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Kimberly A. Moore[*]

INTRODUCTION

Perceptions that American courts are hostile to foreign parties are widespread.[1] As one commentator noted, "[t]he one time U.S. companies don't mind a trip to the courthouse so much is when their adversary is foreign—especially Japanese."[2] Foreign corporations involved in U.S. litiga-

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[1] *See* Jack L. Lahr, *Bias and Prejudice Against Foreign Corporations in Patent and Other Technology Jury Trials*, 2 FED. CIR. B. J. 405, 405 (1992) ("A widespread perception within the corporate communities of many industrial countries holds that they will be treated unfairly in U.S. jury trials due to the jury bias and prejudice against foreigners."); *Japanese Firms Fight Back as "Patent Wars" Heat Up*, BALT. SUN, Sept. 5, 1992, at 14C (reporting that Japanese companies perceive American juries as "inscrutable and biased against them"); Victoria Slind-Flor, *TV Spots Bash the U.S.: Japanese Still Uneasy on Patents*, NAT'L L.J., Nov. 30, 1992, at 3 (reporting that Japanese industries fear xenophobic U.S. juries); Daniel Akst, *Patent Suit Jury Trials Are the Rage*, L.A. TIMES, Apr. 20, 1994, at D8 ("Smart lawyers for patent holders want juries because jurors tend to favor independent inventors and small companies over large or foreign competitors."); Robert M. Kunstadt, *Don't Tailor Patent Law for Special Interests*, NAT'L L.J., Jan. 6, 1997, at A25 ("Foreign litigants have demonstrably well-founded concern about having to litigate patent claims before American juries."); Barry S. Wilson, *Patent Invalidity and the Seventh Amendment: Is the Jury Out?*, 34 SAN DIEGO L. REV. 1787, 1787 n.4 (1997) (suggesting that juries are biased against large corporations or foreign corporations); David Bowen, *Foreign Firms Can Be Soft Targets in the 'Jackpot' Mentality of US Litigation*, INDEPENDENT, Feb. 16, 1997, at 3 ("It is perhaps too easy to drum up an image of xenophobic rednecks determined to kick foreign butt, but it is undoubtedly true that small-town juries will give the home team an advantage. . . . My advice is to avoid a jury trial, especially if you're a foreigner going up against a local company."); George P. McAndrews et al., *Local Bias Alive and Well*, METROPOLITAN CORP. COUNSEL, Dec. 2001, at 18 ("The 'us versus them' mentality is certainly strongest when dealing with foreign versus American corporations, but it is also raised in local versus out-of-state corporations, and can be difficult to dispel."); Catherine A. Rogers, *Fit and Function in Legal Ethics*, 23 MICH. J. INT'L L. 341, 408 ("Bias against foreign defendants is alive and well in all countries, including the United States.").

[2] Linda Himelstein, *Japan in the Dock: Beware of the Bashers*, BUS. WK., Nov. 8, 1993, at 101. *But see id.* ("It doesn't make any difference if a defendant is German, Japanese, or whatever. Juries

tion routinely express concern about the susceptibility of the U.S. jury to xenophobic bias[3] and are quick to blame their losses on such prejudice.[4] The fear of bias is so pervasive that at least one jury consulting firm offers its Japanese clients a scale that predicts anti-Japanese bias among potential jurors throughout the United States.[5] The conventional wisdom on the suc-

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don't have these biases.") (quoting patent attorney Kenneth B. Herman).

[3] Jury trials of patent cases are especially troubling to foreign companies because almost no other industrialized country permits lay juries to resolve technically sophisticated patent cases. Philippe Signore, *On the Role of Juries in Patent Litigation*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 791, 794 (2001) ("Many non-Americans, especially if they are accused of infringing a U.S. patent, are astonished to learn that U.S. patent cases can be decided by juries. The U.S. may be the only country in the world that uses juries to decide patent disputes."). There is no shortage of pithy quotes in which corporate counsel question the abilities of lay juries to adjudicate patent cases, as the following illustrates: "Corporate defendants and patent lawyers have long griped that intellectual property litigation is too complex to leave to plumbers, housewives, mailmen and music teachers." *Jury Cases on Patent Infringement on Trial*, CHI. TRIB., June 12, 1995, at 6, *available at* 1995 WL 6216112. In most countries, patent trials are exclusively to the bench and in some countries they are to expert or technically trained judges. *See* Signore, *supra*, at 794–95 (reporting that England, France, Germany, and Japan each have specialized trial court judges which resolve patents cases).

[4] After a Japanese company, Nintendo, lost a $208 million case before an American jury, the general counsel said "This kind of outrageous verdict presents an image of bias against foreigners or large companies. There is a serious issue of whether a jury trial is the appropriate way [of handling patent disputes]." Leslie Helm, *Jury Orders Nintendo to Pay $208.3 Million in Patent Case*, L.A. TIMES, Aug. 2, 1994, at D3. Japanese analysts frequently attributed lost jury trials to anti-Japanese bias. *Id.*; *see also* Victoria Slind-Flor, *Japanese Are Stung on Patents*, NAT'L L.J., Aug. 10, 1992, at 46 ("Japanese response to those large infringement-case verdicts 'is somewhere between anger and bewilderment, and they are blaming it on Japan-bashing'") (quoting patent attorney Norman S. Brunell).

[5] Himelstein, *supra* note 2, at 101 (reporting that Litigation Sciences Inc. tracks xenophobic bias for its clients). Another jury consulting firm, DecisionQuest, has found repeatedly that mock jurors discriminate against Japanese parties by making "different decisions when presented with identical cases except for the nationality of the defendant, which is changed from American to Japanese." *Id.* It is not uncommon, even in recent times, for foreign companies (and especially Japanese) to engage jury consulting firms to assist in the selection of a forum which exhibits the least prejudice against foreigners. *See, e.g.*, DecisionQuest, *Success Story #4*, *at* http://www.decisionquest.com/site/success4.htm (last visited March 31, 2003). Decision Quest advertises these services and reports the following success story on their website:

> DQ Finds Best Trial Venue for Client:
>
> Problem:
> A major Japanese corporation planned to file suit against a competitor for trademark infringement. Fearing that jurors in certain parts of the country might hold anti-Japanese biases which would cloud their ability to hear their arguments, counsel asked DQ to find a venue in which jurors would be receptive to the case and not prejudiced against the client.
>
> Solution:
> With hundreds of intellectual property cases to its credit, DecisionQuest knew the general profile of jurors predisposed toward infringed parties in trademark disputes. Combining that knowledge with our demographic and lifestyle databases to analyze the key factors impacting juror predisposition, DQ conducted telephone surveys to determine the extent of anti-Japanese bias in each venue.
>
> We knew from experience that American jurors are more biased against foreign corporations than they are against foreign countries and that they hold strong biases against Japanese corporations in particular. This bias is more common in venues suffering economic difficulties due to foreign competition and becomes much more pronounced when Japanese witnesses use translators on the stand.

cess of foreign parties, however, is based on anecdotes and impressions, and no empirical study has ever confirmed its accuracy.

Indeed, the only study ever to address xenophobic bias and its impact on U.S. litigation contradicts the conventional wisdom that bias against foreigners affects outcomes. In a 1996 article in the *Harvard Law Review* entitled *Xenophilia in American Courts*, Professors Kevin Clermont and Theodore Eisenberg appeared to refute the popular perception.[6] Their empirical study of civil cases found that foreign parties win a higher percentage of cases in court than domestic parties. While Clermont and Eisenberg discounted the possibility of an affirmative bias in favor of foreigners,[7] their results suggested at least that perceptions of xenophobic bias in civil litigation are exaggerated. While the popular perceptions held by litigants, attorneys, and commentators on one hand suggest a well-accepted belief that American courts, and in particular American juries, are hostile to foreign parties, the best available empirical work to date on the other fails to substantiate this bias and in fact concludes that foreign parties are more successful than their domestic adversaries.[8]

The Clermont-Eisenberg finding is particularly surprising in light of the vast social psychology literature on jury decisionmaking. The social psychology literature documents the phenomenon of bias in jury decisionmaking and offers a "similarity hypothesis" to explain it.[9] The "similarity

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Id.

[6] Kevin Clermont & Theodore Eisenberg, *Xenophilia in American Courts*, 109 HARV. L. REV. 1120 (1996).

[7] *Id.* at 1132.

[8] Despite the perceptions of anti-foreigner bias in American courts and the deleterious effects this bias could have on international trade and foreign relations, there was a dearth of theoretical or empirical analysis of xenophobia's effects before the Clermont-Eisenberg study. *See* Kevin Johnson, *Why Alienage Jurisdiction? Historical Foundations and Modern Justifications for Federal Jurisdiction Over Disputes Involving Noncitizens*, 21 YALE J. INT'L L. 1, 43 (1996) ("It is difficult to verify bias against foreign business in the adjudicatory process. However, I would be surprised if the antipathy toward foreign business historically visible in the political process failed to influence the adjudicatory process in the United States."); Lahr, *supra* note 1, at 407 ("Significant also is the absence of published empirical evidence to document the extent to which jurors are inclined to base their verdicts on factors such as prejudice or bias."). The Clermont-Eisenberg study seems unlikely by itself to transform popular preexisting inferences made in the absence of data, and though the study might have succeeded in changing the academic consensus about xenophobia in litigation generally, it might not be sufficient to persuade practitioners and scholars in particular fields like patent law. Consider, for example, Professor Johnson's analysis:

> Despite the intuition that judges and juries may be influenced by antiforeign bias, empirical data demonstrating such bias in the state or federal courts is difficult to come by. . . . Nonetheless, the existence of antiforeign views in the general public, and the influence of such views on the political process, is difficult to question. One would be surprised if such views did not somehow influence the adjudicatory process.

Johnson, *supra*, at 39. As Professor Johnson observes, confirmation of the Clermont-Eisenberg data would hardly signal the end of a need for scholarship in the area, but instead would suggest a need for explanation of the anomaly. *Id.*

[9] *See, e.g.*, SAUL M. KASSIN & LAWRENCE S. WRIGHTSMAN, THE AMERICAN JURY ON TRIAL 28

hypothesis," also referred to as "in-group bias" or simply as "ethnocentrism," posits that decisionmakers consciously or subconsciously tend to favor people like themselves; for example, whites favor whites, African Americans favor African Americans, and Americans favor Americans.[10] The corollary, of course, of the tendency to favor like parties is the tendency to discriminate against different parties.[11] This hypothesis has led many legal scholars and behavioral scientists to study the impact of variables like race and sex on case outcomes.[12] Studies in human psychology

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(1998) (discussing the similarity hypothesis). Concern over xenophobia goes as far back as the oldest book in the Old Testament: "[y]ou shall not oppress a stranger; you know the heart of a stranger, for you were strangers in the land of Egypt." Frank Crusemann, *'You Know the Heart of a Stranger' (Exodus 23.9). A Recollection of the Torah in the Face of New Nationalism and Xenophobia*, *in* IMMIGRANTS AND REFUGEES 95, 97 (Dietmar Mieth and Lisa Sowle Cahill eds., 1993). Peter Rose's book quotes Rudyard Kipling as capturing the essence of ethnocentric thinking:

> All good people agree,
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> And all good people say,
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> All nice people like Us are We,
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> And everyone else is They.

PETER I. ROSE, THEY AND WE 85 (1997) (quoting Rudyard Kipling, *We and They*, *in* DEBITS AND CREDITS 327–28 (1926)).

