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Rules versus Standards: Competing Notions of Inconsistency Robustness in Patent Law

David Olson[†] and Stefania Fusco[‡]

ABSTRACT

This Article applies a new paradigm from the field of computer science—inconsistency robustness (IR)—in order to analyze the competing ways in which the Supreme Court and Federal Circuit craft patent law standards and rules. The IR paradigm is a shift from the previous paradigm of inconsistency elimination. The new IR paradigm recognizes that modern, complex information systems must perform notwithstanding persistent and continuous inconsistencies. The focus on IR encourages system designers to recognize the reality of persistent inconsistency when building robust systems that can perform reliably. Legal systems regularly process a great deal of complexity and inconsistency, and thus, by necessity, have always been structured to be inconsistency robust. Accordingly, applying insights from the formal IR paradigm is helpful in analyzing the effective functioning of legal systems.

This Article is the first legal article to formally utilize IR in analyzing the legal system. By using IR analysis, the article identifies and analyzes a previously under analyzed persistent pattern within patent law. Specifically, the article shows via example in five separate areas of patent law that the Federal Circuit and Supreme Court repeatedly diverge on the adoption of rules versus standards in patent law. The Article shows that this pattern can be explained by viewing the two courts as rational systems administrators attempting to maintain an inconsistency robust patent system from each of their perspectives as systems

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administrators. The Article further shows that if the courts adopt a holistic view of IR, they can craft more optimal patent law by taking into account the costs and benefits of the law to all participants and administrators of the patent law system.

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I. Introduction

This Article applies a new paradigm from the field of computer science—Inconsistency Robustness (IR)—in order to analyze the contrasting ways in which the Supreme Court and Federal Circuit craft patent law standards and rules. The inconsistency robustness paradigm is a shift from the previous computer science paradigms of inconsistency denial and inconsistency elimination. The new IR paradigm recognizes that modern, complex information systems must perform notwithstanding persistent and continuous inconsistencies. The focus on inconsistency robustness encourages system designers to recognize the reality of persistent inconsistency when building robust systems that can perform reliably. Using insights from the IR paradigm, this Article analyzes a significant difference in the approaches of the Supreme Court and the Federal Circuit to crafting the patent law system. By analyzing five separate areas of patent law, this Article examines the clear trend, when it comes to patent law, of the Federal Circuit to prefer bright-line rules, while the Supreme Court repeatedly overturns those rules in favor of more flexible, contextual standards. This Article explores several possible explanations for this phenomenon, including explanations based on the differing mandates and roles that the legal system gives the two courts, relative expertise, and potential “capture” of the Federal Circuit by the patent community.

While each of these explanations may have some merit, we ultimately conclude that much of the divergence derives from the fact that the Federal Circuit and the Supreme Court both function as sophisticated “system designers” that consciously try to design and adjust the patent law system so as to have optimal inconsistency robustness in terms of costs and benefits both to those affected by patent law and the court system itself. This Article shows that when analyzed within the inconsistency robustness paradigm, the costs and benefits to flexible standards as opposed to bright-line rules vary considerably between the Federal Circuit and the Supreme Court. Accordingly, a system design that the Supreme Court considers to be efficient and inconsistency robust turns out to be inefficient and non-robust from the point of view of the Federal Circuit. In sum, both courts are sophisticated actors with knowledge of the tradeoffs between rules and standards, but, because they bear the costs and benefits of rules versus standards differently, and because of the fact that they perceive these costs and benefits to be borne differently by those affected by their decisions, they adopt divergent strategies to frame the patent system. We believe that recognition of the validity of this analysis can lead these two courts to pursue a more uniform system design tactic and, thus, decrease the level of uncertainty in patent law.

The Article proceeds as follows. Part II discusses the new paradigm of inconsistency robustness, surveying the nascent literature in the field and discussing the courts from within the paradigm of inconsistency robustness. Part II shows that courts, by necessity, have built inconsistency robust systems for

millennia. This part also shows the types of error and inconsistency present in legal systems that must be weighed and balanced. Part III analyzes six areas of patent law that highlight the divergent strategies adopted by the Federal Circuit and the Supreme Court when dealing with inconsistency present in the legal system. Part IV discusses possible explanations for the differing strategies. It also analyzes the divergent approaches of the two courts from the inconsistency robustness paradigm and provides significant evidence to conclude that the Federal Circuit and the Supreme Court weigh the costs and benefits of rules versus standard differently when it comes to patent law. Part V discusses what the two courts can learn about patent law from their respective positions on inconsistency robustness. The Article concludes in Part VI.

II. Inconsistency Robustness

Inconsistency robustness is a paradigm shift in thinking about information system performance. Before examining how the inconsistency robustness paradigm is changing thinking about information systems, however, it is worthwhile to define the term “system” as is generally used in the study of systems, which is how we will use the term in this Article.

A “system” is a set of components and relationships that are different from components or relationships of other sets.¹ In many ways, categorizing a set of components and relationships as a system is an exercise in boundary determination.² Once a system has been characterized, studies of the system may attempt to determine abstract properties, concepts, and principles that may be applicable to systems more generally.³ Fields that study the properties of systems include systems theory, cybernetics, dynamical systems, and complex systems.⁴

Inconsistency robustness recognizes that modern, complex information systems must perform notwithstanding persistent and continuous inconsistencies.⁵ The focus on inconsistency robustness encourages designers and administrators to recognize the reality of persistent inconsistency when building robust systems that can perform reliably.⁶ The focus on inconsistency robustness

¹ NORBERT WIENER, *CYBERNETICS: OR THE CONTROL AND COMMUNICATION IN THE ANIMAL AND THE MACHINE* (1948); KENNETH D. BAILEY, *SOCIOLOGY AND THE NEW SYSTEMS THEORY: TOWARD A THEORETICAL SYNTHESIS* (1994).

² See Bailey, *supra* note 1.

³ ROSS ASHBY, *AN INTRODUCTION TO CYBERNETICS* (1956).

⁴ See Bailey, *supra* note 1.

⁵ Carl Hewitt, *Common Sense for Inconsistency-robust Information Integration Using Direct Logic™ Reasoning and the Actor Model*, available at <http://arxiv.org/abs/0812.4852>, August 2011, at 6.

⁶ *Id.*

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is a shift from the previous dominant paradigm that sought to solve inconsistencies via inconsistency denial or inconsistency elimination.⁷

The term “inconsistency robustness” was coined in recent years by Carl Hewitt⁸, founder of the International Society of Inconsistency Robustness. This society promotes the study of information systems, such as computer programs, ecosystems, and management systems that process ever growing inconsistent information. The goal is to understand how these systems operate reliably while being “bombarded” by inconsistent information and use that knowledge to improve other systems’ performance. This knowledge is the science of “inconsistency robustness.”⁹

Because inconsistency robustness is a new paradigm, the literature about it is only beginning to develop. The primary published resource at this point is the refereed proceedings of Inconsistency Robustness 2011 published online. Thus, we think it is useful to further explore our understanding of the paradigm at the outset of this Article. We understand the inconsistency robustness paradigm to situate a system designer so that she operates with a mindfulness of the costs and benefits of reducing inconsistencies within an information processing system.¹⁰ In other words, we understand the inconsistency robustness paradigm as a “reminder” to a system designer that the ultimate goal is not inconsistency elimination *per se*, but rather a cost efficient inconsistency circumvention.¹¹ This means that the system designer knows that creating an inconsistency-free legal

⁷ *Id.*

⁸ Carl Hewitt is Board Chair of the International Society for Inconsistency Robustness. He has been a Visiting Professor at Stanford University and the University of Keio. In 2000, he became emeritus in the EECS department at MIT; see <http://carlhewitt.info/>

⁹ See <http://www.isir.ws/>

¹⁰ Of course, discovering what are the costs and benefits of inconsistency reduction or management can be a difficult, and may occur gradually, as they are uncovered, and in some cases, negotiated among the participants. See, e.g., Edwina L. Rissland, *AI and Similarity*, IEEE INTELLIGENT SYSTEMS, May/June 2006, at 42 (“[T]he study of flexible, slippery concepts has great potential for shedding light on how we think and how to build robust systems capable of dealing with the evolving, messy world we and our systems need to thrive in.”).

¹¹ See also Edwina L. Rissland, *Black Swans, Gray Cygnets and Other Rare Birds*, CASE-BASED REASONING RESEARCH AND DEVELOPMENT, 2009, at 6 (arguing that it is important to understand novel, although not necessarily unforeseen cases, when building an intelligent system that is not only robust in changing and challenging contexts but that can also be pro-active in such domains).

system is a quite unrealistic task,¹² and that sometimes even attempting just to reduce inconsistency may not be worth the costs entailed.¹³ Consequently, a system designer working within the inconsistency robustness paradigm strives to *manage* inconsistency with a significant appreciation for the costs and benefits of reducing particular inconsistencies, i.e. with a significant appreciation for the value of designing a system so as to be robust in the face of inconsistency that is not able to be reduced, or not worth the cost of reduction.

Inconsistency Robustness Theory tells us that systems characterized by the presence of pervasive inconsistency should be designed in a way that allows effective operation notwithstanding that inconsistency. This means that designers and administrators of complex systems should focus on identifying the best way to make the system—together with its inconsistency—run effectively, rather than investing resources in inconsistency elimination, which can never be even partially attained for large systems. This is because on one hand complete inconsistency elimination is impossible, and on the other, significant inefficiencies both in the form of higher costs or additional inconsistency can derive from merely attempting inconsistency reduction. Thus, IR promotes an approach that is, ultimately, able to improve the overall system's performance.

A. Use of Inconsistency Robustness in Computer Science

The operation of computer information systems is a clear example of the benefits produced by IR adoption.¹⁴ Computer information systems are characterized by the presence of significant inconsistency; yet they operate effectively. The reason for this result is that computer scientists have learned to work with the many inconsistencies present by using inconsistency robust reasoning that allows them to accomplish that task in an efficacious way.¹⁵

Clearly, the inconsistency robustness concept acquired great significance with the emergence of computer science. However its origin can be traced back to Wittgenstein's work on mathematics and his critique of Gödel's incompleteness theorem.¹⁶ At the beginning of the twentieth century Gödel showed that there are fundamental limitations to what statements can be proved

¹² *AI and Similarity*, *supra* note 10 at 44 (“Instead of trying to cure [the open-textured, nonstationary, nonconvex nature of their concepts], perhaps we should simply embrace the fact that they're open-textured ‘all the way down’ so to speak—that the one constant is change, and exceptions aren't exceptional.”).

¹³ “Inconsistency” in terms of information systems generally refers to holding both a proposition and its negation. Thus “inconsistency” includes mistakes and “bugs.” See Carl Hewitt *supra* note 5.

¹⁴ See Carl Hewitt *supra* note 5 at 38.

¹⁵ *Id.*

¹⁶ *Id.* at 37.

or disproved within a formal system; thus, he produced a theory of incompleteness within such systems.¹⁷ However, Wittgenstein criticized significantly Gödel's theory because it made use of self-referential propositions, thus, leading to inconsistency.¹⁸ The value of Wittgenstein's work on mathematics was recognized only recently.¹⁹

One of the areas in which the application of IR has produced useful results is active learning where machine-learning algorithms are studied.²⁰ The idea is that a learning algorithm can perform tasks such as speech recognition, information extraction and classification and filtering better and with less training than other algorithms.²¹ Thus, it can provide better and less costly email filtering, movie recommendations, personalized restaurant ratings, etc. The adoption of IR in this area has changed significantly the way in which outliers—data points inconsistent with what the algorithm has already learned²²—are treated.²³ Typically, outliers are ignored because, given a certain model that is reasonably accurate for most of the points, they are considered to misinform and lead the learning process astray.²⁴ However, based on IR, it has been recently shown that outliers can be highly informative during the early learning stage because, for instance, they allow for a quicker model selection and optimization of the model's parameters.²⁵ Thus, a new active learning framework has been proposed that utilizes outlier detection methods.²⁶ This framework outperforms frameworks adopting traditional active learning methods in a number of settings.²⁷

How are “outliers,” such as inconsistent or erroneous decisions, treated within the legal system? Are they ignored, eliminated or managed? Is it possible

¹⁷ Francesco Berto, *There's Something About Gödel: The Complete Guide to the Incompleteness Theorem*, Wiley-Blackwell (2009); Rebecca Goldstein, *Incompleteness: the proof and paradox of Kurt Gödel*, W. W. Norton (2005). For history of mathematics see also Victor J. Katz, *A History of Mathematics*, Adison-Wesley (1998).

¹⁸ See Francesco Berto *supra* note 17, Carl Hewitt *supra* note 5 at 37.

¹⁹ *Id.* at 38.

²⁰ Burr Settles, *Curious Machines: Active Learning with Structured Instances* 2, 3 (2008) available at <http://www.cs.cmu.edu/~bsettles/pub/settles.thesis.pdf>

²¹ *Id.*

²² Neil Rubens, Toshio Okamoto, *Active Learning by Outlier Detection* (2011)

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

to use this knowledge to improve the overall legal system's performance? These are key questions for IR that shows that that "properly taking into account inconsistent data can positively affect systems' performance."²⁸ Thus, the remaining parts of this paper use IR to address these issues and, specifically, to provide an IR analysis of the divergent approach to rules versus standards by the Supreme Court and the Federal Circuit in patent law.

B. Inconsistency Robustness and the U.S. Legal System

While inconsistency robustness has great applicability to computing and information systems design and operation, it is also applicable to information processing systems generally. And indeed, many complex systems have been practicing some form of inconsistency robustness for centuries, even if they did not use the terminology.²⁹

One such complex system that must deal with inconsistency is a legal system. Of course, in this later case one cannot speak in the same precise terms in which one describes inconsistency in mathematical or computing systems. Indeed, the legal "code" is not as precise as computer programming codes, because it is written in prose, which is inherently more nuanced, and therefore more open to multiple interpretations.³⁰ Also, the application of legal code to the multivariate affairs of humans gives even more complexity to the inconsistency robustness analysis.

Court systems, like complex computer systems, constantly face questions as to what is the state of things, or what is the correctness of a contention. Courts also face legal questions as to which of a number of competing legal rules could apply in a given situation. Often, the policies underlying the competing legal

²⁸ *Id.*

²⁹ See generally Michel Cotsaftis, *A Passage to Complex Systems*, in *COMPLEX SYSTEMS AND SELF-ORGANIZATION MODELLING* 3, 3-4 (Kelso, J.A. Scott et al., ed. 2009) (describing the evolution of system studies ranging from simple systems through complex systems where "Now ways have to be developed for proper analysis of their dynamics which do not come out from just addition of the ones of their components and the research of final system behavior is, due to importance of nonlinearities, generally outside the range of application of classical methods.")

³⁰ LAWRENCE LESSIG, *CODE VERSION 2.0* 315 (2006) ("These questions are not addressed by any clear constitutional text or tradition, but they are also cases of latent ambiguity. There is no 'answer' to them in the sense of a judgment that seems to have been made and that a court can simply report. An answer must be fixed upon, not found; made, not discovered; chosen, not reported.").

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rules are inconsistent with each other and pull the court in different directions.³¹ Consequently, courts work in contexts in which significant inconsistency is present,³² and in which decisions about inconsistency reduction and inconsistency robustness are fundamental to the proper operation of the overall system.

Specifically, courts must deal both with error correction and with inconsistency. By error correction, we mean the management of *manifest error* that courts make both in terms of the determination of facts and the interpretation and application of law. Correcting errors, or getting decisions “right,” is an important value of any court system; it is a substantial part of what we call *justice*.³³ A system designer thus has an interest in a correct interpretation of facts and law, i.e. has an interest in managing manifest errors. At the same time, being treated equally before the law is also an essential part of what we call *justice*.³⁴

³¹ See, e.g., Michael LeBoff, *A Need for Uniformity: Survivorship Under 42 U.S.C. §1983*, 32 LOY. L.A. L. REV. 221, 221-222 (1998) (Courts unable to determine which laws should apply regarding § 1983 recovery due to inconsistent policies demonstrate inconsistent and inequitable recoveries throughout the United States.). (“Currently, state and federal courts borrow the survival statute of the state in which the court sits, unless that law is inconsistent with the policies of compensation and deterrence which underlie § 1983. This has led to inconsistent and inequitable recoveries throughout the United States. Therefore, courts need to create a uniform rule of survivorship to ensure fairness and equity.”).

³² See Shirley Lung, *Exploiting the Joint Employer Doctrine: Providing a Break for Sweatshop Garment Workers*, 34 LOY. U. CHI. L. J. 291, 325 (2003) (“Courts decide rather arbitrarily which factors to employ and, without articulated interpretative frameworks to guide their decisions, courts oscillate between different versions of the factors, resulting in inconsistencies within circuits...Critics liken litigation of joint employer cases to ‘legal Russian roulette.’”).

³³ There are many competing notions of what is justice and thus what are the legal standards that promote justice. Any opinion on theories of justice is beyond the scope of this Article. But whatever notion of justice one adopts, one wants courts to get decisions correct. To get it wrong obviously does not promote justice.

