any given “close case,” each judge either voted with or against the district court: pro-affirm (shades of blue) or pro-reverse (shades of red). The pro-affirm/pro-reverse data is important because it could serve as an objective measure of how important it is for a given judge to defer to the district court. Here, we see that Judge Reyna has aligned himself with the district court in each of the “close” cases in which he participated, and always in dissent. It remains to be seen whether this trend will hold. The biggest change from last year is that Chief Judge Rader voted against the district court three out of three times. This was generally

consistent with his pro-broadening approach (he voted broad two of three times), but inconsistent with his previously-observed pro-affirm tendency.

FIGURE 8
Close Cases: Pro-Patent vs. Anti-Patent



This chart is based on the fact that for any given “close case,” each judge either voted with or against the patentee: pro-patent (shades of blue) or anti-patent (shades of red).³² On the pro-patent/anti-patent metric, Judge O’Malley has voted with the patentee in all five of her close cases. As was the case with Judge Reyna and “pro-affirm,” it is too early to tell if this will remain a solid predictor of her votes in close cases. Judge Reyna appears at the opposite pole of this chart; thus, one might argue that his results could be explained almost as well by

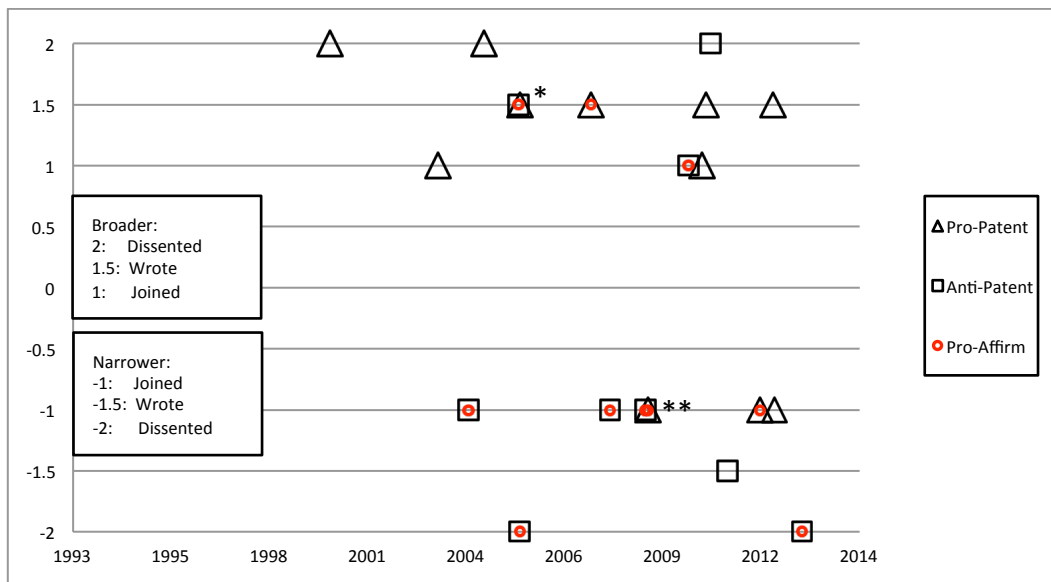
³² To be clear, a “pro-patent” vote merely means that the judge voted for the patentee on the claim construction issue. Where the issue was infringement, this typically meant a broadening vote; where the issue was invalidity, this typically meant a narrowing vote. Given all the other factors at play – and that this data only considers judges’ votes in claim construction cases—a “pro-patent” or “anti-patent” tendency in this study does not necessarily reflect a pro-patentee or anti-patentee bias.

an anti-patent bias as a pro-affirm bias. Of course, in this early stage, it is too soon to tell.

