
THE FEDERAL CIRCUIT AND INEQUITABLE CONDUCT: AN EMPIRICAL ASSESSMENT

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ABSTRACT

Inequitable conduct is a unique judicially created doctrine designed to punish patent applicants who behave inequitably toward the public in the course of patent acquisition. Its name alone strikes fear into the hearts of patent prosecutors, and justly so—for when successfully asserted, inequitable conduct can have devastating consequences that reach far beyond a patentee's case. The need for a systematic empirical study of inequitable conduct jurisprudence has become especially pressing now that the Federal Circuit is reviewing inequitable conduct en banc—in terms so broad as to be unprecedented in the history of the doctrine. This Article

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† Associate Professor, University of Iowa College of Law. This Article was written while the author was a Visiting Researcher at the University of California Hastings School of Law. For the sake of full disclosure, the author notes that he previously represented clients on both sides of inequitable conduct, including Abbott Laboratories in *Therasense v. Becton Dickinson*. The opinions expressed are those of the author, and do not necessarily reflect the views of former clients.

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reports such a study.

*The study reported here provides evidence, inter alia, that the Federal Circuit applies an inequitable conduct standard that is stricter, in other words less favorable to finding inequitable conduct, than that applied by a substantial number of the tribunals it reviews. The Federal Circuit's stricter standard manifests primarily through the intent to deceive component of the inequitable conduct doctrine. For all intents and purposes, the Federal Circuit has no substantive jurisprudence around the balancing component, and the materiality component is comparatively less impactful than intent to deceive. The court appears to have trouble communicating its stricter standard to lower tribunals. We offer some explanations for why this might be so, and offer some modest suggestions that might advance the inequitable conduct doctrine. In addition, while this Article was in production the Federal Circuit heard argument in and decided *Therasense v. Becton, Dickinson & Co.*, so we have added a brief epilogue addressing some of the implications of the decision that are relevant in view of the findings of this Article.*

ABSTRACT	1293
I. INTRODUCTION	1295
II. STUDY DESIGN AND METHODOLOGY	1303
A. OVERALL APPROACH	1303
B. CASE SELECTION	1305
C. CODING	1307
D. ANALYSIS	1307
III. RESULTS AND DISCUSSION	1308
A. INEQUITABLE CONDUCT JURISPRUDENCE EVINCES A STRONG PREFERENCE FOR PATENTEE SUCCESS	1308
1. The Federal Circuit Applies an Inequitable Conduct Standard Stricter Than That Applied by Tribunals It Reviews.....	1311
B. THE FEDERAL CIRCUIT'S STRONG PREFERENCE FOR PATENTEE SUCCESS MANIFESTS THROUGH THE INTENT TO DECEIVE COMPONENT OF THE INEQUITABLE CONDUCT ANALYSIS	1319
1. Patentees Usually Win for Lack of Intent to Deceive	1319
2. Balancing Is (Largely) Jurisprudentially Irrelevant.....	1321
3. The Boundlessness of Materiality	1324
C. WHAT IS GOING ON?.....	1329

1. Inequitable Conduct Claims Precipitate into Contests over Intent to Deceive.....	1329
2. The Federal Circuit Is Having Trouble Communicating Its Intent to Deceive Standard to Lower Tribunals.....	1333
3. The Lack of a Clear Standard for Intent to Deceive Permits the Federal Circuit Useful Latitude (or a Theory of Inequitable Conduct Enforcement)	1339
IV. ADDITIONAL OBSERVATIONS AND RECOMMENDATIONS.....	1342
A. <i>KINGSDOWN</i> IS PROBABLY RIGHT	1342
B. FACTUAL INQUIRIES PROVIDE INSIGHT INTO THE SIGNIFICANCE OF MATERIAL INFORMATION.....	1345
V. CONCLUSION.....	1349
VI. EPILOGUE	1349
APPENDIX – DATABASE FIELDS.....	1353

I. INTRODUCTION

Perhaps no doctrine in patent law is of greater concern to patent lawyers than inequitable conduct, a unique judicially created¹ doctrine designed to punish patentees who behave inequitably toward the public in the course of patent acquisition.² Its name alone strikes fear into the hearts of patent prosecutors, and justly so—for when successfully asserted, inequitable conduct can have devastating consequences that reach far beyond a patentee’s case. Its use is frequently painted as the blackest of evils—a “plague” that permeates all of patent litigation.³

1. *Digital Control, Inc. v. Charles Mach. Works*, 437 F.3d 1309, 1315 (Fed. Cir. 2006).

2. The doctrine has its roots in a series of Supreme Court cases in which the Court refused to enforce patents in situations where patentees had engaged in fraud to obtain the patents. *Id.* See also *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806 (1945); *Hazel-Atlas Glass Co. v. Hartford-Empire Co.*, 322 U.S. 238 (1944); *Keystone Driller Co. v. Gen. Excavator Co.*, 290 U.S. 240 (1933).

Compliance with the duty of candor may often be contrary to the self-interests of those who seek patents because it requires patent applicants to disclose to the patent office information that may adversely impact the scope of patent claims that might issue, and indeed, may adversely impact an applicant’s claim of entitlement to any patent claims. By policing patent applicants’ compliance with the duty of candor, inequitable conduct serves two important policies. First, it enforces a duty of good faith and fair dealing that binds patent applicants in dealing with the public during the ex parte patent granting process. Second, it protects the social utility of the patent system by seeking to diminish the probability that unscrupulous individuals wrongfully obtain undeserved rents.

3. The point used comes from *Burlington Industries, Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988) (“[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague. Reputable lawyers seem to feel compelled to make the charge against other

The purpose of the modern incarnation of the doctrine is to police patent applicant conduct before the patent office. The doctrine is thought necessary because patent prosecution is an *ex parte* process, and as such, it requires a strict duty of candor on the part of patent applicants—a duty that requires patent applicants to disclose to the patent office “all information known [to the patent applicant] to be material to patentability.”⁴ Thus, when prosecuting a patent, an applicant is required to disclose information that is material to patentability and within the sphere of knowledge and control of the applicant. An applicant also needs to take care to make accurate statements about the invention, the prior art, and other matters affecting patentability.

Unlike statutory defenses to infringement such as anticipation⁵ or obviousness⁶ that undermine individual patent claims, a successful inequitable conduct defense will render an entire patent unenforceable.⁷ A finding of inequitable conduct may also make the case exceptional⁸ and entitle the accused infringer to attorney fees.⁹ The risk of losing the right to enforce one or more patents, combined with the probability of being forced to pay the other side’s attorney fees, can give serious pause to a patentee who might consider a patent infringement lawsuit as a means to vindicate its property rights.

Nor does the impact of a finding of inequitable conduct necessarily end with the loss of the right to enforce a patent or the payment of attorney fees to an adverse party. Depending on the identity of the individual

reputable lawyers on the slenderest grounds, to represent their client’s interests adequately, perhaps. They get anywhere with the accusation in but a small percentage of the cases, but such charges are not inconsequential on that account. They destroy the respect for one another’s integrity, for being fellow members of an honorable profession, that used to make the bar a valuable help to the courts in making a sound disposition of their cases, and to sustain the good name of the bar itself.”)

4. 37 C.F.R. § 1.56(a) (2010).

5. See 35 U.S.C. § 102 (2006).

6. See *id.* § 103(a).

7. *Kingsdown Med. Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 877 (Fed. Cir. 1988) (relevant part *en banc*) (“When a court has finally determined that inequitable conduct occurred in relation to one or more claims during prosecution of the patent application, the entire patent is rendered unenforceable.”).

8. See 35 U.S.C. § 285 (2006) (“The court in exceptional cases may award reasonable attorney fees to the prevailing party.”); *Epcon Gas Sys., Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1034 (Fed. Cir. 2002) (“The prevailing party may prove the existence of an exceptional case by showing: inequitable conduct before the PTO . . .”).

9. *A.B. Chance Co. v. RTE Corp.*, 854 F.2d 1307, 1312 (Fed. Cir. 1988) (“Inequitable conduct is a separate defense to patent infringement and, either alone or in conjunction with trial conduct, may constitute the basis for an award of attorney fees under 35 U.S.C. § 285.”).

determined to have behaved inequitably,¹⁰ there may also be important personal consequences. For example, if an inequitable conduct determination is based on the conduct of a patent agent or patent attorney, he or she may be subject to a malpractice suit, disqualification from practice before the patent office, and, for attorneys, potential discipline by the bars of the jurisdictions in which they are licensed to practice law.¹¹ Thus, the inequitable conduct defense poses a challenge not just to one's invention, but also to one's livelihood.¹²

There is also a concern that the prospect for a sweeping victory and a potentially sizeable fee award, combined with the relatively small marginal cost of asserting inequitable conduct, strongly encourages patent litigators to assert the defense as a matter of course.¹³ Moreover, compared with some defenses to patent infringement, inequitable conduct is relatively easy to invoke. It is a remarkably broad and unconstrained¹⁴ doctrine in the sense that it depends almost exclusively on proving two very general elements. The first is materiality, an inquiry into whether a patentee made an affirmative misrepresentation of a fact, failed to disclose information, or

10. Individuals who owe a duty of candor to the patent office and whose acts may create the possibility for a claim of inequitable conduct include

(1) Each inventor named in the application; (2) Each attorney or agent who prepares or prosecutes the application; and (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

37 C.F.R. § 1.56(c) (2010).

11. See Christopher A. Cotropia, *Modernizing Patent Law's Inequitable Conduct Doctrine*, 24 BERKELEY TECH. L.J. 723, 766 (2009) (citing additional sources).

12. See, e.g., Brief of Amicus Curiae 43 Patent Practitioners Employed by Eli Lilly and Company, in Support of No Party at 2, *Therasense, Inc. v. Becton, Dickinson & Co.*, Nos. 2008-1511, -1512, -1513, -1514, -1595 (Fed. Cir. Aug. 2, 2010), available at <http://www.patentlyo.com/ts.enbanc.elililly.pdf> (discussing the personal impact of inequitable conduct claims on patent prosecutors at Eli Lilly). While individuals whose conduct forms the basis of an inequitable conduct claim may be able to intervene at trial, they appear to lack standing on appeal. See *Nisus Corp. v. Perma-Chink Sys., Inc.*, 497 F.3d 1316, 1320–22 (Fed. Cir. 2007) (denying standing to appeal a court criticism of an attorney short of sanctions).

13. John F. Lynch, *An Argument for Eliminating the Defense of Patent Unenforceability Based on Inequitable Conduct*, 16 AIPLA Q.J. 7, 8 (1988) (“The strategic and technical advantages that the inequitable conduct defense offers the accused infringer make it almost too attractive to ignore.”); Christian E. Mammen, *Controlling the “Plague”: Reforming the Doctrine of Inequitable Conduct*, 24 BERKELEY TECH. L.J. 1329, 1332 (2009) (“With [the] advantages [of the inequitable conduct defense], together with an increasing murkiness in the elements and boundaries of the defense, it is little wonder that accused infringers look for any opportunity to inject the inequitable conduct defense into patent litigation, and are doing so with increasing frequency.”).

14. *But see Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1329–31 (Fed. Cir. 2009) (attempting to increase the pleading requirements for inequitable conduct).

submitted false information¹⁵ that a “reasonable” patent examiner would have considered “important in deciding whether to allow the application to issue as a patent.”¹⁶ The second is a mental state element, which asks whether the material act or omission was committed with the “intent to deceive” the patent office.¹⁷ Intent to deceive may be—and normally is¹⁸—inferred from the facts and circumstances surrounding the acts or omissions of an individual associated with the filing or prosecution of a patent application.¹⁹ The only clear doctrinal constraint on intent to deceive is that an individual’s state of mind must be greater than gross negligence, as an en banc Federal Circuit required in *Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*²⁰

A finding of inequitable conduct requires an additional step, an equitable balancing in which a court balances all of the evidence, including the level of materiality of the conduct and the level of intent to deceive, in order to determine as a matter of law whether the patent applicant behaved inequitably toward the public in the course of patent acquisition.²¹

On appeal, the two factual elements of inequitable conduct are entitled to relatively limited review. Materiality and intent to deceive are conclusions of ultimate fact that follow from broad, open-ended factual inquiries. They are reviewed for clear error or substantial evidence

15. *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995).

16. *Id.* at 1179. For other articulations, see, for example, 37 C.F.R. § 1.56(b) (2010).

17. *Halliburton Co. v. Schlumberger Tech. Corp.*, 925 F.2d 1435, 1443 (Fed. Cir. 1991) (“An applicant’s conduct in its entirety must ‘manifest[] a sufficiently culpable state of mind to warrant a determination that it was inequitable.’” (quoting *Consol. Aluminum Corp. v. Foseco Int’l Ltd.*, 910 F.2d 804, 809 (Fed. Cir. 1990)). See also *Digital Control, Inc. v. Charles Mach. Works*, 437 F.3d 1309, 1319 (Fed. Cir. 2006) (“[T]he involved conduct, viewed in light of all the evidence, including evidence of good faith, must indicate sufficient culpability to require a finding of intent to deceive.”).

18. “Smoking gun evidence is not required in order to establish an intent to deceive Rather, this element of inequitable conduct[] must generally be inferred from the facts and circumstances surrounding the applicant’s overall conduct.” *Dippin’ Dots, Inc. v. Mosey*, 476 F.3d 1337, 1345 (Fed. Cir. 2007) (quoting *Paragon Podiatry Lab. v. KLM Lab.*, 984 F.2d 1182, 1189 (Fed. Cir. 1993)) (internal quotation marks omitted).

19. *Molins*, 48 F.3d at 1181.

20. *Kingsdown Med. Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 876 (Fed. Cir. 1988) (relevant part en banc) (“We adopt the view that a finding that particular conduct amounts to ‘gross negligence’ does not of itself justify an inference of intent to deceive; the involved conduct, viewed in light of all the evidence, including evidence indicative of good faith, must indicate sufficient culpability to require a finding of intent to deceive.”).

21. *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1365 (Fed. Cir. 2008) (“[T]he district court must still balance the equities to determine whether the applicant’s conduct before the PTO was egregious enough to warrant holding the entire patent unenforceable.”). For additional discussion of this doctrinal component, see Mammen, *supra* note 13, at 1342–44.

depending on whether the judge or jury acted as fact finder.²² The equitable balancing step is reviewed for abuse of discretion,²³ arguably an even more deferential form of review.

Inequitable conduct is thus a fairly simple cause of action allowing for broad investigation into, and argument concerning, a patentee's behavior and state of mind. Moreover, the potential reward of success is great, and doctrinally, victories that patent challengers win at the trial level are—formally anyway—structurally insulated from strong appellate interference due to the deferential standard of review.

This state of affairs helps to fuel the concern that the inequitable conduct defense is often misused. The Federal Circuit acknowledged this concern over twenty years ago, stating that “the habit of charging inequitable conduct in almost every major patent case has become an absolute plague.”²⁴ More recently, Judge Pauline Newman, dissenting from her panel members' refusal to reverse a determination of inequitable conduct, offered the suggestion that the “plague” is returning to patent litigation by stating,

Litigation-induced assaults on the conduct of science and scientists, by aggressive advocates intent on destruction of reputation and property for private gain, produced the past “plague” of charges of “inequitable conduct.” A successful attack on the inventor or his lawyer will destroy the patent, no matter how valid the patent and how sound the invention. The uncertainties of the processes of scientific research, the vagaries of the inductive method, the complexities of patent procedures, and the twists of hindsight, all provided grist for this pernicious mill. Indeed, the prevalence of accusations of inequitable conduct in patent cases led judges to suspect that all scientists are knaves and all patent attorneys jackals. Today this court revives that misbegotten era.²⁵

Given the significance of inequitable conduct to the psyches (and careers) of patent lawyers, it should come as little surprise that patent

22. Compare *Rothman v. Target Corp.*, 556 F.3d 1310, 1323–24 (Fed. Cir. 2009) (stating that when the inequitable conduct issue is submitted to a jury, the Federal Circuit reviews whether substantial evidence supports the jury's verdict), with *Duro-Last, Inc. v. Custom Seal, Inc.*, 321 F.3d 1098, 1110 (Fed. Cir. 2003) (stating that clear error review applies as long as the trial judge makes the final inequitable conduct fact findings, even if the issue is submitted to an advisory jury). See also *Star Scientific*, 537 F.3d at 1365 (“[W]e review the underlying factual determinations [of the trial court] for clear error . . .”).

23. *Union Pac. Res. Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 693–94 (Fed. Cir. 2001).

24. *Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988).