³⁴ Louise Arbour, *Economic and Social Justice for Societies in Transition*, 40 N.Y.U. J. INT’L L. & POL. 1, 5 n. 10 (2007) (“Substantive equality is important to social justice, as equality with no qualification may be misinterpreted as formal equality or equality of opportunities only.”); N.J. Schweitzer, et al., *Rule Violations and the Rule of Law: A Factorial Survey of Public Attitudes*, 56 DEPAUL L. REV., 615, 623 (2007) (citing T.R.S. ALLAN, LAW LIBERTY, AND

Consequently, a system designer has an interest in pursuing equality too, i.e. has an interest in managing inconsistency even when it is the result of courts' error management. Indeed, as discussed in the next part, manifest error and inconsistency are sometimes byproducts of the different strategies that courts, and particularly higher courts, adopt to achieve increased *justice*, and at times can be negatively correlated.³⁵

To manage errors, the American court system utilizes an intricate scheme of complex rules aimed at providing reliable information to judges and juries to help them achieving a better determination of what are the relevant facts of a particular case. Entire courses in law school are devoted to this system so that attorneys will be trained in their roles and able to aid courts in this task.³⁶ The American court system also has an intricate scheme for adjudicating legal questions in the form of equally complex rules for construing legal statutes and applying the law to cases. This system is also the subject of numerous courses, and portions of courses, in law schools.³⁷ Indeed, teaching this intricate scheme makes up most of what is meant when law schools say that they teach students to "think like lawyers."³⁸

JUSTICE: THE LEGAL FOUNDATIONS OF BRITISH CONSTITUTIONALISM 22 (1993, ("Professor T.R.S. Allan has echoed Scalia's belief that equality and consistency are necessary conditions for justice."); Jenny S. Martinez, *Process and Substance in the "War on Terror"*, 108 COLUM. L. REV. 1013, 1085 (2008) ("Neutrality and equality of treatment have likewise been offered in more theoretical terms by legal scholars as important components of procedural justice, and are well-represented in legal doctrine."))

³⁵ Cf. ANNE VON DER LIETH GARDNER, AN ARTIFICIAL INTELLIGENCE APPROACH TO LEGAL REASONING 20 (L. Thorne McCarty et al. eds., 1987) ("[O]n a view of law as fixed rules with deductive consequences, there is no room for asking whether a valid deduction leads to an unjust conclusion."))

³⁶ Courses include civil procedure, evidence, legal ethics, and trial practice. *Curriculum Guide – Boston College*, <http://www.bc.edu/content/bc/schools/law/services/academic/programs/curriculum/guide.html> (last visited Oct. 31, 2011).

³⁷ Courses include civil procedure, administrative law, federal courts, and significant portions of the first year curriculum. *Id.*

³⁸ JOHN DELANEY, LEARNING LEGAL REASONING: BRIEFING, ANALYSIS AND THEORY 10 (2006) ("In developing these basic skills, am I learning to read, think, talk and write like a lawyer? ... this is the dominant professorial priority in the first year of law school...If, over a period of time, you develop and internalize these basic skills...you'll use some of these skills each day you work as a lawyer."); Stephen Wizner, *Is Learning to "Think Like a Lawyer" Enough?*, 17 YALE L. & POL'Y REV. 583, 587 (1998) ("Anyone who has attended law school

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Notwithstanding this elaborate design, the endless variety of ways in which people get into disputes and the complexities of deciding legal cases combine to result in trial courts getting both factual and legal questions incorrect with regularity. Consequently, the system has federal courts of appeal and the Supreme Court for the purpose of correcting these errors and promoting a proper application of the law by trial courts.³⁹ Indeed, as previously mentioned, for the rule of law to be just and equitable, citizens should be able to expect consistent, fair, and accurate treatment in the courts.⁴⁰

The higher courts do not seek complete error elimination in lower court decisions, however, especially on factual issues.⁴¹ Nor does the system attempt complete equality of treatment across different courts.⁴² As one example, it is not uncommon for some courts to develop reputations as venues within which defendants, or plaintiffs, or even patent owners, may have a better chance of

will recognize Llewellyn's description. The not-so-hidden message that law professors give to their students is that to be a lawyer one must "think like a lawyer," even if that means suppressing one's compassion, idealism, and concern for truth and justice."),

³⁹ Paul D. Carrington, *Justice on Appeal in Criminal Cases: A Twentieth-Century Perspective*, 93 MARQ. L. REV. 459, 462 (2009) ("The purpose, indeed the only purpose, of those responsible for creating the United States Circuit Courts of Appeals was to provide a system of public accountability for federal trial judges; it was only for that reason that Congress established appellate courts whose job, indeed whose only job, would be not only to correct judges' errors but to affirm and support their contested decisions."); Charles S. Chapel, *The Irony of Harmless Error*, 51 OKLA. L. REV. 501, 514 (1998) ("The traditional view is that appellate courts serve two purposes: (1) error review and correction, and (2) development of the law.⁷³ If our appellate courts are to fulfill their error review and law development purposes and to maintain their systemic integrity, they must correct serious errors found on appeal.").

⁴⁰ Meir Katz, *Plainly Not "Error": Adjudicative Retroactivity on Direct Review*, 25 CARDOZO, L. REV. 1979, 1991 n.74 (2004) ("Equality's fundamental importance to law—specifically, its command that like cases be treated alike—cannot be overstated.").

⁴¹ Harry T. Edwards, *To Err is Human But Not Always Harmless: When Should Legal Error Be Tolerated?*, 70 N.Y.U. L. REV. 1167, 1169-70 (1995) ("Under [the harmless error doctrine], when an appellate court's review of trial proceedings uncovers a legal error that might produce a disfavored result (such as the retrial of a defendant who appears to be guilty), the court may simply call the error "harmless," and the potential aggravation is removed"); [Frase, n. 47; Hoffstadt, n. 44].

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success in their cases than other places.⁴³ Thus, we see that rather than attempting to eliminate all error and inconsistency, the system has developed in a way that shows substantial inconsistency robustness. The court system openly accepts the presence of a certain amount of error and inconsistency.⁴⁴ This is quite sensible, and is an example of an intuitively inconsistency robust view within the judicial system.

If higher courts wanted to attempt correction of all potential factual errors, the higher courts would need to reevaluate the factual issues with the same richness of information available to the trial court—including the ability to observe witness demeanor.⁴⁵ Reviewing courts would virtually have to retry the

⁴³ William Lynch Schaller, *Secrets of the Trade: Tactical and Legal Considerations from the Trade Secret Plaintiff's Perspective*, 29 REV. LITIG. 729, 782 (2010) (“So-called ‘rocket dockets’ like the Eastern District of Virginia, the Eastern District of Texas, and the Western District of Wisconsin have been favored venues for plaintiffs in a hurry”). Elizabeth P. Offen-Brown, *Forum Shopping and Venue Transfer in Patent Cases: Marshall's Response to TS Tech and Genentech*, 25 BERKELEY TECH L.J. 61, 62 (2010) (“As plaintiffs strive to choose the forum most favorable to their case, several federal district courts have become patent litigation ‘hotbeds.’ Some emerged because of their reputation as ‘rocket dockets,’ and the most notable hotbed, due to a variety of factors, explained infra, is the Eastern District of Texas”). Yan Leychkis, *Of Fire Ants and Claim Construction: An Empirical Study of the Meteoric Rise of the Eastern District of Texas as a Preeminent Forum for Patent Litigation*, 9 YALE J.L. & TECH. 193 (2007) (“Plaintiff patent holders and their attorneys love the Eastern District of Texas. There are three key factors that make Marshall such an attractive forum: 1) knowledgeable judges experienced in patent cases; 2) special patent rules that compel open discovery with tight deadlines to which the judges strictly adhere, resulting in quick and relatively inexpensive trials; and 3) plaintiff-friendly juries.”)

⁴⁴ Brian M. Hoffstadt, *Normalizing the Federal Clemency Power*, 79 TEX. L. REV. 561, 577 (2001) (“These extensive judicial review mechanisms do not catch all errors, however. Despite the generally high quality of the federal bench and counsel in federal court, people are people and mistakes sometimes go undetected or uncorrected. Having a nonjudicial mechanism to correct some errors that the judicial system missed has logical appeal for the same reason that it makes sense to have appellate courts review errors allegedly committed by trial courts: each authority has a different perspective and sensitivities that make it likely to catch errors missed by the other.”).

⁴⁵ Honorable James P. Timony, *Demeanor Credibility*, 49 CATH. U. L. REV. 903, 919 n. 72 (citing *Arnstein v. Porter*, 154 F.2d 464, 470 (2d Cir. 1946)) (“The court correctly observed that the jury, despite the plaintiff’s ‘fantastic’

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case. This would obviously be very expensive and time consuming. Instead of going to these lengths, appellate courts give deference to trial courts on issues of fact, and only overturn the lower courts when clear error or abuse of discretion has occurred.⁴⁶ This allows some errors and inconsistencies to go unresolved, and thus may result in some litigants unfairly having their cases resolved based on mistaken understandings of the facts. But rather than seeking perfectly fair treatment of litigants by attempting perfect error correction and inconsistency elimination, the system is designed with knowledge that some error and inconsistency is inefficient to correct.⁴⁷ In this way, one might say that the judicial system seeks robustness in the face of known error and inconsistencies.

On the other hand, the courts of appeal and Supreme Court strive to reduce a good deal of inconsistency in legal issues. Courts are less concerned about the effect of some factual error and inconsistency on the parties of an individual case than they are about the erroneous and/or inconsistent application of law across numerous cases.⁴⁸ For this reason, courts seek to correct more error

story, must have an opportunity to observe the witnesses' demeanor to ascertain truthfulness.");

⁴⁶ William T. Stone, Jr., *Waiving Good-Bye to Inconsistency: Factual Basis Challenges to Guilty Pleas in Federal Courts*, 45 GA. L. REV. 311, 339 (2010). ("Some courts, however, adopt an abuse of discretion standard. While an abuse of discretion standard is arguably better than a de novo review in this context since district judges are exercising a degree of discretion in determining whether to accept a plea, abuse of discretion applies to context specific issues like the admission or exclusion of evidence rather than factual determinations. Therefore, review for clear error constitutes the proper amount of deference to the trial court's factual determinations if appellate courts decide to conduct a factual basis review.")

⁴⁷ Richard S. Frase, *The Search for the Whole Truth About American and European Criminal Justice Trials Without Truth: Why Our System of Criminal Trials has Become an Expensive Failure and What We Need to do to Rebuild It*, 3 BUFF. CRIM. L. REV. 785, 840 (2000) ("That is because appellate courts make liberal use of the doctrine of "harmless error," which allows certain trial errors (particularly decisions erroneously admitting some item of prosecution evidence) to be overlooked if the case is so strong that the error was unlikely to have affected the outcome.").

⁴⁸ John F. Duffy, *The Federal Circuit in the Shadow of the Solicitor General*, 78 GEO. WASH. L. REV. 518, 530 (2010) ("In most federal statutory cases, the Supreme Court follows a rather simple rule in deciding whether to grant certiorari in the case: the Court waits until the courts of appeals have reached inconsistent results in the interpretation and application of the federal law.").

when it comes to legal questions,⁴⁹ and to correct it at a higher level, so that a correct rule can then be applied consistently vertically, down to the trial courts, and horizontally, across numerous trial courts and appellate courts, if applicable. Thus, we see greater attempts at correcting errors and eliminating inconsistency for legal issues.⁵⁰ More specifically, we see that the legal system designers have made important *determinations* about when to try to decrease error and inconsistency, and when to attempt robust operations in the face of error and inconsistency, by weighing the benefits of contemplated error correction or inconsistency reduction against the attendant costs of achieving this result.

The legal system is designed so that it is good at getting to the point of action (decision) in the face of inconsistency. The rules and standards on how to proceed in the face of inconsistency reflect the overall goals and values of the system. These rules are designed to create a system that finds truth where it is efficient to do so, corrects error where that is efficient, and above all proceeds to decision, even in the face of inconsistency and error.⁵¹ One example of many, is that while errors may be reversed by a reviewing court, in the case of “harmless error” a court will uphold a decision even in the presence of acknowledged error, so long as that error is judged to be irrelevant to the outcome of the case.⁵²

The judicial system also sometimes adopts inconsistency robustness strategies in one area so as to decrease inconsistency in another area. For example, higher courts sometimes apply the judicial principle of *stare decisis* as a justification for forbearing the correction of a legal standard that is well established.⁵³ The principle of *stare decisis* does not counsel courts never to

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ Indeed, getting to a point of official and authoritative judgment is another primary feature of legal systems. Such judgments give litigants a decision from an authority, and reduce private conflict and even violence that would exist in the absence of the ability to litigate disputes. Justice Evelyn Keyes, *The Literary Judge: The Judge as Novelist and Critic*, 44 HOUS. L. REV. 679, 682 (2007) (“The purpose of legal judgment is to resolve particular cases in accordance with the law and the facts to determine the legal rights and duties of the individual litigants under the applicable legal principles; hence, to do justice to the litigants in the case and to provide a principled and coherent guide for future litigants in similar circumstances.”).

⁵² See Frase, *supra* note 47.

⁵³ See Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 601, 654 (2001) (“[A] court’s decision to apply a relaxed doctrine of *stare decisis* and its decision to follow or discard a particular precedent. A court may decide that it is appropriate to relax the doctrine of *stare decisis*, but nonetheless conclude that

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overturn well-established legal rules, but instead the principle encourages courts to be hesitant to overturn such rules absent compelling reasons.⁵⁴ *Stare decisis* is thus very much within the inconsistency robustness paradigm. It warns against too great a willingness to frequently change the law in an attempt to achieve a “correct” standard, because, it may lead to the risk of creating additional inconsistency and error in subsequent lower courts’ decisions as they struggle with the shifting legal standards, or may cause problems for parties who relied on the established rule.⁵⁵ Thus, *stare decisis* eschews elimination of some manifest error in order to promote robust horizontal and vertical consistency.

a particular precedent should be followed either because it is correct or because it is not clearly incorrect.”)

⁵⁴ See William S. Consovoy, *The Rehnquist Court and the End of Constitutional Stare Decisis: Casey, Dickerson and the Consequences of Pragmatic Adjudication*, 2002 UTAH L. REV. 53, 54 (2002). (“Champions of *stare decisis* make several arguments on its behalf: (1) *stare decisis* serves to legitimize judicial institutions, because by adhering to precedent, in all but the rarest of circumstances, courts not only show deference to their predecessors but also give weight to current decisions because the citizenry recognizes the lasting impact these decisions will have; (2) *stare decisis* promotes judicial economy by allowing courts to reduce caseloads and creates disincentives to relitigation of precedent cases; (3) *stare decisis* allows for predictability because individuals are able to conform their behavior to a certain set of guidelines, and in return they are rewarded with the knowledge that this behavior, in line with the judicial determination, will be protected under law.”).

⁵⁵ See *In re Tarczy-Hornoch*, 55 C.C.P.A. 1441, 1459 (1968) (“I think that it takes much more than the discovery of a possible flaw in the reasoning of a court of years ago, which may or may not have misunderstood the purport of earlier decisions, to overturn a well established and accepted rule of nearly seventy years’ standing.”); *Bradstreet v. Thomas*, 37 U.S. 59, 64 (1838) (“The principle on which this averment has been required is purely technical. But the rule has been established by the decisions of this Court, and we do not mean to disturb it”). See also Edwina L. Rissland et al., *AI and Law: A Fruitful Synergy*, 150 ARTIFICIAL INTELLIGENCE, 1, 3 (November 2003) (“*Stare decisis* requires that similar cases be decided similarly. While this doctrine puts the focus squarely on reasoning from case to case, it is silent on how “similarity” should be determined. In fact, similarity is not static; it can depend on one’s viewpoint and desire outcome.”); ANNE VON DER LIETH GARDNER, AN ARTIFICIAL INTELLIGENCE APPROACH TO LEGAL REASONING 29 (L. Thorne McCarty et al. eds., 1987) (“The announcement of an entirely new rule, perhaps with direct overruling of earlier decisions, is exceptional. More often the change is gradual,

The judicial system also seeks horizontal consistency in decision making by courts. Horizontal consistency is an important goal for the American legal system because it is only when people are treated (mostly) consistently under the law that they can truly be said to have equal rights and equal protections.⁵⁶ Thus, the federal judicial system is structured so that the courts of appeal are divided into separate geographic circuits each of which pronounces legal decisions that are binding for all of the district courts within the particular circuit court's geographic area.⁵⁷ The district courts are bound to apply the decisions of the appellate court in their circuit,⁵⁸ and thus a good deal of horizontal consistency is present in each circuit,⁵⁹ as well as a certain amount of vertical consistency.

as apparently relevant precedents are distinguished away or are extended to cover new situations.”).