[10] Johan M.G. van der Dennen, *Ethnocentrism and In-group/Out-group Differentiation: A Review and Interpretation of the Literature*, *in* THE SOCIOBIOLOGY OF ETHNOCENTRISM 1, 17 (Vernon Reynolds et al. eds., 1987) (citing experimental support for the hypothesis that "an individual will discriminate against a member of an out-group even when there is no conflict of interest and there is no past history of intergroup hostility"). Several theories have been proposed to explain xenophobia including: realistic group conflict theory (groups are in competition for scarce resources), evolutionary theories, and sociopsychological theories such as the frustration-aggression-displacement theory, group narcissism, self-esteem, reference group theory, projection, cognitive congruity theories, and transfer and reinforcement theories. *Id.* at 10–16 (listing and explaining theoretical explanations for ethnocentrism). "The essence of xenophobia is an aggressive response towards a complete social stranger." *Id.* at 22. Nativism, meaning a preference for those deemed native and an opposition to those deemed foreign, is another form of xenophobia. *See, e.g.*, Kevin R. Johnson, *The New Nativism*, *in* IMMIGRANTS OUT! 167 (Juan F. Perea ed., 1997) (defining nativism as "intense opposition to an internal minority on the grounds of its foreign (i.e. 'Un-American') connections").

[11] *See* Robert Kurzban et al., *Can Race be Erased? Coalition Computation and Social Categorization*, 98 PNAS 15387, 15387 (2001), *available at* http://www.pnas.org/cgi/content/full/98/26/15387 ("Following on historical experience, field and laboratory studies have confirmed that this behavior is remarkably easy to elicit: people discriminate against outgroups even when they are assigned to groups temporarily and anonymously by an experimenter who uses dimensions that are trivial, previously without social significance, and random with respect to any real characteristics of individuals assigned."); Marilynn B. Brewer, *In-Group Bias in the Minimal Intergroup Situation: A Cognitive-Motivational Analysis*, 86 PSYCHOL. BULL. 307 (1979); Sheri L. Johnson, *Black Innocence and the White Jury*, 83 MICH. L. REV. 1611, 1640 (1985) ("own-race bias"); Cookie W. Stephan & Walter G. Stephan, *Habla Ingles? The Effects of Language Translation on Simulated Juror Decisions*, 16 J. APPLIED PSYCHOL. 577, 587 (1986) ("ethnocentrism").

[12] *See, e.g.*, Nancy J. King, *Postconviction Review of Jury Discrimination: Measuring the Effects of Juror Race on Jury Decisions*, 92 MICH. L REV 63 (1993) (reviewing evidence and experiments of the effect of racial composition on jury decisions); JOHN GUINTHER, THE JURY IN AMERICA 93 (1988) ("Whether it has its wellspring in psychological or socioeconomic causes, or some combination of both, prejudice whether on the part of jury or judge or lawyer is justice's well-recognized and most formidable

and social cognition suggest that biases, whether latent or patent, may not be excised from decisionmaking, even when the decisionmaker is made aware through de-biasing procedures of their existence.[13] Such studies have examined countless permutations on the effect of race, studying interaction effects among jury, plaintiff, and defendant. The social studies, experimental and behavioral psychology, and legal literature test the similarity hypothesis by studying characteristics that could be shared between the jury and the party litigants. For example, studies of the impact of race in jury adjudication consider the following scenarios: (1) white jury, white plaintiff, white defendant; (2) white jury, white plaintiff, black defendant; (3) white jury, black plaintiff, white defendant; (4) white jury, black plaintiff, black defendant, etc; there are, of course, eight possible scenarios.[14] These studies are able to analyze in-group and out-group bias because the experimenters compare cases where the jurors share characteristics with one or both of the parties and cases where they do not. While this literature has not explicitly studied xenophobic bias (*i.e.*, prejudice based on alienage or domicile), the theory underlying the literature would suggest the existence of such bias.

The Clermont-Eisenberg finding also contradicts long-held assumptions about the need for procedural protections for foreign litigants. For example, the grant of alienage jurisdiction to federal courts was an explicit recognition of the potential for anti-foreigner bias in state courts.[15] Com-

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enemy.").

[13] *See* Linda Hamilton Krieger, *The Content of Our Categories: A Cognitive Bias Approach to Discrimination and Equal Employment Opportunity*, 47 STAN. L. REV. 1161, 1188 (1995) (discussing how, in the process of deciding cases, biases influence the decisionmaker's judgment long before the decisional moment and often beyond the reach of the decisionmaker's self-awareness).

[14] One such study undertaken by the Rand Corporation determined that over the 20 year period 1959–1979, black plaintiffs were less likely to win and black defendants more likely to lose civil cases than their white counterparts. GUINTHER, *supra* note 12, at 93. Even these seemingly clear results were not offered as conclusive proof of racial bias by juries because the Rand Corporation acknowledged that the types of civil cases brought by black and white plaintiffs differed substantially, which could contribute to the differences in win rates. *Id.* at 94.

[15] Rene Lettow Lerner, *International Pressure to Harmonize: The U.S. Civil Justice System in an Era of Global Trade*, 2001 B.Y.U. L. REV. 229, 293–94 (2001) (discussing foreigner bias as the historical ground for alienage jurisdiction); Jonathan Shafter, *Originals Intentions and International Reality: States, Sovereignty, and the Misinterpretation of Alienage Jurisdiction in* Matimak v. Khalily, 39 COLUM. J. TRANSNAT'L L. 729, 746 (2001) (explaining that alienage jurisdiction was intended to protect foreign investments in the United States from populist bias and prejudice by assuring "foreign investors that their disputes would be resolved in a forum relatively insulated from local populist pressures, thus reducing the political risk profile of their investments"); Johnson, *supra* note 8, at 43. In one of the more colorful examples of appealing to xenophobic biases in state court, a Texas attorney made the following argument during his closing statement to the jury:

> In some places the very rich are almost like God. They can do anything they want. Mr. Soerono Haryanto thinks he is that kind of person, and he thinks America is that kind of place. . . . You have the opportunity to emphasize what America stands for . . . [I]s it a place where we should allow someone from Singapore or Indonesia or Philippines, or whatever this man is, to come over and say, 'When I'm here, slavery is fine: and if I say to kiss my feet and if I say I will kill you, if I have the right to terrorize you for a period of time, it's fine for who I am?' . . . He is thumbing his

mentators have often observed that removing a case from state court has some advantages for foreign parties.[16] The advantage is attenuated however, because a local jury will still adjudicate the dispute and therefore local bias may still prejudice decisionmaking.[17] The theory, however, is that the federal courts are likely to be institutionally better situated to control and limit such bias than state courts. Modern defenders of alienage jurisdiction have argued that the persistence of xenophobia in the United States justifies the retention of alienage jurisdiction,[18] a position that would be considerably

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> nose at you, at this process, at this country. . . . You need to send a message not just to Soerono Haryanto in the Philippines or Singapore or wherever he is hiding out, but to send a message all the way around that in America you can't do this . . . Do something right for America.

Haryanto v. Saeed, 860 S.W.2d 913, 927-28 (Tex. Ct. App. 1993) (Robertson, J., dissenting) (rejecting majority's decision to affirm jury verdict of $1 million in compensatory damages and $2 million in punitive damages in a tort case).

[16] Federal judges with their life appointments are not subject to the same political pressures as elected state court judges and can therefore more closely monitor attorney attempts to stir up local prejudice or bias among juries. *See* Johnson, *supra* note 8, at 47. Moreover, removal to federal court affords an opportunity to transfer a case (if venue and jurisdiction requirements warrant transfer) to other federal district courts anywhere in the country. Finally, the federal court system would likely be preferred by foreign litigants because it may offer greater certainty and uniformity than the multitude of state systems. *Id.*

[17] *See, e.g.*, McAndrews et al., *supra* note 1, at 18 (suggesting that "diversity jurisdiction may not eliminate problems of local bias"); Johnson, *supra* note 8, at 47 ("The influence of xenophobia on juries may affect adjudication in the federal as well as state systems."). A 1996 patent trial in the U.S. District Court for the District of Delaware stirred up concerns over xenophobia prejudicing the jury when attorneys for the American company suggested that if the patent holder won the lawsuit, an American company, Motorola, which employs American workers would have to stop making cellular phones and all of these jobs would be lost to the Japanese. The company's opening statement to the jury went as follows:

> The evidence will show [Motorola] started out as a very small company. But it was successful. It came out with good products. And it was successful. And it got to the point that it was the largest cellular telephone company in the United States. It made cellular phones. It made cellular telephones so well that it gave jobs to people here in the United States to make these cellular telephones to be sold not only here, but we sell [them] in Europe, and something that is almost unheard of in this country, they are sold in Japan. They are made here and sold there. So Motorola felt a duty. Certainly it was looking out for its own interests. This is an important part of Motorola's business. [If] Interdigital has its way, Motorola will have to stop making digital cellular telephones. Stop. The people that are making them will have to stop going to work. The people that are selling them will have to stop selling them. That is what they want. That is what they ask for.

Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1469 (Fed. Cir. 1997) (emphasis omitted) (holding that the comments that suggested that American jobs would be lost to the Japanese unless Motorola won ranged from "innocuous to slightly improper, with most of them being somewhat ambiguous"). Attorneys for Interdigital complained that these statements were especially troubling because:

> The anti-Japanese sentiment in the region where the case was tried was well known, due primarily to the fact that some 7000 jobs in the area of the trial were threatened with extinction due to apparent Japanese competition. In fact, just prior to the filing of the case there had been research published by the American Bar Association commenting that anti-Japanese sentiment in that area was stronger there than in other areas. The publication stated that: "The strength of anti-Japanese sentiment [in that area] is directly related to two main factors; (1) the nature of the industrial base of the community where the trial is being held and the perceived impact that Japanese corporations have had on the local economy, and (2) juror's personal experience with the Japanese."

McAndrews et al., *supra* note 1, at 18.

[18] *See* Johnson, *supra* note 8, at 35–43.

less appealing if a finding were accepted that such prejudice does not permeate courtroom walls.

Whether the xenophobic bias exists in fact, there can be no controversy about the reality of the perception that bias exists in American courts and American juries. Perhaps nowhere is the impact of this fear greater realized than in intellectual property matters. In 1999, I conducted a survey of sixty-two Chief Patent Counsels of leading corporations[19] and found that they overwhelmingly believed that juries favored domestic over foreign parties in patent litigation.[20] These fears about American juries are compounded by the skyrocketing frequency in recent years of jury demands in patent cases.[21] Perceptions of jury favoritism manifest themselves in a significantly higher likelihood that domestic plaintiffs seeking to enforce their patents will demand a jury trial if they are suing out-of-state or foreign corporations in U.S. courts.[22]

This Article reports the results of a research project designed to test for xenophobia in patent litigation specifically. While this research is animated in part by the significance of international litigation in the intellectual property arena, patents and the cases brought to enforce them present an ideal case to study more generally perceptions of anti-foreigner bias, the impact of such perceptions, and whether they are well-grounded. Analysis of civil cases in areas such as contract, tort, medical malpractice, or products liability runs into a serious methodological problem: the impossibility of determining the number of situations that potentially could have led to litigation. Although one could measure the number of contract cases brought by domestic parties or foreign parties, there is no way of knowing how many contracts foreign parties actually enter into in the U.S., and reliance on back-of-the-envelope calculations would be risky. Similarly, it may be difficult or impossible to measure foreign product entrance into U.S. markets to gauge the impact of foreignness on product liability litigations or the number of medical procedures performed by foreign versus domestic doc-

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[19] This survey was administered in 1999 at the annual conference of the Association of Chief Patent Counsels. In order to be a member of this organization and attend the conference, a lawyer must head the intellectual property legal group of a corporation with at least five full-time intellectual property attorneys. The average level of experience of the group surveyed was 25.3 years of practice. In fact, all but three of the respondents had at least fifteen years of experience practicing patent law.