25. *Hoffmann-La Roche, Inc. v. Promega Corp.*, 323 F.3d 1354, 1372 (Fed. Cir. 2003).

lawyers,²⁶ courts,²⁷ and patent scholars²⁸ have spent a vast amount of time and ink over the last twenty-five years fretting over, criticizing, and commenting on the doctrine.²⁹ A review of the legal literature, however, reveals a stunning dearth of studies directed to the systematic empirical assessment of inequitable conduct jurisprudence.³⁰

26. As of September 18, 2011, searching the “Bar Journals” database on LEXIS for “inequitable conduct” returns 107 results, and searching “ABA Journals” on LEXIS for “inequitable conduct” returns 234 results. It is also noteworthy that at least thirty-nine briefs of amicus curiae were filed in connection with the *Therasense v. Becton, Dickinson & Co.* en banc appeal. This number rivals the amount of amicus briefs filed in the Supreme Court in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002) (twenty-seven amicus briefs) and *eBay, Inc. v. MercExchange L.L.C.*, 547 U.S. 388 (2006) (thirty-one amicus briefs). Both numbers are reported in John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 957 & n.5 (2007) (describing this level of amicus briefing in a Supreme Court patent case as indicating an “unprecedented frenzy”).

27. For example, in this study, we observe that the Federal Circuit has written 338 opinions addressing claims of inequitable conduct. *Cf.* Mammen, *supra* note 13, at 1351 tbl.1 (reporting 321 cases through 2008). Pleadings in recent years are obviously higher. *See id.* at 1358 tbl.2 (estimating that between 2005 and 2008, inequitable conduct was pled in 827 to 1157 pleadings per year).

28. As of September 18, 2011, searching the “Intellectual Property Law Review Articles” database on LEXIS for “inequitable conduct” returns 822 results.

29. In addition to the inequitable conduct scholarship cited already, see Cotropia, *supra* note 11; Lynch, *supra* note 13; Mammen, *supra* note 13, and following, see, for example, *infra* note 30, other significant scholarship on the subject includes Thomas Cotter, *An Economic Analysis of Patent Law’s Inequitable Conduct Doctrine*, 53 ARIZ. L. REV. (forthcoming 2011); Lisa Dolak, *The Inequitable Conduct Gyre Widens*, 50 IDEA 215 (2010); Robert J. Goldman, *Evolution of the Inequitable Conduct Defense in Patent Litigation*, 7 HARV. J.L. & TECH. 37 (1993); David Hricik, *Wrong About Everything: The Application by the District Courts of Rule 9(b) to Inequitable Conduct*, 86 MARQ. L. REV. 895 (2003); David McGowan, *Inequitable Conduct*, 43 LOY. L.A. L. REV. 945 (2010); Sean M. O’Connor, *Defusing the “Atomic Bomb” of Patent Litigation: Avoiding and Defending Against the Allegations of Inequitable Conduct After Mckesson et al.*, 9 J. MARSHALL REV. INTELL. PROP. L. 330 (2010); Melissa F. Wasserman, *Limiting the Inequitable Conduct Defense*, 13 VA. J.L. & TECH. 7 (2008). *See also* Randall R. Rader, *A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Foreword: Always at the Margin: Inequitable Conduct in Flux*, 59 AM. U. L. REV. 777 (2010).

30. We have so far discovered only four published pieces that appear to be reports of somewhat formal empirical assessments of inequitable conduct decisionmaking. *See* Mammen, *supra* note 13 (focusing on whether there is a “plague” of inequitable conduct); Benjamin Brown, Comment, *Inequitable Conduct: A Standard in Motion*, 19 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 593 (2009) (using statistical analysis to examine the policy considerations and consequences of reforming the standard through legislation); Kevin Mack, Note, *Reforming Inequitable Conduct to Improve Patent Quality: Cleansing Unclean Hands*, 21 BERKELEY TECH. L.J. 147 (2006); Katherine Nolan-Stevaux, Note, *Inequitable Conduct in the 21st Century: Combating the Plague*, 20 BERKELEY TECH. L.J. 147 (2005). *See also* Dennis Crouch, *Inequitable Conduct: Trends at the Federal Circuit*, PATENTLYO (Mar. 19, 2009, 11:31 AM), <http://www.patentlyo.com/patent/2009/03/inequitable-conduct-trends-at-the-federal-circuit.html> (noting a “clear increase” in the number of Federal Circuit decisions discussing inequitable conduct in the last twenty-five years). We know of two instances where some systematic empirical assessment of inequitable conduct was undertaken in the context of a broader study of patent law. *See* Donald R. Dunner, J. Michael Jakes & Jeffrey D. Karceski, 5 FED. CIR. B.J. 151, 156, 173 tbl.4 (1995) (examining inequitable conduct as part of a study into whether the Federal Circuit is pro-

We think the need for the systematic empirical study of inequitable conduct jurisprudence has become especially pressing now that the Federal Circuit has decided to take the issue of inequitable conduct en banc—in terms so broad as to be unprecedented in the history of the doctrine.³¹ Information about inequitable conduct jurisprudence should improve the ability of judges, practicing lawyers, policymakers, and others to participate more meaningfully in the debate encouraged by the Federal Circuit's willingness to rethink entirely the parameters of inequitable conduct doctrine. We also believe that the availability of empirical information concerning inequitable conduct jurisprudence will improve the quality of the debate. It is to these ends that we offer this Article, which reports a systematic empirical study of the Federal Circuit's inequitable conduct jurisprudence.

While this Article seeks to help fill the informational breach created by the lack of empirical study of inequitable conduct jurisprudence, it must be made clear that the report in this Article falls well short of painting a complete picture of all aspects of inequitable conduct. First and foremost, this Article reports a study of the *Federal Circuit's* inequitable conduct jurisprudence. We suspect that a complete picture requires some assessment of lower tribunals' handling of inequitable conduct claims. In addition, even with respect to the Federal Circuit there are valuable inquiries to be made that we either have not (yet) made or will not report

patentee); Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 11 FED. CIR. B.J. 209 (2001) (comparing patentee win rates and recoveries in cases tried before juries and judges). Another recent study has potential bearing on the issue of inequitable conduct although it does not directly empirically explore courts' inequitable conduct jurisprudence and decisionmaking. See Christopher A. Cotropia, Mark A. Lemley & Bhaven N. Sampat, *Do Applicant Patent Citations Matter? Implications for Presumption of Validity* (Stanford Law & Econ. Olin Working Paper Grp., Paper No. 401, 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1656568 (studying the use of applicant-submitted prior art).

31. *Therasense, Inc. v. Becton, Dickinson & Co.*, Nos. 2008-1511, -1512, -1513, -1514, -1595, 2010 U.S. App. LEXIS 9549 (Fed. Cir. April 26, 2010) (en banc). In *Therasense* the court posed the following questions:

1. Should the materiality-intent-balancing framework for inequitable conduct be modified or replaced?
2. If so, how? In particular, should the standard be tied directly to fraud or unclean hands? If so, what is the appropriate standard for fraud or unclean hands?
3. What is the proper standard for materiality? What role should the United States Patent and Trademark Office's rules play in defining materiality? Should a finding of materiality require that but for the alleged misconduct, one or more claims would not have issued?
4. Under what circumstances is it proper to infer intent from materiality?
5. Should the balancing inquiry (balancing materiality and intent) be abandoned?
6. Whether the standards for materiality and intent in other federal agency contexts or at common law shed light on the appropriate standards to be applied in the patent context.

Id. at *4–6 (citations omitted). We take no position on the merits of the appeal.

here. Finally, this is a piece of empirical legal scholarship. It is not a sterile report of research outputs. In addition to reporting data developed from the application of our research methodology, we also offer interpretations of that data. The interpretations we offer are the ones we think are most plausible in view of the data, and we attempt to explain why this is so. But our interpretations are surely unconsciously impacted by our long experience with patent law, our closeness to the study, and our having recently read the entire body of Federal Circuit inequitable conduct jurisprudence. We are therefore aware that other narratives might be developed from the results we present, and indeed, part of our purpose in presenting these results is to encourage narratives that challenge the ones we set forth in the following sections.³²

This Article proceeds in four additional parts. Part II describes the methodology used to gather and summarize information about the Federal Circuit's inequitable conduct jurisprudence. Part III presents the results and offers a discussion of their meaning. Among other interpretations, we suggest that:

1. *The Federal Circuit applies an inequitable conduct standard stricter than that applied by a substantial number of the tribunals it reviews.*

2. *The Federal Circuit's stricter standard manifests primarily through the intent to deceive component of the inequitable conduct doctrine.*

a. For all intents and purposes, the Federal Circuit has no substantive jurisprudence around the balancing component; and

b. The materiality component is nonspecific and has less impact.

3. *The Federal Circuit appears to have trouble communicating its stricter standard to lower tribunals.*

a. Judicial variation between Federal Circuit judges may make it difficult for judges in lower tribunals to "lock on" to the Federal Circuit's standard;

b. The mental state standard articulated in the jurisprudence—anything above gross negligence—might be lower than some circuit judges intend it to be.

32. Other limitations to the interpretation of the results presented in this Article will be evident from an analysis of our methods. We will endeavor to point out some of the most important limitations at relevant points throughout the Article.

4. *The Federal Circuit might use a higher standard for intent to deceive when it reviews judgments in order to effect its theory of enforcement of inequitable conduct.*

a. More specifically, differential standards of intent to deceive, higher at the Federal Circuit than at the trial level, provide a structural context that allows the Federal Circuit to create the threat of inequitable conduct—keeping the patent bar in line—but to rarely ever find inequitable conduct.

Based on our observation of all of the Federal Circuit’s written inequitable conduct jurisprudence, Part IV offers some thoughts about it, including some modest recommendations for improving inequitable conduct doctrine. Among other recommendations, we suggest that:

1. *When one considers the policies animating inequitable conduct in view of what the duty of candor actually requires of a patent applicant, the mental state standard for intent to deceive articulated in Kingsdown is probably the right one.*

2. *The analysis of the materiality component of inequitable conduct could be improved by judicial recognition of factual inquiries that provide insight into the significance of material information.* We suggest some such factors and think they have natural implications for the intent to deceive and balancing inquiries.

This Article finishes with a brief conclusion and, as *Therasense* was argued and decided during production, a short epilogue addressing some of the implications of the decision that are relevant in view of the findings of this Article.

II. STUDY DESIGN AND METHODOLOGY

A. OVERALL APPROACH

The basic methodology of this study is the well-known technique of “content analysis,” which permits researchers to systematically read and empirically analyze the text of judicial opinions.³³ In broad strokes, the

33. Mark A. Hall & Ronald F. Wright, *Systematic Content Analysis of Judicial Opinions*, 96 CALIF. L. REV. 63, 67 (2008) (describing content analysis and its application to legal studies and collecting many examples of the use of content analysis on legal studies). Content analysis has been applied in a number of significant studies of patent law. *See, e.g.*, Allison & Lemley, *supra* note 26, at 956–57 (examining the impact of legal rules and legal procedure); Christopher A. Cotropia, *Nonobviousness and the Federal Circuit: An Empirical Analysis of Recent Case Law*, 82 NOTRE DAME

methodological approach involves selecting cases likely to provide information pertinent to the study, coding the content of the collected cases, and analyzing the coded content. The analysis component can take almost any form, including the descriptive assessment of the content of cases and case law, the development of and formal testing of empirical claims about case law,³⁴ and the examination of relationships between case law and extrinsic factors or variables.

Using what is written in judicial opinions to study the law presents more concerns than one might at first expect considering the ubiquity of the task to the practice of law. To begin with, it usually assumes that facts and reasoning that appear in an opinion accurately reflect those from the underlying case. This may not always be true. If opinion authors are substantially concerned with “showing that [a conclusion] proceeds from accepted sources by legitimate, properly argued steps,”³⁵ they may present a biased view of the facts to encourage the acceptance of the opinion or to encourage the perception that the decision flows comfortably from established legal principles. In addition, the content of opinions may be impacted by strategic behavior on the part of opinion authors, for example, the desire to address a certain doctrine. Further, the content of opinions may be impacted by strategic behavior on the part of litigants, such as the decision to emphasize one or a set of doctrinal principles on appeal when others may apply more readily to the facts.

Selection bias is also a concern.³⁶ Not all disputes make it to trial, and those that do may not generate a written order or opinion. Only a fraction

L. REV. 911, 941 (2007) (examining empirical claims about the nature of the nonobviousness requirement of patent law); Lee Petherbridge & R. Polk Wagner, *The Federal Circuit and Patentability: An Empirical Assessment of the Law of Obviousness*, 85 TEX. L. REV. 2051, 2070–71 (2007) (same); David L. Schwartz, *Practice Makes Perfect?: An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 237–38 (2008) (studying claim construction appeals); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding?: An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1133–34 (2004) (examining judicial claim construction methodology).

34. See Hall & Wright, *supra* note 33, at 77 (“Content analysis allows scholars to verify or refute the empirical claims about case law that are implicit or explicit in all branches of legal scholarship.”).

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

36. For a discussion of selection bias as it relates to content analysis, see Hall & Wright, *supra* note 33, at 101–06; Wagner & Petherbridge, *supra* note 33, at 1130. More generally, there is a vast literature considering the selection of cases for trial and the selection of cases for appeal. A detailed discussion of it is well beyond the scope of this Article. For those interested, a seminal paper on selection bias is George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984) (addressing the factors that impact the selection of disputes for litigation).

of disputes tried are appealed, and of those appealed not all will generate an opinion.³⁷ Of those that generate an opinion, the opinion may be published or unpublished, which may impact the content and depth of analysis presented in the opinion.

In sum, there are limitations to using judicial opinions to study the law. But we do not think they are prohibitive. It is therefore worth emphasizing that the information collected and analyzed in this study is the very same information on which legal scholars, patent system institutions, patent system participants, and lawyers rely daily. It does not become less valid because it is subjected to a systematic and comprehensive analysis. Indeed, there may be a benefit to such an approach because it affords a broad, objective perspective that can be difficult to reproduce in traditional interpretive scholarship.

B. CASE SELECTION

The dataset was primarily assembled from a search of the LEXIS “Federal Circuit, U.S. Court of Appeals Cases” database.³⁸ Using no date restrictions, the database was searched for the term “inequitable conduct” on May 27, 2010. The search returned 650 cases.³⁹ Not all cases that mention “inequitable conduct” evince an analysis of a claim of inequitable conduct and so cases were screened—both manually and using a computer script—to identify ones that evince an analysis of inequitable conduct.⁴⁰

The defining characteristic of a record entry in the dataset is that it comprises a distinct analysis of an inequitable conduct claim in an opinion for the court.⁴¹ In most instances, a case is equivalent to a record entry. But

37. See, e.g., FED. CIR. R. 36 (describing when the Federal Circuit may enter a judgment of affirmance without opinion).

38. We also used Westlaw to supplement the dataset. For example, we discovered that before 1991 LEXIS primarily reported the Federal Circuit’s published orders for nonprecedential opinions, but that Westlaw reported entire nonprecedential opinions dating back to 1987. Thus, we conducted a parallel search of the Westlaw “U.S. Court of Appeals for the Federal Circuit Cases (CTAF)” database and included the reports that appeared in only that database.

39. As the data were cleaned and prepared for coding, cases were added as they issued through June 11, 2010, raising the total number of cases to 653.

40. This left a total number of 338 cases, which is comparable to the 321 reported by Mammen through 2008. See Mammen, *supra* note 13, at 1351 tbl.1.

41. Because this study is focused on the content of inequitable conduct jurisprudence, it focuses on opinions for the court (that is, it does not include an analysis of the content of concurrences and dissents). This raises another issue—as noted earlier at *supra* note 37—that the Federal Circuit may, according to its Rule 36, affirm a lower court’s judgment without an opinion. In any study that seeks to use cases to understand the law, the presence of such opinions may be relevant. The relevance of Rule

in some cases involving multiple patents, a case gives rise to multiple record entries because different patents are subject to different analyses. To be clear, if a case involves a claim that four patents have been procured by inequitable conduct and the court's analysis addresses all of the patents in a single textual analysis or rationale, then a single record entry is made in the dataset. By contrast, if the court uses one textual analysis or rationale to

36 opinions to this study is put into perspective by the following observations:

First, much of this study's focus is on the content of the Federal Circuit's written jurisprudence. Rule 36 opinions are not very relevant to this focus because summary affirmances do not add statements of law or explanations of the application of law to facts to the body of relevant law.