B. Judge-Specific Charts

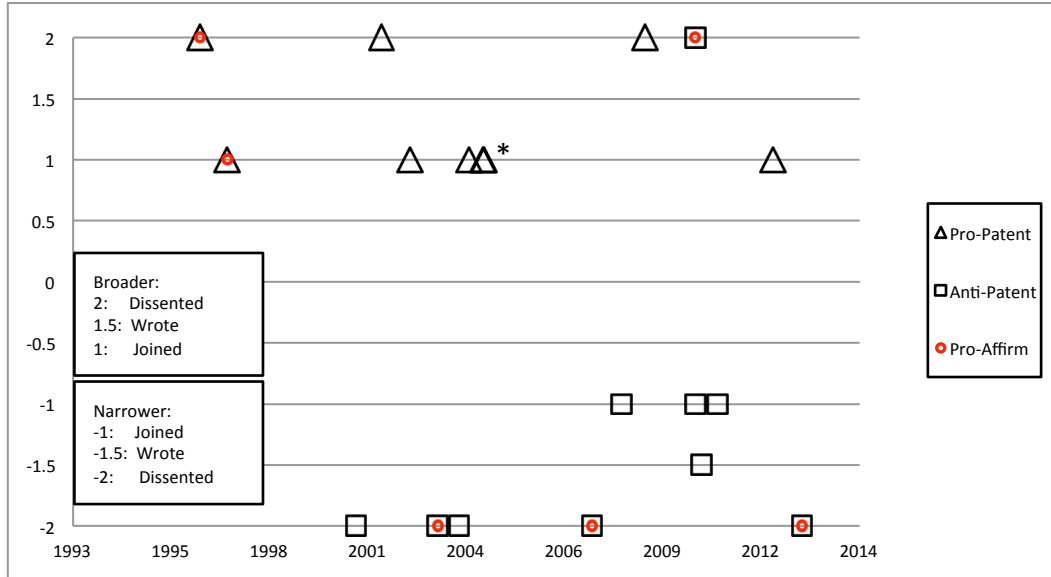
Below are updated scatter charts for the individual judges. We believe the coding is self-explanatory; in any event we explained it at length in last year’s publication, and will not repeat that explanation here. Given that each judge has only been involved in at most four close cases since our last study, and that some judges have not been involved in any, it is difficult to draw any conclusions from the new data. We note, however, that in general the judges have voted as predicted by last year’s chart.

FIGURE 9
 CLOSE CASES: JUDGE BRYSON (20 CASES)



* Circle goes with square: One case is pro-patent, pro-reverse; the other is anti-patent, pro-affirm
 ** Two circles: One case is anti-patent, pro-affirm; the other is pro-patent, pro-affirm

FIGURE 14
CLOSE CASES: JUDGE MAYER (19 CASES)



* Two triangles: Both cases are pro-patent, pro-reverse

FIGURE 15
CLOSE CASES: JUDGE MOORE (9 CASES)