[20] When asked, "Do you believe that jurors are biased in any of the following ways: Jurors favor domestic parties over foreign parties? YES or NO," 88% or fifty-two of the respondents answered affirmatively, indicating their belief that juries are biased against foreign parties. Seven Chief Patent Counsels answered that there was no bias and three did not answer the question.

[21] Kimberly A. Moore, *Jury Demands: Who's Asking?*, 17 BERKELEY TECH. L.J. 847, 855 (2002) [hereinafter Moore, *Jury Demands*] (finding that jury demands were made in 78% of all patent cases terminated from 1999–2000); *see also* Kimberly A. Moore, *Judges, Juries, and Patent Cases: An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 366–67 (2000) [hereinafter Moore, *Judges, Juries, and Patent Cases*] (finding that jury trials in patent cases have risen from 2.6% in 1970 to 62% in 1999).

[22] Moore, *Jury Demands*, *supra* note 21, at 865–66.

tors. In the absence of such data, it is difficult to calculate the extent to which foreign party success or failure at trial is a vestige of differential willingness to sue or to settle.

This difficulty does not exist in patent law. The number of U.S. patents applied for and obtained by foreign and domestic parties can be measured and compared with the number of U.S. patent cases. Though it is impossible to control for all factors, the existence of a measurable universe of potential patent cases facilitates the analysis of actual patent cases. For patent cases, we can study the impact of foreignness from cradle to grave, from patent acquisition to attempted patent enforcement, to trial. The empirical data presented in this Article thus reflects all patents granted in the ten-year period 1990–1999 (1,108,395 patents) and all patent cases terminated during the two-year period 1999–2000 (4247 cases involving 6861 patents).

The data validates concerns that American courts, and American juries in particular, exhibit xenophobic bias. The most significant finding illustrates a substantial disparity in domestic and foreign party success in jury trials. Domestic parties win 64% of cases tried to juries in which the adversary is foreign; foreign parties win the remaining 36% of such cases. However, there is no significant difference in win rate for foreign and domestic parties when judges adjudicate. The latter finding is important not only because it helps to identify the source of the bias in patent litigation, but also because it minimizes the possibility that the low foreign party win rate can be explained by weak cases on the merits. If foreigners somehow systematically had weaker cases than domestic parties in patent cases, the difference should be manifested before judges as well as juries.

Nonetheless, to explore more systematically the differences in case strength between foreign and domestic parties, this Article compares patterns of patent acquisition with patterns of patent litigation. Although foreign inventors acquire 45% of patent rights annually,[23] they seek to enforce their patent rights in only 13% of the litigated cases. The disparity is important in part because it may reflect foreigners' cynicism about their prospects of enforcing patents in U.S. courts. The higher the expected probability of success, presumably the more willing a patent holder would be to pursue patent litigation. There are, however, a variety of additional explanations for the prelitigation sorting. One important possibility is that patents obtained by foreign inventors may somehow be "weaker" than those acquired by their domestic counterparts. This Article substantiates significant differences in the characteristics of the patents issued to foreign and domestic inventors. Economists have assumed that these patent characteris-

[23] There does not appear to be any xenophobic bias in the patent acquisition process as patents have historically been granted to foreign and domestic inventors in direct proportion to their application filings. For example, in 1999, 45% of all patent applications were filed by foreign parties and 45% of all granted patents were issued to foreign parties. *See infra* text accompanying notes 91–94.

tics are indicative of the strength or breadth of the patent.[24] While the characteristics of issued patents may indicate that patents obtained by domestic inventors are stronger than those obtained by foreign inventors, the pool of litigated foreign party patents, as measured by these same patent characteristics, are stronger than their domestic counterparts.

Another possible explanation for the reluctance of foreign parties to litigate lies in the culture of the foreign parties themselves and their traditional manner of resolving disputes. The increase in jury demands in patent cases,[25] coupled with the perception of jury prejudice against foreign parties, may also contribute to the low incidence of patent enforcement by foreign parties.[26] Finally, large and asymmetric litigation costs likely drive down foreign enforcement rates. Each of these explanations likely contributes to the disproportionately low rate of enforcement of patent rights by foreign parties.[27] These theories, however, all support the conclusion that foreign parties bring suit against domestic infringers only on their strongest patents when they believe that they have the greatest chances of success.

The magnitude of this disparity between patent acquisition and enforcement rates is sufficiently high to call into doubt the possibility that foreigners' cases are inherently weaker than those of domestic parties. Patentees are most likely to seek enforcement of patents against alleged infringers when the validity of the patent and the fact of infringement seem most clear, and foreign parties are apparently more selective than domestic parties. Even if patents acquired by foreign parties are weaker than domestic ones, the pool of *litigated* foreign party patents appear to be stronger than the comparable pool of domestic party patents.

Moreover, the application of economic theory predicting case selection to the pool of patent disputes studied suggests that the win rate data understates bias still further. Theoretical models of case selection predict that as the pool of tried disputes tends towards zero, the plaintiff win rate will tend towards 50% because only close cases will be tried.[28] Litigants factor their perceptions of bias against foreigners and the impact they believe this bias

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[24] *See, e.g.*, JEAN O. LANJOUW & MARK SCHANKERMAN, THE QUALITY OF IDEAS: MEASURING INNOVATION WITH MULTIPLE INDICATORS (Nat'l Bureau Econ. Research, Working Paper No. 7345, 1999) (suggesting that the number of claims is a measure of the breadth of the patent); BRONWYN HALL ET AL., THE NBER PATENT CITATION DATA FILE: LESSONS, INSIGHTS AND METHODOLOGICAL TOOLS (Nat'l Bureau Econ. Research, Working Paper No. 8498, 2001) [hereinafter NBER DATA] (suggesting that the number of citations a patent receives is a measure of the importance of the cited patent).

[25] *See supra* note 21 and accompanying text.

[26] *See supra* notes 1–4 and accompanying text.

[27] The low rate of enforcement also raises the obvious question: "why are foreign parties even bothering to obtain U.S. patents if they refrain from enforcement?" This Article also discusses the value of U.S. patents as defensive mechanisms, their use for signaling purposes, and, of course, the licensing revenue generated by a patent even without enforcement. *See infra* Part III.A.2.c.

[28] George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984) (explaining the divergent expectation model of case selection theory).

will have on their success rate into their outcome estimations. We should thus expect parties' strategic behavior based on their rational expectations and estimations of outcome to mask any actual bias against foreign parties. For the bias to appear in the win rate data, the parties must be systematically *underestimating* the extent of the jury prejudice. In addition, when there are asymmetrical litigation costs, the model predicts that the win rate will favor the party with higher costs.[29] Because litigation costs are higher for foreign parties, more victories for foreign parties ought to be observed, making the reverse reality even more indicative of bias.

Part I of this Article describes the data set, its acquisition, and some methodological issues in coding the data. Part II tests the impressions of prejudice against foreigners against the empirical data and considers the implication of the substantial disparity in win rates that is found. Part II also identifies discrimination against domestic out-of-state parties, and it questions whether the larger the cultural contrast presented by the foreign party, the greater the discrimination by juries. Part III shows that the data may tend to understate the degree of prejudice, both because foreign parties tend to litigate only their strongest patents and because the economic theory of selection effects suggests that predictions of bias are impounded in settlement decisions.

I. DATA AND SOURCES

In order to measure perceived bias in the U.S. courts and its impact on the litigation process, I collected an original database that includes every patent case terminated in every district court in the two-year period 1999–2000 (4247 cases). These 4247 cases litigated 6861 patents.[30] This database includes three types of information relevant to testing the hypothesis:

(1) PARTY DATA: detailed characteristic information on the parties to the litigation, such as whether the party was foreign or domestic, individual or corporation, located in the state where the litigation was brought or out-of-state, as well as whether the plaintiff or defendant was the effective patent holder;[31]

(2) CASE DATA: detailed information on the litigation itself, such as at

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[29] *See id.* at 25–26 ("[W]here the stakes are greater to defendants than to plaintiffs, relatively more defendant than plaintiff victories ought to be observed in disputes that are litigated."); Bruce Kobayashi, *Case Selection, External Effects, and the Trial/Settlement Decision*, *in* DISPUTE RESOLUTION: BRIDGING THE SETTLEMENT GAP 17, 29 (David A. Anderson ed., 1996) (explaining that differential stakes will result in a high win rate for the party with the higher stakes); Daniel Kessler et al., *Explaining Deviations From the Fifty Percent Rule: A Multimodal Approach to the Selection of Cases for Litigation*, 25 J. LEGAL STUD. 233, 257 (1996).

[30] Many patent suits charge the defendant with infringing more than one of plaintiff's patents. In fact, one of the cases in this dataset involved twenty separate patents.

[31] In many cases, a patent infringement suit is brought by an unrecorded assignee. Any time ownership rights to a patent are conveyed after the patent is issued, they are not reported on the patent. Assignees are permitted to bring a patent suit without joining the actual patentee.

what stage in the litigation process the case terminated (before there was any significant court action, midlitigation, or at trial), how the case was terminated (settlement, judgment on a motion, court verdict, jury verdict, etc.), the district court, whether a jury was demanded and if so, by which party, whether the plaintiff or defendant won the lawsuit, and whether the patent holder or infringer won the lawsuit, as well as who won on individual issues such as infringement and patent validity; and,

(3) PATENT DATA: detailed characteristic information on the patents involved in the litigation, such as the number of claims, issuance date, forward and backward citations, field of technology, whether the patent was assigned and if so to what type of assignee (foreign or domestic, individual or corporation), and constructed measures of the originality and generality of the patent.

The data in this study was largely acquired through independent research, and this is the first time it is presented. The population of patent cases that I researched was derived from the reports of the Administrative Office of the United States Courts. The Administrative Office compiles statistics by subject matter on terminated litigations. When a patent case is terminated in the district courts, the court is required to file a form with the Administrative Office providing details regarding the case.[32] The data obtained from the Administrative Office consists of the population of 4247 patent cases that terminated during the two year period 1999–2000.[33] This includes every case that was resolved by any means (settlement, motion, trial, etc.).

Because of deficiencies in the Administrative Office data due to a lack of reporting or inconsistent reporting,[34] I did not rely solely on their data but instead researched and verified all information used in this empirical study. For example, the Administrative Office data did not provide any of the characteristics of the parties to the lawsuit or the patent numbers involved in the litigations or the characteristics of those patents. These data were obtained by locating the docket sheet, complaint, opinion, verdict, and judgment for each case.

The detailed patent characteristic data, which includes the patent filing date, issuance date, number of claims, number of forward and backwards

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[32] *See* ADMINISTRATIVE OFFICE OF THE U.S. COURTS, GUIDE TO JUDICIARY POLICIES AND PROCEDURES, Transmittal 64, vol. XI, at II-19-II-28 (March 1, 1985).