Second, in some instances, this study reports outcomes. To the extent it does so, Rule 36 dispositions may increase in relevancy. This is because the summary affirmation of an appeal that contests a lower court's judgment concerning inequitable conduct suggests the possibility that the Federal Circuit might have applied the law of inequitable conduct in resolving the appeal. A conventional means to collect information about cases that are affirmed without an opinion is to examine the appellate briefing in the case and then to infer from the issues raised in the briefing that—because the court affirmed—the court resolved an issue in a particular way. *See* Schwartz, *supra* note 33, at 239 (describing this methodological approach in the counting of claim construction reversal rates). Because the Federal Circuit reviews only judgments, however, this approach can present serious biasing concerns since it is not possible to know why the court affirmed the reviewed judgment. For example, a party might contest a lower tribunal's judgment of no inequitable conduct, but the appellant's position might depend entirely on whether it wins on another issue, such as claim construction or the effective date of a reference. *See* Pfizer, Inc. v. Apotex, Inc., 480 F.3d 1348, 1359 (Fed. Cir. 2006) (“Since we hold that claims 1–3 are invalid for obviousness, we need not and do not address Apotex’s assertion that Pfizer engaged in inequitable conduct . . .”). Thus, including Rule 36 dispositions may increase the size of a sample of case outcomes. *See* Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1128 (2001) (reporting the use of Rule 36 in 21% of patent cases); Schwartz, *supra* note 33, at 239 (reporting that 206 of 952 claim construction cases used Rule 36). Still unknown, however, are the outcomes of cases that are tried but not appealed, settled before, during, or after trial, or do not even get that far—at the expense that the information gleaned may be less likely to accurately represent the court's decisionmaking because the evidence of how the court resolved the appeal is not as clear.

Third, one might speculate that the Federal Circuit uses Rule 36 to affirm large numbers of judgments of inequitable conduct. This seems to us to be strongly counterintuitive given the significance of such a judgment. We also suspect that if this has been happening it would not have escaped the notice of legal scholars and the bar—and to the best of our knowledge there are no reports or outcry claiming that this has become the practice of the Federal Circuit. Alternatively, one might speculate that the Federal Circuit uses Rule 36 to affirm large numbers of judgments of no inequitable conduct. This is slightly more intuitive, although there is no evidence that this happens. Thus, if the Federal Circuit does affirm large numbers of judgments of no inequitable conduct, the most likely conclusion to be drawn, as one will see from the results below, is that the Federal Circuit treats patentees even more favorably than it appears to in its written opinions.

Finally, it is worth emphasizing two points: (1) that there is no evidence that Rule 36 usage in appeals involving inequitable conduct (or any other issue for that matter) has varied substantially—in a way meaningful to this study—over time; and (2) that even if Rule 36 usage has varied, the most likely impact to this study of that fact, if indeed there is any at all, should be in outcomes, for example, if the patentee wins. The text of opinions—the evidence of the law cited in briefs and argued to courts—is unchanged.

find, perhaps, that one of the patents was procured inequitably and then uses a single textual analysis or rationale to find that the other three were not, then two record entries are made in the dataset.

C. CODING

Analyses were coded for content. Some of the content was machine coded, while other content was human coded. The human coding was categorical in nature, requiring coders to independently score an analysis as falling into particular predetermined and predefined categories. Much of the human coding was highly objective. Nonetheless, coding results from different coders were compared, and where applicable, corrections were made to the data set.⁴² To assess whether the scoring could be reproduced, the reliability of the coding was assessed using a coefficient of coder agreement known as Cohen's kappa.⁴³

D. ANALYSIS

The empirical evidence reported in this study comes from the application of several statistical techniques. Some are simple descriptive techniques, such as graphical representations that describe variables for the entire period studied or at various points in the modern history of patent law. The study also employs more complex statistical arguments, including some useful for exploring and defining relationships between variables drawn from the content of judicial opinions.

At times the analysis employs the statistical argument that results are "significant"—a contention that the observed results are not simply a product of chance. This argument suggests the possibility that there might be a relationship between certain variables, and Part III offers ideas and hypotheses that might explain significant relationships.

Significance is indicated by the letter p, which stands for probability. Any p-value of 0.05 or lower is considered statistically significant because it indicates that the probability that the results are due to chance is less than 5 percent. Values between 0.05 and 0.1 are considered marginal, indicating that the probability that the observed results are due to chance is between 5 and 10 percent.

42. More than half of the analyses in the data set were coded by more than one coder.

43. See Hall & Wright, *supra* note 33, at 113–14 (identifying this technique as best practice); Petherbridge & Wagner, *supra* note 33, at 2074–75 (assessing intercoder reliability by this measure); *infra* Appendix.

Finally, we endeavored to collect the entire population of written inequitable conduct analyses over the period studied. To the extent we succeeded, the results are by definition a statistically significant representation of the population.⁴⁴ Inherent uncertainties in data collection, however, make the absolute claim that we have collected the entire population somewhat difficult to sustain,⁴⁵ plus we have an interest in the predictive utility⁴⁶ of the data. For that reason we often treat the dataset as a sample of a super-population.

III. RESULTS AND DISCUSSION

In this part we set out some key empirical findings and offer an interpretation of what they suggest about inequitable conduct. Part III.A presents evidence indicating that patentees win much more often than they lose at the Federal Circuit when it comes to inequitable conduct. This part also develops evidence that suggests a reason why this is so: the Federal Circuit applies an inequitable conduct standard stricter than that applied by the tribunals it reviews. Part III.B builds on this finding and examines the content of Federal Circuit jurisprudence with a view toward describing what doctrinal components explain the observed levels of patentee success. Part III.C provides a discussion of what we think is happening in inequitable conduct jurisprudence.

A. INEQUITABLE CONDUCT JURISPRUDENCE EVINCES A STRONG PREFERENCE FOR PATENTEE SUCCESS

How often are patentees successful at the Federal Circuit? To find out, we measured patentee success in the Federal Circuit's written jurisprudence. A patentee was deemed to have succeeded when the Federal Circuit affirmed a lower tribunal's inequitable conduct judgment that was favorable to the patentee, or reversed or vacated a lower tribunal's inequitable conduct judgment that was adverse to the patentee.⁴⁷ As figure

44. John R. Allison & Mark A. Lemley, *How Federal Circuit Judges Vote in Patent Validity Cases*, 27 FLA. ST. U. L. REV. 745, 747 (2000).

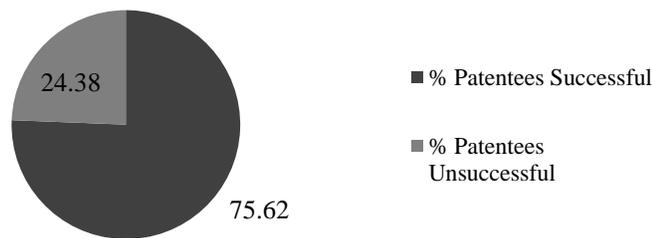
45. Although to be clear, if for some reason we do not have the entire population, we believe we have nearly the entire population, *cf.* Mammen, *supra* note 13, at 1351 tbl.1 (reporting 321 cases through 2008), which given the variation we report might make a generalizable claim to statistical significance practicable anyway.

46. That utility may extend to all appeals decided by, argued, or even filed at the Federal Circuit; to the extent that Federal Circuit opinions may be a representative sample of inequitable conduct claims made in lower tribunals, the utility of some findings may extend even farther.

47. For example, if a district court ruled that a patent applicant did not commit inequitable

1 shows, patentees are successful in Federal Circuit written analyses an overwhelming and strongly significant⁴⁸ majority of the time (75.62%) and unsuccessful only 24.38% of the time.

FIGURE 1. Frequency of Patentee Success in Federal Circuit Written Inequitable Conduct Decisions (1983–2008) (n = 361)



Note: Figure 1 shows the percentage of Federal Circuit analyses in which patentees succeed on claims of inequitable conduct. Patentee success was determined by whether the Federal Circuit affirmed a lower tribunal's inequitable conduct judgment that was favorable to a patentee, or reversed or vacated a lower tribunal's inequitable conduct judgment that was adverse to the patentee.

Figure 2 reveals that while there is some variation in the rate of patentee success over the last twenty-seven years, the broad trend appears to be flat: patentee success has fluctuated fairly evenly around the overall average of 75.68%. Figure 2 also shows the rate of patentee success in the lower tribunal judgments that the Federal Circuit analyzes in writing. In this context, patentees were deemed successful when the lower tribunal found no inequitable conduct. Patentees succeeded just over half the time—

conduct, and the Federal Circuit affirmed, that was deemed to be a success for the patentee. Likewise, if a lower tribunal granted summary judgment of inequitable conduct, and the Federal Circuit vacated that grant of summary judgment, that was deemed to have been a success for the patentee.

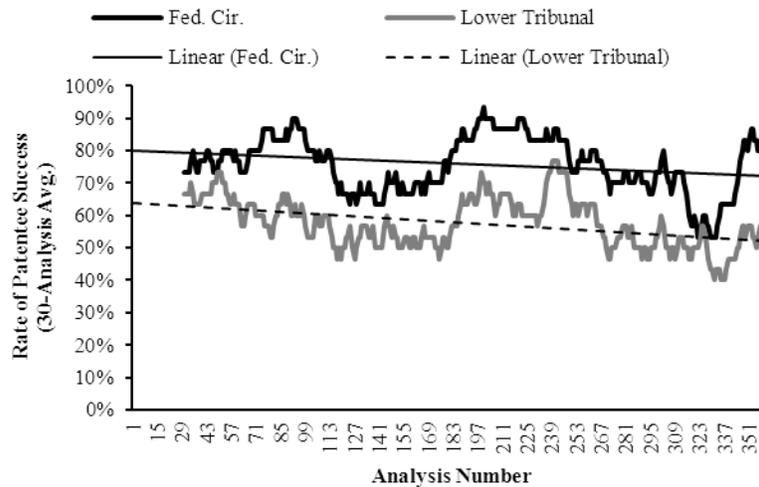
48. TABLE 1. Patentee Outcome in Federal Circuit Written Analyses (n = 361)

<i>Outcome</i>	<i>Observed</i>	<i>Expected if Equal</i>
Success	273	180.5
Failure	88	180.5

Chi square = 94.50, *df* = 1, *p* < 0.001

58.17% (or, if one prefers lost nearly half the time—41.83%), a rate significantly lower than that enjoyed by patentees at the Federal Circuit.⁴⁹

FIGURE 2. Trend in Rates of Patentee Success in Inequitable Conduct Analyses Lower Tribunal Versus Federal Circuit (1983–2008) (n = 361)



Note: Figure 2 shows the trends in rates of patentee success on inequitable conduct in Federal Circuit analyses and lower tribunal judgments analyzed by the Federal Circuit. Patentee success in Federal Circuit analyses was determined by whether the Federal Circuit affirmed a lower tribunal's inequitable conduct judgment that was favorable to a patentee, or reversed or vacated a lower tribunal's inequitable conduct judgment that was adverse to the patentee. Patentee success in lower tribunal judgments was determined by the judgment, that is, inequitable conduct or no inequitable conduct. Rates are depicted as 30-Analysis (lagged) moving averages, a perspective that offers a view of what one would see if he or she looked back from any point in time and surveyed the Federal Circuit's then most recent twenty-five to thirty inequitable conduct analyses. The trend lines imposed are least squares lines. *R-squared* for "Fed. Cir." is 0.055; for "Lower Tribunal" it is 0.167.

The broad trend in rate of patentee success in the lower tribunal judgments that are analyzed by the Federal Circuit also appears to be generally flat around its central measure, although like the Federal Circuit trend it also exhibits some variation. Perhaps the most remarkable finding depicted by figure 2 is emphasized by the trend lines: when the Federal Circuit writes, it appears to be turning back substantial numbers of lower

49. *Chi square* = 24.04, *df* = 1, *p* < 0.001.

tribunal judgments of inequitable conduct, a pattern that seems to persist throughout the court's history.

We think this pattern suggests an understanding of Federal Circuit inequitable conduct jurisprudence—namely, that the Federal Circuit is comparatively (to the lower tribunals it is dealing with) “pro-patentee.” We do not mean this in a pejorative sense; rather, we mean that overall the Federal Circuit seems to be at a different place than the lower tribunals on what constitutes inequitable conduct. It is as if the Federal Circuit simply has a different—and stricter—standard than a substantial number of the tribunals whose judgments it reviews. To look more specifically at the hypothesis that the Federal Circuit applies a stricter, harder-to-meet standard than the tribunals it reviews, we examined how the Federal Circuit treats incoming judgments of inequitable conduct.

1. The Federal Circuit Applies an Inequitable Conduct Standard Stricter Than That Applied by Tribunals It Reviews

Figures 3 and 4 report the rate at which the Federal Circuit affirms lower tribunal judgments depending on whether they found inequitable conduct.⁵⁰ The figures indicate that the Federal Circuit seems to strongly favor judgments that favor patentees. When the lower tribunal concludes that a patentee has engaged in inequitable conduct, it is affirmed less than half (45.70%) of the time, but when it reaches the opposite conclusion, it is affirmed a whopping 90.73% of the time; these differences are strongly statistically significant.⁵¹ If everything else were equal, one might expect lower tribunals to be equally wrong: mistakenly finding and mistakenly not finding inequitable conduct at similar rates.⁵² The results do not bear this

50. *Cf. Mammen, supra* note 13, at 1332.

51. TABLE 2. Federal Circuit Determinations Based on Lower Tribunal Findings (n = 361)

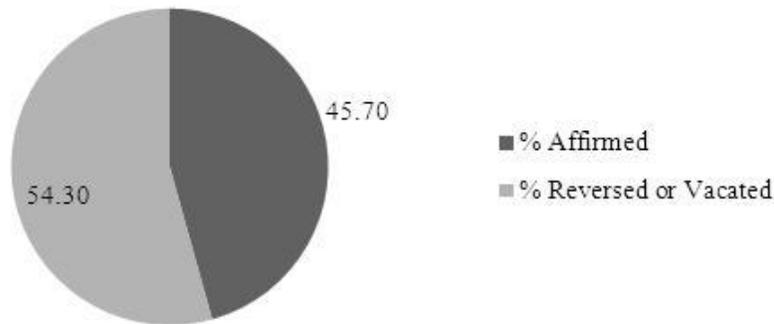
<i>Lower Tribunal Outcome</i>	<i>Affirmed</i>	<i>Not Affirmed</i>
Inequitable Conduct	69	82
No Inequitable Conduct	186	19

Chi square = 84.58, *df* = 1, *p* < 0.001

52. This interpretation is made more difficult by not knowing what happens in cases that were summarily affirmed. If written opinions, however, provide a representative sample of what is happening in cases that are summarily affirmed, then the analysis should not change. If, as is intuitive, summary affirmances more often find in favor of the patentee, that is, if the Federal Circuit sustains a judgment of inequitable conduct, it will normally decide that a written opinion is necessary. But if the Federal Circuit sustains a judgment of no inequitable conduct it is less likely to decide an opinion is necessary, then patentee success on inequitable conduct is likely to be even greater than what has been observed in

out. Lower tribunals are very good at figuring out when patent applicants have not engaged in inequitable conduct and much less good at figuring out when they have.

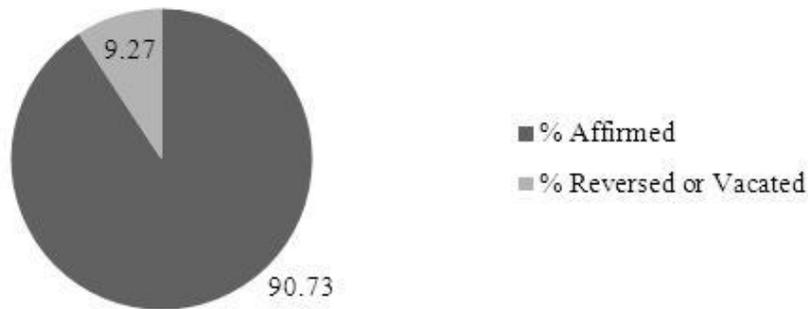
FIGURE 3. Frequency of Incoming Judgments of Inequitable Conduct Affirmed and Not Affirmed, Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 151)



Note: Figure 3 shows the percentage of Federal Circuit analyses in which lower tribunals' judgments that patentees have engaged in inequitable conduct are affirmed.

this study. Finally, if as is counterintuitive, the Federal Circuit is affirming substantial numbers of lower tribunal judgments of inequitable conduct, then the possibility exists that the Federal Circuit is harsher toward patentees. We are not aware, however, of any information suggesting that the Federal Circuit is summarily affirming large numbers of judgments of inequitable conduct without providing a written opinion. Thus, it is our intuition that patentees are at least as successful as the results of this study show.

FIGURE 4. Frequency of Incoming Judgments of No Inequitable Conduct Affirmed and Not Affirmed, Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 205)



Note: Figure 4 shows the percentage of Federal Circuit analyses in which lower tribunals' judgments that patentees have *not* engaged in inequitable conduct are affirmed. *Cf.* Mammen, *supra* note 13, at 1332.