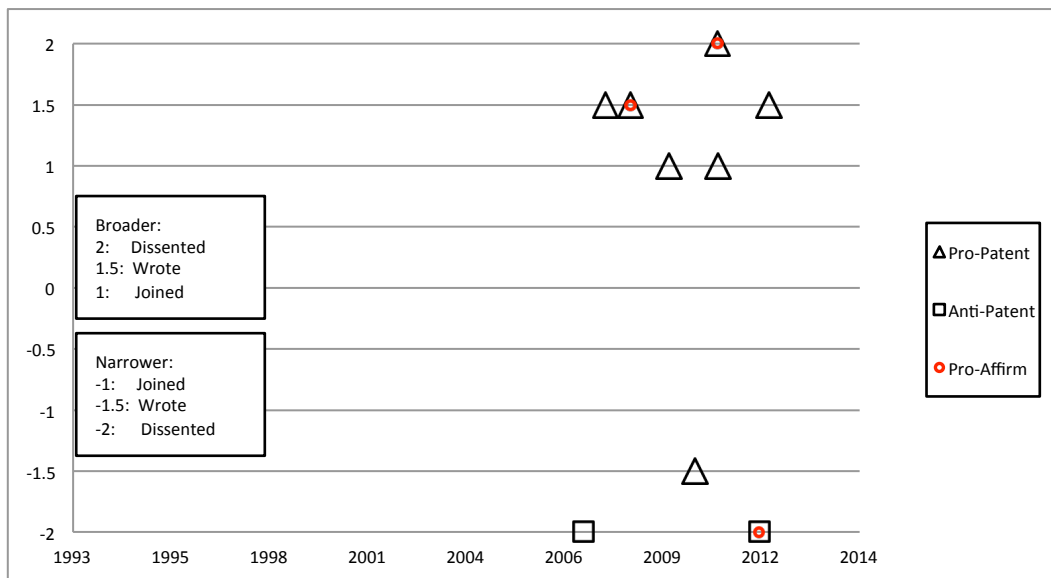
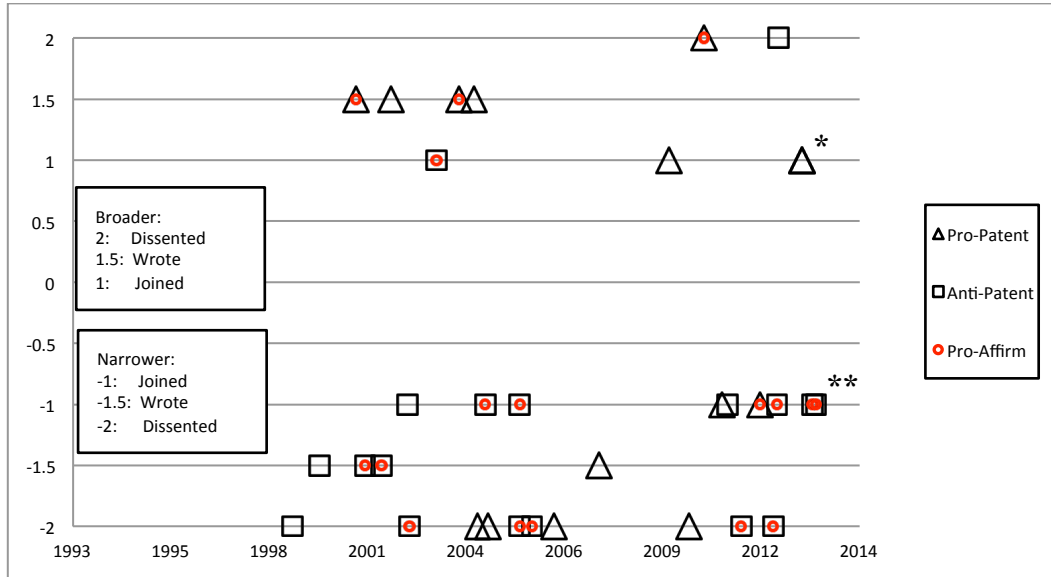


FIGURE 16
CLOSE CASES: JUDGE NEWMAN (33 CASES)



* Two triangles: Both cases are pro-patent, pro-reverse
** Two squares, two circles: Both cases are anti-patent, pro-affirm

FIGURE 17
CLOSE CASES: JUDGE O'MALLEY (5 CASES)