[33] A few cases were eliminated because they were not patent suits. For example, a case may be categorized as a patent case by the Administrative Office when it is a contract dispute over assignment or licensing of the patent rights. Because these are in actuality contract rather than patent infringement actions, they are excluded from this study. Also, two cases were eliminated because the courts lost the files and the parties and their attorneys were unable to assist in providing the underlying characteristic data.

[34] The inaccurate and sometimes inconsistent reporting of the courts necessitated independent verification of all data. A detailed discussion of the flaws in the Administrative Office data is the subject of another article in progress.

U.S. citations, and constructed variables which measure the originality and generality of the patents, is from the extensive empirical work of Bronwyn Hall, Adam Jaffe, and Manual Trajtenberg on the characteristics of all issued patents from 1975–1999.[35] It is useful to examine the pool of all issued patents to ascertain, for example, whether there are any underlying differences in the types of patents foreign and domestic parties acquire and to compare the litigated and non-litigated patents. For purposes of this article, I isolated patents issued during the ten-year period 1990–1999 from the National Bureau of Economic Research (NBER) database. When I refer to this NBER data, I am referring to the characteristics of all patents issued during this ten-year period (1,108,395 patents). A limitation of the NBER database of particular relevance to this study is the absence of data on citations to foreign patents. I thus supplemented the NBER database by independently researching cited foreign prior art and other cited prior art for each of the litigated patents.[36]

A significant coding issue is the identification of whether a party is foreign. There are several ways that this identification might be made: domicile of the inventors,[37] domicile of the assignee as reported on the patent,[38] or domicile of the party who at the time of the litigation had the right to bring suit. According to the NBER database, 82% of all patents are assigned at the time of issuance.[39] When patents are assigned, the inventors no longer own the property right, so if litigation ensues, it must be brought by (or against) the assignee, not the inventor. Isolating just the patents assigned to corporations, 59% are assigned to U.S. corporations and 41% to foreign corporations. Of the patents assigned to U.S. corporations, 6% have at least one foreign inventor. Of the patents assigned to foreign corporations at issuance, 15% of them had no foreign inventors.

As these statistics demonstrate, domicile of the inventor does not always match domicile of the patent owner. The NBER assignment data, however, is not ideal for measuring the impact xenophobic bias may have

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[35] NBER DATA, *supra* note 24.

[36] Although U.S. patents make up the bulk of all citations considered during patent prosecution, the examiner also considers foreign patents and other types of foreign and domestic prior art such as printed publications. All of these would be important to assessing the patentability of a particular application. The NBER database only reports U.S. patents cited. Because this article analyzes differences between U.S. and foreign inventors and litigants, intuitively it seems important to consider foreign as well as domestic prior art. A foreign inventor seems more likely to disclose foreign prior art and a domestic inventor domestic prior art. *See infra* Tables 7 and 8.

[37] Of the litigated patents, 17.6% have some foreign inventors.

[38] Of the litigated patents, 12.7% were assigned to foreign corporations or foreign individuals at the time of issuance.

[39] This underestimates rates of assignment because it only counts assignments made at the time the patent issued. Of those patents that are assigned at the time of issuance, 47% are assigned to U.S. corporations and 33% are assigned to foreign corporations. The remainder of the 1,108,395 granted patents are assigned to U.S. individuals (0.8%), foreign individuals (0.3%), the U.S. government (1.6%) or a foreign government (0.4%).

on the selection of cases to litigate. The reported assignments are measured only at the time of patent issuance, yet many assignments and licensing arrangements of patents occur later. Because the threat of xenophobic bias presumably would be greatest when a party to litigation is foreign, a measure of foreignness based on the parties to the litigation is preferable. This study is thus based on an examination of the alienage of the parties to each of the patent litigations rather than an examination of the inventors or assignees who in many cases no longer own the rights at issue.[40]

II. RESULTS AND PRELIMINARY ANALYSIS

A. Disparity in Win-Rate Data

Perhaps the most startling finding of this empirical study is that win rate data substantiate the existence of jury prejudice against foreign parties. Domestic parties won 64% of the cases decided by a jury when their adversary was foreign, while foreign parties prevailed in the remaining 36% of such cases. There is no similar discrimination immediately apparent in judicial decisions. Foreign and domestic parties succeeded with equal frequency when a judge, rather than a jury, resolved the case. When the judge determined the outcome (aggregating summary judgment and bench trials), foreign parties won 56% of the cases when their adversaries were domestic.[41]

The differences, meanwhile, cannot be attributed to which party is the patent holder. Table 1 breaks the empirical results down in greater detail, showing that foreign patent holder win rates in jury trials against domestic infringers (38%) are significantly lower than domestic patent holder win rates against foreign infringers (82%). In contrast, in cases decided by judges, the patentee win rate is almost identical, with domestic patentees winning 35% of the time against foreign infringers, and foreign patentees winning 31% of the time against domestic infringers.

Disaggregating the judicial decisions between those made on motion and those made at trial further accents the contrast between judge and jury decisionmaking. When judges decide cases with mixed alienage (foreign

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[40] This is not to suggest that foreign inventorship would not impact the decision to bring suit even where the patent owner is domestic. In most patent cases, the validity of the patent is at issue. A validity dispute generally requires the testimony of the inventors of the patent because it often involves the determination of dates of inventorship. If there is concern about prejudice against foreign parties, even a domestic patent owner may be fearful of having a foreign inventor testify. Accordingly, alienage of inventors was included in the multivariate regression model. *See infra* Table 2 and accompanying text. *Cf.* Akst, *supra* note 1, at D8 ("The demeanor of the inventor and the corporate representative may be more important than the analyses offered by the battling experts [in jury trials.]").

[41] The 56% foreign party win rate is almost exactly the win rate predicted by the Priest/Klein selection effect model after incorporating the parties' asymmetric litigation expenses. *See infra* notes 170–174 and accompanying text (applying economic models of case outcome to predict a slightly higher foreign party win rate).

versus domestic or domestic versus foreign) on motion, the domestic party win rate is 57%. If, however, the case proceeds to a bench trial, the domestic party win rate in mixed alienage cases is only 46%. This means that foreign parties prevail in 54% of the cases that are decided at trial by a judge, in contrast to 36% of the cases tried to a jury.

TABLE 1: PATENTEE WIN RATES DEPENDING ON PARTY ALIENAGE[42]

Plaintiff Patentee	Defendant Accused Infringer	Overall Patentee Win Rate	Win Rate With Jury	Win Rate With Judge
Domestic	Domestic	38%	71%	29%
Domestic	Foreign	42%	82%	35%
Foreign	Domestic	32%	38%	31%
Foreign	Foreign	29%	67%	24%

There are several possible explanations for the difference between judge and jury outcomes. First, judges are likely to exhibit less bias in their decisionmaking than juries. A judge, either in a ruling on summary judgment or at the conclusion of a bench trial, presumably seeks to prevent personal prejudice and bias from swaying decisionmaking. Judicial determinations, moreover, are subject to greater transparency requirements than are jury determinations. Judges are required to articulate all findings of fact and conclusions of law that underlie their judgment in a case.[43] Judicial decisions are therefore more easily scrutinized to ensure against prejudice and bias. Second, parties may better estimate the outcome when the judge decides the case. Prediction is made easier with repeat players. For example, the advocates may have prior personal experience with the judge that would assist them in predicting the outcome. Even absent any prior personal exposure to the judge, the advocates have the advantage of being able to review prior precedent by the judge, thus enabling them to make more confident and accurate estimates regarding the likely outcome. Finally, the judge may give the parties some indication of her leanings throughout the litigation,[44] aiding the parties in estimating their chances of success and encouraging settlement. Juries, on the other hand, are not re-

[42] This Table measures patentee win rate in patentee-initiated patent infringement lawsuits. It does not include declaratory judgment actions.

[43] FED. R. CIV. P. 52(a) (requiring judges to articulate findings of fact and conclusions of law).

[44] The judge may do this by granting or denying summary judgment motions, motions in limine, or evidentiary rulings throughout the litigation or in pretrial or other conferences with the parties.

peat players; parties have no information prior to trial about the jury,[45] and they obtain very little information from jurors throughout trial upon which to base any outcome estimations.[46] Because there is more than one juror who decides each case, even if the parties believed that they could predict how a particular juror is leaning (by head nodding or other body language, for example), they would be unable to predict the decision of the body as a whole. This makes outcome estimation by the parties more difficult when juries are adjudicating a case. Jury prejudice or bias, moreover, is not discernable because of the "black box" nature of jury verdicts.[47] In sum, win rates in judicial decisions relative to jury cases may be attributable to a combination of less prejudice and greater predictability by judges.

Although it is certainly possible that the difference between the foreign party win rate with judges and juries could be attributable to the theory that the pool of disputes that are pursued with judges are simply stronger for the foreign party than the pool of disputes resolved by juries, this seems implausible for two reasons. First, it would be entirely inconsistent with widespread public opinion that juries harbor greater prejudice against foreign parties. It seems unlikely foreign parties would continue to litigate weaker cases with the less favorable adjudicator. Second, the patent characteristic data does not support the idea that the patents that foreign parties enforce in bench trials are stronger than those in jury trials. In fact, the patents litigated by foreign patentees against domestic infringers in jury trials are, according to two economic indicators, citations made and originality, stronger than both the ones foreign patentees pursue in bench trials and those patents being enforced by domestic patentees against foreign infringers in either bench or jury trials.[48] In short, the patents enforced by foreign patent owners against domestic infringers are arguably the strongest patents.[49]

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[45] Prior to voir dire, the parties have no information about the individuals who may serve on their jury. Through the voir dire process, it is likely that all useful information about how a particular juror may decide a case, will be eliminated by exercise of preemptory challenges. If a party perceives a juror as bad for their side, either because it appears the juror may harbor bias or prejudice or have some predisposition with regard to the legal issues, this juror will almost certainly be struck from the jury. Only jurors who appear impartial will likely survive voir dire.

[46] Other than the occasional involuntary head nod by a juror, the jury gives the parties little information from which to predict likely outcome. Some jury consultants, however, claim to be able to ascertain quite a great deal of information about the jurors' tendencies by observing their body language, eye contact, note taking, and posture during trial. In a few courts, the judges will actually permit the jurors to submit questions to be asked of individual witnesses. This process could reveal a lot of information to the parties and foster settlement if it was widely utilized.

[47] *See* Moore, *Judges, Juries, and Patents Cases*, *supra* note 21, at 401 (discussing "black box" jury verdicts); Kimberly A. Moore, *Juries, Patent Cases, and a Lack of Transparency*, 39 HOUS. L. REV. 779 (2002) (observing the deficiencies in most special verdict forms used in patent cases).

[48] *See infra* Table 8 and accompanying text (outlining differences in patent characteristic data).

[49] While tried foreign party patents make more citations and are more original than tried domestic party patents, in jury cases, they receive fewer cites and correspondingly have a lower generality score.

The disparity between jury and judicial decisions raises significant questions. If jury decisions are, in fact, swayed by bias to a greater extent than judicial decisions, why are any cases with mixed alienage tried to the bench? Because a jury trial will be held if either party demands a jury trial,[50] why doesn't every domestic party whose adversary is foreign demand a jury trial?[51] These questions have a straightforward answer: foreign patentees can avoid a jury trial entirely by limiting their relief sought to injunctive remedies to which no right of jury trial attaches.[52] This indicates that even when a foreign party wins by virtue of a judicial decision, the win might not be as lucrative for the foreign party as it would be in a jury trial because of the absence of monetary damages.