Moreover, as noted in the Introduction, the standard of review applied to inequitable conduct judgments purports to be highly deferential. The determination is highly factual, is often pregnant with unwritten evidence like credibility assessments, and ultimately requires an equitable judgment over which a trial judge is supposed to have considerable discretion. Under those circumstances, we think that inequitable conduct decisions should be more often than not sustained. This is clearly the case when the lower tribunal does not find inequitable conduct, but it is not clearly the case when the lower tribunal finds inequitable conduct. In terms of raw numbers, the Federal Circuit affirms *less than half* of lower court decisions finding inequitable conduct⁵³—a rate of affirmance not significantly different from a fifty-fifty chance.⁵⁴

53. TABLE 3. Whether the Federal Circuit Sustains Lower Tribunal Findings of Inequitable Conduct (n = 151)

<i>Lower Tribunal Finds Inequitable Conduct</i>	<i>Observed</i>	<i>Expected If Equal</i>
Affirmed	69	75.5
Not Affirmed	82	75.5

A similar picture emerges from an examination of appeals from summary judgments. Figure 5 shows that the Federal Circuit finds inequitable conduct only 7.14% of the time when there has been no trial. The first point to make here is that the likelihood that the Federal Circuit will find inequitable conduct without a trial is objectively tiny.⁵⁵ Trials are nearly mandatory for the Federal Circuit to conclude that inequitable conduct has occurred—a position consistent with the view that the court wants to ensure that a patentee has every chance to avoid a finding of inequitable conduct.⁵⁶

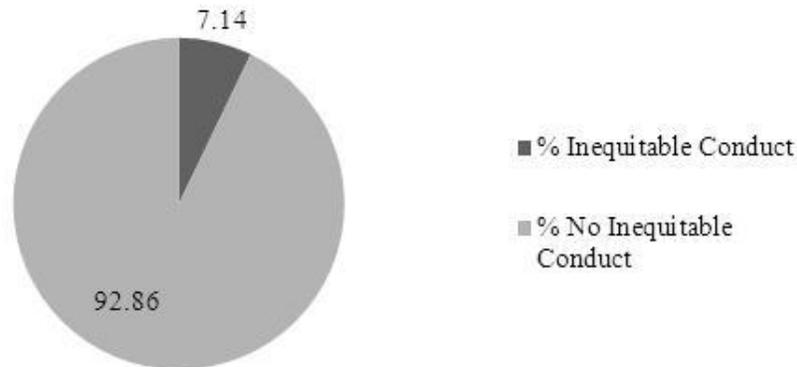
Chi square = 84.58, *df* = 1, *p* < 0.001

54. Summarily affirmed judgments of inequitable conduct might impact this interpretation. If the court is affirming substantial numbers of judgments of inequitable conduct, then the court's decisions might be more neutral (less pro-patentee) than this evidence suggests. Again, however, we think it unlikely (although we do not know for certain) that there are a substantial number of inequitable conduct appeals that are determined against a patentee and produce no writing from the Federal Circuit.

55. It is also worth pointing out here that we have found no cases in which the Federal Circuit has reversed a summary judgment of no inequitable conduct and ordered the entry of a judgment of inequitable conduct. We have seen only four analyses in which the court reversed and ordered judgment against a patentee, and in each the lower tribunal held a trial.

56. The results just presented do not really do justice to how tiny the prospect of an appellate mandate of inequitable conduct without an underlying trial really is. When one considers how often the Federal Circuit finds inequitable conduct against all analyses that can be classified as responsive to either a trial or a nontrial judgment, the rate is miniscule (1.26%, or four analyses when *n* = 317), suggesting that the Federal Circuit *really* meant what it said when it stated: “[W]e rarely affirm a grant of summary judgment of inequitable conduct” *Leviton Mfg. Co. v. Universal Sec. Instruments, Inc.*, 606 F.3d 1353, 1363 (Fed. Cir. 2010).

FIGURE 5. Frequency of Federal Circuit Inequitable Conduct Findings When There Has Been No Trial, Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 56)



Note: Figure 5 illustrates the rate at which the Federal Circuit finds inequitable conduct when there has been no trial. Note that “No Inequitable Conduct” does not describe a category of cases that is identical to the definition of patentee success (or wins) introduced earlier in this Article. No Inequitable Conduct describes a category of analyses in which the Federal Circuit did not conclude that inequitable conduct occurred; it includes cases that might have been remanded for further consideration of a patent applicant’s conduct. The comparable rate of patentee wins is reported in the text (83.87%).

The second point is that when the Federal Circuit is reviewing summary judgment, it seems to not find inequitable conduct at a remarkably high frequency; specifically, 92.86% of the time it will not reach the conclusion that inequitable conduct occurred. Digging deeper, we found that the Federal Circuit affirmed twenty-six of thirty-one (83.87%) summary judgments of no inequitable conduct. Thus, even on summary judgment, lower tribunals are very good at sussing out when patent applicants have not engaged in inequitable conduct and much less good at sussing out when they have. The relevant standard of review—*de novo*—helps to put this point into even sharper relief.

Thus, the evidence that Federal Circuit jurisprudence evinces a stricter standard for inequitable conduct than that applied by at least some lower tribunals:

- *Patentees win at the Federal Circuit the overwhelming majority of the time.*
- *Patentees are significantly more successful in Federal Circuit appeals than in the judgments giving rise to those appeals.*

- *Trials are nearly mandatory for the Federal Circuit to conclude that inequitable conduct has occurred.*
- *In seeming defiance of the standards of review, the Federal Circuit affirms less than half (45.70%) of judgments finding inequitable conduct and over 90% of judgments that do not find inequitable conduct. Thus, according to Federal Circuit cases, lower tribunals are very good at figuring out when patentees have not engaged in inequitable conduct and much less good at figuring out when they have. This is true even when the appeal is from a summary judgment of no inequitable conduct.*

Against this evidence, several possible alternate explanations must be considered. At the outset we posited: “If everything else were equal, one might expect lower tribunals to be equally wrong: mistakenly finding and mistakenly not finding inequitable conduct at similar rates.”⁵⁷ It is possible, probable perhaps, that everything else is not equal. In particular, there might be two classes⁵⁸ of inequitable conduct claims. The first includes claims with an evidentiary quality decent enough that reasonable people might reach the conclusion that inequitable conduct occurred. The second includes a potentially large class of objectively weak inequitable conduct claims made perhaps because of the claims’ potentially devastating impact on the patentee and potentially low cost of asserting them.⁵⁹

If the objectively good and objectively weak claims dichotomy describes the empirical reality, then it might help to explain part of the remarkable difference between figures 3 and 4. Thus, the 90.73% rate of affirmance might reflect augmentation by objectively weak claims that end up in some appeals. If objectively weak claims could be removed from the analysis (they cannot), perhaps the 90.73% affirmance rate would come down somewhat. But there would need to be a large number of such claims, we suspect, to bring the affirmance rate of judgments finding no inequitable conduct into line with the affirmance rate of judgments finding

57. *Supra* text accompanying note 52.

58. To be clear, the idea we develop supposes that there might be a bimodal distribution of quality of inequitable conduct claims, not that there are literally only objectively reasonable ones and objectively weak ones. There is almost surely a spectrum of quality when it comes to inequitable conduct claims.

59. The Federal Circuit has suggested at times that this might be a feature of inequitable conduct litigation. *See supra* note 3.

inequitable conduct (45.70%).⁶⁰

Moreover, the vast majority of lower tribunal judgments considered by the Federal Circuit were made following a trial,⁶¹ reinforcing the idea that the presence of a class of objectively weak claims does not adequately explain figures 3 and 4. When we compared the Federal Circuit's treatment of different incoming postures, we found that the overall outcome parameters (affirmed or not, for all postures) matched closely with those coming from only a trial posture: in appeals from judgments after a trial, the Federal Circuit affirms findings of no inequitable conduct following a trial 94% of the time (136 out of 145 analyses, compared with 90.73% of overall outcomes), but affirms findings of inequitable conduct following a trial only 52% (55 out of 115 analyses, compared with 45.70% overall) of the time. In this milieu, we think the objectively weak and objectively good claim dichotomy is not particularly plausible. This is especially so as applied to figure 3. It seems implausible to us that large numbers of objectively weak claims are surviving pretrial motions practice, trial, and post-trial motions practice. If they are, it probably furthers rather than contradicts our interpretation: that Federal Circuit jurisprudence evinces a stricter standard for inequitable conduct than that applied by at least some lower tribunals.

In addition, as a conceptual matter we think the objectively good and objectively weak claims dichotomy is not a particularly fruitful way of

60. Nor do we think the reverse consideration—that lower tribunals mistakenly find inequitable conduct when objectively weak claims are brought at a high frequency—provides a good explanation for the situation, either alone or in combination. This consideration hypothetically could cause the Federal Circuit to appear to affirm fewer judgments of inequitable conduct than it does because some of the reversed judgments would be essentially “illegitimate”—trial judges fooled by objectively weak claims.

In fact we think it implausible that this concern is of significance. One reason behind this thinking is the presumption that district judges do their jobs well. We also suspect that inequitable conduct is in some ways much easier for district judges to grasp than some other patent issues, and that district judges are likely to be cautious about inequitable conduct for reasons made obvious in Part I and in the discussion that comes later in this Article. Another reason is that nearly all of the analyses in the dataset followed a trial. Thus, trial judges would have to have been fooled into allowing the claim to get to trial, and then be fooled again on the merits after a trial (and yet again on a motion for judgment as a matter of law). Moreover, we think that if this consideration presents a substantial concern, it comes close to proving our interpretation: the Federal Circuit would be applying a different and stricter standard than trial courts.

61. Summary adjudications made up only about 16%, or 56 out of 361, of the analyses forming the basis for figures 3 and 4 while determinations following a trial made up around 72%, or 260 out of 361, of the total determinations. The remainder consisted of appeals involving inequitable conduct determinations made in the context of fee petitions, preliminary injunctions, and instances in which we could not identify the procedural posture of the appeal from the information in the opinion.

framing the issue. There is no evidence of a “plague” of Rule 11 sanctions or frivolous appeal sanctions raining onto patent challengers who bring inequitable conduct claims, which suggests that the bulk of the claims made and lost are at least somewhat reasonable. In addition, the good/weak claims dichotomy is highly relative to what the lower courts and parties understand the law to say is the standard.

Another possibility that must be considered, particularly in connection with the 45.70% affirmance rate of judgments finding inequitable conduct, is the extent to which patentees seek to win on appeal. Patentees that lost on inequitable conduct at the trial level might have a strong incentive to appeal the judgment and might have a strong incentive to invest a lot in trying to prevail on appeal. The direction of this effect—if it exists—is likely to be a lower rate of affirmance of findings of inequitable conduct. Put another way, patentees who lost on inequitable conduct at the lower tribunal might just be “trying harder” than accused infringers who lost on inequitable conduct at the trial court level. While this effect might exist, it must be balanced against some considerations that might moderate its impact on appellate litigation. First, patent challengers who win on inequitable conduct should have a strong motivation to protect the judgment. The scope of the victory is sweeping, fees might have been awarded, and there is structural protection in standards of review more deferential than those applied to a number of patent law issues. Second, patent challengers are often sophisticated and well-heeled corporations who are well positioned to defend a judgment of inequitable conduct. Finally, parties are more likely to be evenly matched on appeal because the costs are relatively low. So a party that really, really wants to win may have a harder time gaining an advantage just by spending more money on the appeal.

Overall, therefore, we think the interpretation we offer—that Federal Circuit jurisprudence evinces a stricter standard for inequitable conduct than that applied by at least some lower tribunals—is the strongest one and the one closest to the results we present. We are particularly compelled by the deeply factual and equitable nature of the analysis, the strong significance of unwritten evidence, and the standard of review supposedly applied.⁶² The interpretation that the Federal Circuit has a stricter standard for inequitable conduct than some of the tribunals it reviews is an important

62. This interpretation is further bolstered by a result reported below, *see infra* Figure 6, that the weight of Federal Circuit inequitable conduct jurisprudence falls heavily on intent to deceive.

result, but it does little to explain how it happens or why it might be so. We pursue both of these concerns in the parts that follow.

B. THE FEDERAL CIRCUIT'S STRONG PREFERENCE FOR PATENTEE
SUCCESS MANIFESTS THROUGH THE INTENT TO DECEIVE COMPONENT OF
THE INEQUITABLE CONDUCT ANALYSIS

As noted in the Introduction, inequitable conduct doctrine consists of essentially three components: a materiality inquiry, which asks whether a patent applicant made an affirmative misrepresentation of a fact, failed to disclose information, or submitted false information that a reasonable patent examiner would have considered “important in deciding whether to allow the application to issue as a patent”;⁶³ an intent to deceive inquiry, which asks whether the material act or omission was committed with the “intent to deceive” the patent office;⁶⁴ and a discretionary judicial balancing of materiality and intent with a view toward deciding whether a patent applicant acted inequitably toward the public.⁶⁵

We hoped that if the Federal Circuit applies a stricter standard than lower tribunals when it comes to inequitable conduct, then perhaps the standard might manifest in the court's use of these doctrinal components. We thus examined the content of the court's jurisprudence with a view toward understanding how the various doctrinal components are used in review of the judgments of lower tribunals.

1. Patentees Usually Win for Lack of Intent to Deceive

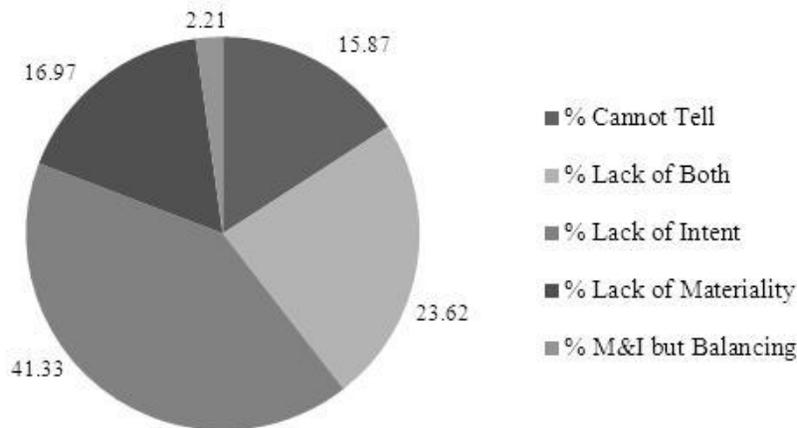
Figure 6 shows that when the Federal Circuit gives a single reason for patentee success, that reason is nearly two and a half times more likely to be lack of intent to deceive than it is to be lack of materiality.

63. *Supra* notes 15–16 and accompanying text.

64. *Supra* notes 17–20 and accompanying text.

65. *See supra* note 21 and accompanying text.

FIGURE 6. Reasons Given for Patentee Success in Federal Circuit Written Inequitable Conduct Analyses (1983–2010) (n = 271)



Note: Figure 6 shows the reasons given in Federal Circuit analyses for why patentees have not engaged in inequitable conduct. “% Lack of Both” refers to analyses in which the court gave as its reason for finding in favor of a patentee that the patent challenger had shown neither a material act or omission nor the intent to deceive the patent office. “% M&I but Balancing” refers to analyses where the court concluded threshold levels of materiality and intent to deceive existed but did not dispose of the claim against the patentee.

This is not due to chance. Statistical tests show strongly significant⁶⁶ evidence that the Federal Circuit does not use lack of materiality and lack of intent to deceive equally.⁶⁷

66. TABLE 4. Reason Given for Patentee Success in All Analyses (n = 271)

<i>Reason</i>	<i>Observed</i>	<i>Expected if Equal</i>
Lack of Intent	112	79
Lack of Materiality	46	79

Chi square = 26.74, *df* = 1, *p* < 0.001

67. The reader should note that the analyses chosen are those where the court gave a singular reason for why it decided an inequitable conduct judgment was unjustified. This approach has the benefit of excluding reasons for decision that are unclear—for example, lack of both or cannot tell—and thereby focusing on those analyses where the individual doctrinal components were clearly deemed important. This is an accepted analytic approach. However, to offer some description of “Lack of Both” analyses: they are of mixed clarity in that some give discrete analyses of both elements while others give analyses that seem to bleed into one another (or herd together), for example, by concluding that a reference withheld is not material and then that there is not intent to deceive, or by finding a lack of

Figure 6 suggests that the predominant reason for patentee success is an appellate determination that the patent challenger has not established that a patent applicant acted with intent to deceive the patent office. Patentees win significantly less often on the theory that the acts undertaken or omissions made in connection with patent prosecution were not material, although they clearly do win for this reason some of the time. Patentees seem to win much less often—compared to either lack of materiality or lack of intent to deceive—because of the balancing component of inequitable conduct, an issue we turn to next.