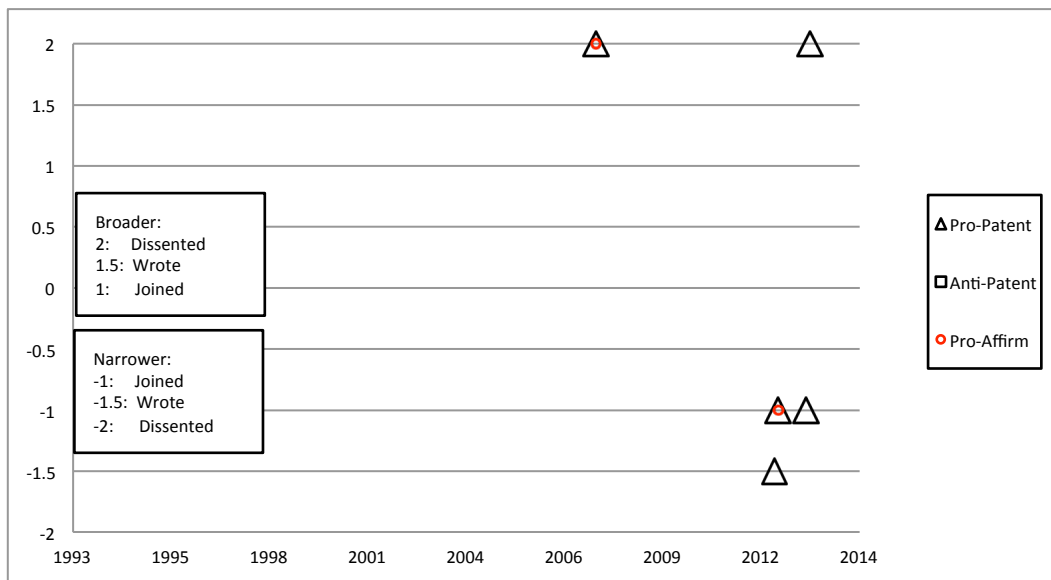


FIGURE 18
CLOSE CASES: JUDGE PLAGER (4 CASES)

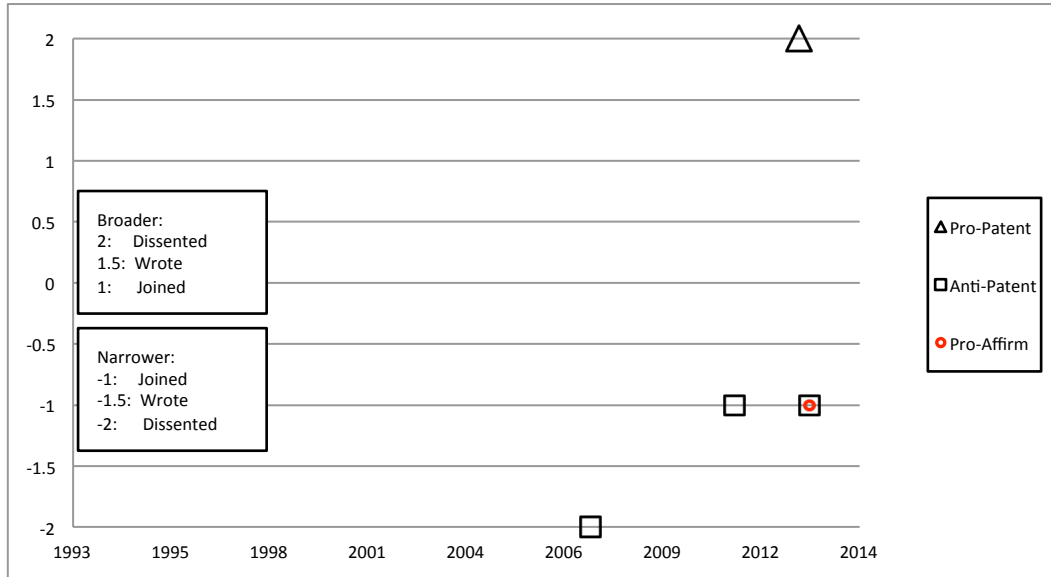
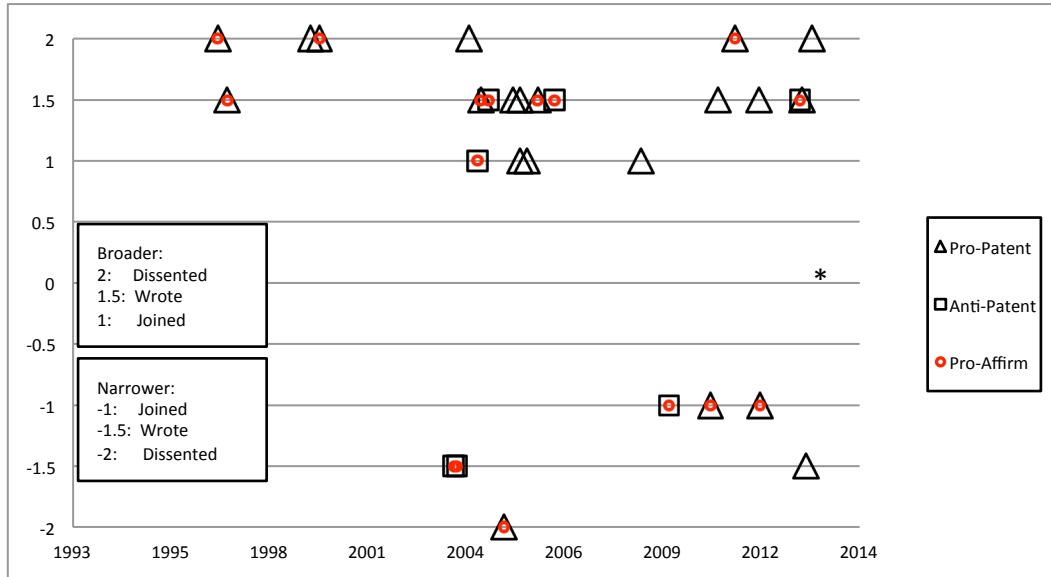