Although a two-year window (1999–2000) of litigated patent cases presents a large number of patent cases overall (4247 cases, 6861 patents), an important caveat is that only 5.3% of these cases (6.2% of all patents) result in a trial.[53] These numbers are even smaller when separated into bench and jury trials, representing 3.0% (119 cases, 214 patents) and 2.5% (104 cases, 210 patents) of the cases, respectively. Comparing the impact of foreign versus domestic characteristics narrows the universe of cases even more substantially. The parties' alienage differed in only 28 bench trial claims and 36 jury trial claims.

To respond to concerns about the small number of cases such a whit-

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It is difficult to draw a conclusion about the inherent strength of the foreign and domestic patent pools from the citations received and generality scores, however. There are two reasons why this proxy seems less reliable as a measure of patent strength. First, the fact that a patent is more general, meaning that it is more widely cited across a variety of fields, does not mean that it is necessarily more valid. Second, knowledge flows (spillovers) have been documented by economists to have some geographic dependence. *See* Adam B. Jaffe et al., *Geographic Localization of Knowledge Spillovers as Evidenced By Patent Citations*, 108 Q.J. ECON. 577 (1993) (finding that patent citations are localized geographically—patentees are more likely to cite the work of others in close geographic proximity). Because patent citations are at least partially a function of applicant disclosure, and knowledge diffuses in relation to geographic proximity, foreign party patents may not be cited by other U.S. patents in great frequency because other inventors filing patent applications in the United States are less likely to be aware of the work of foreign inventors. The geographic proximity lag in knowledge spillover may account for the low number of citations received by the work of foreign inventors.

[50] FED. R. CIV. P. 38(b). *Cf.* Moore, *Jury Demands*, *supra* note 21, at 855 (finding that juries are demanded in 78% of all patent cases).

[51] My previous empirical study of jury demands and the characteristics that impact who demands a jury did substantiate that a plaintiff is significantly more likely to demand a jury trial if it is an in-state, domestic individual and the defendant is an out-of-state corporation. Moore, *Jury Demands*, *supra* note 21, at 870 (finding that whether a plaintiff demands a jury is significantly affected by party characteristic data in predictable ways).

[52] Tegal Corp. v. Tokyo Elec. Am. Inc., 257 F.3d 1331, 1339 (Fed. Cir. 2001) (holding that a defendant who asserts only affirmative defenses and no counterclaims does not have a right to a jury trial when the only remedy sought by the plaintiff-patentee is an injunction).

[53] There are a large number of cases in the two year period resolved on summary judgment motions (887 patents) thus affording an opportunity to examine a larger number of dispositions on the merits for comparison of the impact of alienage. These dispositions, of course, only provide insight on any impact this characteristic may have on the judge, as juries are not involved in summary judgment dispositions.

tling away ultimately produces,[54] I expanded the dataset to consider all patent trials conducted during the eleven-year period 1990–2000. This dataset contains trials of 1463 patents. Like the larger dataset of all patent cases, the database of tried cases consists of the population of patent cases reported to the Administrative Office during this time. Again, every variable was verified independently by acquisition of original case documents from the district courts and federal archives. This larger database confirms my findings. Of the 127 jury trials with mixed alienage (foreign versus domestic or domestic versus foreign), 72% resulted in a win for the domestic party, with 28% won by the foreign party. When foreign patent holders brought suit against domestic infringers, the foreign patent holder won 46% of the jury trials. In contrast, when domestic patent holders sued foreign infringers, the domestic patent holder won 88% of the jury trials. The results are quite consistent with those in the narrower dataset, indicating that American juries overwhelmingly favor domestic parties.

To isolate the effects of several independent variables on the patentee win rate, I used a multivariate regression model.[55] The dependent variable is patentee win rate and the independent variables are listed in Table 2.

[54] Even with the small numbers, many of the results were still significant and are discussed in the relevant sections.

[55] Multivariate regression facilitates examination of the separate effect of each independent variable on the dependent variable (patentee win rate)—that is, the statistical significance of each independent variable in predicting plaintiff win rate.

TABLE 2: IMPACT OF CHARACTERISTIC DATA ON PATENTEE WIN RATE WITH JURY[56]			
INDEPENDENT VARIABLE	COEFFICIENT	STANDARD ERROR	SIGNIFICANCE (P STAT)
Patentee (plaintiff/ defendant)	-1.482	.236	.000
Foreign Patentee	-.452	.308	.143
Foreign Infringer	1.285	.294	.000
Corporate Patentee	-.508	.280	.069
Corporate Infringer	1.302	.552	.018
Constant	-.120	.560	.831
Number of Observations = 716			

According to these results, the patentee is significantly more likely to win a jury trial if: (1) the infringer is foreign; (2) the infringer is a corporation; and (3) the patentee is the plaintiff.[57] The multivariate regression model further supports the conclusion that American juries favor domestic over foreign parties in patent trials.[58]

B. Possible Explanations of Win-Rate Data

Although xenophobia is the simplest explanation for the low foreign party win rate in jury trials, there is another important possibility that warrants consideration. The concern is that the higher win rate for domestic parties might be attributable to domestic parties having stronger cases on the merits.[59] Three reasons, however, significantly alleviate this concern.

[56] The results reported are for a multivariate regression model; an OLS model has the same significance results.

[57] Actually, a multivariate regression with all tried cases from 1990–2000 (judge and jury) produces even stronger xenophobic results. In the larger regression, the patentee is more likely to win if the patentee is domestic and more likely to win if the infringer is foreign, as well as more likely to win if the patentee initiates the suit.

[58] Whether the inventor was foreign also had a significant impact on win rate. The more foreign the inventorship entity (meaning the greater the percentage of inventors were foreign), the less likely the patentee was to win the lawsuit with a jury. I left this variable out of the multivariate regression results reported in Table 2 because inventorship correlated very highly with party domicile. In almost all cases if the inventorship was foreign, the party was foreign.

[59] *See* Joel Waldfogel, *The Selection Hypothesis and the Relationship Between Trial and Plaintiff Victory*, 103 J. POL. ECON. 229, 232–35 (1995) (discussing the effect of case strength on win rates under economic theory of case selection).

First, not only do domestic patent owners prevail more often than foreign patent holders, but domestic defendants prevail more often than foreign defendants. As Table 1 indicates, in jury trials when domestic patentees sue domestic infringers, the defendants win 29% of the cases, but when domestic patentees sue foreign infringers, the defendants win only 18% of the cases. Though it is possible that there could be differences between domestic and foreign infringers, any such differences at least cannot be attributable to differential patent quality between domestic and foreign patentees. More strikingly, when foreign patentees sue domestic defendants, the foreign patentees win 38% of cases, but when the foreign patentees sue foreign infringers, the patentee wins 67% of the claims. There is no obvious reason that foreign patentees will have stronger cases on the merits only when the defendants also happen to be foreign.

Second, if domestic win rates were attributable to stronger cases, the win rate differential ought to exist in both judge and jury trials. As Table 1 indicates, however, the empirical results indicate a difference only in jury trials, and as discussed above, one plausible explanation for this difference is that jurors exhibit more bias in decisionmaking than judges. Win rates are nearly equivalent regardless of the party alienage in cases decided by judges. There is no reason to expect that foreign patentees would be more likely to opt for bench trials when they have stronger cases. If anything, foreign patent holders with stronger cases would be more likely to seek monetary damages in addition to injunctive relief, thus allowing the opposing party to demand a jury. The difference in performance between bench and jury trials also should produce skepticism of any attribution of greater success by domestic parties due to differential quality of counsel. It may well be that litigants who hire better attorneys would benefit from superior litigation skills.[60] Anecdotal evidence suggests that foreign parties are wealthier and generally retain elite American law firms.[61] Although the issue deserves further study, it seems likely that the prestige of counsel would correlate more with a lawyer's ability to persuade a judge than to convince a jury. Because it may be that the most credentialed lawyers are not the ideal jury trial lawyers, foreign party lawyer selection could be a partial explanation for the win rate differences between judge and jury trials.

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[60] *See* Donald Wittman, *Dispute Resolution, Bargaining, and the Selection of Cases for Trial: A Study of the Generation of Biased and Unbiased Data*, 17 J. LEGAL STUD. 313, 325–27 (1988) (discussing the effect of different abilities on win rate).

[61] *See* Clermont & Eisenberg, *supra* note 6, at 1133 (hypothesizing that foreign parties generally hire better skilled lawyers when involved in U.S. litigation); Leslie Helm, *United States-Japan Battle of the Patents: Japanese Firms are No Longer Quick to Settle American Claims to Lucrative Inventions*, L.A. TIMES, Apr. 24, 1992, at A1, A9 ("Japanese . . . hire the best litigators, the 'best samurai in the forest.'" (quoting a patent attorney)); Leslie Helm, *Fear of Litigation: Japanese Firms Prepare for U.S. Patent Jury Trials*, SEATTLE TIMES, Apr. 27, 1992, at C3 ("'Japan is greatly exaggerating the extent to which Japanese companies are being especially targeted in lawsuits.' When Japanese do find themselves in court . . . they hire the best patent litigators and frequently go on to win their cases.").

Third, measurable differences in the quality of patents suggest that tried foreign party patents are stronger than their domestic counterparts. I will explore this issue in greater detail in Part III.A.3.

C. Additional Results

1. Analysis by Country.—There are two hypotheses posited by the psychology literature that can be applied to the data to measure or gauge potential bias and its impact on outcome. First, the literature suggests that coalition behavior or in-group bias is likely to be greatest when there is a perceived threat or sense of competition with the out-group members.[62] For example, prejudice against Muslims or citizens of Afghan heritage may have been particularly strong in the wake of the September 11 terrorist attacks. Similarly, American juries nationwide, but particularly in Detroit, Michigan, may harbor bias against Japanese manufacturers, especially car manufacturers, because of a sense of competition with U.S. industry.[63] Second, the psychology literature suggests that the more alike or similar, the stronger the bias; the more distant or different, the stronger the prejudice.[64]

As Table 3 shows, patent acquisition and patent enforcement are not proportional for all countries. While Japanese inventors acquire 21% of all U.S. patents granted, they initiate only 3.2% of all U.S. litigation. Japanese, however, are not sued much more often (3.8%). Although far from dispositive, it appears that the data may support the psychology literature's suggestion that bias or prejudice could be linked to likeness. In short, the more like Americans the parties are, the more likely they are to engage in litigation to enforce or defend their rights. For example, Canadians and citizens of the U.K. share the general physical characteristics of white, Anglo-Saxon Americans and speak the same language.[65] They enforce their patent rights in nearly direct proportion to their patent acquisition. By contrast, Japanese

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[62] Elizabeth Cashden, *Ethnocentrism and Xenophobia: A Cross-Cultural Study*, 42 CURRENT ANTHROPOLOGY 760, 761 (2001) (stating that "threats and competition from outside groups are often cited as an important force in fostering ethnic loyalty").

[63] *See* David E. Sanger, *Enterprises Complicate Car Criticism*, PORTLAND OREGONIAN, Feb. 29, 1992, at A3 (discussing anti-Japanese racial prejudice in Detroit); Jonathan Peterson, *Loose Lips Can Sink Sales: Rumormongers Damage Company Images*, L.A. TIMES, Aug. 16, 1987, at 4 (discussing American prejudice against foreigners due to foreign product competition).