2. Balancing Is (Largely) Jurisprudentially Irrelevant

In its *Therasense* en banc order, the Federal Circuit requested briefing on two questions pertaining to the equitable balancing aspect of inequitable conduct analysis. Question one asks: “Should the materiality-intent-balancing framework for inequitable conduct be modified or replaced?”⁶⁸ Question five asks: “Should the balancing inquiry (balancing materiality and intent) be abandoned?”⁶⁹ These questions are essentially normative and not directly testable by empirical means. Nonetheless, we were able to collect data that provide a perspective on the meaning of equitable balancing to Federal Circuit jurisprudence and thus provide context to the Federal Circuit’s questions.

Indeed, this subpart’s central finding puts the Federal Circuit’s questions into sharp relief: *balancing does not appear to be a substantive part of Federal Circuit inequitable conduct jurisprudence.*

Our first significant finding is that the Federal Circuit rarely engages in an express review⁷⁰ of a lower tribunal’s application of equitable balancing. As figure 7 shows, balancing is reviewed only 8.33% of the time.

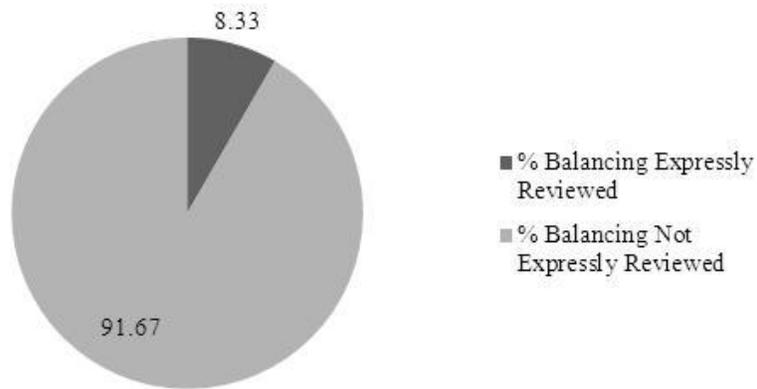
intent to deceive and also questioning materiality. In others still, the content of the opinion simply did not indicate on which element(s) the patent challenger’s claim came up short. In short, assigning lack of both to either lack of materiality or lack of intent to deceive risks confounding both. As one interprets these findings, however, it should be understood that notwithstanding a doctrinal approach that sees intent and materiality as independent structural elements, there is a distinct possibility that decisionally the two elements may not always be independent and so these results should be interpreted with some degree of caution.

68. *Supra* note 31.

69. *Supra* note 31.

70. The reader should not understand “express review” to mean an involved discussion of the application of balancing. If not all then nearly all of the analyses reviewing balancing were very summary.

FIGURE 7. Frequency at Which the Federal Circuit Expressly Reviews Equitable Balancing in Written Inequitable Conduct Analyses (1983–2010) (n = 361)

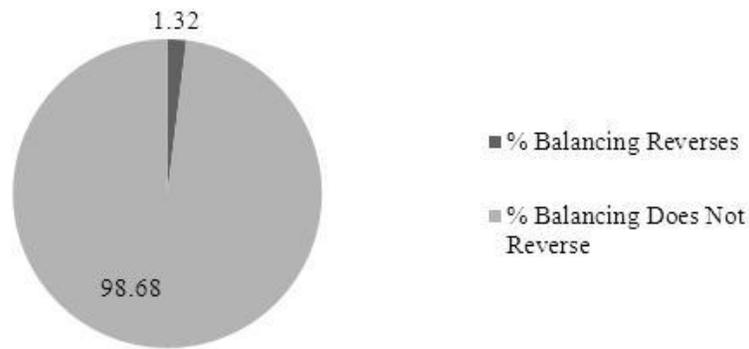


Note: Figure 7 shows the percentage of Federal Circuit analyses that evince a review of a lower tribunal's application of equitable balancing.

Our second significant finding is that in the 361 inequitable conduct analyses we collected between 1983 and 2010, the Federal Circuit has *never* reversed a lower tribunal's judgment of *no* inequitable conduct solely on the theory that the lower tribunal misbalanced the equities.

A third finding concerning balancing that we think significant to the Federal Circuit's questions in *Therasense* is that when materiality and intent have been found, the Federal Circuit has relied on equitable balancing to reverse a lower tribunal's judgment of inequitable conduct only 1.32% of the time: we found two such analyses, as illustrated by figure 8.

FIGURE 8. Frequency at Which Federal Circuit Uses Equitable Balancing to Reverse a Lower Court Judgment that Inequitable Conduct Occurred (1983–2010) (n = 151)



Note: Figure 8 shows the percentage of lower tribunal judgments of inequitable conduct reversed because of balancing.

The most direct interpretation of these results, we think, is that the Federal Circuit has already abandoned equitable balancing. The Federal Circuit hardly ever even talks about balancing and virtually never concludes that lower tribunals got balancing wrong. These considerations suggest to us the interpretation that the court's jurisprudence around balancing is not particularly robust in the sense that there does not appear to be any legal constraint or philosophy of serious bite that cabins or constrains how courts are to balance findings of materiality or intent.

By offering the interpretation that the Federal Circuit has not developed much in the way of a body of principles that guide the application of equitable balancing, we do not mean to suggest that the Federal Circuit does not require balancing from lower tribunals. Our sense is that it does, and a lower tribunal finding of inequitable conduct that eschewed balancing altogether would face a serious probability of not being sustained at the Federal Circuit. Instead, we think these results suggest the hypothesis that in Federal Circuit jurisprudence the balancing inquiry is a mere formality. It is much more akin to checking a box or touching a base than a meaningful guide to determining whether a patent applicant engaged in inequitable conduct.

3. The Boundlessness of Materiality

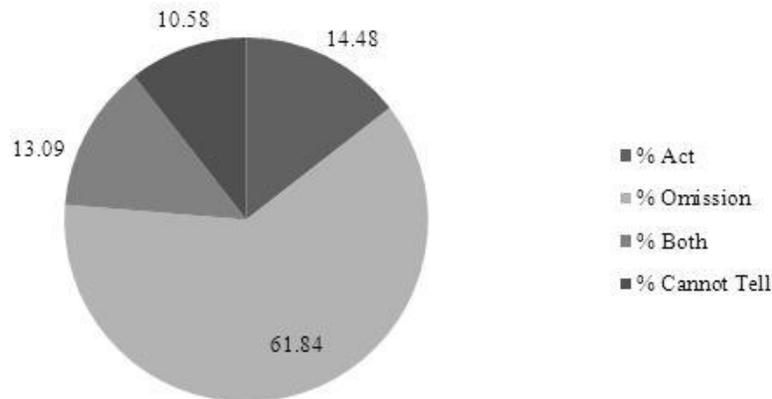
The predominant reason patentees succeed when it comes to inequitable conduct claims appears to be a failure of patent challengers to convincingly establish intent to deceive. It seems clear, however, that patentees at least sometimes win because their acts and omissions are not material to patentability.

We thus wondered whether there might be some jurisprudential constraints to the application of the materiality component of inequitable conduct. In particular, we were interested in learning: Are patentees more likely to be found to have committed inequitable conduct if they submit false and misleading information, or if they fail to disclose prior art, data, or other information? Are there certain types of acts or omissions more likely than others to cause patentees to lose when it comes to inequitable conduct? To develop evidence concerning these questions, we coded Federal Circuit analyses for the type of materiality alleged. We did this at several levels. The first generally codes opinions for whether a patent applicant's alleged material misconduct is an act or an omission.⁷¹ The second codes opinions for more specific categories of potentially material behavior, for example, failure to disclose prior art, failure to disclose data, submission of a false affidavit or declaration, etc. In addition, we coded Federal Circuit analyses for the presence and success of the patent holder's argument that information is not material because it is cumulative to information already made of record.

Figure 9 shows that an omission—the failure to disclose information to the patent office—is far and away the most common form of material conduct described in Federal Circuit opinions.

71. We realize there can be conceptual bleed-over between these two categories. For example, the failure to disclose a material reference can be cast as an act by a patent challenger or a judge who views the conduct as intended to deceive. In our coding, we sought to focus on literally the patent applicant's behavior. Thus, allegations that the patent applicant failed to disclose something to the patent office would normally have been coded as "Omission" while allegations that the patent applicant submitted false or misleading information to the patent office would normally have been coded as an "Act." Cases where the court evaluated whether the patent applicant failed to disclose and whether the patent applicant had submitted false or misleading information were coded as "Both."

FIGURE 9. Rate of Type of Material Conduct Described in Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 359)



Note: Figure 9 shows the frequency of materiality types described in Federal Circuit equivalents analyses. The variables are defined *supra* note 71. “Cannot Tell” means that a coder was unable to assign the analysis to one of the categories.

While omissions are overwhelmingly cited as a basis for inequitable conduct claims, there is no significant difference in patentee success at the Federal Circuit that depends on whether the material conduct is an act or an omission, as reported in table 5. Nor is a patentee significantly more or less likely to be successful when an analysis describes an applicant’s alleged conduct as including both an act and an omission.⁷² This result seems to suggest that the type and quantum of material conduct may not matter much to the Federal Circuit.⁷³

72. See *infra* Table 5.

73. Although it may matter occasionally in individual cases. See *Nilssen v. Osram Sylvania, Inc.*, 504 F.3d 1223, 1234–35 (Fed. Cir. 2007) (taking into account the amount of material conduct).

TABLE 5. General Categories of Material Conduct and Patentee Outcome

<i>Type of Materiality</i>	<i>Success</i>	<i>Failure</i>
Act	40*	12*
Omission	169*	53*
Both	29**	18**
Cannot Tell	34	4

Note: This table shows the categorical frequencies of a type of materiality variable (“Act,” “Omission,” “Both,” “Cannot Tell”) and the outcome variable (“Success” or “Failure”). Patentees are significantly more successful in analyses where we were unable to code (“Cannot Tell”) the type of material conduct. This likely reflects the highly summary nature of the analyses in these opinions, however, so we do not believe there is much to be learned from this observation.

* *Chi square* = 0.00, *df* = 1, *p* = 1.000, (n = 274)

** *Chi square* = 4.46, *df* = 2, *p* = 0.107, (n = 321)

An examination of more specific categories of material conduct described in Federal Circuit analyses also suggests the interpretation that the type of material conduct alleged has little bearing on patentee success.

TABLE 6. Specific Categories of Material Conduct and Patentee Outcome

<i>Specific Type of Material Conduct</i>	<i>Success</i>	<i>Failure</i>
ArtNondisclosure	161*	58*
DataNondisclosure	27*	4*
FalseAffidavit	27*	13*
Inventorship	19*	4*
Characterized	21*	6*
Procedural	5**	7**
Other	45	18

Note: This table shows the categorical frequencies of a type of materiality variable: “ArtNondisclosure” (nondisclosure of prior art references); “DataNondisclosure” (nondisclosure of some form of data); “FalseAffidavit” (submission of some form of affidavit or declaration that contained allegedly false or misleading statements); “Inventorship” (nondisclosure of true inventors or alleged false statements regarding inventorship); “Characterized” (characterizations of art, reference, or other material); “Procedural” (discussed in text); and “Other” (claims that did not fall into one of the other categories), and the outcome variable (“Success” or “Failure”). Note that because some claims of inequitable conduct involved multiple types of alleged material conduct, the totals indicated in this chart exceed 361.

* *Chi square* = 4.70, *df* = 4, *p* = 0.319

** *Chi square* = 11.20, *df* = 5, *p* = 0.047

Table 6 shows that the failure to disclose prior art is overwhelmingly the most commonly mentioned materiality basis for an inequitable conduct claim. Even so, there is essentially no significant difference in patentee success that depends on these specific types of alleged material conduct.⁷⁴ The only type of conduct upon which patentee success seems to depend is *procedural* conduct,⁷⁵ that is, paying a small entity fee when a large entity fee was appropriate or inequitably seeking a petition to make special, which might cause a patent to issue more quickly. These cases are, however, fairly infrequent.

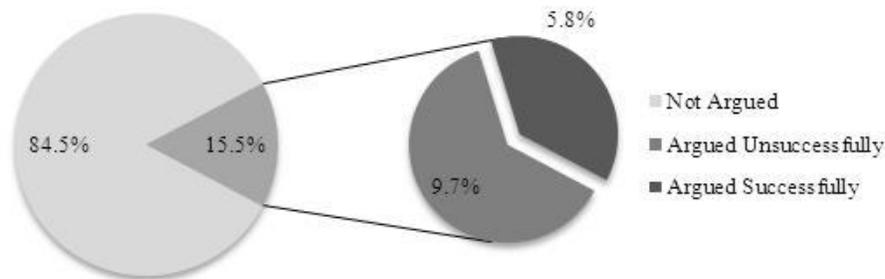
Perhaps the best-known doctrinal limit placed on the materiality component of an inequitable conduct analysis is that information is not material—and thus unable to support a charge of inequitable conduct—if it is cumulative to information already made of record.⁷⁶ Figure 10 suggests that cumulateness does not play a significant role in Federal Circuit inequitable conduct analyses. The court's opinions rarely evince an analysis of cumulateness, and even in the rare cases in which they do patentees did not always win. In short, cumulateness—perhaps the clearest doctrinal hurdle that must be overcome before a decisionmaker can find a material nondisclosure—seems substantially limited in its practical impact.

74. See *supra* Table 6 and accompanying note.

75. See *supra* Table 6 and accompanying note.

76. 37 C.F.R. § 1.56(b) (2010) (“Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application.”).

FIGURE 10. Rate at Which Cumulativenness Is Argued and Is Successful in Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 361)



Note: Figure 10 shows the frequency at which Federal Circuit opinions evince a cumulativenness argument, and whether the argument that art or information is cumulative was successful.

As a conceptual matter, there may be several reasons why cumulativenness is so rarely asserted, and even more rarely makes a difference. Because the doctrine focuses on a comparison of information that was disclosed to information that was not disclosed, it is substantially limited in that it does not apply to all types of potentially material conduct. Furthermore, the doctrine seems largely toothless in the face of the realities of patent prosecution, which might not normally include an evaluation of all (or perhaps even most) of the material prior art and information.⁷⁷ It is also worth remembering that the failure to establish materiality is not all that often given as a distinct reason for why inequitable conduct claims fail. It follows, we think, that patent challengers can in many instances find material prior art and other types of material information that is not cumulative, and can in many—albeit a smaller subset of—instances probably tie knowledge of that art and information to the patent applicant.

In sum, we want to be clear that these results do not paint a complete picture of whether there are jurisprudential boundaries on materiality

77. See *infra* Part III.C (discussing why this is likely to be so based on costs and incentives surrounding patent acquisition).

analyses. That said, we think the observation that it does not matter much what the patent applicant actually did is an interesting, if not important, result. At a minimum, it seems consonant with the idea that materiality analyses are mostly unbounded, and therefore might not be particularly useful for distinguishing culpable from nonculpable behavior. This finding is also consistent with the observation that the Federal Circuit might look to intent to deceive more often than it looks to materiality as a means to decide that inequitable conduct did not occur.

C. WHAT IS GOING ON?

Parts III.A and III.B strongly suggest that when it comes to inequitable conduct, the Federal Circuit prefers to see patentees fare better than they did at the trial court level, and that the Federal Circuit uses its review of the intent to deceive component of inequitable conduct disproportionately to impose its “pro-patentee” bias. In this part we develop an explanation for why the Federal Circuit’s inequitable conduct jurisprudence might look like it does.

1. Inequitable Conduct Claims Precipitate into Contests over Intent to Deceive

We have shown that for all practical purposes, Federal Circuit inequitable conduct doctrine has only two components: materiality and intent to deceive.⁷⁸ As between the two we provide evidence that intent to deceive is the more important one. But why? We think the basic reason is that materiality may be very easy to establish and so does little work⁷⁹ in divining inequitable from noninequitable conduct.

Patent prosecution is inherently imperfect, and we think that the realities of patent prosecution are such as to almost assure that there is relevant prior art or other information concerning the invention and its prosecution that the patent office has not considered and which can be tied to the patent applicant.⁸⁰ To begin with, it is commonly accepted that patent

78. See *supra* Part III.B.2.

79. And, as we argue later, see *infra* Part IV, less than it should.

80. For a set of significant articles discussing the incentives surrounding patentees and patent examiners, see generally Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495 (2001) (“In short, the PTO doesn’t do a very detailed job of examining patents, but we probably don’t want it to. It is ‘rationally ignorant’ of the objective validity of patents, in economics lingo, because it is too costly for the PTO to discover those facts.”); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577 (1999) (theorizing about prior art search expenditures); Gideon

examiners have busy dockets and it is probably unreasonable for them to independently find all or even most material art or information. In addition, patent applicants are not required to search for prior art before or during the prosecution of a patent application, and they have incentives not to spend much to ensure that the patent examiners have the most material information when they examine an application. Moreover, to the extent an applicant might sometimes have an incentive to seriously invest in getting the patent office high quality information relating to the patentability of the invention, there is some indication that patent examiners do not always consider what has been provided.⁸¹ In sum, patent examination is on average probably a fairly poorly informed rough first cut at whether the claims a patent applicant asserts are patentable.⁸²

Indeed, our finding that the overwhelming majority of inequitable conduct claims rely on the failure of the applicant to disclose some information—usually prior art or experimental results—to the patent office,⁸³ tends to bear out the idea that there is substantial material prior art that can be tied to a patent applicant that the patent office never considers.