⁵⁶ See Amy E. Sloan, *The Dog That Didn't Bark: Stealth Procedures and the Erosion of Stare Decisis in the Federal Courts of Appeals*, 78 *FORDHAM L. REV.* 713, 718-19 (2009) (“In the federal appellate courts, the law of the circuit rule implements the policy of horizontal *stare decisis*. The law of the circuit rule provides that the decision of one panel is the decision of the court and binds all future panels unless and until the panel's opinion is reversed or overruled, either by the circuit sitting en banc or the Supreme Court. Every circuit follows the law of the circuit rule.”).

⁵⁷ Martha Dragich, *Uniformity, Inferiority, and the Law of the Circuit Doctrine*, 56 *LOY. L. REV.* 535, 538 (2010) (“The regional structure of the courts of appeals, together with the law of the circuit doctrine, values intracircuit consistency over national uniformity. Decisions are rendered by panels of three judges; en banc decisions are rare. To promote intracircuit consistency, the “prior panel rule” or “rule of interpanel accord” holds that the decision of any panel binds the court of appeals itself and the district courts within the circuit.”).

⁵⁸ Colin E. Wrabley, *Applying Federal Court of Appeals' Precedent: Contrasting Approaches to Applying Court of Appeals' Federal Law Holdings and Erie State Law Predictions*, 3 *SETON HALL CIRCUIT REV.* 1, 15 (2006) (“However, *West's* applicability to district courts faced with a federal court of appeals' *Erie* prediction must be analyzed by reference to the established principle of *stare decisis* that requires district courts to adhere to their superior federal court of appeals' decisions”); Robert A. Ragazzo, *Transfer and Choice of Federal Law: The Appellate Model*, 93 *MICH. L. REV.* 703, 706-7 (1995) (“A district court applies the law of its circuit because its circuit court is the next-higher court in the federal hierarchy—the court that will review its decisions.”)

⁵⁹ *Id.* The exception to this rule is the Federal Circuit, which has jurisdiction based on subject matter rather than geography. Wayne T. Ault, *Subject Matter Jurisdiction in the Federal Circuit: A Lesson on the Effects of a Poorly Drafted Statute*, 36 *AM. U. L. REV.* 943, 943 (1987) (“The statute that created the Court of

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The federal circuit courts also have a rule that a later panel of judges cannot overrule the statement of an earlier panel as to a specific legal rule.⁶⁰ This too helps promote horizontal consistency at the district court level because it means that appellate decisions, once made, can only be changed by the circuit court when it meets as a whole (“en banc”) to reevaluate an existing rule.⁶¹ Thus, in *In re Bilski*, the Federal Circuit met *en banc* to change the “useful, concrete and tangible result” test for the patentability of processes and substitute the “machine-or-transformation” test.⁶²

To achieve even greater horizontal consistency, the Supreme Court is set as the highest court of the land and reviews decisions of the circuit courts.⁶³ The Supreme Court has discretion as to which cases it will review,⁶⁴ but it is more

Appeals for the Federal Circuit (Federal Circuit or court) defined the new court’s jurisdiction in terms of subject matter rather than geography.”). The Federal Circuit has sole jurisdiction over all appeals of patent cases, no matter what district court tried the patent case. George C. Beighley, Jr., *The Court of Appeals for the Federal Circuit: Has it Fulfilled Congressional Expectations?*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 671, 673 n.3 (2011) (“The Federal Circuit’s jurisdiction extends to all appeals from all cases arising under the patent laws”), *see also* Ault, *supra*, at 959-61.

⁶⁰ Sydney M. Leach, *Recent Federal Circuit Decisions on Patent Law*, 1 TEX. INTELL. PROP. L. J. 31, 31 (1992) (“Because the Federal Circuit sits in panels of three judges, if two decisions of the Federal Circuit are in conflict, the *earlier* decision is the controlling precedent because a later panel of only three judges cannot overrule a prior decision of the court.”); Sloan, *supra* note 16, at 718-19.

⁶¹ *Id.*

⁶² *In re Bilski*, 545 F.3d 943, 956 (Fed. Cir. 2008). The machine or transformation test was duly overturned by the Supreme Court. *See infra* notes 156-163, and accompanying text.

⁶³ 28 U.S.C. § 1253 (1948) (“Except as otherwise provided by law, any party may appeal to the Supreme Court from an order granting or denying, after notice and hearing, an interlocutory or permanent injunction in any civil action, suit or proceeding required by any Act of Congress to be heard and determined by a district court of three judges.”).

⁶⁴ 28 U.S.C. § 1257 (1988) (“(a) Final judgments or decrees rendered by the highest court of a State in which a decision could be had, may be reviewed by the Supreme Court by writ of certiorari where the validity of a treaty or statute of the United States is drawn in question or where the validity of a statute of any State is drawn in question on the ground of its being repugnant to the Constitution, treaties, or laws of the United States, or where any title, right, privilege, or immunity is specially set up or claimed under the Constitution or the treaties or

likely to take a case if the circuit courts are split on the interpretation of a particular law.⁶⁵ The Supreme Court thus sees part of its mandate as settling disputed interpretations of the law among the circuit courts.⁶⁶ Once the Supreme Court has decided an issue, all lower courts—circuit and district courts—are bound to apply the law according to the Supreme Court’s interpretation.⁶⁷ This obviously results in substantial horizontal consistency, as well as some increased vertical consistency.

The Supreme Court does not value horizontal inconsistency reduction above all else, however. In fact, the Supreme Court is well-known for at times allowing circuit splits to exist for a period of time before deciding the disputed issue so as to have the benefit of the argument among the circuit courts as well as the benefit of seeing how the application of the differing interpretations works out in the various circuits.⁶⁸ Thus, we see the Supreme Court allowing manifest inconsistency to continue for an indefinite period of time and even attempting to “profit” from its presence.⁶⁹

statutes of, or any commission held or authority exercised under, the United States.”). See also Mary Ann Lane, *“Interactive Services” and the Future of Internet Radio Broadcasts*, 62 ALA. L. REV. 459, 470 (2011) (“Although the Supreme Court recently denied Arista Records’ petition for writ of certiorari, future appellate court interpretations of the meaning of “interactive service” could lead to a circuit split and an issue later ripe for Supreme Court review.”).

⁶⁵ See Lane, *supra* note 64. See also C. Dan Black, *Georgia v. Randolph: A Murky Refinement of the Fourth Amendment Third-Party Consent Doctrine*, 42 GONZ. L. REV. 321, 327 (2006-2007) (“Georgia sought review by the United States Supreme Court, which granted certiorari to resolve a split of authority among the circuits and states”); Duffy, *supra* note 48.

⁶⁶ See Black, *supra* note 25.

⁶⁷ Serge Krimnus, *The Doctrine of Foreign Equivalentents at Death’s Door*, 12 N.C. J. L. & TECH. 159, 193 (2010) (“It is axiomatic that lower courts are bound by the decisions of the Supreme Court.”).

⁶⁸ Frank B. Cross et al., *Judging the Judges*, 58 DUKE L.J. 1383, 1403 (2009) (“The Supreme Court hears many fewer cases and consequently has the advantage of having considerably more time to evaluate the legal issues. The Court often has far better legal and other information on which to ground its decisions. Moreover, circuit courts may be regarded as agents of the Supreme Court, so it seems appropriate to consider the evaluations of their principal.”)

⁶⁹ See, e.g., Bryan K. Weir, *It’s (not so) Plain to See: The Circuit Split on the Plain View Doctrine in Digital Searches*, 21 GEO. MASON U. CIV. RTS. L. J. 83, 121 (2010) (“Unfortunately, it appears that an abolition of the plain view doctrine in digital searches will have to wait. Supreme Court review of the current split in the near future seems unlikely. Even with the divergent circuit rulings, the Court

The second type of inconsistency in the judicial system that we discuss is vertical inconsistency. This is simply the inconsistency that results when higher courts decide cases differently than lower courts. Because higher courts exist to correct errors on the part of lower courts,⁷⁰ one should obviously expect that a fair bit of vertical inconsistency will occur, and is indeed expected in the system.⁷¹ Nevertheless, there are costs of vertical inconsistency. For one thing, litigants will experience a longer period of uncertainty before knowing the ultimate resolution of their disputes if a high level of vertical inconsistency is the norm. In such a vertically inconsistent system, litigants will also tend to spend more money on litigation given that the party that loses below will have more incentive to appeal if the chances of reversal in a higher court are substantial.⁷² In addition, if a judicial system had very weak vertical consistency, litigants might sue over even clearly decided legal questions simply in hopes that the district court would decide the issue differently than the appellate court.⁷³

has denied a certiorari petition...Perhaps after more courts have grappled with this issue and applied the various theories, the Supreme Court will decide the issue with more guidance”).

⁷⁰ See Hoffstadt, *supra* note 44.

⁷¹ Heidi A. Reamer, *Defining Recipients of Federal Financial Assistance Under the Nondiscrimination Statutes*, 57 WASH. & LEE L. REV. 1355, 1389-90 (2000) (“However, lower courts’ application of the indirect recipient theory is problematic for two main reasons—vertical inconsistency and horizontal inconsistency. First, lower courts’ application is vertically inconsistent because they often misapply the theory as limited by the Supreme Court.”)

⁷² Erin O’Hara, *Social Constrain of Implicit Collusion?: Toward a Game of Theoretic Analysis of Stare Decisis*, 24 SETON HALL L. REV. 736, 766 (1993); Sarah E. Ricks, *The Perils of Unpublished Non-Precedential Federal Appellate Opinions: A Case Study of the Substantive Due Process State-Created Danger Doctrine in One Circuit*, 81 WASH. L. REV. 217, 234 (2006) (“Appellate opinions that do not bind subsequent panels or district courts also risk inconsistent treatment by litigants bound by the law in that circuit. For example, a litigant has incentive to rely on a non-precedential opinion because of the possibility that a district court or circuit panel will follow the non-precedential reasoning. A litigant has incentive to use non-precedential opinions not just because the facts may be similar or the reasoning persuasive but also for ‘the added boost of claiming that three court of appeals judges endorse that reasoning.’”).

⁷³ Jennifer E. Spreng, *The Icebox Cometh: A Former Clerk’s View of the Proposed Ninth Circuit Split*, 73 WASH. L. REV. 875, 911-12 (1998) (“Lack of consistency and predictability in a circuit’s law encourages appeals to take advantage of the uncertainty. Because there is a good chance of running into an outlier panel or a panel reflective of one of the court’s polarizations, even

Thus, the court system designer has a motive to limit vertical inconsistency, even while not eliminating it. A number of mechanisms are present in the judicial system that reflect a robust attitude toward vertical inconsistency reduction. They include, among others, a limited number of appeals, a limited number of reasons for which an appeal can be pursued, and, as previously mentioned, the *discretion* granted the Supreme Court in deciding to hear cases.⁷⁴ This *discretion* is based also on the understanding that resources are limited—there is only one Supreme Court—and that only those cases whose decision has the highest potential to benefit society should be taken by the Court.⁷⁵ Other cases are “left behind” even if their dispositions could eliminate certain inconsistency present in the legal system. They are just less worthy of the limited time that the Supreme Court has. The inconsistency robustness paradigm thus is useful in making determinations about the costs and benefits of error correction and vertical and horizontal inconsistency, and has been applied by courts for a long time, at least intuitively.

III. Different Approaches to Crafting Inconsistency Robust Patent Law Systems: The Federal Circuit and Supreme Court Regularly and Reliably Differ on Rules Versus Standards in Patent Law

Having set out the two types of error and two main forms of inconsistency that exist in the United States federal court system in Part II, we now focus on one specific aspect and subject matter of that system—the interaction of the Supreme Court and the Court of Appeals for the Federal Circuit

lawyers with weak cases have a strong incentive to ‘roll the dice’ on appeal and hope the random draw of panel judges comes out in their favor.”); J. Harvie Wilkinson III, *The Drawbacks of Growth in the Federal Judiciary*, 43 EMORY L.J. 1147, 1175 (1994) (discussing wide varieties of possible panels of judges create murky law, increasing litigation due to the “uncertainty of outcomes resulting from a cacophony of differing opinions [that] can act as a catalyst for yet more appeals.”)

⁷⁴ Weir, *supra* note 69.

⁷⁵ Arthur D. Hellman, *The Federal Courts: Crisis and Reform*, 39 STAN. L. REV. 297, 299 (1986) (“In all but a small fraction of the Supreme Court’s cases, review is discretionary with the Court, and that discretion is exercised primarily to select cases that have general importance in the development of the law.”); Barry Friedman, *Dialogue and Judicial Review*, 91 MICH. L. REV. 577, 656 (1993) (“If the issue is of general importance the Supreme Court may hear the case. At this point in the process, an *issue*, not just a *case*, is clearly being debated. The Court will hear argument about the issue...The Supreme Court is important, like the President, or Congress: it is the “last” judicial voice, at least for this round.”)

when it comes to deciding patent cases.⁷⁶ The IR paradigm was useful to us in analyzing a previously underexplored recurring pattern of disagreement that characterizes the Federal Circuit's and Supreme Court's divergent patent law decisions. Specifically, since its creation, the Federal Circuit has increasingly tended towards the refinement of legal rules until they become bright-line rules that can be applied with high levels of predictability and consistency by lower courts.⁷⁷ In contrast, the Supreme Court has increasingly overturned Federal Circuit patent decisions that set forth bright-line rules.⁷⁸ The Supreme Court has consistently replaced the Federal Circuit's bright-line rules with standards that have the benefit of promoting flexible decision-making, but, simultaneously, allow more inconsistency to persist in the system.

We believe that this pattern of disagreement is largely driven by the two courts' differing intuitive views as to how to address inconsistencies, and what is the beneficially allowable level of inconsistency in the area of patent law. Although this pattern has been present in the past few decades, to our knowledge only one other scholar has attempted to systemically analyze the pattern. Peter Lee discussed rule formalism in the Federal Circuit versus holistic standards at the Supreme Court when it comes to patent law.⁷⁹ He argued that cultural differences between the two courts and the "cognitive miser" bias help explain this trend.⁸⁰ Our analysis is different. We believe that it is the courts' roles as system administrators at different levels within the system that best explains the differences between adoption of rules and standards that we repeatedly see. Other scholars have noted the Supreme Court's replacement of rules with standards in specific areas of patent law, but they do not discuss this as a systemic, recurring pattern in patent law.⁸¹ Adopting the IR perspective and analyzing the roles of

⁷⁶ Note that while this Article considers only the United States federal court system, much of what is discussed about the interactions between trial and appellate courts has relevance to other court systems.

⁷⁷ See *infra*, notes 84-163 and accompanying text.

⁷⁸ *Id.*

⁷⁹ Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2 (2010) (identifying cultural differences between the Supreme Court and Federal Circuit and arguing that the Supreme Court utilizes a more holistic analysis, which engages with technology more, while the Federal Circuit relies on formalism to limit its need to analyze technologies at issue)

⁸⁰ *Id.*

⁸¹ Scholars have, however, identified differences in approach between the Supreme Court and Federal Circuit, and have commented on the use of rules versus standards in particular areas of patent law, but not systemically. See, e.g., Tun-Jen Chiang, *The Rules and Standards of Patentable Subject Matter*, 2011 WISC. L. REV. 1353 (2011); John Duffy, *Rules and Standards on the Forefront of*

the Supreme Court and Federal Circuit as system administrators enabled us to fully analyze this pattern. We also believe that the IR perspective provides the best among competing explanations for this pattern.

Our contention is that the Federal Circuit has repeatedly resorted to bright-line rules in an attempt to minimize, if not eliminate, the two types of inconsistency—horizontal inconsistency and vertical inconsistency. More precisely, we observe that the Federal Circuit and Supreme Court may each be focusing on reducing inconsistency—or at least error—in different aspects of the system, and may each be comfortable with inconsistency—or at least error—in other aspects of the system. We believe that when it comes to patent cases, however, because of the different costs and burdens the two courts bear from inconsistency and error correction, the Federal Circuit values horizontal and vertical inconsistency reduction more, while the Supreme Court places greater value on the elimination of manifest error. This means that correspondingly, the Federal Circuit has more tolerance for manifest error that comes from its bright-line rules, while the Supreme Court has more tolerance for horizontal and vertical inconsistency that comes from adopting standards.

In the almost thirty years since the Federal Circuit began hearing cases in 1983, the Court has produced a single body of law to which district courts can look to decide patent cases,⁸² i.e. it has significantly reduced horizontal

Patentability, 51 WM. & MARY L. REV. 609 (2009) (discussing divergent preference for rules versus standards on the parts of the Supreme Court and the Federal Circuit in the area of patentable subject matter); Timothy R. Holbrook, *Substantive versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123 (2005) (arguing that in the area of claim construction, the Federal Circuit utilizes bright-line substantive rules, while the Supreme Court utilizes process-based formalistic rules); Timothy R. Holbrook, *The Supreme Court's Complicity in Federal Circuit Formalism*, 20 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1 (2003) (identifying Federal Circuit preference for bright-line rules and arguing that Supreme Court facilitates such formalism in its review of patent cases); Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035 (2003) (criticizing Federal Circuit's arrogation of fact finding to itself while engaging in rule formalism, and suggesting multi-institutional reform that takes into account institutional design of the patent system).