FIGURE 19
CLOSE CASES: JUDGE PROST (26 CASES)



* One square, one triangle, two circles: One case is pro-patent, pro-affirm; the other is anti-patent, pro-affirm

FIGURE 20
CLOSE CASES: CHIEF JUDGE RADER (28 CASES)



* Circle goes with square: One case is pro-patent, pro-reverse; the other is anti-patent, pro-affirm

FIGURE 21
CLOSE CASES: JUDGE REYNA (5 CASES)

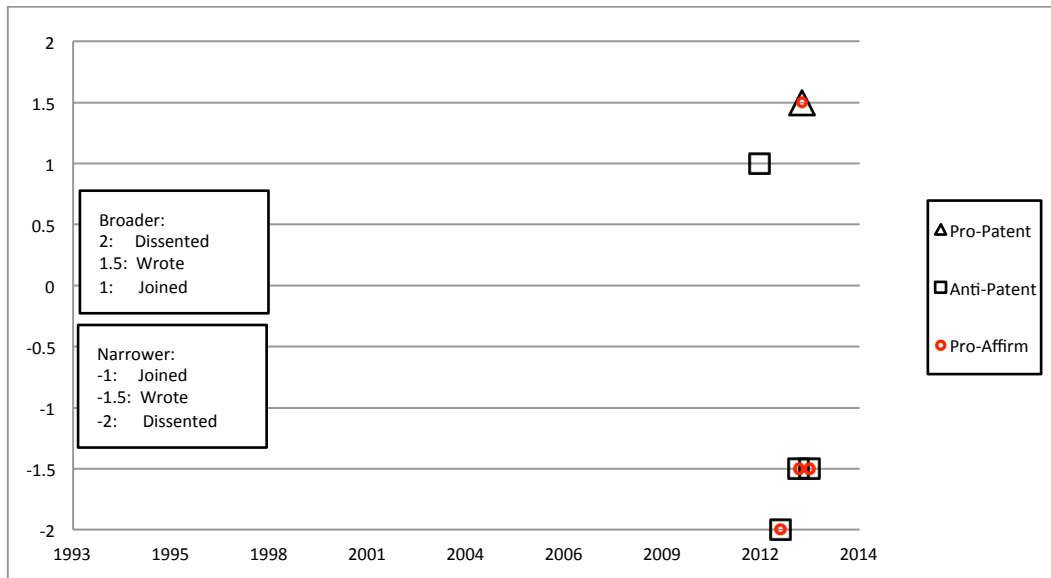
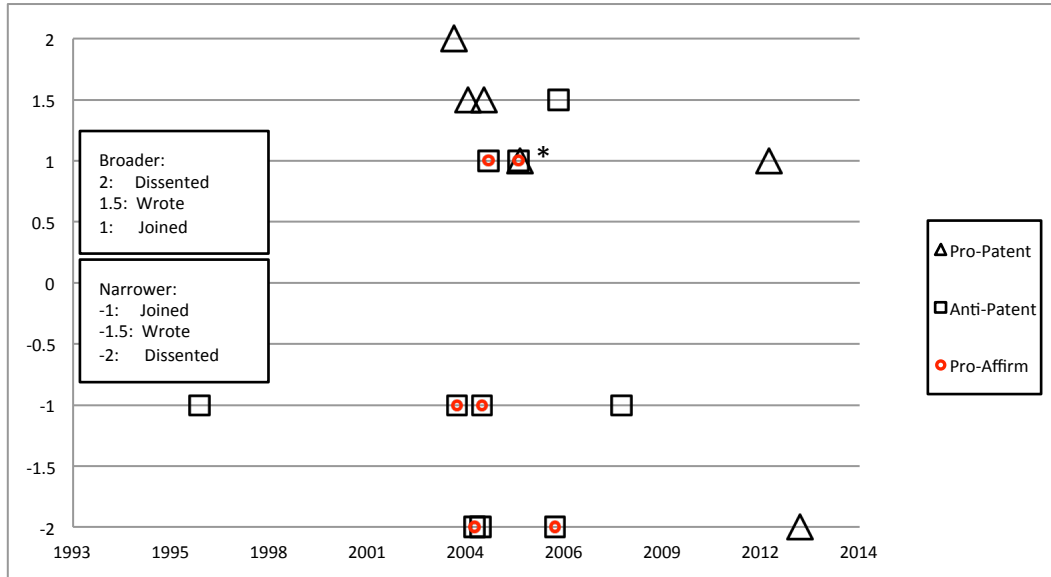
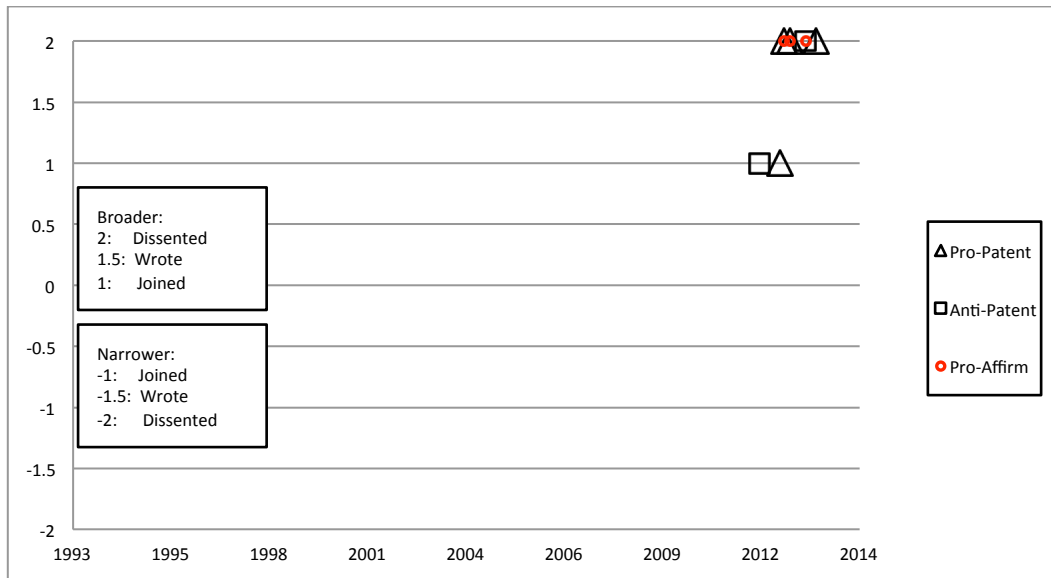


FIGURE 22
CLOSE CASES: JUDGE SCHALL (16 CASES)



* Circle goes with square: One case is anti-patent, pro-affirm; the other is pro-patent, pro-reverse