[64] *See generally* Tom W. Smith & Glenn R. Dempsey, *The Polls: Ethnic Social Distance and Prejudice*, 47 PUB. OPINION Q. 584 (1983) (finding variations in American bias and prejudice against foreigners by their country or region). This study found that for Americans, social standing, trustworthiness, and willingness to interact varied by geographic background. In particular, it found that Americans favored people of varying nationalities in the following order: English, Canadians, French, Italians, Swedish, Irish, Hollanders, Scots, American Indians, Germans, Norwegians, Spanish, Finns, Jews, Greeks, Negroes, Poles, Mexican-Americans, Japanese-Americans, Armenians, Czechs, Chinese, Filipinos, Japanese, Mexicans, Indians (of India), Turks, Russians, and Koreans. *Id*. at 588. This hierarchy is likely to be time-sensitive. At different points in time, various groups are likely to be more or less preferred depending on economic conditions and current events.

[65] Of course, many Canadians speak French as well or exclusively.

and Germans are much less likely to engage in U.S. litigation despite their high rate of U.S. patent acquisition. Of course, the higher rates of enforcement could also be attributable to geographic proximity, which could be related to transaction costs or familiarity with the legal system.

TABLE 3: COMPARISON OF PATENT GRANTS WITH ENFORCEMENT BY COUNTRY

Country	% U.S. Patents 1997-1999	% U.S. Litigation as Plaintiff	% U.S. Litigation as Defendant
U.S.	55	87.0	83.0
Japan	21	3.2	3.8
Germany	6	1.3	2.5
France	2	0.5	0.4
Canada	2	1.4	2.4
United Kingdom	2	1.8	1.7

Because no individual country has a substantial number of claims resolved via jury trial, the magnitude of jury bias and any variation by country cannot be established. It is interesting, however, to note that no cases involving Japanese plaintiffs ever went to a jury trial in the period of this study. Not only do the Japanese enforce their patent rights infrequently, but they also tend to resolve their cases before trial, with 84% of the cases they initiate settling. These statistics suggest that the fear of jury bias amongst parties may vary by country of origin. Moreover, the absence of Japanese plaintiffs in the pool of cases tried to juries suggests that the win rate data presented above understates the degree of bias exhibited by juries.

While foreignness may be a proxy for racial prejudice or nativist bias,[66]

[66] Nativism is a preference for those deemed native, which translates into a prejudice against those deemed foreign, and an "intense opposition to an internal minority on the grounds of its foreign (i.e., 'un-American') connections. Nativism translates into a zeal to destroy the enemy of a distinctively American way of life." Johnson, *supra* note 10, at 167. In support of anti-immigration laws in California, one legislative drafter expressed her xenophobic prejudice as follows:

> You get illegal alien children, Third World Children, out of the schools and you will reduce the violence. That is a fact . . . You're not dealing with a lot of shiny face, little kiddies . . . . You're dealing with Third World cultures who come in, they shoot, they beat, they stab and they spread their drugs around in our school system.

Kevin R. Johnson, *Public Benefits and Immigration: The Intersection of Immigration Status, Ethnicity, Gender, and Class*, 42 UCLA L. REV. 1509, 1575 n.178 (1995) (quoting Pamela J. Podger & Michael Doyle, *War of Words*, FRESNO BEE, Jan. 9, 1994, at A1 (quoting Barbra Coe)). If there were some way

this study does not seek to explain the rationale behind prejudice against litigants of a particular nationality. This Article performs no comprehensive analysis of the race, color, language, or birthplace of the individual or the representatives of the companies that are party to the lawsuits in this study. This Article studies only xenophobic bias as measured by party geography. Anti-foreign discrimination of this type may be particularly problematic in the jury context because foreign individuals are not permitted to serve on American juries.[67] Findings of discrimination on the basis of alienage, however, may in some cases be attributable in part to discrimination on the basis of race. One explanation of the apparently greater fears of discrimination among Japanese litigants is that these litigants fear a combination of alienage and racial discrimination, which this study does not disaggregate.

2. Prejudice Against Out-of-State Firms.—Domestic diversity cases are analogous in many ways to cases of mixed alienage. The enactment of diversity jurisdiction[68] and removal statutes[69] suggests that a perception existed in the late eighteenth century that state courts favored in-state parties and discriminated against out-of-state parties.[70] There is modern anecdotal evidence to justify this perception. For example, a former chief judge of the West Virginia Supreme Court remarked, "As long as I am allowed to redistribute wealth from out-of-state companies to injured in-state plaintiffs, I shall continue to do so."[71] Of the 4247 cases analyzed in this Article, 64% (2723 cases, 4360 claims) were brought by in-state plaintiffs. Parties were

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to measure nativism in case adjudication directly, by assessing party characteristics that suggested or implied foreignness, it would be very useful. It must be acknowledged that although the lawyers for the domestic party are likely to bring up the "foreignness" of their adversary in hopes of prejudicing the jury, the jury may not be aware that a company is foreign. With many companies, the party name alone conveys the foreignness. For example, Hitachi or Samsung have Asian sounding names, and even if the jury did not know that Hitachi was Japanese and Samsung was Korean, they would be likely to presume that they are not domestic companies. There are, however, American sounding company names such as DH Technology, Inc. or Zeneca Limited which are actually foreign companies. It is possible that the jury may not immediately be aware of the fact that these companies are foreign; however, it is likely that this fact would become known during the trial through attorney argument or witness testimony.

[67] *See* 28 U.S.C. § 1861 (2000) (jury shall be composed of U.S. citizens). Of course, the plaintiff or defendant could be foreign, say Japanese, and there could be American jurors of Japanese descent deciding the case.

[68] *See id.* § 1332.

[69] *See id.* § 1404.

[70] Commentators have long opined that juries are prejudiced against out-of-state parties. *See, e.g.*, Martin H. Redish, *The Need for Jurisdictional and Structural Class Action Reform*, 32 ENVTL. L. REP. 10,984 ("Anecdotal data exists concerning abuses committed against out-of-state class action defendants in state courts from Texas to Madison County, Illinois, demonstrating that concerns about prejudice toward out-of-state interests go considerably beyond the purely theoretical."); Ann Woolhandler & Michael G. Collins, *The Article III Jury*, 87 VA. L. REV. 587, 594 (2001) (explaining that diversity jurisdiction attempts to minimize the bias against out-of-state plaintiffs by local juries).

[71] RICHARD NEELY, THE PRODUCT LIABILITY MESS: HOW BUSINESS CAN BE RESCUED FROM THE POLITICS OF STATE COURTS 4 (1988).

classified as in-state if they either resided in (principal place of business or headquarters) or were incorporated in the state where the litigation was brought. Because jurisdiction in patent cases is quite expansive, cases can be brought anywhere the defendant does business.[72] The large percentage of cases brought in the plaintiff's home state, in addition to reflecting lower litigation costs, may reflect a belief by plaintiffs that there is likely to be a home court advantage to litigation, especially if they are litigating against an out-of-state adversary. Table 4 breaks down the domicile of the parties by whether the plaintiff and defendant were in-state or out-of-state.[73]

TABLE 4: SUITS BY STATE DIVERSITY

PLAINTIFF	DEFENDANT	PERCENT OF ALL CASES
In-state	Out-of-state	46.1%
In-state	In-state	17.4%
Out-of-state	In-state	16.5%
Out-of-state	Out-of-state	20.0%

Win rate data by diversity mirrors that of classical foreignness. Juries favor in-state parties over out-of-state parties. In-state plaintiffs succeed against out-of-state defendants in 72% of the jury trials. Out-of-state plaintiffs who sue in-state defendants prevail in only 47% of the jury trials.[74] These data support the same out-group jury bias or similarity hypothesis; namely that jurors favor parties with whom they share some connection, some similarity. Note that a multivariate regression model on the 1999–2000 data, which includes variables to represent whether parties were in-state or out-of-state, indicates that in-state patentees prevail significantly more often than out-of-state patentees when juries adjudicate. The magnitude of this advantage was even greater than the pro-domestic patentee bias. Of course, foreign litigants are almost always out-of-state, so the regression

[72] *See* Kimberly A. Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation*, 79 N.C. L. REV. 889, 897 (2001) [hereinafter Moore, *Forum Shopping*].

[73] There are several possible motivations for a plaintiff's preference for filing in their home state. Plaintiffs may believe that the local judge and jury are more likely to favor them over the out-of-state strangers. It could simply be attributable to a familiarity with the local judges and local procedures or a matter of convenience for the plaintiff and/or its attorneys. Of course, the convenience for the plaintiff when he sues an out-of-stater at home also translates into higher transaction costs for the out-of-stater—asymmetrical stakes.

[74] In judicial decisions (summary judgment and trial), in-state plaintiffs only win 30.0 % of the cases against out-of-state adversaries and out-of-state plaintiffs win 26.9% of the cases against in-state defendants.

indicates that there was a penalty from being foreign above and beyond the penalty for being out-of-state.[75]

D. Clermont and Eisenberg Revisited

In their landmark study published in the *Harvard Law Review*, Professors Kevin Clermont and Theodore Eisenberg found "*the available data offer no support for the belief that there exists xenophobic bias in American courts.*"[76] In fact, as implied by the name of their article, *Xenophilia in American Courts*, they found that in actions between Americans and foreigners, the foreign party wins 63% of the cases.[77] After ruling out the possibility that American courts favor foreign litigants, Professors Clermont and Eisenberg conclude that foreign aversion to American courts coupled with selection effect theory (to be explored in further detail in Part III.B) explain their outcome statistics.[78] In short, they attribute the positive foreign party win rate to parties' overestimation of the prejudice against foreigners, leading them to the logical conclusion that "any xenophobic bias that does exist in American courts is perhaps less serious than commonly thought."[79] With regard to the judge-jury distinction, Clermont and Eisenberg conclude, "[T]he data do not suggest that juries are more xenophobic than judges. Rather, the data probably reveal that the widespread view of juries as generally pro-plaintiff is a misperception."[80]

The data utilized in this study supports Clermont and Eisenberg's suggestion of foreign aversion to American courts. As discussed below, although foreign inventors acquire 47% of all U.S. patents, they initiate litigation to enforce those property rights in only 13% of all cases. That, however, is where the two studies cease to reconcile. Our empirical results differ in a significant respect: The data in this study substantiate the existence of xenophobic bias in the American courts with American juries in patent suits. Clermont and Eisenberg find that American parties win 37% of all cases in which their adversaries are foreign, while this study finds that American parties win 64% of such cases in the patent context.

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[75] There were actually four parties who were coded as foreign and in-state because in these cases there were multiple defendants being sued and one was foreign, while the other domestic and in-state.

[76] Clermont & Eisenberg, *supra* note 6, at 1132.

[77] *Id.* at 1123.

[78] *Id.* at 1133–34.

[79] *Id.* at 1132. I agree with the conclusion by Professors Clermont and Eisenberg that the actual magnitude of the bias is not ascertainable from the win rate statistics because of selection effects. *See id.* at 1132 ("We are not saying that anti-foreign bias is necessarily nonexistent . . . The parties' strategic behavior, based on their expectations, could be masking the bias and offsetting its influence to such a degree that an opposite foreigner effect appears in case outcomes."). *See* discussion of case selection theory Part III.B.

[80] Clermont & Eisenberg, *supra* note 6, at 1139. Although the Clermont-Eisenberg study finds that judges find for foreign parties more often than juries, juries have lower plaintiff win rates across the board regardless of alienage of the parties. *Id.* at 1139 tbl.4.