⁸² Thomas W. Adams, *The 1988 Revision of 28 U.S.C. § 1931(C): Corporate Venue is Now Equivalent to In Personam Jurisdiction Effects on Civil Actions for Patent Infringement*, 39 CLEV. ST. L. REV. 357, 369 (1991) ("The Federal Circuit has eliminated many of the former conflicts among the circuits in interpreting patents and deciding their validity, and has provided a single guiding light for questions of patent law in the district courts, the Patent and Trademark Office,

inconsistency. The Supreme Court seems to believe, however, that the Federal Circuit has engaged in a certain amount of suboptimal decision making by choosing to achieve this goal through the adoption of too many bright-line rules.⁸³

Evidence that the Federal Circuit has attempted to create consistency in the application of patent laws can be found in numerous patent cases—the most significant of which are discussed below—that involved the creation of bright-line rules. In the remainder of this Part, we discuss five areas of law in which the Federal Circuit has developed bright-line rules that the Supreme Court subsequently overturned and replaced with more contextual standards. The five areas of patent law are: obviousness; the doctrine of equivalents; standing in declaratory judgment cases involving patents; standards for granting injunctive relief for patent infringement; and patentable subject matter. We discuss each area in turn.

A. *Obviousness*

The requirement that a patent be nonobvious was codified in the 1952 Patent Act.⁸⁴ The statute merely says that an invention is not patentable if it “would have been obvious at the time the invention was made,” and leaves it to the courts to determine obviousness.⁸⁵ Whether an invention is obvious is an inherently difficult question to answer, and one that lends itself to a good deal of inconsistent opinion. The Supreme Court first interpreted the obviousness requirement in light of the 1952 Patent Act in 1966 in *Graham v. John Deere*.⁸⁶ There the Supreme Court set out a complex, contextual, multifactor analysis for

and for practitioners in the specialty of patent law. In effect, the Federal Circuit is the final arbiter of the majority of patent questions.”) Many commentators also believe that the Court indeed has been friendlier to patent interests than some of the circuit courts were before 1983. Katherine J. Strandburg, *Law and the Science of Networks: An Overview and an Application to the “Patent Explosion* 21 BERKELEY TECH. L. J. 1293, 1329 (2006) (“In 1983, the Federal Circuit published its first patent opinion, inaugurating what many have argued has been an era of patent-friendly legal review after a period of purported judicial hostility to patentees.”).

⁸³ Lee, *supra* note 46 at 42 (“The Court’s recent and significant reentry into patent law has attracted considerable academic attention. For most observers, the Court’s aggressiveness reflects an attempt to rein in patent rights that had become too expansive under Federal Circuit jurisprudence.”).

⁸⁴ 35 U.S.C. § 103.

⁸⁵ *Id.* The new America Invents Act of 2011 does not change this standard. *See* new 35 U.S.C. § 103.

⁸⁶ 383 U.S. 1, 3 (1966).

determining obviousness.⁸⁷ Upon its creation, and for years thereafter, the Federal Circuit struggled with the standard for obviousness, and the inherent unpredictability and uncertainty arising from the Supreme Court's approach.⁸⁸ Eventually, the Federal Circuit adopted the "teaching suggestion or motivation" ("TSM") test.⁸⁹ Under this test, the Federal Circuit ruled that a patent could not be held invalid unless the district court could point to a particular teaching, suggestion, or motivation in the technical literature that suggested the combination of elements that resulted in the patented invention.⁹⁰ There was

⁸⁷ *Id.* at 17. ("Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.")

⁸⁸ *See, e.g.*, *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002); *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999); *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998); *In re Lueders*, 111 F.3d 1569 (Fed. Cir. 1997); Steven J. Lee et al., *Teaching, Suggestion and Motivation: KSR v. Teleflex and the Chemical Arts*, 17 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 915, 917 (2007) ("The TSM test was created in order to preclude a court's engaging in a hindsight-based obviousness analysis, which is impermissible. As the Federal Circuit has stressed in numerous obviousness decisions, the inventor's own disclosure—the claimed invention itself—cannot be used as a "blueprint for piecing together the prior art to defeat patentability—the essence of hindsight." It was this strong distaste for hindsight reconstruction that led the Federal Circuit to adopt and then very rigorously apply the TSM test.")

⁸⁹ *In re Sernaker*, 702 F.2d 989, 994 (Fed. Cir. 1983) ("That being so, the next questions are (a) whether a combination of the teachings of all or any of the references would have suggested (expressly or by implication) the possibility of achieving further improvement by combining such teachings along the line of the invention in suit, and (b) whether the claimed invention achieved more than a combination which any or all of the prior art references suggested, expressly or by reasonable implication. These manifestly related tests are indicated as appropriate by the following decisions of the former Court of Customs and Patent Appeals reviewing, as we do here, decisions of the board denying patentability under § 103 on obviousness grounds."). *See also* Sarah A. Geers, *Common Sense and the Fact Finder Without Skill in the Art: The Role of Objective Evidence in Achieving Proper Technology Specificity*, 40 SETON HALL L. REV. 225, 232 (2010) ("In the years following the Graham decision and the creation of the Federal Circuit, the Federal Circuit did indeed usher in an era of more well-defined and rigorous use of the TSM test.")

⁹⁰ *See* *Al-Site Corp v. VSI Intern., Inc.*, 174 F.3d 1308 (Fed. Cir. 1999) ("The party seeking patent invalidity based on obviousness must also show some motivation or suggestion to combine the prior art teachings. A suggestion or

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some debate about whether the teaching, suggestion, or motivation had to be written, but this was at the least greatly preferred.⁹¹

The benefit of the TSM test was that it gave fairly clear criteria for determining obviousness, and thus decreased horizontal and vertical inconsistency. The detriment of the test was that it allowed patents on a number of inventions that would otherwise have been thought obvious if the patent office could not point to a specific teaching, suggestion, or motivation to combine all of the elements claimed in an invention.⁹² Thus, a number of seemingly obvious inventions were patented.⁹³

The Supreme Court rejected any rigid, narrow application of the TSM test in 2007 in *KSR v. Teleflex*.⁹⁴ The case involved the question of whether a

motivation to combine generally arises in the references themselves, but may also be inferred from the nature of the problem or occasionally from the knowledge of those of ordinary skill in the art.”); *see also* Rouffet, 149 F.3d at 1355.

⁹¹ Tamir Packin, *A New Test for Obviousness in Combination Patents: Economic Synergy*, 28 CARDOZO L. REV. 957, 973 (2006) (“The Federal Circuit has held that this test can be implicit and does not need to be explicit. The issue of how explicit the suggestion needs to be is a topic of current debate; some commentators suggest that although the Federal Circuit theoretically allows for an implicit suggestion, Federal Circuit case law applying the “suggestion” test consistently requires an explicit suggestion.”); Gregory Mandel, *Patently Non-Obvious II: Experimental Study on the Hindsight Issue Before the Supreme Court in KSR v. Teleflex*, 9 YALE J. L. & TECH. 1 (2007) (“Under Federal Circuit case law, a decision-maker may rely on an implicit suggestion or motivation to combine prior art references—the suggestion or motivation does not need to be recorded or documented.”).

⁹² Mandel, *supra* note 91 (“The challenge to the suggestion test before the Supreme Court in *KSR v. Teleflex* is relatively straightforward. Petitioners argue that the test improperly lowers the non-obvious standard by causing inventions for which there is no suggestion to combine references in the prior art to be held non-obvious, even though certain of these inventions actually are obvious.”).

⁹³ Mandel, *supra* note 91 (“The petitioner in *KSR*, backed by *amici* briefs from the Solicitor General of the United States, industry representatives, and a number of intellectual property professors, argues that the suggestion test violates the Patent Act and the Supreme Court’s non-obvious precedent because it results in certain actually obvious advances instead being held non-obvious. Their argument is that combining references may have been obvious even if there was no explicit suggestion, teaching, or motivation to combine the references in the prior art.”)

⁹⁴ 550 U.S. 398, 402 (2007).

movable gas pedal with an electronic sensor was obvious.⁹⁵ Prior automotive pedal designs included movable pedals, and pedals with electronic sensors.⁹⁶ The question before the court was whether combining a moveable design with an electronic sensor was obvious.⁹⁷ The Federal Circuit had held that it was not, citing the lack of teaching, suggestion, or motivation to combine the two types of pedals.⁹⁸ The Supreme Court reversed, finding that such a combination was obvious because it was where the industry was inevitably headed.⁹⁹ In its decision, the Court reiterated its contextual approach set out in *Graham v. John Deere*.¹⁰⁰ The Court preferred a more flexible approach that encouraged more nuanced decisions to the bright-line TSM test.¹⁰¹ Thus we see an example of the Federal Circuit preferring to reduce horizontal and vertical inconsistency while the Supreme Court preferred to reduce manifest error deriving from the application of said bright-line rule. The Supreme Court has the final say, of course, and thus substituted its view of proper inconsistency robustness for that of the Federal Circuit.

B. Doctrine of Equivalents

A similar pattern can be discerned regarding the law of prosecution history estoppel of infringement claims based on the doctrine of equivalents. Patent law allows a patent owner to exclude others from using both his claimed invention and near equivalents.¹⁰² When a patentee amends his patent during prosecution before the patent office so as to narrow the scope of the claimed invention, the question is whether he may thereafter assert the right to exclude equivalents to his invention.¹⁰³ Courts have always been hesitant to allow patentees to benefit from the application of the doctrine of equivalents in these

⁹⁵ *Id.* at 406.

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.* at 407.

⁹⁹ *Id.* at 424.

¹⁰⁰ *Id.* at 406.

¹⁰¹ *See id.* at 413-4

¹⁰² *Festo v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002) (“The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.”).

¹⁰³ *Id.* at 733-34 (“When, however, the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent.”).

cases¹⁰⁴ and, ultimately, adopted the doctrine of prosecution history estoppel to limit infringement claims via equivalents for claims that had been narrowed during prosecution.¹⁰⁵

The question, then, became what the parameters should be for invoking prosecution history estoppel, and what should be the boundaries of the estoppel? The Federal Circuit struggled with these questions and finally settled on a bright-line rule.¹⁰⁶ The Federal Circuit held that if a patentee narrowed his patent claim in any way during prosecution, then he was absolutely barred from invoking the doctrine of equivalents for the narrowed claims.¹⁰⁷ This again promoted great reductions in horizontal and vertical inconsistency.

The Supreme Court reversed the Federal Circuit's approach in *Festo v. Shoketsu* in 2002.¹⁰⁸ The Supreme Court held that an absolute bar to invoking the doctrine of equivalents was too severe, and that instead, patentees would be estopped from invoking the doctrine only as to equivalents that were foreseeable at the time of patent prosecution.¹⁰⁹ Here again the Supreme Court rejected the

¹⁰⁴ See, e.g., *Goodyear Dental Vulcanite Co. v. Davis*, 102 U.S. 122, 128 (1880) (“In view of [the amendment] there can be no doubt of what [the patentee] understood he had patented, and that both he and the commissioner regarded the patent to be for a manufacture made exclusively of vulcanites by the detailed process”); *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 136-37 (1942).

¹⁰⁵ *Warner Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 30-32 (1997); *Festo*, 535 U.S. at 734-35 (“Prosecution history estoppel ensures that the doctrine of equivalents remains tied to its underlying purpose. Where the original application once embraced the purported equivalent but the patentee narrowed his claims to obtain the patent or to protect its validity, the patentee cannot assert that he lacked the words to describe the subject matter in question. The doctrine of equivalents is premised on language’s inability to capture the essence of innovation, but a prior application describing the precise element at issue undercuts that premise. In that instance the prosecution history has established that the inventor turned his attention to the subject matter in question, knew the words for both the broader and narrower claim, and affirmatively chose the latter.”); *Wang Laboratories, Inc. v. Mitsubishi Electronics America, Inc.*, 103 F.3d 1571, 1577-1578 (Fed. Cir. 1997) (“Prosecution history estoppel ... preclud[es] a patentee from regaining, through litigation, coverage of subject matter relinquished during prosecution of the application for the patent”).

¹⁰⁶ *Festo v. Shoketsu Kinzoku Kogyo Kabushiki Co.*,

¹⁰⁷ *Id.*

¹⁰⁸ 535 U.S. 722, 742 (2002).

¹⁰⁹ *Id.* at 738.

Federal Circuit's bright line rule in favor of a more nuanced one.¹¹⁰ Interestingly, however, in this case the Supreme Court's rule was also fairly bright. Thus we see an example of the Supreme Court again substituting its preference for a greater reduction of manifest error, but to a lesser degree than in the case of the rule regarding obviousness.

C. Declaratory Judgment Standing

The divergent approaches to deciding when a declaratory judgment patent case may be brought shows again the differing approaches to inconsistency and error by the Federal Circuit and Supreme Court. Although the statute governing declaratory judgments is of general application,¹¹¹ over time, the Federal Circuit developed a specialized approach to patent cases that made it very difficult for potential patent defendants to sue for declaratory judgments.¹¹²

Even though the Declaratory Judgment Act vests discretion in the trial courts as to whether to hear declaratory judgment actions,¹¹³ The Federal Circuit developed a rule that, in patent cases, required a court to find that there was a "reasonable apprehension of suit" against the would-be plaintiff in a declaratory judgment action.¹¹⁴ If a potential infringer could not show evidence of a reasonable apprehension of suit, under the Federal Circuit's rule, a district court did not have standing to hear the case.¹¹⁵ The Federal Circuit interpreted this

¹¹⁰ *Id.*

¹¹¹ David I. Levine, *Declaratory Relief After Medimmune*, 14 LEWIS & CLARK L. REV. 491, 494 (2010) ("In [the place of the Federal Circuit's use of declaratory relief], the Court substituted an older, and broader, totality-of-circumstances test, which has been used commonly in actions for declaratory relief to determine whether a controversy exists.").

¹¹² Peter J. Shurn III, *Using Declaratory Judgments Offensively in Patent Cases – DJ Jive*, 3 J. MARSHALL REV. INTELL. PROP. L. 1, 4 (2003) ("This Federal Circuit approach gives a tremendous advantage to the plaintiff in a patent-based declaratory judgment action to the detriment of the patent-owning defendant")

¹¹³ Federal Declaratory Judgment Act of 1934, Pub. L. No. 73-343 (current version at 28 U.S.C. § 2201 (2006)); *Medimmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2010).

¹¹⁴ *Medimmune, Inc. v. Genentech, Inc.*, 427 F.3d 958 (Fed. Cir. 2005); *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956 (Fed. Cir. 2002)

¹¹⁵ *Medimmune*, 427 F.3d at 965 ("Thus although courts have discretion in deciding whether to accept a declaratory action when the constitutional and statutory requirements are met, there is no discretion to accept an action when there is no controversy of immediacy or reality because there is no reasonable apprehension of suit.")

requirement strictly against potential infringers, such that mere allegations by a patentee that a product or process infringed a patent could not be the basis for a declaratory judgment suit.¹¹⁶ Even allegations of infringement coupled with invitations to pay royalties were not enough to provide standing in these cases.¹¹⁷ Additionally, the rule became stricter over time, as the Federal Circuit seemed to move to a rule requiring not just a “reasonable apprehension of suit,” but instead a “reasonable apprehension of imminent suit.”¹¹⁸

The Federal Circuit’s bright-line rule allowed an elaborate practice to grow according to which patent owners would write letters to alleged infringers making the infringers aware of the relevant patents, suggesting that the patents applied to the alleged infringers product(s), and offering to discuss licensing terms.¹¹⁹ By couching the letters so as to be somewhat vague as to the exact infringement analysis, and often even as to which patents might be infringed by which products, and by not including any direct threat of suit, patent owners could be quite confident under the Federal Circuit’s rule that they would not be subject to a declaratory judgment suit.¹²⁰ Patent owners found this beneficial because they could all but directly threaten a lawsuit if an alleged infringer did not license the patents at issue and, simultaneously, control if and when any litigation was brought.¹²¹ In addition, by making potential patent infringers aware of the patents, the patent owners opened up the possibility of treble damages because the alleged infringers would henceforth be “willful” infringers, absent an

¹¹⁶ *Medimmune*, 427 F.3d at 958; *Teva Pharm. USA, Inc. v. Pfizer, Inc.*, 395 F.3d 1324 (Fed. Cir. 2005); *Gen-Probe*, 323 F.3d at 956.

¹¹⁷ *Teva Pharm. USA*, 395 F.3d at 1324.

¹¹⁸ *Id.* at 1333.