CLOSE CASES: JUDGE WALLACH (6 CASES)



V. CONCLUSION

The empirical approaches to claim construction used in the two studies in this article (and in our article from last year) differ from past approaches in that they reveal clear differences between (1) the Federal Circuit and district courts and (2) between judges on the Federal Circuit. Anyone advocating a rule of deference as a policy matter would be well-advised to carefully consider the implications of these studies, and whether such calls for deference are in fact merely an attack on the symptom and not the disease. The data tells us that the main problems with claim construction that need to be addressed are (1) the systematic way in which district courts err in a narrowing direction, as shown by the reversals data, and (2) the differing approaches taken by different Federal Circuit judges, as shown by the close cases data.

The question of whether or not the Federal Circuit is obligated to give deference to the district courts is, of course, a question of law that is currently before the final judicial arbiter of patent law—the Supreme Court. We express no opinion on that question of law; in the long run, perhaps our articles will only serve to document our prediction: that a rule of deference will not fix the current problems with claim construction, and will in fact add an additional layer of confusion that will have to be addressed in any true solution.

APPENDIX A

TABLE 5
CHANGE IN DATA BY JUDGE FROM LAST YEAR TO THIS YEAR

| | Broad | Narrow | Less Spec | More Spec | Pro aff | Pro rev | ProPat | AntiPat |
|-----------|-------|--------|-----------|-----------|---------|---------|--------|---------|
| Brys -Old | 11 | 8 | 3 | 5 | 9 | 10 | 11 | 8 |
| Brys-New | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| Clev-Old | 16 | 5 | 8 | 0 | 5 | 16 | 15 | 6 |
| Clev-New | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| Dyk-Old | 17 | 19 | 10 | 6 | 13 | 23 | 13 | 23 |
| Dyk-New | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Linn-Old | 15 | 2 | 11 | 0 | 5 | 12 | 15 | 2 |
| Linn-New | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| Lour-Old | 4 | 20 | 2 | 15 | 16 | 8 | 5 | 19 |
| Lour-New | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| Maye-Old | 10 | 8 | 6 | 2 | 5 | 13 | 9 | 9 |
| Maye-New | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| Moor-Old | 6 | 3 | 5 | 2 | 3 | 6 | 7 | 2 |
| Moor-New | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Newm-Old | 8 | 21 | 1 | 17 | 15 | 14 | 13 | 16 |
| Newm-New | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 2 |
| O'Mal-Old | 1 | 2 | 1 | 0 | 2 | 1 | 3 | 0 |
| O'Mal-New | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 0 |
| Plag-Old | 1 | 2 | 1 | 1 | 0 | 3 | 1 | 2 |
| Plag-New | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| Pros-Old | 14 | 11 | 5 | 8 | 11 | 14 | 16 | 9 |
| Pros-New | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| Rade-Old | 19 | 6 | 14 | 6 | 16 | 9 | 18 | 7 |
| Rade-New | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 7 |
| Reyn-Old | 1 | 2 | 1 | 0 | 3 | 0 | 0 | 3 |
| Reyn-New | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 1 |
| Scha-Old | 8 | 8 | 6 | 4 | 6 | 10 | 6 | 10 |
| Scha-New | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wall-Old | 4 | 0 | 1 | 0 | 2 | 2 | 3 | 1 |
| Wall-New | 2 | 0 | 0 | 0 | 1 | 1 | 4 | 2 |