There are several potential explanations for our different results. First, the two studies both measure the foreigner effect across civil cases, but involve two different, non-overlapping time periods. The Clermont-Eisenberg study uses data on civil cases terminated from 1987–1994; this study uses data on patent cases terminated from 1999–2000. Although intuitively it is difficult to imagine that American courts are substantially more prejudiced, biased, or hostile to foreign parties now than they were from 1987–1994, the Clermont-Eisenberg study does show a decline in foreign party win rate and an increase in domestic party win rate over the length of their study.[81] It is possible that if their study had been continued through 2000, there would be a greater convergence in our results. When I expanded my dataset, however, to cover the eleven-year time period from 1990–2000, the prejudice against foreign parties was even higher. In patent suits from 1999–2000, foreign parties won 36% of the jury trials; from 1990–2000, foreign parties only won 28% of the jury trials. The further back the study goes, the larger the magnitude of the bias. Although this study does not cover the entire period of the Clermont-Eisenberg study, the slight difference in time periods between the two studies does not seem to be a plausible explanation for our greatly differing results, because the prejudice measurable in both datasets has been declining over time.

Second, their study examines all civil diversity cases; the present study is limited to patent cases. Because jurisdiction in patent cases is based upon the existence of a federal question, there is no overlap between the two types of cases. This study considers no other civil cases, not even other federal question cases. It is possible that the foreigner effect could be impacted by the subject matter at issue in the lawsuit. The Clermont-Eisenberg study, however, delineated cases by subject matter and found that in seventeen of the twenty different kinds of civil cases in their dataset, the foreign plaintiffs did better than domestic plaintiffs against domestic defendants.[82] At least within the realm of civil diversity cases, the results are fairly uniform.

There may be reason to suspect, however, that patent cases, along with other factually complex litigation, may invite more prejudicial decisionmaking than other types of civil suits. The psychology literature suggests that prejudice is most likely to impact outcome in complex, difficult, and close cases.[83] This theory has been termed "the liberation hypothesis," be-

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[81] *Id.* at 1125 fig.1 (showing a steady decline in foreign party win rate from 85% in 1987 to 64% in 1994 and an increase in domestic party win rate from 45% in 1987 to 55% in 1994).

[82] *Id.* at 1126–28 & tbl.1.

[83] *See, e.g.*, Denis Chimaeze E. Ugwuegbu, *Racial and Evidential Factors in Juror Attribution of Legal Responsibility*, 15 J. EXPERIMENTAL SOC. PSYCHOL. 133, 145 (1979) (demonstrating that in cases where there was only marginal evidence (close cases) against the defendant, the defendant was more likely to be found guilty if he was racially different (black or white) from the jurors). This study was particularly interesting because it varied the strength of the evidence while testing for impact of racial bias in decisionmaking. *Id.* at 135; *see also* Jeffrey R. Boyll, *Psychological, Cognitive, Person-*

cause complex or close cases liberate jurors to base their decision on personal prejudices.[84] The more difficult the adjudicators' task is, the more likely their prejudice and bias will influence the outcome. Because patent cases are among the most factually complex of all civil cases,[85] and almost certainly more complex on average than contract, property, and tort disputes that make up the bulk of the Clermont-Eisenberg dataset, anti-foreigner prejudice may simply be more prevalent in patent cases.

Third, there is a difference in the way that "foreignness" is measured in each dataset. In the Clermont-Eisenberg dataset, a party is coded foreign if the first named party is foreign. This means that a wholly owned U.S. subsidiary of a foreign corporation is treated as domestic, even if the foreign corporation is also listed as a party. For example, if the plaintiff were Nissan USA and Nissan Japan, this would be treated as a domestic party in the Clermont-Eisenberg study. In the dataset used in this study, a party is foreign if any member of the party is foreign. Using the same example, the party would be coded as foreign. Accordingly, the Clermont-Eisenberg study might be underinclusive in its consideration of foreignness, and this study might be overinclusive. There is no reason to think either of these measures of foreignness would produce systematically erroneous results that would explain the difference in win rates found, however.

Fourth, while the methodology of the Clermont-Eisenberg analysis is quite sound, the data may not be. There are several shortcomings of data reported by the Administrative Office.[86] For example, the Administrative Office reports judgments for the plaintiff, defendant, or both. Recognizing that a judgment for both makes no sense, Clermont and Eisenberg eliminated all cases from their dataset that reported both parties won. Clermont

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ality and Interpersonal Factors in Jury Verdicts, 15 LAW & PSYCHOL. REV. 163 (1991) ("as the strength of the evidence increases, the effects of non-legal or extra-evidentiary factors decreases, and vice versa").

[84] *See* Ugwuegbu, *supra* note 83, at 145 ("[T]he present studies provide substantial laboratory support for the liberation hypothesis by showing that ambiguity in the facts of a case serves to liberate the juror to respond to racial prejudices and bias.").

[85] *See* Moore, *Forum Shopping*, *supra* note 72, at 933 (finding patent cases more complex than other civil litigation); National Academies Committee on Intellectual Property Rights in the Knowledge-Based Economy Conference on the Operation of the Patent System Transcript (October 22, 2001), *available at* http://www7.nationalacademies.org/step/transcript1022_PDF.pdf at 295 (consisting of the comments of Judge T.S. Ellis of the Eastern District of Virginia, who reports that the Administrative Office of the Courts considers patent cases 1.7 times more complex than the average civil case and commenting that "the NEC-Hyundai case involved 25 transistor circuitry patents, and I can tell you it's far more than 1.7. It may be 100.7 because it's very labor intensive"). *Cf.* John Allison & Mark Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77 (2002) (finding that patents have become increasingly complex by comparing a sample of patents from the 1960s with patents from the 1990s).

[86] *See* Moore, *Judges, Juries, and Patents Cases*, *supra* note 21, at 381 (discussing some shortcomings in the Administrative Office data). I am presently working on a study which identifies and explains the shortcomings in greater detail to improve future reliance upon the data. Kimberly A. Moore, Empirical Studies: Fact or Fiction (unpublished work in progress and on file with author).

and Eisenberg determined that despite the "*minor gaps and misclassifications*" that likely exist in the Administrative Office data, "[i]n the aggregate, the data appear reliable."[87] Rather than relying upon the judgments reported by the Administrative Office, I independently verified all of the Administrative Office data.[88] Such verification would be nearly impossible for the large scale Clermont-Eisenberg study, which included 94,142 different cases. To ascertain whether errors in Administrative Office reporting might account for the difference in our foreigner win rates, I decided to compare the judgments I found after researching each case with the judgments reported in the Administrative Office data.[89] As I will detail in a separate article,[90] in a large percentage of the patent cases the Administrative Office reported the judgment incorrectly.

III. PRELITIGATION SORTING

This Part analyzes the effect of prelitigation sorting on the results in Part II. Because it is not possible to assess which side won or lost a settlement, Part II analyzes only outcomes, but these results may be skewed if cases that are tried are not a random sample of the broader universe of disputes and potential disputes, or if there are systematic differences between foreign and domestic patent holders. This Part concludes that tried cases are not likely to be a random sample in the patent context, but that the differences between the pools of disputes and tried cases on balance suggest that the win rate disparities identified in Part II understate the degree of bias in litigation. This is so for two reasons. First, although patents acquired by foreign inventors may be slightly weaker on average than those with domestic inventors, this effect is likely outweighed by the tendency of foreign patentees to seek enforcement in only a small number of cases. In fact, in cases which the parties litigate through to trial, foreign party patents appear to have stronger characteristics. Second, to the extent that bias is anticipated, it should not affect win rate data, so any disparities at trial suggest that parties underestimate the actual degree of bias in patent cases.

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[87] Kevin M. Clermont and Theodore Eisenberg, *Do Case Outcomes Really Reveal Anything About the Legal System? Win Rates and Removal Jurisdiction*, 83 CORNELL L. REV. 581, 585 (1998).

[88] Verifying the data is expensive and time consuming. It requires obtaining all original court documents (complaint, judgment, order, findings of fact and conclusions of law, and special verdict forms). Obtaining these documents requires contacting each of hundreds of district court offices throughout the country. Copies of the documents are then supplied at a cost of $0.50 per page plus a $35.00 retrieval fee if the case has been archived which generally occurs 6 months to a year after the case terminates.

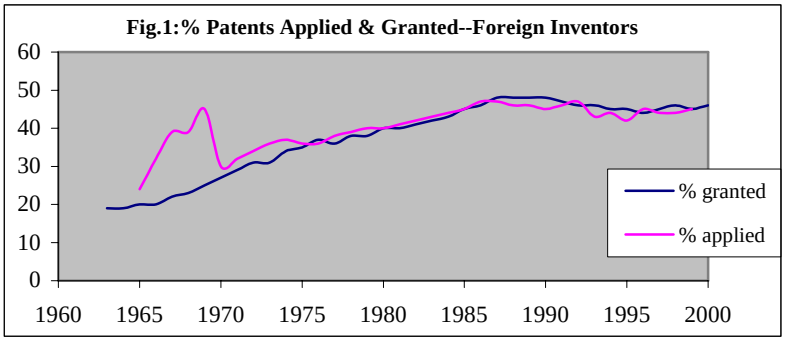
[89] Like the Clermont-Eisenberg study, the Administrative Office judgments only include judgment for the plaintiff or judgment for the defendant, but not both. Since I verified each judgment, the report of the Moore study includes all judgments (even the ones erroneously reported by the Administrative Office as won by both parties).

[90] *See supra* note 86.

A. Patent Acquisition and Enforcement by Foreign Inventors

This section considers three sources of evidence to compare the quality of the patents held by foreign and domestic inventors. The first two sources of evidence—patent grant rates and patent enforcement rates—suggest, when taken together, that foreign parties seek to enforce only a relatively small number of patents. While foreigners obtain patents at the same rate as domestic parties, they enforce their patents far less often, perhaps in part because they anticipate bias, suggesting that the pool of foreign party patents actually litigated will be particularly strong. The third source of evidence is more direct, consisting of analyses of foreign and domestic patents themselves, but also more equivocal. Measures commonly used by economists to signal originality suggest that foreign litigated patents are stronger than domestic litigated patents and especially strong in the subset of cases tried to a jury. Some other measures that might be expected to correlate with patent strength, however, point in the other direction.

1. Patent Grant Rates.—As Figure 1 demonstrates, foreign inventors have been acquiring U.S. patents with increasing frequency.[91]



[91] Figure 1 compiles data reported by the United States Patent & Trademark Office (PTO) on inventorship of filed patent applications and issued patents. The compilation is original, and the source data comes from U.S. Patent and Trademark Office/ Office of Information Dissemination Services/ Technology Assessment and Forecast program. Because the PTO data only considers inventors foreign if the first named inventor is foreign and there is no consistent, logical rationale for the ordering of inventors on a patent (it could be alphabetical, by order of contribution, by order of seniority, or any other ordering scheme the patentee chooses), these data actually underestimate the percentage of U.S. patents with foreign inventors. The NBER database which includes the data on the alienage of all named inventors confirms that there is one or more foreign inventor listed on 47% of all patents granted from 1990-1999. PTO data from the same time period reporting only the alienage of the first named inventor finds 45.7% of all patents acquired by foreign inventors. I found that inventorship is largely all or nothing in terms of alienage—all of the inventors are domestic or all of the inventors are foreign. In fact, of the 1,108,395 patents granted from 1990–1999, only 21,575 (1.9%) had mixed inventorship.