¹¹⁹ Michael Donovan, *The Impact of Medimmune, Inc. v. Genentech, Inc. and Its Progeny on Technology Licensing*, 3 J. BUS. ENTREPRENEURSHIP & L. 39, 58 (2009) (“[T]hings have changed, favoring the accused infringer/potential licensee. No longer can a patent owner send a letter to a potential infringer informing them that their product may be infringing and that a license may be in order; this could be enough to confer declaratory action jurisdiction.”).

¹²⁰ *Micron Tech., Inc. v. MOSAID Techs., Inc.*, 518 F.3d 897, 899 (Fed. Cir. 2008) (dismissing declaratory judgment); *SanDisk Corp. v. STMicroelectronics, Inc.*, 480 F.3d 1372 (Fed. Cir. 2007) (dismissing declaratory judgment)

¹²¹ Sean M. O’Connor, *Using Stock and Stock Options to Minimize Patent Royalty Payment Risks After Medimmune v. Genentech*, 3 N.Y.U. J L. & BUS. 381, 448-9 (2007) (“In practice, however, in the wake of MedImmune, licensees will likely not challenge the patent in any other way than a declaratory judgment action, thus effectively depriving the licensor of any meaningful opportunity to take control of the litigation as plaintiff by suing the licensee first.”)

informed and good faith belief that the patents were invalid or not infringed.¹²² On the other hand, potential infringers had no way to clear any clouds as to infringement and validity of the patents that might cover their technology.¹²³

¹²² *In re Seagate Technology, LLC*, 497 F.3d 1360 (Fed. Cir. 2007) (Opinion letters may help avoid infringement but are not required.).

¹²³ William F. Lee et al., *Understanding and Addressing the Unfair Dilemma Created by the Doctrine of Willful Patent Infringement*, 41 HOUS. L. REV. 393, 434 (2004) (“First, uncertainty about the scope of waiver following voluntary production of an opinion letter makes it difficult for the alleged willful infringer to resolve the dilemma in an informed and rational manner.”) In addition, to avoid potential willfulness treble damages, most potential infringers also felt obligated to seek opinion letters from counsel as to arguments for non-infringement or invalidity. This in itself involved time and money, and provided on its own a motive to settle for at least nuisance value. Dov Greenbaum, *In re Seagate: Did it Really Fix the Waiver Issue? A Short Review and Analysis of Waiver Resulting from the Use of a Counsel’s Opinion Letter as a Defense to Willful Infringement*, 12 MARQ. INTELL. PROP. L. REV. 155, 194 (2008) (“Instead of framing the selectiveness of the waiver as only a waiver to a third party, perhaps the Federal Circuit can see this waiver as a very narrow subject matter waiver, that of only (but all) opinion letters referencing the opinion of counsel as to non-infringement.”); Geoffrey Shippersides, *Advocacy or Counsel: The Continuing Dual Role of Written Infringement Opinion Letters and the Failure of Knorr-Bremse to Confine the Role of Patent Attorneys Issuing Written Infringement Opinion Letters*, 18 GEO. J. LEGAL ETHICS 1069, 1070 (“The infringement opinion has the second potential use of being produced as evidence at trial of the potential infringer’s state of mind for the determination of willful infringement. Patent attorneys, aware of this possible evidentiary use of infringement opinion letters, know that the letter is also the place to advocate for their client’s position of non-infringement.”); Damon C. Andrews, *Why Patentees Litigate*, 12 COLUM. SCI. & TECH. L. REV. 219, 222 (2011) (“While several scholars have advanced the theory that parties are prone to settle disputes in the interest of avoiding costly trials, the intricate issues that are inherent to patent litigation provide a platform for discussing why patentees are especially willing to settle to avoid additional harms other than just the expense of litigating.”); John M. Golden, *“Patent Trolls” and Patent Remedies*, 85 TEX. L. REV. 2111, 2133 (2007) (“Moreover, even aside from being handicapped by information asymmetries, the patent holder is likely to be burdened by the knowledge that it faces significant potential costs if negotiations fail. Such costs of negotiating failure could drive the patent holder to settle for substantially less than the patented invention’s more intrinsic economic worth.”).

The Supreme Court overruled the Federal Circuit's strict, bright-line rule in *Medimmune, Inc., v. Genentech, Inc.*¹²⁴ In that case, the Supreme Court again replaced the Federal Circuit's bright-line rule with a more contextual standard, and also vested more discretion in individual district courts.¹²⁵ In that case, petitioner Medimmune had a license to Genentech's patents allegedly covering Medimmune's drug, Synagis, which was used to prevent respiratory infections in infants and children.¹²⁶ When the parties entered the license, it included the rights to a license under a pending Genentech patent.¹²⁷ When that patent was granted, Medimmune disputed that the patent, as granted, was valid, and also disputed that Synagis infringed.¹²⁸ Moreover, because the license only required payments for any patents that were both infringed and valid, Medimmune argued that it was no longer contractually required to make payments to Genentech.¹²⁹ Genentech disagreed, arguing that the patent was valid and infringed, and thus that payments were still owed under the license.¹³⁰ Rather than risk a lawsuit for breach of contract and patent infringement, Medimmune continued to pay "under protest and with reservation of all or [its] rights."¹³¹ Medimmune then brought a declaratory judgment action, seeking a ruling that the patent was invalid and non-infringed, and that no payments were owed under the contract.¹³²

Despite "serious misgivings," the district court dismissed the case at the motion to dismiss stage in accordance with the Federal Circuit's clear rule.¹³³ Under that rule, so long as Medimmune continued to make payments under the license, it could not have any apprehension of suit, much less a "reasonable apprehension of imminent suit."¹³⁴ The Federal Circuit, citing its precedent with

¹²⁴ 549 U.S. 118 (2007).

¹²⁵ *Id.* at 136 ("We have found it 'more consistent with the statute,' however, 'to vest district courts with discretion in the first instance, because facts bearing on the usefulness of the declaratory judgment remedy, and the fitness of the case for resolution, are peculiarly within their grasp.'").

¹²⁶ *Id.* at 121 ("Petitioner MedImmune, Inc., manufactures Synagis, a drug used to prevent respiratory tract disease in infants and young children. In 1997, petitioner entered into a patent license agreement with respondent Genentech, Inc.").

¹²⁷ *Id.* at 121-22.

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.* at 122.

¹³³ *Id.* at 136.

¹³⁴ *Id.* at 128 ("Assuming (without deciding) that respondents here could not claim an anticipatory breach and repudiate the license, the continuation of royalty

regard to its bright-line rule on declaratory judgment standing, upheld the district court's dismissal of Medimmune's suit.¹³⁵

The Supreme Court reversed.¹³⁶ The Court stated that the Federal Circuit's rule was inconsistent with earlier Supreme Court precedents.¹³⁷ The Court did not set forth a simple, bright-line rule for when standing is properly found in a declaratory judgment action. Instead, the Court gave examples of interests at stake that would be sufficient to create an actual controversy needed for jurisdiction under the Declaratory Judgment Act.¹³⁸ These interests simply had to be significant, and a party needed to have an actual dispute as to its obligations.¹³⁹ Thus, the Supreme Court rejected any rule that a party needed to be in reasonable apprehension of suit before having standing in these cases.¹⁴⁰

Finally, the Supreme Court reminded the Federal Circuit of the Supreme Court's prior cases holding that the Declaratory Judgment Act "confer[s] on

payments makes what would otherwise be an imminent threat at least remote, if not nonexistent. As long as those payments are made, there is no risk that respondents will seek to enjoin petitioner's sales. Petitioner's own acts, in other words, eliminate the imminent threat of harm.")

¹³⁵ *Id.* at 122 ("The Federal Circuit affirmed the District Court, also relying on *Gen-Probe*. 427 F.3d 958 (2005).")

¹³⁶ *Id.* at 137.

¹³⁷ *Id.* at 130 ("The only Supreme Court decision in point is, fortuitously, close on its facts to the case before us. *Altwater v. Freeman*, 319 U.S. 359 (1943), held that a licensee's failure to cease its payment of royalties did not render nonjusticiable a dispute over the validity of the patent. In that litigation, several patentees had sued their licensees to enforce territorial restrictions in the license.").

¹³⁸ *Id.* at 127 ("Our decisions have required that the dispute be 'definite and concrete, touching the legal relations of parties having adverse legal interests'; and that it be 'real and substantial' and 'admi[t] of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts.'") (citing *Aetna Life Ins. Co. v. Haworth*, 300 U.S. 227, 240-1 (1937)). The Court gave as examples of "actively contested legal rights" sufficient to give standing under the Declaratory Judgment Act: "actual or threatened serious injury to business or employment," "imperil[ing] a man's livelihood, his business enterprise, or his solvency," and risking "actual [and] treble damages in infringement suits. *Id.* at 131-33.

¹³⁹ *Id.* at 127.

¹⁴⁰ *Id.* at 137 ("We hold that petitioner was not required, insofar as Article III is concerned, to break or terminate its 1997 license agreement before seeking a declaratory judgment in federal court that the underlying patent is invalid, unenforceable, or not infringed.")

federal courts unique and substantial discretion in deciding whether to declare the rights of litigants.¹⁴¹ The Supreme Court held that the Federal Circuit's bright-line, reasonable-apprehension-of-suit test improperly deprived trial courts of this discretion.¹⁴²

Thus, in their approaches to declaratory judgment standing issues when it comes to patent cases, we see another example of how the Federal Circuit evolved a formal, bright-line rule, which the Supreme Court then rejected in favor of a more contextual, discretionary approach. Here again, the Federal Circuit's rule provided certainty and horizontal and vertical consistency. The Supreme Court's standard provided less predictability, and less horizontal consistency. But it also provided courts greater leeway to decide declaratory judgment actions when important economic interests are at stake. By allowing potential defendants to determine the validity and infringement status of patents before potentially infringing.

D. Injunctions

The difference in approach between the Federal Circuit and the Supreme Court over the standard for issuing injunctions is another example that conforms to our thesis that the Federal Circuit seeks to decrease inconsistency and increase predictability through bright-line rules while the Supreme Court seeks more contextual approaches that allow for more flexibility in deciding individual cases. There is a well-developed body of law on injunctions that the Supreme Court has developed over the course of its existence.¹⁴³ Rather than developing special rules for how injunctions should be granted in various substantive areas of law, the Supreme Court applies the same equitable, four-factor test for whether an injunction should be granted regardless of the type of law at issue in a case.¹⁴⁴

¹⁴¹ *Id.* at 136 (citing *Wilton v. Seven Falls Co.*, 515 U.S. 277, 286 (1995)).

¹⁴² *Id.* at 136 ("The District Court here gave no consideration to discretionary dismissal, since, despite its 'serious misgivings' about the Federal Circuit's rule, it considered itself bound to dismiss by *Gen-Probe*.").

¹⁴³ *See e.g.* *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006); *New York Times Co. v. Tasini*, 533 U.S. 483, 505 (2001); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578, n. 10 (1994); *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 422-430 (1908); *Dun v. Lumbermen's Credit Assn.*, 209 U.S. 20, 23-24 (1908).

¹⁴⁴ The four factors require a plaintiff to demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction. *eBay*, 547 U.S. at 391.

Notwithstanding this long historical practice, the Federal Circuit, in perhaps one of the clearest displays of its drive to create bright-line, predictable rules, developed a body of cases holding that a court should issue an injunction as a matter of right when patent infringement occurs.¹⁴⁵ The Federal Circuit's rule was that courts "will issue permanent injunctions . . . absent exceptional circumstances."¹⁴⁶ The Federal Circuit developed this rule even though the statute authorizing injunctions in patent cases states that courts "may grant injunctions in accordance with the principles of equity."¹⁴⁷ In *eBay v. MercExchange*,¹⁴⁸ the Supreme Court overruled the aforementioned Federal Circuit's approach.¹⁴⁹ Specifically, the Supreme Court emphasized that there is no special rule for applying injunctions in patent cases, but that instead, the traditional four-factor equitable test must be applied.¹⁵⁰

In fairness to the Federal Circuit, historically, courts did grant injunctions for patent infringement in the vast majority of cases.¹⁵¹ Thus, had the Federal Circuit said, prior to *eBay*, that injunctions issue as a matter of course after a finding of infringement, the Federal Circuit would have been stating a truism. But historically, courts issued injunctions in patent cases under the traditional

¹⁴⁵ *MercExchange, LLC v. eBay, Inc.*, 401 F.3d 1323, 1338 (Fed. Cir. 2005); *Lerner Germany GmbH v. Lerner Corp.*, 94 F.3d 1575, 1577 (Fed.Cir.1996); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1246-47 (Fed.Cir.1989); *Rite-Hite Corp. v. Kelley, Inc.*, 56 F.3d 1538, 1547 (Fed.Cir.1995); *Roche Prods., Inc. v. Bolar Pharm. Co.*, 733 F.2d 858, 865-66 (Fed.Cir.1984).

¹⁴⁶ *eBay*, 401 F.3d at 1339.

¹⁴⁷ 35 U.S.C. § 283 (emphasis added). The full text of the statute states that "[t]he several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable." *Id.*

¹⁴⁸ *eBay*, 547 U.S. at 388.

¹⁴⁹ *Id.* at 394.

¹⁵⁰ *Id.* at 390 ("According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.").

¹⁵¹ *Id.* at 395 ("From at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases.") (Roberts, C.J., concurring).

four-factor test.¹⁵² The majority opinion in *eBay* did not say that the historical practice was wrong.¹⁵³ The majority opinion rather said that the Federal Circuit's rule that stripped district courts of their equitable discretion to decide whether an injunction should issue was wrong.¹⁵⁴ Here again, we see an example of the Supreme Court rejecting a bright-line rule crafted by the Federal Circuit. The Federal Circuit's rule promoted predictability and horizontal consistency.¹⁵⁵ But the Supreme Court was comfortable with much less horizontal consistency in exchange for more flexibility provided to district courts to exercise their equitable discretion so as to get injunction decisions "right" in terms of balancing

¹⁵² *Id.* at 390 ("Ordinarily, a federal court considering whether to award permanent injunctive relief to a prevailing plaintiff applies the four-factor test historically employed by courts of equity.").

¹⁵³ But note that there was some dispute in the concurring opinions as to whether the historical practice of issuing injunctions as a matter of course in patent cases is still justified. Justice Roberts, joined by justices Scalia and Ginsburg, seemed to think that the historical practice of frequent patent issuance in patent cases continues to be justified "given the difficulty of protecting a right to *exclude* through monetary remedies." *Id.* at 395 (Roberts, C.J., concurring) (emphasis in original). Accordingly, Justice Roberts said that when district courts apply the four-factor test in deciding whether to issue an injunction after finding patent infringement, the courts should note that "a page of history is worth a volume of logic." *Id.* (citing *New York Trust Co. v. Eisner*, 256 U.S. 345, 349 (1921) (opinion for the Court by Holmes, J.)). Justice Kennedy, joined by justices Stevens, Souter, and Breyer, wrote a separate concurrence that focused on the rise of patent holding firms that do not practice the patents they own, but instead seek to monetize the patents through licensing and infringement suits (referred to as "non-practicing entities" or, derogatorily, as "trolls"). *Id.* at 396. Kennedy argued that this change in the landscape of patent litigation should be kept in mind by district courts exercising their discretion in the issuance of injunctions for patent infringement. *Id.* Kennedy argued "the nature of the patent being enforced and the economic functions of the patent holder present considerations quite unlike earlier cases." *Id.* Accordingly, Kennedy urged district courts deciding patent injunctions to "determine whether past practice fits the circumstances of the cases before them." *Id.*

¹⁵⁴ *Id.* at 394. Although note that under the Federal Circuit's "general rule," district courts were allowed to deny injunctions under "exceptional circumstances" or in "rare instances . . . to protect the public interest." *eBay v. MercExchange*, 401 F.3d 1323, 1338 (2005).

¹⁵⁵ Horizontal consistency was maximized under the Federal Circuit's rule because all district court's were required to enter injunctions absent "exceptional circumstances." *eBay*, 401 F.3d at 1338.

the interests of the parties. Thus, once again one can argue that the Supreme Court is acting as a system designer seeking an inconsistency robust system.

E. Patentable Subject Matter

The Federal Circuit's treatment of patentable subject matter also fits within its trend toward bright-line rules, although with some meandering along the way. For several years the Federal Circuit followed a general course of liberalizing the standard for patentable subject matter that the Supreme Court had started back in the 1980s.¹⁵⁶ This approach to patentable subject matter ultimately led to the 1999 *State Street Bank*¹⁵⁷ decision in which the Federal Circuit ruled that business methods are within the scope of §101 of the patent statute. Nevertheless, over the course of the next decade the Federal Circuit struggled with what limits there should be to patentable subject matter, especially for process patents, and eventually settled on a bright-line rule in *In re Bilski*.¹⁵⁸ In *Bilski*, the Federal Circuit adopted the "machine or transformation" test.¹⁵⁹ Under this test, a process was patentable only if it was tied to a particular machine or caused a transformation of matter.¹⁶⁰ This bright-line rule again decreased horizontal and vertical inconsistency. The Supreme Court, following its pattern, overturned the Federal Circuit's bright-line rule and replaced it with a more amorphous standard.¹⁶¹ The Supreme Court held that process patent claims are only unpatentable subject matter when they are too "abstract."¹⁶² The Supreme Court left the exact contours of unpatentable abstractness to be developed by courts over time.¹⁶³ This is a particularly striking example of the Supreme Court preferring standards to bright-line rules—and, consequently, devaluing horizontal

¹⁵⁶ Emblematic in this regard is *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980), in which the Supreme Court cited a Congressional Committee report stating that "anything under the sun that is made by man" is patentable.