APPENDIX B

TABLE 6
CLOSE CASES

| Case | Date | Broader | Narrower | Less Spec | More Spec | Pro-Affirm | Pro-Reverse | Pro-Patent | Anti-Patent |
|--|---------|-------------------|----------------------|-------------------|----------------------|------------|-------------|------------|-------------|
| Aventis Pharmaceuticals Inc. v. Amino Chemicals Ltd. | 5/20/13 | Newman, Reyna [a] | Bryson [d] | n/a | n/a | | X | X | |
| Douglas Dynamics, LLC v. Buyers Products Co. | 5/21/13 | Rader [a], Newman | Mayer [d] | Rader [a], Newman | Mayer [d] | | X | X | |
| Rambus Inc. v. Rea | 6/28/13 | Wallach [d] | Rader [a], O'Malley | n/a | n/a | | X | X | |
| 3M Innovative Properties Co. v. Tredegar Corp. | 8/6/13 | O'Malley [d] | Plager, Reyna [a] | O'Malley [d] | Plager, Reyna [a] | X | | | X |
| SkinMedica, Inc. v. Histogen Inc. | 8/23/13 | Rader [d] | Prost [a], Clevenger | Rader [d] | Prost [a], Clevenger | X | | | X |
| Cooper Notification, Inc. v. Twitter, Inc. | 8/30/13 | Taranto [d] | Newman, Lourie [a] | n/a | n/a | X | | | X |
| Kruse Technology Partnership v. Volkswagen AG | 10/8/13 | Wallach [d] | Newman, Linn [a] | n/a | n/a | X | | | X |

APPENDIX C

TABLE 7
REVERSALS

| Case (Reversals) | Date | Panel | Broader | Narrower | Procedural Posture | Dissent |
|---|----------|---------------------------------|---------|----------|--------------------|---------|
| Capital Mach. Co., Inc. v. Miller Veneers, Inc. | 4/15/13 | Lourie, Moore [a], O'Malley | X | | SJ of NI | None |
| Aventis Pharmaceuticals Inc. v. Amino Chemicals Ltd. | 5/20/13 | Newman, Bryson [d], Reyna [a] | X | | StipJ of NI | Bryson |
| Douglas Dynamics, LLC v. Buyers Products Co. | 5/21/13 | Rader [a], Newman, Mayer [d] | X | | SJ of NI | Mayer |
| Creative Integrated Systems, Inc. v. Nintendo of America, Inc. | 6/3/13 | Reyna [a], Clevenger, Lourie | X | | StipJ of NI | None |
| Plantronics, Inc. v. Aliph, Inc. | 7/31/13 | Rader, O'Malley, Wallach [a] | X | | SJ of NI | None |
| 3M Innovative Properties Co. v. Tredegar Corp. | 8/6/13 | O'Malley [d], Plager, Reyna [a] | X | | StipJ of NI | None |
| Aria Diagnostics, Inc. v. Sequenom, Inc. | 8/9/13 | Rader [a], Dyk, Reyna | X | | Denial of PI | None |
| Trading Technologies Intern., Inc. v. Open E Cry, LLC | 8/30/13 | Lourie [a], Plager, Benson | X | | SJ of NI | None |
| TecSec, Inc. v. International Business Machines Corp. | 10/2/13 | Moore, Linn [a], Reyna | X | | StipJ of NI | None |
| AstraZeneca LP v. Breath Ltd. | 10/30/13 | Rader, Bryson, Linn [a] | X | | NI after T | None |
| Butamax(TM) Advanced Biofuels LLC v. Gevo, Inc. | 2/18/14 | Rader, Linn [a], Wallach | X | | SJ of NI | None |
| Takeda Pharmaceutical Co. Ltd. v. Zydus Pharmaceuticals USA, Inc. | 2/20/14 | Prost [a], Plager, Chen | | X | INF after T | None |
| Frans Nooren Afdichtingssystemen B.V. v. Stopaq Amcorr Inc. | 2/21/14 | Rader, Taranto [a], Chen | X | | SJ of NI | None |
| Ancora Technologies, Inc. v. Apple, Inc. | 3/3/14 | Rader, Taranto [a], Chen | X | | SJ of NI | None |
| e2Interactive, Inc. v. Blackhawk Network, Inc. | 3/12/14 | Moore [a], Dyk, Wallach | | X | INF after T | None |
| Vederi, LLC v. Google, Inc. | 3/14/14 | Rader [a], Dyk, Taranto | X | | SJ of NI | None |