Not only is it likely that material art and information goes unconsidered in patent prosecution, but it is also likely that prior art searches and arguments for and against patentability are often made in the context of very poor information about what the invention even is. There is tremendous—and in our view underappreciated—uncertainty associated with comprehending and articulating the subject matter for which a patent is sought. Similar uncertainties attend comprehending and articulating the prior art.⁸⁴ These uncertainties are further amplified when patent examiners and patent applicants contest the comparison of an invention with the prior

Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1 (2005) (theorizing about patentee goals in patenting); R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135 (2009) (theorizing about patent-quality mechanisms).

81. See Cotropia, Lemley & Sampat, *supra* note 30, at 3 (“We find, to our surprise, that patent examiners effectively ignore almost all applicant-submitted art.”).

82. ROBERT P. MERGES & JOHN F. DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 1046 (4th ed. 2007).

83. To be clear, our coding does not indicate whether the applicant had knowledge. That said, a claim that applicants failed to disclose art that they did not know about should be futile as the threshold level of intent should be impossible to reach.

84. See Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 479–80 (2004) (discussing these concerns). For an argument that patent examination could be made more socially useful if it focused on these considerations, see Lee Petherbridge, *Positive Examination*, 46 IDEA 172 (2005) (arguing that direct, recorded discussion concerning the boundaries of claimed subject matter would improve the utility of patent prosecution).

art by way of a sporadic written correspondence in which one or both parties may be unwilling to expend a lot of time and effort to understand the other or to make points clear. Further distortions may arise when—as is commonly the case—patent prosecution takes place years before an actual factual situation arises in which the patent is enforced.⁸⁵

The above concerns may be enhanced further still by the Federal Circuit's decision in *Phillips v. AWH Corp.*,⁸⁶ in which the court held in effect that patent claims will not always be interpreted to mean what they say (sometimes it will be appropriate to import a limitation from a written description, sometimes not).⁸⁷ Patent prosecutors might therefore proceed on the understanding that claims should be interpreted in one way, but when the claims are actually litigated parties advocate for a very different construction. If so, patent prosecutors might sometimes be in for a rude surprise when litigators get a hold of their claims.

If it is true that patent applicants are somewhat blindly (in terms of information that might later come to be appreciated as material), emphasizing information helpful to a claim of entitlement and deemphasizing information unhelpful to a claim, it seems reasonably likely that motivated hindsight can make decisions not to disclose, characterizations of art, and submissions made to advocate the allowance of patent claims appear to be material even when at the time the decisions were made it was not nearly as clear.

We also think the culture of patent prosecution may have a role to play in making materiality a relatively easy target for patent challengers. Clients want patents, advocates get paid to get patents for clients, and the patent office issues patents much more often than it does not.⁸⁸ In fact, it seems probable that patents procured by inequitable conduct might still provide plenty of value for their owners.⁸⁹ If so, clients may be much more

85. See, e.g., Wagner, *supra* note 80, at 2147–48 (noting that patents are drafted to be enforced in the future).

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

87. See generally R. Polk Wagner & Lee Petherbridge, *Did Phillips Change Anything? Empirical Analysis of the Federal Circuit's Claim Construction Jurisprudence*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* (S. Balganesch ed., forthcoming 2012), available at <http://ssrn.com/abstract=1909028> (providing an empirical-founded assessment of the impact of the *Phillips* opinion).

88. Mark A. Lemley & Bhaven Sampat, *Is the Patent Office a Rubber Stamp?*, 58 *EMORY L.J.* 181, 181–82 (2008).

89. The patentee's biggest worry here would seem to be an antitrust claim, but inequitable conduct alone does not rise to the level of an antitrust violation. Sometimes cases are found exceptional when patentees press claims acquired by inequitable conduct, but even there, and even if a patentee had

interested in getting patents at a cheap price than in encouraging their agents to avoid inequitable conduct. We do not say, of course, that clients desire their agents to act inequitably. We presume they do not. The point is that in many instances clients have good reasons, namely cost concerns, to want patents and to not want to hear about why patents cannot be obtained.

This brew of institutional realities and professional pressures—it may be hard to explain to a client why you cannot get them a patent, or cannot get one at a reasonable cost, when everyone else seems to be able to get patents—can create an environment that might encourage patent agents (many of whom are lawyers) to act more like advocates when patent policy seems to expect them to play a more neutral, more publicly interested role in an *ex parte* patent acquisition process.⁹⁰ Moreover, the situational context that many patent prosecutors find themselves in may also shape or alter their perceptions of the patent laws.⁹¹

For example, in the environment of “everyone can get a patent,” some number of patent applicants might develop a biased interpretation of the patent laws, that is, they might develop an interpretation of the statutory requirements of patentability that favors allowance (and might develop a complementary, and thus somewhat narrow view of the duty to disclose information to the patent office). Similarly, patent prosecutors may be prone to thinking that there is little prior art over which they cannot get claims allowed. It is possible that once a patentee believes that little art or information can really stand in the way of getting claims allowed, it might become difficult to know what to disclose. As it makes no sense to send in art that will not be considered, or worse, be used to make an unreasonable rejection (and thus waste the resources of both the applicant and the patent office), the applicant may disregard art or information for which a case of materiality might later be made.⁹²

to pay fees, the patent might under some sets of facts still been worth getting.

90. It is of some interest that attorneys in this role may be in something of an ethical bind. Their obligation to zealously advocate for their clients may conflict with the systemic public-considering role that patent policy has long expected of them.

91. Here, too, *Phillips* may have an impact by encouraging patent prosecutors to try to exploit ambiguities in claim language, for example, by subjectively interpreting a claim narrowly during prosecution so as to justify a decision not to disclose.

92. We want to be clear that we think that it is possible that some applicants may view information as less relevant to their claims than a dispassionate (or defense-advocate) person might. In making this observation, we are not referring to the “intent” element of the analysis, but rather simply providing some suggestions as to why patent applicant conduct might be more likely to appear material to subsequent reviewers.

Finally, of course, the probability of prosecuting a patent that gets litigated to judgment—which is needed to create even the risk of a judgment of inequitable conduct—is tiny. Nor may the risk be all that palpable if the likelihood of being entangled in an inequitable conduct claim—however low the probability—might present itself long after the acts that give rise to the claim and possibly late in a career. Moreover, even if everything goes wrong, and the patent is litigated and inequitable conduct is raised, there is still the relative protection of the high rate of success that patentees enjoy at the Federal Circuit.

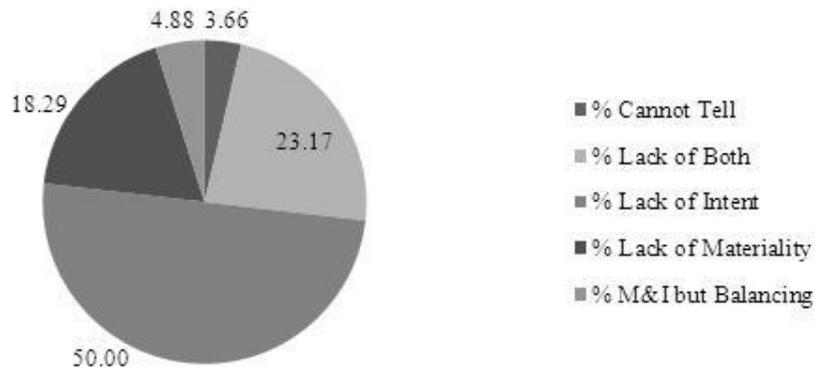
It thus seems strongly intuitive that material acts and omissions are often made in patent prosecution. And the data we report suggests the interpretation that the Federal Circuit does not much distinguish between the sorts of acts and omissions that can support a claim of inequitable conduct. If this is true, then it seems reasonable that patent challengers can often locate something—which the Federal Circuit cannot easily refute—to meet the materiality component of the analysis. Hence, the significance of intent to deceive to a court that appears to believe there is substantially less inequitable conduct than lower tribunals are finding.

2. The Federal Circuit Is Having Trouble Communicating Its Intent to Deceive Standard to Lower Tribunals

So what if inequitable conduct claims precipitate into contests over intent to deceive? Should that component of inequitable conduct be good enough to divine inequitable behavior? The short answer is that it may be, but our results suggest that at present it seems not to serve that function really well. In this regard, readers should note particularly figure 2, which shows that the Federal Circuit has essentially always had a more patentee favorable understanding of inequitable conduct than the tribunals it reviews.⁹³ We have also shown that the Federal Circuit's stricter inequitable conduct standard mostly flows through the intent to deceive component of the analysis. We therefore speculated that the Federal Circuit is having a hard time communicating its stricter standard for intent to deceive to the lower tribunals. To gather evidence for this, we asked why—according to the Federal Circuit—do lower courts find inequitable conduct in error?

93. See also *supra* Part III.A.1 (presenting data suggesting that the Federal Circuit appears to apply a stricter standard).

FIGURE 11. Reasons Given for Patentee Success When Lower Tribunal Finds Inequitable Conduct, Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 82)



Note: Figure 11 shows the reasons given in Federal Circuit analyses for why patentees have not engaged in inequitable conduct. The “% Lack of Both” reason refers to analyses in which the court gave as its reason for finding in favor of a patentee that the patent challenger had shown neither a material act or omission nor the intent to deceive the patent office. *See supra* note 67. The “% M&I but Balancing” reason refers to analyses where the court concluded threshold levels of materiality and intent to deceive existed but did not dispose of the claim against the patentee.

Figure 11 shows that when the lower courts find inequitable conduct in error, they often do so significantly more often because they erroneously find intent to deceive.⁹⁴ In 50% of the rejected lower tribunal judgments of inequitable conduct, the sole reason for error is the finding of intent to deceive. In another 23.17%, both intent and materiality findings are flawed. And only in 18.29% of the judgments is the sole reason for the error the finding of materiality. In sum, in almost three-fourths (73.17%) of cases where the lower tribunals find inequitable conduct in error, they get the intent to deceive element wrong.

94. TABLE 7. Reasons for Patentee Success in Analyses After Inequitable Conduct Judgment (n = 82)

<i>Reason</i>	<i>Observed</i>	<i>Expected if Equal</i>
Lack of Intent	41	28
Lack of Materiality	15	28

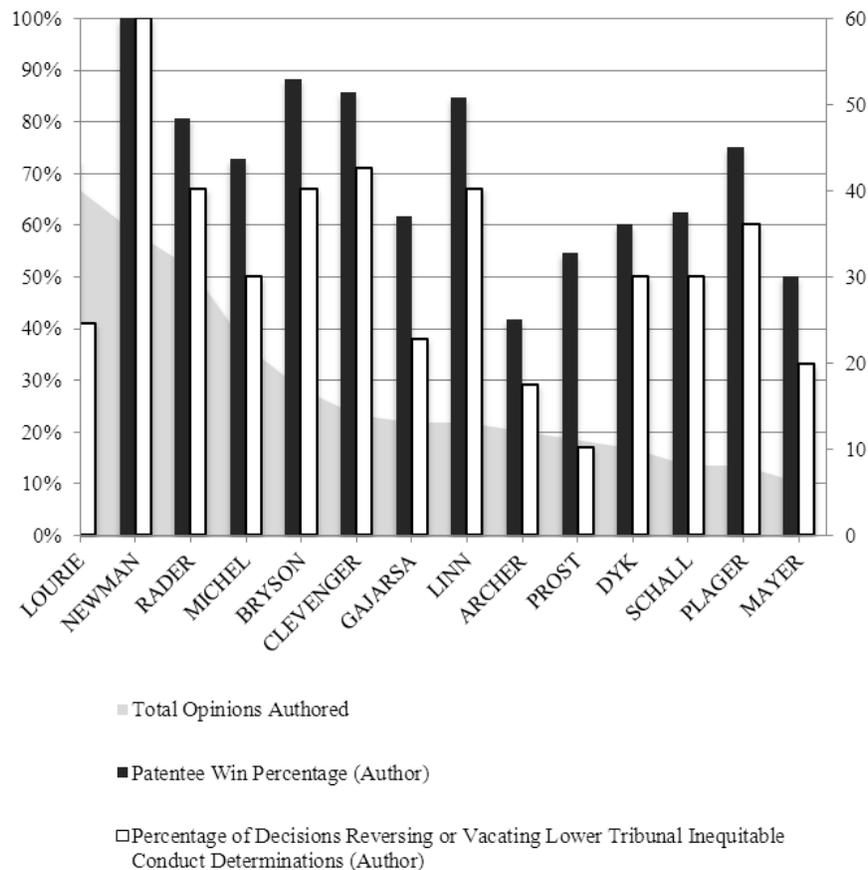
Chi square = 11.16, *df* = 1, *p* = 0.001

There appears, therefore, to be a palpable disconnect between the Federal Circuit's understanding of intent to deceive and trial tribunals understanding of intent to deceive. Why might this be so? We offer three explanations: one empirical and two conceptual.

The empirical explanation is that the Federal Circuit may have trouble communicating the strictness of its standard because the court might not be speaking with one voice. Figure 12 illustrates the variation in outcomes depending on authorship of inequitable conduct analysis. It shows the rates in which a lower tribunal's finding of inequitable conduct was reversed or vacated by fourteen of the judges who sat on the Federal Circuit during the past decade.⁹⁵

95. Judges Byron Skelton, Daniel M. Friedman, and Kimberly A. Moore were excluded because they authored a very small number of opinions.

FIGURE 12. Judicial Variation with Respect to Inequitable Conduct, Federal Circuit Inequitable Conduct Analyses (1983–2010) (n = 240)



Note: Figure 12 shows the information about Federal Circuit inequitable conduct determinations on a per-judge basis. The dark bars show the percentage (left axis) at which patentees win as defined in Part.III.A, when a given judge authors the analysis. The white bars show the percentage (left axis) of lower tribunal findings of inequitable conduct that are reversed or vacated when a given judge authors the analysis (right axis). The gray area behind the bars shows the total number of analyses authored by the relevant judge. For example, Judge Alan D. Lourie has authored over forty while Judge Richard Linn has authored more than ten but less than fifteen. It is along this measure that the judges are arrayed on the graph.

As the dark bars in Figure 12 indicate, patentee win rates can vary from approximately 40% to 100% depending on the judge authoring the opinion. Even starker is the variation in decisions reversing or vacating lower tribunal determinations of inequitable conduct, which can range from

below 20% to 100%, depending on the author. This judicial variation suggests the possibility that Federal Circuit judges may be applying different standards to inequitable conduct determinations. If, as we suggest, inequitable conduct is predominantly about intent to deceive, the observed variation—which is mostly likely significant—might indicate that Federal Circuit judges are applying different levels of strictness of mental state when reviewing intent to deceive. In that case, it may be difficult for judges of lower tribunals to “lock on” to the Federal Circuit’s standard no matter how skilled a trial judge is with mental state standards and evidence.

The first conceptual explanation is that some judges at the Federal Circuit may be applying a standard for intent to deceive that is higher than that called for in Federal Circuit case law. In other words, the Federal Circuit’s articulated intent to deceive standard is out of whack with the court’s normative perspectives on inequitable conduct, at least as applied by some circuit judges.

According to Federal Circuit case law, the intent to deceive component of inequitable conduct can be satisfied by any mental state above gross negligence.⁹⁶ This leaves a broad array of mental states that can qualify (and recall that there is little evidence in Federal Circuit law that balancing works to raise the bar). Judges from lower tribunals—particularly district court judges—may have a great deal of experience with mental states and mental state evidence; thus, it is possible that what the Federal Circuit had in mind when it said that anything above gross negligence was good enough is not the same as what trial judges who work with these standards more regularly have in mind.

For instance, when viewed in the framework of tort standards of intent, “anything above gross negligence” could mean recklessness,⁹⁷ it could mean knowledge, or it could mean actual purpose.⁹⁸ “Purpose” to deceive would mean that by engaging in a particular act, such as withholding a material reference, the applicants’ desire was to deceive the

96. See *supra* note 20.

97. See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 2 cmt. a (2010) (“Taken at face value, [gross negligence] simply means negligence that is especially bad. Given this literal interpretation, gross negligence carries a meaning that is less than recklessness.”).