¹⁵⁷ *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1468, 1373 (Fed. Cir. 1998).

¹⁵⁸ 545 F.3d 943, 956 (Fed. Cir. 2008).

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *In re Bilski*, 130 S. Ct. 3218, 3227 (2010) ("But there are reasons to doubt whether the [machine-or-transformation test] should be the sole criterion for determining the patentability of inventions in the Information Age. As numerous *amicus* briefs argue, the machine-or-transformation test would create uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals.")

¹⁶² *Id.* at 3230.

¹⁶³ *Id.* at 3229.

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and vertical consistency—to allow greater flexibility to “cure” previous manifest error and to allow further development of the law of patentable subject matter.

IV. Possible Explanations for the Federal Circuit and Supreme Court’s Divergent Embrace of Rules versus Standards in Patent Law

The pattern emerging from the five areas of patent law discussed in III is clear. The pattern includes two steps. First the Federal Circuit attempts horizontal and vertical inconsistency reduction via the creation of bright-line rules. Second, the Supreme Court weighs in with a focus on reducing manifest error, and reverses the bright-line rules. Unfortunately, it is also a pattern that, as previously described, has determined idiosyncratic changes in key elements of patent law and, thus, has created possible significant uncertainty for innovators in fields such as the online commerce and the software industry that are of great importance for the US economy.¹⁶⁴

There is a rich literature on the application of rules versus standards to legal questions.¹⁶⁵ Rules provide predictability and consistency, while standards are less predictable but provide the opportunity for nuanced, contextual decision making.¹⁶⁶ The Federal Circuit’s focus on creating predictability through

¹⁶⁴ See Matthew DeJulio, *Courts Left with Little Guidance Following the Supreme Court’s Decision in Bilski v. Kappos*, 13 TUL. J. TECH. & INTELL. PROP. 285, 291 n.55 (2010) (“Sole application of the machine-or-transformation test would lead to uncertainty with regard to patents in several fields, including software, advanced diagnostic medicine, data compression, and digital signals.”)

¹⁶⁵ See, e.g., Michael J. Burstein, *Rules for Patents*, 52 WM. & MARY L. REV. 1747 (2011); Daniel A. Crane, *Rules Versus Standards in Antitrust Adjudication*, 64 WASH. & LEE L. REV. 49 (2007); Daniel Bodansky, *Rules vs. Standards in International Environmental Law*, 98 AM. PROC. SOC’Y. INT’L L. 275 (2004); Kathleen M. Sullivan, *The Justices for Rules and Standards*, 106 HARV L. REV. 22 (1992); Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557 (1992); Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685 (1976).

¹⁶⁶ Kaplow *supra* note 85 at 589 (“most commonly, it is asserted that rules tend to be over- and/or underinclusive relative to standards.”); see also Burnstein, *supra* note 85 at 1771 (“Rules are bright-line and clear. Standards are flexible and adaptable.”). Cf. Edwina L. Rissland, *Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning*, 99 YALE L.J. 1957, 1966 (1990) [hereinafter *Artificial Intelligence and Law*] (“The rule-based approach is particularly useful because in many domains much of an [expert system’s] knowledge is amenable to expression in if-then rules, many of which are ‘heuristic.’ Heuristics are typically an expert’s individual synthesis of past problem solving, and they capture methods for making educated hunches. Expert

horizontal and vertical inconsistency reduction seems to have caused it to move toward bright-line rules and away from contextual standards. The result has been that horizontal and vertical consistency were increased (which also increases predictability),¹⁶⁷ but at the “cost” of such things as increased manifest error in the form of more obvious patents being issued,¹⁶⁸ the doctrine of equivalents being made unavailable for amended patent claims,¹⁶⁹ limited availability of patent declaratory judgments, no flexibility to deny injunctions, and strict exclusions of some process patent claims.¹⁷⁰ As discussed in Part III, over the last

system provide a straightforward way to harness heuristic expertise, expressed as rules.”).

¹⁶⁷ Thomas F. Gordon, *Foundations of Argumentation Technology Summary of Habilitation Thesis* (2009) (unpublished thesis, Technical University of Berlin) (on file with author) (“The first argument was based on the observation that rules are not intended primarily for resolving disputes after they have arisen, or justify legal decisions, but rather to guide behavior so as to prevent and void such disputes in the first place. Rules can guide behavior only to the extent [sic] that it is possible for individuals to *learn* the rules. That is, rules must be structured in such as [sic] way as to take the cognitive capabilities of humans into account.”); *Artificial Intelligence and Law* supra note 86 at 1968 (“[R]ule-based techniques have demonstrated utility for frequently performed analyses on stereotypical cases in stable, well-developed bodies of law.”)

¹⁶⁸ Tun-Jen Chiang, *The Rules and Standards of Patentable Subject Matter*, 2010 WIS. L. REV. 1353, 1353 (2010) (“A legal regime governed by a set of bright-line rules will have high error costs because rules tend to be over- and under-inclusive”).

¹⁶⁹ *Festo*, 535 U.S. at 732.

¹⁷⁰ *Bilski*, 545 F.3d at 960-1; see also Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 80 (2010) (“In *In re Bilski*, the Federal Circuit overruled previous doctrine establishing an expansive, relatively bright-line approach to the patentability of processes.”) Note, however, that the Federal Circuit has not focused on bright-line rules to minimize vertical inconsistency in all areas. Specifically, in the key patent contexts such as novelty (§102(a) prior art), claim construction, and obviousness, Federal Circuit decisions are characterized by reversal rates of district courts’ decision equal to 36%, 33% and 29% respectively. It is beyond the scope of this paper to examine whether this comes from the Federal Circuit balancing the benefit of vertical inconsistency reduction differently in these areas, or whether these areas of patent law simply do not lend themselves to bright-line rules. Whatever the reason, these reversal rates are certainly significant in terms of vertical inconsistency. A recent study has shown that the Federal Circuit’s average reversal rate across all patent issue is equal to 8-18% and is the same as the reversal rates in regional circuits for

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six years, the Supreme Court has reversed each of the Federal Circuit's rules, and replaced them with more contextual standards intended to decrease manifest error but at the price of some decreased predictability (decreased horizontal and vertical inconsistency).¹⁷¹ In the remainder of this Part, we explore the possible reason for this difference in tolerance of error versus inconsistency between the Federal Circuit and Supreme Court.

A. The Federal Circuit's Special Mandate

A possible explanation for the Federal Circuit's intense focus on horizontal and vertical inconsistency reduction can be found, we believe, in this court's perception that it has a *special* mandate—compared to the other circuit courts—to increase predictability when it comes to the application of patent law.¹⁷²

The Federal Circuit's belief that it has a mandate to standardize the application of patent law is unsurprising given the events leading to the court's creation. In the 1960's and 1970's in the United States, there came to be a

private civil actions, particularly complex ones, like Bankruptcy, Securities and Contracts cases. See Ted Sichelman, *Myth Of (Un)certainty at The Federal Circuit*, (...) 2010. However, the reversal rate of certain key patent issues such as novelty (§102(a) prior art), claim construction and obviousness is way above such averages. Sichelman's study seems not to appreciate the relative importance of each of the considered patent issues in concluding that the Federal Circuit is as predictable as other regional circuits i.e. the Federal Circuit is considered less predictable than other regional circuits because the patent issues with very high/above average reversal rates are among those with highest impact on patentability and patent value—not all the patent issues used to calculate the average have the same weight in patent law.

¹⁷¹ See *supra*, see also Kelly Casey Mullally, *Legal (Un)certainty, Legal Process, and Patent Law*, 43 LOY. L.A. L. REV. 1109, 1130 (2010) (“The Supreme Court, on the other hand, exerts downward, counter-pressure on the Federal Circuit, moving the intermediate appellate court and the law away from formal rule-like doctrine. As it has become more active in patent cases over the past decade, the Court has expressly stated in conjunction with several specific areas of patent law that greater flexibility is required. Moreover, the Supreme Court has replaced a bright-line rule with a more flexible standard or balancing test with respect to numerous issues, some of which are unique to patent disputes but some of which also arise in other areas of the law.”)

¹⁷² Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 125 (2005) (“Congress created the Federal Circuit to consolidate patent law and increase its certainty and predictability.”).

general perception that the amount of uncertainty about the validity of patents, and the inconsistency with which patent cases were decided in different circuit and district courts (horizontal and vertical inconsistency), was harmful to both innovation and businesses.¹⁷³ Accordingly, in 1982, Congress passed the Federal Courts Improvement Act, which merged the Court of Customs and Patent Appeals and the appellate division of the Court of Claims.¹⁷⁴ The Act also mandated that henceforth all appeals of patent cases from any district court would be heard by the Federal Circuit.¹⁷⁵ Prior to the act, patent cases were appealed from the district court in which they had been tried to whichever of the twelve federal appellate courts had geographic jurisdiction over the trial court.¹⁷⁶ The result was that the legal rules governing patents varied from circuit to circuit—horizontal inconsistency. In addition to that, a potential patent defendant had little control over where it might be sued, and thus did not know which of the rules from the circuit courts might be applied to its activities.¹⁷⁷ Likewise, a

¹⁷³ *Id.*

¹⁷⁴ Federal Courts Improvement Act of 1982 §125, 28 U.S.C. § 1292 (c)-(d) (1992)

¹⁷⁵ *Id.*; see also Alexandra B. Hess et al., *Permissive Interlocutory Appeals at the Court of Appeals for the Federal Circuit: Fifteen Years in Review (1995-2010)*, 60 AM. U. L. REV. 757, 763 (2011).

¹⁷⁶ See Emmette F. Hale, III, *The 'Arising Under' Jurisdiction of the Federal Circuit: An Opportunity for Uniformity in Patent Law*, 14 FLA. ST. U. L. REV. 229, 231-2 (1986) (“The most significant change resulting from the creation of the Federal Circuit is the transfer of patent appeals from the appellate jurisdiction of the regional courts of appeal to the Federal Circuit. The CAFC has exclusive jurisdiction over any appeal taken from the final decision of a district court ‘if the jurisdiction of that court was based, in whole or in part, on section 1338’ with an exception for any ‘case involving a claim arising under any Act of Congress relating to copyrights or trademarks and no other claims under section 1338(a).’ Section 1338 in turn vests exclusive jurisdiction in the district courts over cases which ‘arise under’ the patent laws.”)

¹⁷⁷ Donald R. Dunner, *The U.S. Court of Appeals for the Federal Circuit: Its Critical Role in the Revitalization of the U.S. Patent Jurisprudence, Past, Present, and Future*, 43 LOY. L.A. L. REV. 775, 777 (2010) (“At the same time, however, we noted a significant problem. At that time, appellate review of patent cases litigated in the many district courts around the United States took place in eleven different circuit courts of appeals, depending on the geographic location of the district courts. Because those circuit courts had widely varying views of the patent laws--some very friendly to patents and some very hostile to them--lawyers handling patent cases engaged in mad and undignified races to the courthouses of their choice in order to position their clients in the circuit most

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patent holder faced uncertainty as to the application of patent law because it might be sued by a potential defendant under the declaratory judgment statute in any circuit, or a case that it brought in a circuit of its choosing might be transferred to another venue upon a successful motion by the defendant.¹⁷⁸

The legislative history makes clear that Congress hoped that the consolidation of all patent appeals in one circuit court would both standardize the law that the district courts are required to apply to patent cases,¹⁷⁹ and allow more expert review of patent appeals by a specialized court with the ability to hire specialized, often scientifically trained, clerks.¹⁸⁰

Most commentators agree that since its creation, the Federal Circuit has indeed acted in accordance with Congress's desire that the Court increase uniformity in patent law.¹⁸¹ In fact, the Court very quickly began moving toward

friendly to their clients' interests. The end result was an extremely inefficient and unfair administration of justice in the patent law area, not to mention the total unpredictability of patent jurisprudence, contingent on who reached the courthouse first.") While horizontal inconsistency among circuits is a common feature of the United States court system, the drafters of the Federal Courts Improvement Act seemed to think that the cost of inconsistency was particularly great when it came to patent law due to the national scope of the production and use of patented goods.

¹⁷⁸ Although in practice declaratory judgment actions and transfers of venue were not common.

¹⁷⁹ See Hale, *supra* note 42.

¹⁸⁰ Lee, *supra* note 170 at 19 ("Furthermore, while Federal Circuit judges routinely employ scientifically trained clerks, it is highly unlikely that district judges would prioritize this attribute in hiring decisions."); Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1068 (2003) ("Federal Circuit judges are also assisted by a small technical staff and by law clerks who generally have both legal training and some technical background.") There is also evidence that at least some of the proponents of the Act instituting the Federal Circuit hoped that the Court would prove to be more favorably inclined to protecting and enforcing patent rights, especially given that in some circuits prior to the act the rates of invalidation of patents had become quite high.

¹⁸¹ John Donofrio et al., *Christianson v. Colt Industries Operating Corp.: The Application of Federal Question Precedent to Federal Circuit Jurisdiction Decisions*, 45 AM. U. L. REV. 1835, 1837 (1996) ("Congress created the Federal Circuit, in part, to unify the application of the patent laws."); Paul C. Craane, *At the Boundaries of Law and Equity: The Court of Appeals for the Federal Circuit and the Doctrine of Equivalents*, 13 N. ILL. U. L. REV. 105, 109 (1992) ("In 1982,

bright-line rules that, because of the Court's unique situation as the only circuit court hearing patent law cases, were particularly effective in providing nationwide inconsistency reduction.¹⁸² Bright line rules are predictable, and much easier to apply than standards in horizontally and vertically consistent ways. Thus, the Federal Circuit's actual and perceived special mandate does seem to have some explanatory power in discussing its preference bright line rules.

The Supreme Court, on the other hand, is used to operating within the historic federal court system within which horizontal inconsistency among the circuit courts—and thus district courts—is the norm. While part of the Supreme Court's mandate is to provide some horizontal and vertical consistency by

Congress created a new federal circuit court of appeals to unify the field of patent law.”)

The Federal Circuit also emphasized rules that avoided making it unduly difficult for patent applicants to get patents. For instance, the Federal Circuit has consistently warned against hindsight bias in deciding issues of obviousness. *See* Rebecca S. Eisenberg, *Pharma's Nonobvious Problem*, 12 LEWIS & CLARK L. REV. 375, 378 (2008) (“The Federal Circuit has quite explicitly deployed the TSM approach to guard against the “hindsight trap” that makes a new invention seem obvious once an examiner or trial court knows what it is, even though the same invention might not have been obvious at the time it was made to an evaluator who only knew the prior art and was not yet aware of the inventor's further contribution.”); Gregory Mandel, *Patently Non-Obvious II: Experiment Study on the Hindsight Issue Before the Supreme Court in KSR v. Teleflex*, 9 YALE J. L. & TECH 1 (2007) (“Similarly, the Federal Circuit . . . has strived for years to reduce or eliminate the impact of hindsight on patent decisions.”).

¹⁸² Rochelle Cooper Dreyfuss, *The Federal Circuit as an Institution: What Ought We to Expect?*, 43 *Loy. L.A. L. REV.* 827, 835 (2010) (“Of course, the Supreme Court does not face the expertise asymmetry with which the Federal Circuit must contend. And there is enough disarray in other federal regimes to suggest that the Supreme Court might, at least on occasion, take a page out of the Federal Circuit's playbook and attend to the difficulties lower courts will face when applying its law.”); LeRoy L. Kondo, *Untangling the Tangled Web: Federal Court Reform Through Specialization for Internet Law and Other High Technology Cases*, 2002 *UCLA J.L. & TECH.* 1 (2002) (“The Federal Circuit's decision in *Festo* may have been calculated to diminish the level of uncertainty of adjudication among the generalist lower courts resulting from this doctrine through erection of an easily applied “bright-line” standard. Certainly, indeterminacy in interpretation of the Doctrine of Equivalents in patent claims has led to increased uncertainty among the lower courts.”).

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settling disputed legal questions, it has neither the inclination nor the capacity to drive out anything near all of the horizontal inconsistency in the system. Thus, the Supreme Court has historically been comfortable with a large amount of vertical and horizontal inconsistency and has focused on crafting “correct” decisions as to particularly thorny or disputed legal questions.¹⁸³ This difference in focus helps explain why the Supreme Court has repeatedly ruled against the Federal Circuit’s adoption of bright line rules that the Court considered to be a source of a great deal of manifest errors in patent law.¹⁸⁴

B. The Federal Circuit’s Specialized Role As Sole Federal Appellate Court For Patent Cases

Another possible reason for the Federal Circuit’s embrace of rules as compared to the Supreme Court’s embrace of standards is closely related to consideration of the Federal Circuit’s special mandate, yet distinct. Even if the Federal Circuit were not influenced by the legislative history and apparent Congressional intent that the Federal Circuit should make patent law more uniform nationwide, the fact that the Federal Circuit has the unique appellate role of deciding patent appeals from every district court in the United States may create its own pressure for the uniformity that comes from bright-line rules.

Even if the Federal Circuit does not interpret the Federal Courts Improvement Act of 1982 as a mandate to make patent law more uniform, the fact that every Federal Circuit decision applies to every district court in the United States means that every district court must attempt to apply the Federal Circuit’s case law. With so many courts applying the Federal Circuit’s case law, amorphous interpretations are likely to be applied in a wide variety of ways. These varieties of interpretations are then appealed to the Federal Circuit, which must rule on the correctness of each application of its rule. If the Federal Circuit adopts highly contextual standards rather than bright line rules, then it must rule on the correctness of each district court decision by engaging in a detailed examination of the district court’s application of the relevant standard. Thus

¹⁸³ Evan H. Caminker, *Why Must Inferior Courts Obey Superior Court Precedents?*, 46 STAN. L. REV. 817, 861 (1994) (“When is superior court self-correction desirable, and what role should inferior courts play in encouraging it? To answer the first question, we must distinguish between the values of (a) the superior court’s divining the “best” rule when first addressing a legal issue and (b) the court’s “correcting” or improving an initially misguided answer.”).

¹⁸⁴ Although beyond the scope of this article, the inconsistency robustness paradigm provides a good tool for investigating whether the pattern identified here—the Supreme Court’s regular rejection of bright-line rules from the Federal Circuit—plays out in the Supreme Court’s relationship with the other circuit courts.

standards, while allowing great flexibility in decision making, present two main drawbacks due the significant contextual component that characterizes them: inconsistent rulings and time intensiveness of rulings. In short, deciding to adopt standards costs the Federal Circuit not just in terms of opening the Court to charges of unpredictability in patent law, but also by directly and exponentially increasing the Court's workload per case. This provides the Federal Circuit an additional motive to move towards bright-line rules.

Such a motivation is not present for the Supreme Court because it only hears cases by granting *certiorari*. This means that the Supreme Court is only marginally involved with the "aftermath" of lower courts' applications of standards after the Court adopts them. Thus, the Supreme Court internalizes much less of the drawbacks associated with the adoption of standards than the Federal Circuit does. We will come back to this point later in the paper.

C. The Federal Circuit's Specialized Knowledge (Capture?) versus Supreme Court's Generalized Approach

A third possible explanation for why the Federal Circuit regularly chooses rules while the Supreme Court regularly chooses standards in patent law is that the Federal Circuit has greater specialized knowledge in this field and, consequently, better understanding of how certain solutions affect patent owners, prosecutors, lawyers, litigants, industries, and the economy. The Federal Circuit certainly has more experience with the parties directly affected by patents than does the Supreme Court. For one thing, many Federal Circuit judges had patent law experience before they became judges.¹⁸⁵ Given this, it may be that the Federal Circuit repeatedly crafts plain rules because it has reason to believe, based on its specialized knowledge, that they will be more administrable and workable for the patent community.

In contrast to the Federal Circuit's "specialized approach," the Supreme Court uses its "generalized approach" in patent cases, i.e. it uses the approach that it has developed from dealing with cases related to *all* areas of law. While patent law mostly applies to sophisticated parties, in many other areas of law,

¹⁸⁵ Jacob Birnbaum, *The Case for the U.S. Patent and Trademark Office's Adoption of an Open-Source "Bounty" System for Reviewing Business Method and Software Patents in Light of the Patent Infringement Battles Featuring the U.S. Financial Exchanges That Have Been Waged in Recent Years*, 2006 UCLA J. L. & TECH. 2, 21 (2006) ("Unlike other appellate courts judges, many Federal Circuit judges had prior experience as patent attorneys."); Lee Petherbridge, *Patent Law Uniformity?*, 22 HARV. J.L. & TECH. 421, 452 (2009) ("Finally, a number of Federal Circuit judges have substantial pre-appointment practice experience in patent law, while others do not.").

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legal rules or standards affect both sophisticated and unsophisticated groups.¹⁸⁶ This could result in the Supreme Court being “in general” more comfortable with standards than rules because they are flexible and, thus, are easier to applied to protect the unsophisticated.¹⁸⁷ Under this possible explanation, if the Federal Circuit really does have more expertise and is correct that the patent community is sophisticated and can better adapt to plain rules, then the Supreme Court should probably be more careful in considering whether the Court of Appeal’s strategy is appropriate or not in the specific context.

On the other hand, it could be that rather than applying greater expertise, both the Patent Office and the Federal Circuit are victims of a form of agency capture.¹⁸⁸ The Federal Circuit’s closeness to patent practitioners and patent owners could make it unwittingly favor the interest of the patent community members that it knows best—patent lawyers at prestigious firms and big companies that can afford to litigate patent suits. If this is the case and the Federal Circuit is crafting rules that help these members of the patent community at the expense of other members (say start ups who fall victim to patent thickets or non-patent holders who want to build commercial products but are blocked by obvious patents), then the Supreme Court’s scrutiny of the Court of Appeal’s choice of tools to operate in this field, is essential.

D. Differing Assumptions about Transaction Costs in Patent Disputes

Another possible explanation for the difference in approach to rules versus standards by the two courts relates to whether the Federal Circuit and Supreme Court have divergent assumptions on the transaction costs of using, negotiating, and clearing patents. It may be that the Federal Circuit is comfortable adopting bright-line rules in certain patent law cases when it believes that even if the rule results in an inefficient allocation of property rights, transaction costs are low enough that parties can bargain around these rules to

¹⁸⁶ Tort law, insurance law, administrative law, property law, and contracts are a few examples.

¹⁸⁷ More investigation that goes beyond the scope of this paper is necessary on this point. In particular, a comparative study of the Supreme Court’s approach in other areas of law would benefit from analysis informed by the inconsistency robustness paradigm.

¹⁸⁸ This is also known as “regulatory capture,” and occurs when a regulated industry (for example, airlines or the FDA) has a far larger stake in regulatory decisions than any other group. The regulated companies then spend a large sum of money on lobbyists and lawyers and soon turn the regulatory process to their advantage. See Timothy B. Lee, *Entangling the Web*, N.Y. TIMES (Nov. 9, 2011, 11:03 AM), <http://www.nytimes.com/2006/08/03/opinion/03lee.html>.

efficient outcomes. The Coase Theorem teaches that if transaction costs are low, it does not matter to whom a property right is assigned, so long as there is a clear assignment of the right.¹⁸⁹ With low transaction costs, parties will bargain so that the party who values the particular resource the most, ends up with the property right.

This approach is a bit of a one-way ratchet, however, because only improperly granted patent rights can be bargained around. If the Federal Circuit adopts bright-line rules that result in negating patents that should have issued or been held valid, that destroys incentives to innovate or commercialize inventions in a way that obviously cannot be bargained around.¹⁹⁰ And indeed, if we look at the five areas of patent law discussed in Part III; we see that the Federal Circuit did not create any bright-line rules that will negate patent grants or validity even if the rules are over or under inclusive.

Three of the five areas discussed in Part III in which the Federal Circuit created bright-line rules obviously were beneficial to patent owners, and thus created property rights that, if they were incorrectly allocated, must depend on low costs of reallocation for efficient functioning of the system. First, the Federal Circuit's strict TSM test for obviousness resulted in more patents being held valid. Second, the Court's strict standard for alleging standing to assert a declaratory judgment case against a patent owner affected the timing and ability to bring declaratory judgment actions, but did not affect the substantive rules for determining whether a particular patent is valid. Third, the Court's near-automatic issuance of injunctions in patent cases created property remedies for property right violations, and thus gave patentees stronger positions *vis a vis* infringers.

¹⁸⁹ The Coase Theorem describes the economic efficiency of an economic outcome in the presence of externalities. If trade in an externality is possible and there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights. *See generally* R. H. Coase, *The Problem of Social Cost*, J.L. & ECON. 1 (1960).

¹⁹⁰ There is also a social cost in the form of higher prices for products covered by patents that carry market power. This cost is deemed worthwhile to the extent that it is more than offset by increased innovation. To the extent that the Federal Circuit's bright-line rules create patent rights where the cost in terms of monopoly loss is greater than the benefit of increased innovation, even low transaction costs do not solve this problem. But so long as transaction costs are low, innovation should occur and property rights should be efficiently reallocated, even if in some cases they are rights that should not have been granted and the result in some allocative inefficiency and in consumers paying more.

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In the two other areas of patent law discussed in Part III—the doctrine of equivalents and patentable subject matter—the Federal Circuit created bright line rules that limited patent holders’ rights. These rules operate to limit the scope of patent rights (DOE) and to limit the types of innovation for which patents can be granted (PSM). Because these rules restrict patent rights rather than reallocate them, they cannot be bargained around. In other words, reallocation of rights is not possible when a patent is not issued or a broadening of a claim is not available. Rather, these rules serve to limit property rights. Obviously rights that do not exist cannot be reallocated and thus, there are no transaction costs to discuss in those situations. But the Federal Circuit may believe that any harmful affect of its rules on patent holders can be largely avoided.

The Court’s absolute bar to the doctrine of equivalents in *Festo* did not invalidate patents, but instead simply disallowed claiming infringement beyond the literal scope of the claims in those instances in which the patentee amended her patent during prosecution. Because patent prosecutors have become very sophisticated about writing claims, and because many claims are not amended, the additional rights for patent owners that were destroyed by the rule were likely less significant, and to some extent avoidable going forward. Thus, the Court may have determined that the potential losses to patent incentives from the rule were outweighed by the increased certainty it provided. And the increased certainty in itself helps to make patent value more determinable and thus lowers information costs in transactions concerning patent rights.

The Federal Circuit’s machine or transformation test likewise restricted the universe of innovation subject to patenting. Under the Court’s rule, processes that were neither tied to a machine nor resulted in a physical transformation were unpatentable. This was obviously not something that could be bargained around because there was no right over which to bargain. Rather, the Court in effect created null rights. Thus, like the Federal Circuit’s bright-line rule restricting certain applications of the Doctrine of Equivalents, its bright-line rule restricting patentable subject matter could not have grown out of a thought that the rule could be bargained around if it is overly broad. Rather, here again the Court seems to have thought that the decrease in innovation and commercialization incentive was likely to be slight in comparison to the certainty accompanying the rule and the other benefits of limiting patentable subject matter in this way.

Accordingly, we see that if transaction costs are low enough, bright-line patent rules having to do with the allocation of patent rights rather than with negating them appear to be most efficient because, in addition to creating predictability and consistency, where the lower-value user is granted the property right by patent law, other interested parties will simply be able to bargain to the efficient re-allocation.

Thus, it could be that, in the context of the patent law, the Federal Circuit is comfortable creating bright-line rules that favor patent rights because it believes that transaction costs are low enough that even numerous and overlapping weak or bad patents can be cleared by those seeking to make

products supposedly covered by them. Thus, bright-line rules should be preferred over standards in these cases.

If the Supreme Court, however, believes that transaction costs are high when it comes to patents,¹⁹¹ then bright-line rules will result in inefficient results whenever their application rewards the lower-value user with the patent. This is because, in these cases, “autonomous” re-allocation of rights by interested parties is close to impossible. Specifically, the Supreme Court may be worried that patent thickets¹⁹² or other inefficient results associated with high transaction costs, will occur if courts don’t get the questions of patent validity and infringement “right” in the first place.¹⁹³ Thus, standards rather than bright-line rules should be adopted, because they determine fewer manifest errors and, consequently, less need for “autonomous” reallocations of rights.

Why might the Federal Circuit and Supreme Court have different views on transaction costs in the patent system? This could be the result of the different opinions of the individuals on the two courts. Or it could be that the Federal Circuit, in dealing with mainly patent cases, is regularly in the mindset of business and professional transactions and, in that role, has concluded that transaction costs often can be overcome.

A variant of this explanation could be that the Federal Circuit may believe that the incentive given by bright-line patent rules to create and commercialize is important enough and significant enough that it outweighs any thicket effects or hold-up problems from non-practicing patent holders, while the Supreme Court believes the opposite, and thus thinks standards are needed to both prevent bad patents from issuing and from being found valid and infringed.

¹⁹¹ Transaction costs might be high due to patent thickets, uncertainty as to claim scope, or because the systems for negotiating licenses and adjudicating disputes is expensive, for instance.

¹⁹² For a discussion of patent thickets, see, e.g., Adam Mossoff, *The Rise and Fall of the First American Patent Thicket: The Sewing Machine War of the 1850’s*, 53 ARIZ. L. REV. 165 (2011); Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL’Y 309 (2002).

¹⁹³ *eBay*, 547 U.S. at 396 (Kennedy, concurring) (“An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent.”)

E. Differing Views on What System Creates Optimal Inconsistency Robustness Drives the Two Courts to Disagree as to Rules v. Standards.

This Part presents a final and, we believe, more persuasive explanation for the divergent approach to rules versus standards in patent law taken by the Supreme Court and the Federal Circuit. The previous parts offered explanations for why the Federal Circuit tends to favor bright-line rules in patent law. Some of these explanations have to do with the Federal Circuit's unique position as the sole circuit court of appeals for all patent cases. But if the Federal Circuit's unique position encourages it to move toward bright-line rules, why does the Supreme Court, as the sole final arbiter of all patent law, not seem to have the same incentives and equally embrace bright-line rules for patent law?

We believe that the explanation may be that the attractions and defects of inconsistency reduction together with the related costs and benefits, looks different to each court in this area. In other words, the perceived costs and benefits of different approaches to horizontal and vertical inconsistency reduction and to error correction in legal decisions vary by position of the system administrator. Thus, if the system designer thinks of administering the system sporadically, from the top, as the Supreme Court does, this gives a different perspective on the optimal standards for the system than that of the system designer who thinks of administering the system from the "middle", as the Federal Circuit does. For the highly involved "middle manager" system administrator, the optimal standards for the system seem quite different.

The Supreme Court not only administers the system from the top, but it has discretionary *certiorari* power, so it can choose which patent appeals to hear, and indeed, hears very few patent appeals.¹⁹⁴ This feature means that the Supreme Court can focus on creating standards that allow trial courts to get the "best" answers to legal and factual patent questions, and that allow the Federal Circuit any needed leeway to correct trial court decisions that, when considered in full context, may be considered "erroneous." These are decisions, for instance, that apply the correct rule and thus, strictly speaking, *are* correct, but because of the special circumstances of the case do not achieve the most desirable result and leave a sense that something – perhaps, the rule itself - is "wrong." The obvious reaction is that, in these cases, standards are preferable, but at what cost? The Supreme Court can create standards and leave them to the Federal Circuit and

¹⁹⁴ Note that while the Supreme Court has accepted *certiorari* on more patent cases in the last decade than in the previous decades of the Federal Circuit's existence, it still accepts relatively few patent cases per year, by necessity. John M. Golden, *The Supreme Court As "Prime Percolator": A Prescription For Appellate Review Of Questions In Patent Law*, 56 UCLA L. Rev. 657, 667 (2009).

trial courts to apply, even at the cost of greater horizontal and vertical inconsistency. As we briefly mentioned in Part IV.B, the Supreme Court, because of its certiorari power, internalizes very little of the “aftermath” of the adoption of standards and, thus, perceives the benefit of more “correct” application of patent law to be greater.

The Federal Circuit, on the other hand, operates within a system that gives every patent litigant an appeal as of right. Thus, the Federal Circuit must rule on every appeal and bear the full cost of applying any difficult standards that the Supreme Court adopts. The Federal Circuit bears the costs of horizontal and vertical inconsistency more directly than the Supreme Court in another way as well. Because the Federal Circuit must hear every appeal, it regularly and directly experiences the “discomfort” that comes with the adoption of standards. While standards promote contextual application of the law, they also create mental uncertainty and exhaustion that is unpleasant to most decision makers.¹⁹⁵ This is because of the large amount of discretion necessary for their administration and the pressure created by issuing decisions that the decision maker perceives to be uncertain as to correct result.¹⁹⁶ In addition, deciding so many patent cases on

¹⁹⁵ See Shai Danziger et al., *Extraneous Factors in Judicial Decisions*, 108 PROC. NAT’L ACAD. SCI. U.S. 6889, 6889 (2011) (“Sequential choices and the apparent mental depletion that they evoke also increase people’s tendency to simplify decision by accepting the status quo. ... [R]epeated rulings can increase the likelihood of judges to simplify their decisions.” Participants in a study who were asked to both determine their desired computer features and then go through the process of selecting those features in an online form experienced more fatigue than participants who only analyzed the desired features or who entered predetermined specifications into the form. “They had to cast the die, and that turned out to be the most fatiguing task of all.”); John Tierney, *Do You Suffer from Decision Fatigue*, N.Y. TIMES, Aug. 17, 2011, www.nytimes.com/2011/08/21/magazine/do-you-suffer-from-decision-fatigue (Judges in a study were more likely to deny defendant’s parole request when fatigued to preserve the status quo, eliminate recidivism risk, and retain future sentencing options.); Kent Greenfield, *THE MYTH OF CHOICE* 50 (2011) (Subjects in a study asked to remember a seven digit number, given a choice of dessert or fruit, were less able to resist dessert than subjects asked to remember a one digit number.). *But see* Greenfield, *supra* at 173 (“The law’s vagueness can have surprising benefits. Gray areas force decision makers to look at the nuances and particularities of situation before issuing legal edicts or making determinations of blame.”).