98. See RESTATEMENT (SECOND) OF TORTS § 8A (1965). Note that the use of “intent” is somewhat problematic, as it can be used to refer both to the general concept of mental states (that is, do they possess the requisite *intent*), as well as to a particular degree of mental culpability (that is, they *intended* to harm the victim). A better term is “purpose.” See RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 1(a) (2010).

examiner.⁹⁹ Such a mental state is certainly possible—indeed, it may even be what the court had in mind when it articulated the *Kingsdown* standard. Alternatively, the court might have meant that applicants possessed the necessary mental culpability if they, in engaging in the relevant conduct, knew with substantial certainty that the examiner would be misled.¹⁰⁰ Such a possibility is not necessarily a lower level than that of purpose; rather, the inquiry focuses on the applicants' awareness of the degree of certainty that the examiner would be misled, as opposed to their desire. In the latter analysis, the applicants' desire is irrelevant; rather, what matters is whether the applicants know “to a substantial certainty” that a particular consequence will result.

Lower tribunals might also be interpreting the Federal Circuit's language as permitting either an objective or subjective recklessness standard.¹⁰¹ Indeed, some of the court's language—which refers to whether the actor “should have known” of the materiality—suggests this approach.¹⁰² Thus, lower tribunals may be effectively applying the standard announced in the case law while some judges at the Federal Circuit may be applying a standard that is much closer to “purpose.”

The second conceptual explanation is that intent to deceive is just very hard to prove and even harder to defend on review to a court that is anti-inequitable conduct.

Intent to deceive should normally be harder than materiality to prove and to defend on review because there is rarely a smoking gun—something approximating a statement that the patent applicant did (or planned to do) something dishonest so that the patent office would be more likely to issue

99. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 1 cmt. a (2010).

100. *Id.*

101. In overly simplified terms, objective recklessness focuses on whether the actor either knows of a significant risk or knows of facts that would make him aware of that risk. The degree of awareness has changed over time. Compare RESTATEMENT (SECOND) OF TORTS § 500 (1965) (requiring merely that the actor “hav[e] reason to know of facts that would lead a reasonable man to realize” the heightened risk), with RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 2 (2010) (modifying recklessness to require that the actor must know of facts that would make the risk “obvious” to anyone in the person's situation). “Subjective” recklessness, largely applied in the criminal law context, focuses on whether the actor actually knew of the high risk.

102. In fact, the district court in *Therasense* itself used this standard. See *Therasense, Inc. v. Becton, Dickinson & Co.*, 565 F. Supp. 2d 1088, 1113 (N.D. Cal. 2008) (“Without a doubt, Attorney Pope knew or *should have known* that the withheld information would have been highly material to the examiner”) (emphasis added).

claims.¹⁰³ Thus, judges are forced to infer from the facts, circumstances, and testimony that—often another attorney—acted inequitably in dealing with the public. But in many instances, the cases involve complex sets of transactional and technical facts that occurred many years before the litigation and from which innocent narratives can often be woven. That might often place judges in the position of having to find intent to deceive based on demeanor or character evidence adduced at a trial that, again, occurs many years after the alleged acts were taken. In an environment where the *ex ante* presumption is one of good faith, the prospect of needing to conclude that a fellow attorney is something close to (if not) a liar may be something judges are reluctant to do.

It seems to us that this problem may be exacerbated on review. Federal Circuit judges no doubt appreciate that evidence underlying a finding of intent to deceive often involves unwritten evidence like credibility assessments. When one considers, however, what is at stake and what the judges have to review—words on paper reflecting a record below and the trial judge’s rationale for judgment—it seems possible that in some cases, unwritten evidence may get short shrift. A trial judge’s order—flavored with parties’ appellate advocacy—reads something like: “I found that attorney X had intent to deceive because I observed the witness, and also, see particular words in the record that I believe help support my conclusion.” Because demeanor evidence is hard to record, it seems reasonable that a reviewing court’s work may often heavily emphasize a review of the record text that a trial judge points to as supporting his or her finding. We do not say that a reviewing court does not seek to account for unwritten evidence when reviewing a finding of intent to deceive. We just think the task is difficult, and one that may often favor a patentee if there is a judicial perception that there is some kind of a “plague” or overuse of inequitable conduct claims on the part of patent challengers.

3. The Lack of a Clear Standard for Intent to Deceive Permits the Federal Circuit Useful Latitude (or a Theory of Inequitable Conduct Enforcement)

The preceding discussion speculates that the Federal Circuit might be having trouble communicating its intent to deceive standard to lower tribunals. Here we speculate that any trouble communicating the strictness of the standard, any potential lack of clarity, might not reflect “trouble” at

103. See *supra* note 18.

all. It may reflect jurisprudential design. More specifically, it is at least possible that the Federal Circuit *prefers* placing the weight of an inequitable conduct analysis almost entirely on intent to deceive. The idea why this might be so relies on the assumption—for which some evidence has been presented above—that the Federal Circuit is strongly biased against successful (for the patent challenger) inequitable conduct claims, but believes the doctrine is necessary to protect the integrity of the patent system. In such a context, an obfuscated standard for intent to deceive might be just right. It provides a structural context that allows the Federal Circuit to maintain a credible threat of inequitable conduct—and thus keep the patent bar in line—but also a context in which the court rarely ever needs to find inequitable conduct.

Beyond being hard to prove and to defend on review, an obfuscated standard for intent to deceive permits the Federal Circuit a wide latitude in deciding inequitable conduct claims. It creates a space of doctrinal uncertainty in which the court can reach the outcomes it wants without having to attack the discretion of trial judges and without having to really explain what it is doing.

Thus, the Federal Circuit could articulate a case law standard for intent to deceive that is relatively low, for example, its current formal standard from *Kingsdown*—anything over gross negligence. This is a stick. The message to patent applicants and their attorneys is: be careful, make sure you disclose material information within the sphere of your control or knowledge and take care in the statements you make about the invention, the prior art, and other matters affecting patentability, or face the possibility of a judgment of inequitable conduct. Lower courts read *Kingsdown* and may apply the standard in accordance with their general understanding of mental states or may exercise some discretion themselves in the doctrinal black space the Federal Circuit has created. Either way, the presence of a formal standard that tolerates objective recklessness makes the stick all the more real to patent applicants.

The Federal Circuit, on the other hand, can use the same black space to avoid a plague of inequitable conduct findings and thus satisfy its normative convictions concerning inequitable conduct (as well as possibly maintain a perception of validity for the patent system). We have observed that the actual number of appeals that conclude in a finding of inequitable conduct is just about 2.5 a year across the last twenty-seven years.¹⁰⁴ And

104. We obtained the 2.5 figure by dividing the sixty-nine appeals by twenty-seven years. There is

as we have already shown, turning back inequitable conduct judgments for lack of intent to deceive seems to be no problem for the Federal Circuit.

Structuring inequitable conduct this way, articulating a standard for general use by lower tribunals that is lower than the one at least some circuit judges apply, allows the Federal Circuit to continue the threat of inequitable conduct without having to often find inequitable conduct. If inequitable conduct law is structured this way, it might suggest that the Federal Circuit's view of inequitable conduct is that it happens with some regularity, but that catching all or most of the offenders is impracticable. To protect the integrity of the patent system the court may have resorted to a strategy of using its discretion over inequitable conduct appeals—afforded by uncertainty around intent to deceive doctrine—to make occasional examples out of the cases where it is most convinced that inequitable conduct occurred with the hope that the relatively low risk of a relatively large sanction will impact patent applicant conduct more generally. An obfuscated standard for intent to deceive could be well suited for this strategy.¹⁰⁵

If the Federal Circuit is using intent to deceive in this manner it might go a long way toward explaining why the court's jurisprudence appears to lack any structure around the equitable balancing component of the

obviously some variation. Others have observed similar outcomes. *See* Mammen *supra* note 13, at 1351 tbl.1 (reporting the rate of inequitable conduct findings on appeal per year and reporting at least two years with as many as five appeals so concluded).

105. Which does not necessarily mean it is well suited to the patent system. It must be noted that regardless of whether what we have observed is a “strategy of inequitable conduct enforcement” or an artifact of judge-dependent variation in the standard to be applied, it is not without costs. The magnitude of those costs, and how they balance out on a systemic level, are unclear. But a moving standard for inequitable conduct, such as the one described here, might be expected to create costs in the form of appeals of lower tribunal judgments of inequitable conduct that would be unnecessary (we observed that more than half of lower tribunal judgments of inequitable conduct were not sustained on appeal). It is also possible that a moving standard could increase litigation costs in the sense that, if a clearer standard existed, some claims would not be litigated or would settle before reaching judgment. In addition, there are likely to be personal costs to the nonparty individuals who engage in conduct lower tribunals find inequitable even if the Federal Circuit eventually rejects the lower tribunal judgment.

Balanced against those cost concerns are incentives of patent challengers to bring inequitable conduct claims under any reasonable standard—incentives that might well encourage claims of inequitable conduct and refusals to settle even if the standard were clarified. Also weighing against a clearer standard are the costs to the patent system of taking a more permissive attitude toward inequitable conduct should the standard for showing unenforceability be heightened. Another cost concern is that by clarifying the standard for inequitable conduct—even if it is modestly heightened—it may become much easier to prove claims of inequitable conduct and sustain them on appeal than it is in the shadow of the current and seemingly less certain standard.

analysis. The Federal Circuit is balancing through intent to deceive. It might therefore skip the separate balancing analysis called for by the doctrine when it reviews appeals from judgments concerning inequitable conduct.

IV. ADDITIONAL OBSERVATIONS AND RECOMMENDATIONS

In this part, we offer a few modest observations and recommendations that we think may help to advance inequitable conduct doctrine. Our ideas are informed by the data we presented in Part III, by the policies of inequitable conduct, and by our reading of the entire corpus of Federal Circuit inequitable conduct jurisprudence.

A. *KINGSDOWN* IS PROBABLY RIGHT

Kingsdown announced a mental state standard for intent to deceive that permits a finding of intent to deceive when a patent applicant's intent exceeds gross negligence. Thus, patent applicants might intend to deceive the patent office by engaging in reckless behavior that results in deception of the patent office, behavior they know will deceive the patent office, or behavior the purpose of which is to deceive the patent office. We think *Kingsdown*'s refusal to firmly entrench a singular mental state for intent to deceive probably sets the right standard for inequitable conduct for two reasons we sketch out below.

The first reason is that the current mental state requirement is consonant with the policies that animate inequitable conduct when viewed in light of what the duty of disclosure actually requires applicants to do. Two policies we think should be taken into account in determining the proper mental state are: (1) enforcing the duty of good faith and fair dealing that binds patent applicants in dealing with the public; and (2) protecting the social utility of the patent system by seeking to diminish the probability that unscrupulous individuals wrongfully obtain undeserved rents using patents that should never have issued or are of inappropriate scope. What patent applicants are required to do is to disclose information that a reasonable examiner would consider material to patentability *and which is within the sphere of knowledge and control of the applicant—sometimes uniquely so*. An applicant is also required to take care to make accurate statements about the invention, the prior art, and other matters affecting patentability.

In this context, formally requiring a mental state standard stricter—one that is harder to meet—than objective recklessness seems unwarranted.¹⁰⁶ The quid pro quo vision of patent granting contemplates a not entirely arms-length transaction in which the applicant is under a special duty to ensure that the public is not mistreated. Patent applicants seek valuable rights from the public and are charged with the duty of disclosure to help ensure that patent applications receive the best examination possible under the circumstances—to help ensure the public receives its consideration. The circumstances include the cost and incentive problems addressed earlier,¹⁰⁷ in view of which it is largely undisputed that keeping information from the patent office can improve patent applicants' prospects of getting claims issued, and of getting broader claims issued. In this milieu, it is strongly counterintuitive to think that a patent applicant satisfies its duty of good faith and fair dealing, and thus acts equitably toward the public, when material information within its sphere of knowledge and control is not disclosed by reason of a reckless lack of care for the public. This is especially so when such reckless lack of care makes patent examination more costly to the public and so makes it more likely that the patent office will make a mistake, the public be deprived of its bargain, *and* the public be required to pay underserved premiums (in at least some instances) to the very individuals who intentionally made it difficult for the patent office to perform its function.

For these reasons it seems clear that some instances of reckless conduct are likely to be inequitable. But formalistically insisting that all conduct that is reckless is adequately intentional to always satisfy the intent to deceive element of inequitable conduct seems like overkill. In particular, it seems to ignore the historical foundations of the doctrine—a heritage that seems to infuse its application with some flexibility by emphasizing a judicial role and the evaluation of an applicant's conduct against the doctrine's general purpose of protecting the integrity of the patent system. Ordinarily, one might expect the balancing component of the inequitable conduct analysis to make this adjustment, but as we have shown, Federal Circuit jurisprudence does not appear to use that component to perform this role.¹⁰⁸ In a doctrine without equitable balancing, establishing threshold

106. Indeed, it suggests that the gross negligence standard announced in *Kingsdown* might not be inappropriate.

107. See *supra* Part III.C.1.

108. See *supra* Part III.B.2 (showing results that suggest the Federal Circuit rarely discusses equitable balancing).

levels of intent to deceive and materiality creates a prima facie case of inequitable conduct. Thus, declaring that all reckless conduct is inequitable and declaring that such a rule will bind the Federal Circuit, might well invite a landslide of inequitable conduct claims that could seriously damage public perceptions about the validity of the patent system.

The second reason we think that the mental state standard articulated in *Kingsdown* might be the right one is that it complements what could be the Federal Circuit's enforcement theory of inequitable conduct. As we noted above, it seems as though the Federal Circuit uses inequitable conduct more to scare patent applicants into good behavior than to actually punish them. If this is true, and especially if this is really the only plausible strategy by which inequitable conduct can be used to encourage patent applicants to deal fairly with the public without causing the system to endure a plague of inequitable conduct findings, which might be much more disruptive than beneficial to the patent system, then it seems inapposite to either raise or lower the formal mental state standard for intent to deceive. Rather, it might make more sense to let intent to deceive law continue on as it is, even if there is some lack of precision,¹⁰⁹ at least until it becomes evident that there is a serious problem.

Some may be concerned that the current standard requires overly burdensome disclosure on the part of a patent applicant—specifically, that the current standard causes an overinvestment in patent examination on the part of the patent applicant that will adversely impact the incentive structure of the patent system.¹¹⁰ To this we have two responses: first, whether or not this is true is an empirical question that has not been seriously examined by anyone; and second, the patent system has gotten along just fine with the current standard for a number of years and neither this study, nor others that have looked,¹¹¹ find any evidence of a plague of

109. The single-minded pursuit of clarity above all else is unlikely to be consistent with a well-administered legal system, and inequitable conduct might be an area of law in which very clear rules are undesirable. Specifically, clarifying the standard too much, that is, cabinining the “judgment” part of the decision, runs the risk of creating a plague of inequitable conduct findings, or alternatively—if the law were clarified so that inequitable conduct findings were essentially impossible—risking damage to the integrity of the patent system. By contrast, emphasizing the judicial role and equitable aspects of the decision infuses the analysis with some uncertainty, but it might be for good reason in view of the underlying policy.

110. Or, even more fantastically, diminish the quality of patent examination because patent examiners are unable to separate the important art and information from the unimportant art and information.

111. See, e.g., Mammen, *supra* note 13.

inequitable conduct findings. In view of these considerations, we think the current standard should be shown to adversely impact the incentive structure of the patent system before this argument can be given any serious weight.

We finish this part with the observation that regardless of whether the court considers adjusting the intent to deceive component of inequitable conduct, it might consider recognizing that there are certain subsidiary inquiries that may have relevancy to whether an applicant had intent to deceive. Such recognition might help to positively shape patent applicant behavior and might be useful in divining when applicants have intent to deceive and when they do not.

One such inquiry may be whether an applicant searched for prior art and submitted material information discovered through the search to the patent office. This, we think, might generally suggest good faith. While we are aware of the commonly lobbed counterargument that searching just gets patent applicants into more trouble because challengers can later scrutinize the decisions applicants made after receiving the results of a search, we think that the judicial process should be able to distinguish when applicants act with intent to deceive in this context, presumably a very rare occurrence. Another inquiry expressed in more recent cases is whether there are equally reasonable innocent inferences that can be drawn from the conduct set up with the evidence.¹¹² Other subsidiary inquiries could be developed that might help to guard against hindsight-driven attributions of intent to deceive. Overall, however, we think work with the materiality component of intent to deceive could be more fruitful *and* that developments in that component of the doctrine have natural implications for the intent to deceive and balancing components. So our following recommendations concerning materiality should be considered in connection with foregoing discussion about intent to deceive.