¹⁹⁶ Note that also here the problem of achieving the “correct” result is present. In the case of adoption of bright-line rules the problem is produced by

shifting panel assignments may make Federal Circuit judges aware of how the specific judges sitting on a panel may have more to do with predicting a case's outcome than the standard being applied.¹⁹⁷ This knowledge too can be uncomfortable to a judge, who, notwithstanding an appreciation of legal realism,¹⁹⁸ generally wishes to be able to say that her/his decisions were grounded in a statute rather than in policy preference.¹⁹⁹

the fact that “one size does not fit all,” whereas here the problem is produced by the discretion given to the decision maker.

¹⁹⁷ See Jonathan P. Kastellec, *Panel Composition and Voting on the U.S. Courts of Appeals Over Time*, 64 POL. RES. Q. 377, 377 (2011) (“Given varying preferences among the judges in a circuit, and the fact that a panel decision represents the views of a majority of three judges, the assignment of judges to a particular panel may increase the probability of a certain outcome.”); see also Thomas J. Miles & Cass R. Sunstein, *The New Legal Realism*, 75 U. CHI. L. REV. 831, 837 (“New Legal Realists describe the impact of [ideological preferences of] the colleagues on an appellate panel on a judge’s own votes as ‘peer effects’ or ‘panel effects.’”); see also Greenfield, *supra* note 184 at 69 (“On the one hand, influences are only that. They do not dictate behavior, and their effects can be moderated merely by our knowing they exist. On the other hand, our brains are pre-programmed to think and feel in certain ways, and it takes the analytical reflexive, and emotional parts of our brains all working together to give us a fighting chance at making good decisions. . . . Instead of assuming that everyone is completely responsible for his or her decisions, we’d be better off recognizing the complexity of choice, in law and politics and life. . . . We’d be more likely to recognize the limitations we face and the constraints on our decisions, and be better able to prepare for the times when decisions really do need to be made well.”).

¹⁹⁸ See Miles, *supra* n. 197 at 834 (“A distinguishing feature of the New Legal Realism is the close examination of reported cases in order to understand how judicial personality, understood in various ways, influences legal outcomes, and how legal institutions constrain or unleash these influences.” “For [Karl] Llewellyn, the indeterminacy, sometimes even incoherence, of law meant that ‘the personality of the judge’ must to some degree explain case outcomes. In his view, ‘our government is not a government of laws, but one of laws through men.’”); Danziger, *supra* n. 195 at 6889 (“Legal realists argue that the rational application of legal reasons does not sufficiently explain the decisions of judges and that psychological, political, and social factors influence judicial ruling.”).

¹⁹⁹ See RICHARD A. POSNER, *HOW JUDGES THINK* 8 (2008) (“No responsible student of the judicial system supposes that “politics” . . . or personal idiosyncrasy drives most decisions, except in the Supreme Court, which indeed is largely a political court when it is deciding constitutional cases. Legalism drives

In addition to any cognitive discomfort created by regularly applying amorphous rules and witnessing increased levels of inconsistency, contextual standards also create more work for the Federal Circuit, in that they, by their nature, involve more detailed investigations. New institutional economics teaches us that, all other things being equal, an institution will prefer less work to more work.²⁰⁰ Accordingly, it is unsurprising that the Federal Circuit would dislike standards that greatly increase its workload. But even if Federal Circuit judges do not consider the impact of the standards in the form of increased workload, they have a selfless, inconsistency robust motivation to seek reduced workloads. Simply put, widespread adoption of standards creates more work per case, which, when it reaches a critical mass, results in inadequate time available per case.²⁰¹ Inadequate time per case must result in both more hurried opinions that are of less use to litigants and those seeking to keep abreast of the Federal Circuit's decisions, as well as poorer quality opinions. Thus, for both self-regarding and

most judicial decisions, though generally they are the less important ones for the development of legal doctrine or the impact on society.”). *See generally*, Edmund Ursin, *How Great Judges Think: Judges Richard Posner, Henry Friendly, and Roger Traynor on Judicial Lawmaking*, 57 BUFF L. REV. 1267, 1328, 1330 (2009) (a “wise judge will try to check his convictions against those of some broader community of opinion.”); Cass R. Sunstein & Adrian Vermeule, *Interpretation and Institutions*, 101 MICH. L. REV. 885, 911-12 (2003).

²⁰⁰ *See* Davide Dragone, *I'm Getting Tired: Effort and Fatigue in Intertemporal Decision Making*, 552 J. ECON. PSYCHOL. 552, 552 (2009) (“[In economics] the cost of exerting effort is formalized by assuming that the agent does not like working, i.e. that exerting effort yields disutility, and that the agent will exert effort on the task only if appropriately motivated.”).

²⁰¹ One way to deal with decreased time per case is to decide a number of cases in unpublished, non-precedential decisions. This allows a more hurried application of the law in individual cases, with less collateral damage caused to other litigants from any mistakes that are made. The Federal Circuit currently uses unpublished opinions to decide a significant number of cases. While unpublished opinions do not create precedent, and thus do not provide increased clarity as to patent law, deciding a number of cases in a non-precedential way can be inconsistency robust if doing so keeps any possible error in the unpublished decisions from conflicting with published decisions. Thus, even if unpublished decisions are decided in ways that are horizontally or vertically inconsistent, by segmenting these cases from the official, precedential body of patent law, the Federal Circuit promotes and retains formal, official consistency. Allowing inconsistency in some areas to preserve consistency in other, more important areas is a fully inconsistency robust approach to systems designs. *See supra*, Part II.

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selfless reasons, the Federal Circuit's evaluation of what a cost-beneficial inconsistency robust system of patent law should be will differ from the Supreme Court's in favor of more bright-line rules. Thus we see that what looks like a nicely inconsistency robust system to the Supreme Court looks to the Federal Circuit like a system in which the benefit of decreased inconsistency is significantly greater than the cost. The Federal Circuit thus naturally attempts to reduce the inconsistency by applying more bright-line rules.

Of course, all courts of appeals have some motivation to choose rules over standards to decrease their workloads, but three factors increase the Federal Circuit's incentive and ability to choose bright-line rules, as compared to other circuit courts. First, the Federal Circuit must hear all patent appeals from the entire country. Thus, the Federal Circuit experiences more costs from standards, and more benefit from rules than an average circuit court of general jurisdiction.²⁰² Second, a bright-line rule in patent law can significantly decrease the complexity of appeals for the Federal Circuit, since a great deal of their cases are patent cases.²⁰³ Contrarily, for other appellate courts, any particular bright-line rule is less likely to significantly decrease the complexity of a large number of appeals, because they hear cases in so many areas of law.²⁰⁴ Third, because the

²⁰² The Federal Circuit has 1,102 cases currently pending to date within the last twelve months as of 10/01/11. *Year-to-Date Activity and Status of Pending Appeals*, UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT (Nov. 14, 2011) (http://www.cafc.uscourts.gov/images/stories/the-court/statistics/YTD_Activity_and_Status_of_Pending_Appeals_10.28.2011.pdf). The U.S. Courts of Appeals had 44,440 cases pending from a period of March 2010 to March 2011 throughout all circuits (excluding the Federal Circuit). The majority of these arose in the Ninth Circuit, which has 13,913 cases as of March 2011. The First, Second, Seventh, Eighth, and Tenth Circuit all have less than 1,500 cases pending in each circuit. *U.S. Court of Appeals-Appeals Commenced, Terminated, and Pending During the 12-Month Periods Ending March 31, 2010 and 2011*, UNITED STATE COURTS (Nov. 14, 2011) (<http://www.uscourts.gov/Viewer.aspx?doc=/uscourts/Statistics/FederalJudicialCaseloadStatistics/2011/tables/B00Mar11.pdf>).

²⁰³ Intellectual Property disputes make up 45% of the cases that the Federal Circuit will hear in 2011. *Appeals Filed, by Category*, UNITED STATE COURT OF APPEALS FOR THE FEDERAL CIRCUIT (Nov. 14, 2011) (http://www.cafc.uscourts.gov/images/stories/the-court/statistics/Caseload_by_category_2011.pdf).

²⁰⁴ Kent S. Scheidegger, *Habeas Corpus, Relitigation, and the Legislative Power*, 98 COLUM. L. REV. 888, 932 (1998) ("Second, the characteristic of the circuit court that made its judgment binding was not its status as an Article III court but rather its status as a court of general jurisdiction.").

Federal Circuit is the only circuit court for patent appeals, it can choose bright-line rules without conflicting with other circuits. This decreases the cost of choosing bright line rules in two ways. Number one, no one can argue that another circuit has a superior rule. Number two, the knowledge that the rule will be applied by all district courts and will thus be uniform decreases comparisons and also lets the Federal Circuit think it is making things easier for all district courts.

V. Lessons the Federal Circuit and Supreme Court Can Learn from the Inconsistency Robustness Paradigm

To make the best decisions on what rules should govern patent litigation issues, and to decrease the likelihood of continued reversals by the Supreme Court, the Federal Circuit should recognize the different way in which the Supreme Court approaches inconsistency robustness in the United States federal court system. Understanding that the Supreme Court is likely to focus more on manifest error than vertical and horizontal inconsistency can help the Federal Circuit predict when the Supreme Court is likely to overturn a legal rule crafted by the Federal Circuit. Thus, the Federal Circuit should exercise restraint in driving towards its goal of certainty and inconsistency reduction. The Federal Circuit should realize that if it makes rules that are too bright-lined, the Supreme Court will likely overturn them because the Supreme Court's view of the patent legal system and of administering it is a view from the top, without as much focus on the burdens that contextual standards place on the mid-level system administrators—in this case, the Federal Circuit.

At the same time, the Supreme Court would do well to remember that when it reverses patent appeals from the Federal Circuit, it is reversing not just the law in one geographic area of the United States, but rather is reversing the law nationwide. In evaluating the benefit of crafting standards that allow for the review of lower court decisions according to multivariate criteria, the Supreme Court should remember that the cost of this nuanced review is overturning a high degree of horizontal and vertical consistency that the Federal Circuit has established nationwide. The Supreme Court should attempt to view the system not just from its own perspective, but also from the perspective of the Federal Circuit as an important administrator of the patent system. This should lead the Supreme Court to give greater deference to the judgment of the Federal Circuit as to the importance of vertical and horizontal consistency versus capacity for error reduction in the realm of patent law. It may be that the Federal Circuit's greater experience day in and day out with patent cases and patent litigants gives the Federal Circuit particular expertise in judging how to balance the elimination and allowance of inconsistencies so as to arrive at the best level of inconsistency

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robustness management in service of the values of the legal system in the unique area of patent law.²⁰⁵

Thus, there may be times when a properly nuanced vision of the inconsistency robustness paradigm with respect to the court system would encourage the Supreme Court to consider the costs in terms of inconsistency and predictability of correcting error in Federal Circuit opinions. On the other hand there may be times when the Federal Circuit's bright-line rules have greater benefits to society in terms of predictability and consistency of application than nuanced standards that allow for reducing manifest error at the cost of inconsistency and unpredictability.²⁰⁶

The Supreme Court's decision in *Festo v. Shoketsu*²⁰⁷ seems a good example of the Court acting in accordance with a holistic view of inconsistency robustness in patent law.²⁰⁸ The Court rejected the Federal Circuit's bright-line rule that the doctrine of equivalents is unavailable as to a particular claim once a

²⁰⁵ Lee, *supra* note 46 at 42 (“Actors in the patent system reduce information costs in a number of surprising ways. Historically, the Supreme Court has done so by largely deferring to the Federal Circuit on patent matters. For a long period after the Federal Circuit’s establishment in 1982, the Supreme Court rarely reviewed that court’s patent opinions. In the first ten years of the Federal Circuit’s existence, the Supreme Court only reviewed three patent decisions. In a sense, this paucity of Supreme Court review reflected deference to the Federal Circuit’s expert authority.”); Rochelle Cooper Dreyfuss, *In Search of Institutional Identity: The Federal Circuit Comes of Age*, 23 BERKELEY TECH. L.J. 787, 808 (2008) (“Although the Supreme Court takes too few cases in most areas of federal law to become expert, it can normally rely on the experience gained from seeing how the differing rules of the regional circuits play out. But because of the Federal Circuit, there is no occasion for differing rules in patent law. Given these difficulties, it might be expected that the Supreme Court would defer to the Federal Circuit’s expert judgment on issues of law. (Or, to put things another way, one might have thought that the Federal Circuit’s unique placement in the judicial hierarchy was intended to reduce the need for Supreme Court attention.)”).

²⁰⁶ Computer scientists often address issues by going to a higher level of abstraction. Their approach is to go to a higher level of abstraction that gets around the problem or inconsistency. In this way, computer scientists build more inconsistency robust systems. Is there an analogous phenomenon in the law? Probably yes. The law often reasons at a higher level of abstraction so as to divide factual or legal decisions consistently. Bright-line rules, to function, must be built at a higher level of abstraction.

²⁰⁷ 535 U.S. 722, 742 (2002).

²⁰⁸ See *supra* notes 102-110, and accompanying text.

patentee once the patentee has amended a claim.²⁰⁹ But the Supreme Court replaced the Federal Circuit's rule with one that allowed a bit more flexibility, yet remains easy to administer and easy to maintain horizontal and vertical consistency.²¹⁰ The Supreme Court's replacement rule is that the doctrine of equivalents is unavailable once a patentee has amended a claim, except as to unforeseeable equivalents that the patentee could not have literally claimed at the time of amendment. This decision of the Supreme Court is an example of the Court crafting an inconsistency robust system at all levels. The Court corrected an excessive narrowness of the Federal Circuit—patentees should not be foreclosed from claiming unforeseeable equivalents simply because they amend their claims—but the Court did so via a rule that is easy to administer and that maintains consistency at a fairly low cost.

The Supreme Court's decision in *KSR v. Teleflex*,²¹¹ however, seems to be an example of the Court failing to consider creating inconsistency robustness from multiple perspectives.²¹² In *KSR*, the Court rejected the Federal Circuit's bright-line TSM rule for obviousness and instead insisted that the Federal Circuit return to the highly contextual standard for obviousness with which the Federal Circuit had struggled for years until it adopted the more administrable and consistent TSM test.²¹³ The Supreme Court's decision did indeed allow more flexibility to determine the obviousness of patents, but at extremely high cost in terms of certainty and predictability of patent validity, and in terms of confidence in district and appellate court decisions as to obviousness. Had the Court taken a view of the patent law system from the perspective of the Federal Circuit as a system administrator, and from the perspective of market participants who rely on information about patent validity in conducting their business, it should have attempted a solution that did not sacrifice so much certainty, predictability, and consistency for the benefit of nuanced obviousness determinations.

VI. Conclusion

This Article has applied insights from the new paradigm of inconsistency robustness to both identify and analyze the consistent difference in approach to rules versus standards that exists between the Federal Circuit and the Supreme Court on the subject of patent law. This Article described the inconsistency robustness paradigm, and explained how legal systems in general function in accordance with it, i.e. legal systems must be inconsistency robust to function. The Article then gave five examples of substantive areas in patent law in which

²⁰⁹ *Id.*

²¹⁰ *Id.*

²¹¹ 550 U.S. 398, 402 (2007).

²¹² See *supra* notes 84-101, and accompanying text.

²¹³ *Id.*

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the Federal Circuit and Supreme Court have divided over rules versus standards. The Article showed a recurring pattern in which the Federal Circuit gravitates towards bright-line rules that are eventually overturned by the Supreme Court and replaced by contextual standards. The Article then discussed possible reasons for this repeated divide, including explanations utilizing the inconsistency robustness paradigm to show that each court is engaged in designing what it sees as the optimally inconsistency robust system of patent law. This article also shows, however, that because of these two courts' different positions, and consequent different way in which they experience costs and benefits of inconsistency reduction, they repeatedly and predictably differ as to their views of what tools should be adopted to achieve the optimally inconsistency robust patent law system. Finally, this Article explains that acknowledging the difference in costs and benefits to rules versus standards for the two courts is necessary to design a truly inconsistency robust patent law system—a system in which the level of inconsistency and error correction is optimized for the benefit of all players.