B. FACTUAL INQUIRIES PROVIDE INSIGHT INTO THE SIGNIFICANCE OF MATERIAL INFORMATION

For inequitable conduct doctrine to be effective, it probably needs to recognize that material misconduct can take many forms. For that reason, we think it is not particularly useful to restate or rearticulate a standard for

112. See, e.g., *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1366 (Fed. Cir. 2008) (holding that the inference of deceptive intent “must . . . be the single most reasonable inference able to be drawn from the evidence to meet the clear and convincing standard”).

materiality. Nor does it seem particularly useful to declare certain kinds of acts or omissions incapable of being the basis for a claim of inequitable conduct (assuming of course, the presence of intent to deceive). Instead, we suggest that the Federal Circuit might improve the materiality inquiry by recognizing that there are subsidiary factual inquiries that may have relevancy in weighing the significance of material information or conduct.

A recognition of such factors will help to emphasize that the binary choice on materiality expressed in the formal inequitable conduct analysis does not require that all “material” nondisclosures or misrepresentations are material for the purposes of an inequitable conduct analysis. Put slightly differently, a recognition of factors may better reveal to the bench and bar that there is a quantum of materiality that must be reached (as well as what that quantum is) before the analytical question—“was the conduct material?”—can be answered in the affirmative. Recognizing factors for this purpose is not inconsistent with the Federal Circuit’s existing cases, and so we do not think this suggestion breaks a lot of new ground. We have not, however, found cases that substantially collect or aggregate sets of factors that should be taken into account in determining whether an applicant’s conduct is “material enough” to be material.

Moreover, we think the formal recognition of factors that may have relevancy to the materiality of an applicant’s conduct should be expected to make the analysis of an applicant’s intent to deceive more robust, and have obvious implications for the balancing component of the inequitable conduct analysis.

Factual inquiries that might provide insight into whether particular information is material include¹¹³:

The extent to which information is related to issues of patentability raised by the examiner during prosecution. Information that is closely related to the examiner’s inquiries or grounds for rejections is likely to be more material than information that is not. In analyzing this issue, however, courts should recognize that simply because a significant issue of patentability is raised during litigation does not mean that it was an issue during prosecution—the latter is more likely to be material while the former might be less likely to be material. Furthermore, issues of claim

113. In offering these suggestions, we note that these are only things to consider when making a materiality determination, not hard and fast rules that apply in every circumstance. We think, though, that armed with these considerations, lower tribunals might be better equipped to analyze whether particular conduct should be material or not.

construction may complicate this inquiry. While prosecuting attorneys may be operating under one perceived construction, litigators may advocate for a different construction—one unexpected at the time of prosecution—later on.

The extent to which the information is patentability defeating as determined by a court. We do not mean to suggest that inequitable conduct should be limited only to information that defeats patentability. But we also think that information that is farther from patentability defeating may in many instances be less material information.

The quality of the disclosure an applicant makes. If an applicant makes a reasonably good quality disclosure but omits material art it is possible that, while not cumulative, the case for or against patentability is well made and the patent claims were fairly tested even without the noncumulative material art. In such cases, the level of materiality surrounding nondisclosed art might be lower. Similarly, when an applicant makes a search and discloses information obtained from the search a court could ask: notwithstanding the fact that noncumulative material art went undisclosed—did the applicant disclose the art that is most material? The idea being that the range of material to nonmaterial may in some cases appear as a gradient. An applicant that discloses the most material references, leaving out a material but comparatively more marginal reference, may have made a very respectable disclosure and simply misjudged a cutoff later determined in litigation. When considered holistically, in view of all that was disclosed, the undisclosed art may be of only modest materiality (and potentially inadequate to meet the threshold for an inequitable conduct analysis).

The amount of art in the field. Crowded fields by definition have a lot of art and may present opportunities to overlook material information or misjudge the significance of information. By contrast, less crowded fields might make more obvious art that the applicant should know to disclose.

The extent to which the information is uniquely within the sphere of knowledge and control of the applicant may have relevancy. Some information may be readily publicly accessible, such that a patent examiner might be expected to find it if he or she searches with the ethic and ability of a reasonable examiner. We do not mean to suggest that an applicant's duty to disclose is obviated if a reasonable examiner should have found the art. But in some subset of cases this consideration may be relevant and may diminish the materiality of a nondisclosure, or depending on the facts, that is, the fact that the patent office missed the reference becomes particularly

glaring as prosecution goes on, may amplify the materiality of the nondisclosure. This scenario can be contrasted with one where the patent applicant is for some reason uniquely in control of the information, or where the information is of limited accessibility to the patent office and to others. In this sort of a case, we think the failure to disclose the information could be highly material.

The prospect of litigation. If the patent was clearly prosecuted with the expectation of litigation, for example, if it was drafted for the purpose of enforcing it against a competitor's known product, then it might be appropriate to hold the patent applicant to a less forgiving materiality standard. Given that the patentee is planning to seek rents from a specific competitor in a specific techno-factual context, it might make sense for the patent applicant to make a greater effort—albeit probably at greater cost—to have the patent well vetted before having it issued and asserting it.¹¹⁴

The uncertainty of the art may also be relevant. How likely is the research process to produce variable results? On one end of the spectrum may be results that are highly predictable, such that a “bad” result would be extremely noteworthy (perhaps with respect to simple mechanical inventions). On the other end might be results that are expected to exhibit some degree of variation, such as clinical studies, biological experiments, or experiments with complex macromolecules. The variation might exist because of the imprecision of the technological tools, or it might result from the technological difficulty of the art. Even artisans with “good hands” can make imperceptible errors that produce variation in results. In some instances it might not be reasonable to expect that an experiment can be performed repeatedly with identical results. It may be normal in the field for some rate of failure of reproducibility. By way of example, after applicants report the results of a study in a patent application, they are likely to conduct further studies in order to secure FDA approval. It is conceivable that while the majority of those studies might support a particular claim, one might not. If the court's overall conclusion is that the anomalous study may just represent accepted statistical variation, it may

114. It is perhaps true that a patent destined for litigation is one that will be subject to a more vigorous test of validity, which might cause some to suggest that the proper significance of inevitable litigation is a lower standard of materiality. On balance, however, this seems not to be the best application of this consideration because the patent probably still allows (at least in many instances) the patentee to obtain rents from a competitor. Those rents would not be available without the patent. And requiring a patent applicant who is planning to specifically assert a patent to invest more in patent prosecution seems a better choice. Moreover, the presence of the presumption of validity, *see* 35 U.S.C. § 282 (2006), tilts matters in favor of a patentee once a patent issues.

not be material.¹¹⁵

As noted above, we think the forgoing considerations have natural implications for the intent to deceive and balancing inquiries.

V. CONCLUSION

The need for a systematic empirical study of inequitable conduct jurisprudence has become especially pressing now that the Federal Circuit is reviewing inequitable conduct en banc—in terms so broad as to be unprecedented in the history of the doctrine. This Article reports such a study and provides evidence, inter alia, that the Federal Circuit applies an inequitable conduct standard stricter than that applied by a substantial number of the tribunals it reviews. The Federal Circuit's stricter standard manifests primarily through the intent to deceive component of inequitable conduct doctrine. For all intents and purposes, the Federal Circuit has no substantive jurisprudence around the balancing component, and the materiality component is comparatively less impactful than intent to deceive. The court appears to have trouble communicating its stricter standard to lower tribunals. We offer some explanations for why this might be so, and offer some modest suggestions that might advance inequitable conduct doctrine.

VI. EPILOGUE

While this Article was in production, the Federal Circuit decided *Therasense, Inc. v. Becton, Dickinson & Co.*,¹¹⁶ in which a sharply divided en banc Federal Circuit vacated the district court's finding of inequitable conduct and remanded the case to the district court for further findings on inequitable conduct. Much of the court's opinion, however, was not directed to the specific circumstance of *Therasense*. Instead, consistent with this Article's analysis, which indicates that a number of Federal Circuit judges do not very much like the doctrine, the majority used the case as a vehicle for radically redefining the doctrine of inequitable

115. This is a similar situation to that involved in *Abbott Laboratories v. Sandoz, Inc.*, 544 F.3d 1341, 1356 (Fed. Cir. 2008), in which the Federal Circuit agreed with a district court finding that, in light of all the studies performed by the applicant, the anomalous study did not demonstrate that the prior art formulation possessed the same properties as the claimed formulation, and thus was not material.

116. *Therasense, Inc. v. Becton, Dickinson & Co.*, Nos. 2008-1511, -1512, -1513, -1514, -1595, 2011 U.S. App. LEXIS 10590 (Fed. Cir. May 25, 2011) (en banc).

conduct.¹¹⁷ The majority was not shy about its goal: it deliberately sought to make it more difficult to successfully pursue inequitable conduct claims, a change that it predicted would improve both patent quality and litigation.¹¹⁸

The *Therasense* court imposed two significant changes on the doctrine of inequitable conduct, one relating to materiality and the other to intent. With respect to materiality, six of the eleven judges voted to require “but-for” materiality, a standard stricter than the one previously applied.¹¹⁹ This “but-for” materiality standard, however, is subject to a critical exception: “When the patentee has engaged in affirmative acts of egregious misconduct, such as the filing of an unmistakably false affidavit, the misconduct is material.”¹²⁰ The court raised the bar on intent as well, specifying that, going forward, inequitable conduct will require the “specific intent” to deceive the patent office.¹²¹ These changes, the majority asserted, would favorably address “adjudication cost and complexity, . . . likelihood of settlement, burdened courts, strained PTO resources, increased PTO backlog, and impaired patent quality”¹²²—a grand slam in terms of public benefit.

While only time will tell whether the majority’s predictions will come to pass, we are somewhat less sanguine. We suspect that *Therasense* could have a much more significant, complex, and nuanced impact on the legal infrastructure of American innovation than the majority of the court appears to appreciate. While the full implications of *Therasense* are too complex to completely address in this brief epilogue, we briefly touch on two that are particularly relevant in light of this article.¹²³

First, we question whether—assuming that the court succeeded in its goal of making it more difficult for inequitable conduct claims to succeed—the effect of *Therasense* will be to improve patent quality. The

117. See *id.* at *18–39.

118. See *id.* at *32 (“This court now tightens the standards for finding both intent and materiality in order to redirect a doctrine that has been overused to the detriment of the public.”).

119. See *id.* at *37.

120. *Id.* at *39.

121. *Id.* at *32. (“To prevail on a claim of inequitable conduct, the accused infringer must prove that the patentee acted with the specific intent to deceive the PTO.”)

122. *Id.* at *31–32.

123. For a more detailed discussion of Rantanen and Petherbridge’s views on the possible impacts of *Therasense*, see Jason Rantanen & Lee Petherbridge, *Therasense v. Becton Dickinson: A First Impression* (June 8, 2011) (unpublished working paper), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1859764.

primary reason is that, after *Therasense*, there is reason to suspect that the patent office will be even less well informed about the invention, relevant art, and other facts relating to patentability than it already is. Under a stricter standard, the effect is to require from patent applicants less care in, and less contribution of information to, the patent application process. This suggests the interpretation that patent quality may be discouraged, rather than encouraged, by the Federal Circuit's decision in *Therasense*. The findings reported in this Article, which show that patentees are already overwhelmingly successful at the Federal Circuit, further point in this direction.¹²⁴ Whether materiality is based on an alleged act or omission, whether it involves the nondisclosure of art or data, the submission of allegedly false affidavits, or the concealment of information about purported inventors, patentees already succeed at an extremely high rate before the Federal Circuit.¹²⁵ If a primary purpose of inequitable conduct is to encourage the full submission of pertinent information to the patent office, *Therasense* may have reduced its effectiveness.

In light of the findings reported in this Article, we also question whether—despite the court's clear intent to do so—*Therasense* really imposes doctrinal constraints that will limit future findings of inequitable conduct. We base this observation in part on the idea that different judges may possess different normative views about inequitable conduct.¹²⁶ If, as we suspect, judges' decisions on inequitable conduct are impacted by their moral views of right and wrong, as opposed to technical violations or nonviolations of rules laid down by the Federal Circuit, this normative standard may be hard to move with a Federal Circuit opinion. District court judges in particular, whose views of right and wrong may be well grounded outside the boundaries of patent law, may be particularly difficult to sway. This tension is already at play within *Therasense* itself, as demonstrated by the issue of intent: despite unanimously agreeing that inequitable conduct requires specific intent to deceive, the judges split on whether or not the specific facts of *Therasense* rose to that level.

We do not predict that the “sky will fall” as a result of *Therasense*; rather, we predict that perhaps the marginal effects may not be in the direction that the Federal Circuit seems to expect, and that the systemic interactions may be much more complex than the Federal Circuit may have

124. See *supra* Part III.A.

125. See *supra* Tables 1 & 2.

126. See *supra* Figure 12 and accompanying text.

appreciated, based on its opinion. That said, it will take time and, at some point in the future, a further empirical analysis of the type reported herein to gauge whether and in what direction *Therasense* will have an impact.

APPENDIX – DATABASE FIELDS

#	Field ID	Description	Form	Coding	Cohen's K^a
1	Data Entry	Data Entry Identifier	[Integer]	Machine	NA
2	Citation	Full Citation	[Reporter, LEXIS, or WESTLAW format]	Machine	NA
3	Date	Date Issued	[Day-Month-Year]	Machine	NA
4	Disposition	Case outcome	[Affirmed Reversed Vacated Mixed]	Machine	NA
5	Judge 1	Panel Judge	Text	Machine	NA
6	Judge 2	Panel Judge	Text	Machine	NA
7	Judge 3	Panel Judge	Text	Machine	NA
8	Author	Authoring Judge	Text	Machine	NA
9	IE Found	Mandate = Inequitable Conduct	[Yes No]	Human	0.944
10	Balancing Defeats Inequitable Conduct	Whether balancing was reason given for failure of inequitable conduct claim	[Yes No]	Human	0.795
11	Balancing Reviewed	Whether court expressly reviewed balancing	[Yes No]	Human	0.658
12	Patentee Outcome 1	Patentee Outcome	[Wins – Dispositive Wins – Still Open Loses – Dispositive	Human	1.000

			Loses – Still Open]		
13	Patentee Outcome 2	Explanation for Patentee Success	[Lack of Intent Lack of Materiality Lack of Both cannot tell na]	Human	0.840
14	Disposition	Inequitable Conduct Outcome	[Affirmed Reversed Vacated]	Human	1.000
15	Posture	Procedural Posture	[Bench SJ JMOL-granted Jury PI Fee ITC PTO cannot tell]	Human	0.902
16	Materiality Type I	General description of alleged misconduct	[Act Omission Both cannot tell]	Human	0.638
17	Materiality Type II – Art Nondisclosure	Specific Description of alleged misconduct	[Yes No]	Human	0.684
18	Materiality Type II – Data Nondisclosure	Specific Description of alleged misconduct	[Yes No]	Human	0.600
19	Materiality Type II – False Affidavit	Specific Description of alleged misconduct	[Yes No]	Human	0.453
20	Materiality Type II – Inventorship	Specific Description of alleged misconduct	[Yes No]	Human	0.808
21	Materiality Type II – Characterizing Art	Specific Description of alleged misconduct	[Yes No]	Human	0.178 (87.25% Agreement)
22	Materiality Type II – Procedural	Specific Description of alleged	[Yes No]	Human	0.315 (96.08% Agreement)

		misconduct			
23	Materiality Type II – Other	Specific Description of alleged misconduct	[Yes No]	Human	0.408
24	Dissent	Dissent on Inequitable Conduct	[Yes No]	Human	0.824
25	Concur	Concur on Inequitable Conduct	[Yes No]	Human	1.000

a. Cohen’s kappa (K) measures intercoder agreement—reliability of measurement—for categorical observations. Jacob Cohen, *A Coefficient of Agreement for Nominal Scales*, 20 *EDUC. & PSYCHOL. MEASUREMENT* 37 (1960). It has the merit of taking into account agreement that occurs by chance, but also tends to underestimate agreement when a category is very commonly present. It is thus, generally speaking, considered to be a conservative measure of agreement. The closer the kappa statistic is to 1.0, the greater the level of agreement. While there is no kappa value that signifies “good enough” agreement, magnitude guidelines have been suggested. Landis and Koch suggest that kappa values of 0.0–0.2 reflect slight agreement; 0.21–0.40 fair agreement; 0.41–0.60 moderate agreement; 0.61–0.80 substantial agreement; and 0.81–1.0 almost perfect agreement. J. Richard Landis & Gary G. Koch, *The Measurement of Observer Agreement for Categorical Data*, 33 *BIOMETRICS* 159, 165 (1977). *See also* JOSEPH L. FLEISS, *STATISTICAL METHODS FOR RATES AND PROPORTIONS* 218 (2d ed. 1981) (discussing 0.40–0.75 as fair to good, and over 0.75 as excellent). In this instance, coder reliability was tested against an uncorrected 103 unit of analysis sample subject to coding by multiple coders. This comprises a 28.5% sample. *Cf.* Petherbridge & Wagner, *supra* note 33, at 2074 & n.118 (using a 25% sample and noting literature which suggests using at least a 10% sample).