They now own nearly half of all patents granted in the United States each year. By and large, Japanese corporations dominate foreign patent acquisition in the United States. Of all patents granted from 1997–1999, 21% were granted to Japanese companies, 6% to German companies, and 2% to companies in each of France, Canada, Taiwan, United Kingdom and South Korea.[92] Foreign inventors acquired 47% of all U.S. patents granted from 1990–1999, and patents have historically been granted to foreign and domestic inventors with equal frequency. As Figure 1 indicates, foreign patent applicants have consistently received the same percentage of patent grants as their percentage of patent applications.[93] For example, according to the PTO data, in 1999, 45% of all patent applications were filed by foreign parties, and 45% of all granted patents were issued to foreign parties.

The relevance of patent application grant rates for the relative quality of the domestic and foreign party patent pools depends on whether there is any prejudice against foreign party patent applicants in the PTO. My own instinct is that there is no prejudice in the PTO's process, and the equivalence of application and grant rates provides some support for this instinct.[94] Because patent applications may be filed and prosecuted only by technically

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[92] U.S. PATENT & TRADEMARK OFFICE, PATENTING BY ORGANIZATIONS: A TECHNOLOGY ASSESSMENT AND FORECAST REPORT A1-1 (2000), *available at* http://www.uspto.gov/go/taf/topo_99.pdf [hereinafter "1999 PTO REPORT"]; U.S. PATENT & TRADEMARK OFFICE, PATENTING BY ORGANIZATIONS: A TECHNOLOGY ASSESSMENT AND FORECAST REPORT A1-1 (1999), *available at* http://www.uspto.gov/go/taf/topo_98.pdf [hereinafter "1998 PTO REPORT"]; U.S. PATENT & TRADEMARK OFFICE, PATENTING BY ORGANIZATIONS: A TECHNOLOGY ASSESSMENT AND FORECAST REPORT A1-1 (1998), *available at* www.uspto.gov/go/taf/topo_97.pdf [hereinafter "1997 PTO REPORT"]. Other countries had one percent or less of U.S. patent grants. In fact, ten of the top thirteen organizations that acquired more than 1000 patents each in 1999 were foreign corporations. Of those ten, all were Asian: nine Japanese and one Korean. The top thirteen were: IBM Corp. (U.S.), NEC Corp. (Japan), Canon Kabushiki Kaisha (Japan), Samsung Elec. Co. (Korea), Sony Corp. (Japan), Toshiba Corp. (Japan), Fujitso Ltd. (Japan), Motorola (U.S.), Lucent Tech., Inc. (U.S.), Mitsubishi Denki (Japan), Kabushiki Kaisha (Japan), Matsushita Elec. Indus. (Japan), and Hitachi, Ltd. (Japan). 1999 PTO Report, *supra*, at A1-2.

[93] Because there is a lag between patent filing and issuance, the patents filed for in any given year are not the ones that issue that year. At present, the prosecution process takes on average two years, but there is significant variance across different technology classes. *See* NBER DATA, *supra* note 24, at 9–10. Accordingly, in looking at a comparison of patents applied for by foreigners and patents issued to foreigners, it might be more meaningful to look at patents applied for in a given year, *N*, and patents issued in the year *N+2*. In both cases, the percentage of applications is nearly identical to the percentage of issuances to foreign inventors.

[94] It is interesting that foreign inventor applications are not granted with greater frequency than applications by U.S. inventors because of the higher costs of application for the foreign inventors. Although the PTO fees are identical for all applicants, foreign inventors are likely paying more in communication and interaction fees with their U.S. patent attorneys. Because these transaction costs are higher for foreign applicants, I might have expected a slightly higher grant rate to reflect their filing stronger applications. It could be that the foreign companies that acquire patent rights in the United States acquire them in such bulk that the difference in transaction costs is virtually zero.

qualified individuals who are members of the patent bar,[95] there would be no reason to expect either foreign or domestic parties to have more skill at filing patent applications. The same patent attorneys and agents file patent applications for domestic and foreign parties, and the same patent examiners are examining them, using relatively technocratic and objective standards.[96]

Nonetheless, in the absence of independent knowledge about the relative qualities of the domestic and foreign applicant pools, the equivalence in grant rates does not prove the absence of prejudice in the PTO. Because this is a study of xenophobia in litigation and not in the PTO, I will explore the issue no further, but I will consider both the possibility that the PTO is or is not prejudicial to assess the implications of the equivalent grant rate for the relative quality of granted foreign and domestic patents.

First, assume that there is no prejudice against foreign applicants in the PTO. The equivalent grants suggest that the pool of foreign party patent applications and the pool of domestic patent applications are roughly similar, at least if one assumes that the incentives of domestic and foreign companies to file U.S. patents are similar. If foreign party patent applications were much more likely to be invalid than American party applications, then one should expect a lower grant rate for foreign applications. If the pools of applications are comparable and grant rates are comparable, then so too should the pools of granted patents be similar.[97] Of course, rough similarity does not mean total similarity, and indeed, there are measurable differences between patents obtained by foreign and domestic parties that I will address below.[98]

Second, assume that there is prejudice against foreign applicants in the PTO. To explain the closeness of application and grant rates, we would then need to assume that the pool of foreign party patent applications is stronger than the pool of domestic party patent applications. Granted patents, of course, will tend to be the strongest of any pool of patent applications, and so we would then expect the pool of foreign party patents to be stronger than the pool of domestic party patents. If that were the case, then it would furnish a reason supplemental to the ones that I will present below that the win-rate data in Part II understates the actual amount of bias.[99]

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[95] Although patent applications can be filed and prosecuted pro se, because of the technical and legal complexity involved, they almost never are.

[96] Patent examiners at the PTO are organized by technological skills into art groups. This way they have work concentrated in their technical background.

[97] This is not meant to suggest that all issued patents are actually valid. *See* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001) (discussing the extensive literature criticizing the PTO for not doing a good job of weeding out invalid patents).

[98] *But see infra* Part III.A.3.

[99] For the same reason, if the PTO were biased *against* domestic patent applicants, then the data in Part II would overstate the bias against foreigners in the litigation process. In the absence of any theoretical reason to expect anti-American bias among patent examiners, I will give this possibility no further consideration.

Thus, in sum, a look at patent grant rates alone provides tentative evidence that foreign party patents are at least as strong as domestic party patents.

2. Patent Enforcement Rates.—Although foreign inventors acquired 47% of all U.S. patents granted in the past ten years, foreign parties have sought to enforce their patent rights in only 11% of the litigated cases. This is a stark difference, and one that is likely sufficient to overcome any apparent relative weakness of foreign party patents as compared to domestic party patents. The relevant comparison for assessing whether the win rate disparity suggests bias is not between the pools of issued foreign party and domestic party patents, but between the pools of litigated foreign party and domestic party patents. As long as stronger patents are more likely to be litigated than weaker patents, the foreign party patents that are litigated should be at least as strong as the domestic party patents that are litigated.

Table 5 breaks down foreign-domestic litigation patterns in more detail. It shows that of the 4247 cases in the dataset, the foreign patent holders initiated suit against domestic defendants in 9.7% of the cases, and against foreign defendants in 3.3%. While this data reflects the litigants' alienage as indicated on the complaints, similar data would result regardless of which measure of foreignness we use (inventor, assignee at the time of patent issuance, or assignee/licensee who brings suit to enforce the patent right). Thus, even though foreign inventors acquire patents as often as domestic firms, they seek to enforce their patents only about one-eighth as often.

TABLE 5: SUITS BY ALIENAGE[100]

PLAINTIFF-PATENTEE	DEFENDANT-INFRINGER	% OF ALL CASES
Domestic	Domestic	73.9%
Domestic	Foreign	13.0%
Foreign	Domestic	9.7%
Foreign	Foreign	3.3%

One apparent anomaly in the data that might appear to be inconsistent with the theory that foreign parties are hesitant to enforce their patents because of anticipation of bias requires explanation. While foreign parties sue domestic parties in only 9.7% of the cases, domestic parties do not bring suit against foreign parties with much greater frequency, as these lawsuits

[100] Although this table only reports cases when the patent holder initiates suit, the results are virtually identical when declaratory judgment actions are incorporated and rate of filing is measured by plaintiff rather than patent holder (75.8%, 12.9%, 8.7%, 2.6%). Foreign parties are not initiating U.S. litigation with as great a frequency as patent holders or in the declaratory judgment context.

constitute just 13.0% of the cases. One possibility is that the aversion to litigation serves to reduce foreign involvement in litigation both as plaintiffs and defendants. Foreign parties can avoid lawsuits by settling before a suit is filed, a form of sorting that cannot be detected even through analysis of all cases in which a suit is filed. For example, if a foreign party is accused of infringement by a domestic patent holder, it might be more likely to agree to a licensing arrangement than a domestic firm would be.

There is an additional, complementary explanation of the low rate of suits by domestic against foreign parties. Although Table 5 reports that in only 13.0% of the cases domestic patentees sue foreign infringers in U.S. district courts, the number of actual cases is in fact higher because many such actions are brought in the International Trade Commission (ITC) as Section 337 actions.[101] Patent holders suing foreign competitors may prefer the ITC to the district courts because it provides faster relief, there are no personal jurisdiction or venue hurdles to overcome, and enforcement of judgments is easy.[102] The ITC has the power to bar importation of products that infringe a U.S. patent or that are produced by a process that infringes a U.S. patent.[103] ITC actions for patent infringement can be brought only against companies importing goods into the United States. Because foreign infringers can be sued in either the district courts or the ITC, the measure of suits brought in district courts against foreign parties is lower than the actual number of such lawsuits.

There are a variety of possible explanations for the disparity between the rate at which foreign parties acquire patents and the rate at which they enforce these patents. One possibility, to be considered in Part III.A.3, is

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[101] 19 U.S.C. § 1337(a)(1)(B) (2000). A simple Westlaw search for patent infringement actions brought in the ITC under section 337 during the same two year period as this dataset revealed 112 cases. All of these actions could have alternatively been brought in U.S. district courts.

[102] Although the ITC cannot award monetary damages for infringement, some patent holders may prefer these actions, because the ITC docket is fast, which affords rapid injunctions that prevent importation of infringing products. *See* John Pegram, *Should the U.S. Court of International Trade Be Given Patent Jurisdiction Concurrent with that of the District Courts?*, 32 HOUS. L. REV. 67, 98–99 (1995); Ernest P. Shriver, *Separate But Equal: Intellectual Property Importation and the Recent Amendments to Section 337*, 5 MINN. J. GLOBAL TRADE 441, 443 (1996) (arguing that the ITC is preferred for patent suits over district courts which are "harder to access, slower, and less likely to provide significant relief to domestic producers whose goal is to exclude all infringing products from the U.S. market"); Donna M. Tanquay & Audrey M. Sugimura, *Patent Litigation Before the ITC*, 397 PLI/PAT 734, 765–67 (1994) (arguing that advantages of ITC litigation for patents include expedited adjudication, broad jurisdiction, single litigation, and the no injury requirement). A rapid injunction which protects ex ante against loss of market share and price erosion may be preferable over ex post damages. One possible disadvantage of the ITC is that all ITC actions are judge, not jury, trials. If domestic parties believe that a jury may harbor some bias or prejudice against a foreign party, then they would be giving up this advantage by filing in the ITC rather than the district court.

[103] Because the ITC has the power to bar infringing imports, the magnitude of the difference in stakes may be greater in ITC actions. Foreign importers have more at stake when their ship pulls up to a U.S. port and is prevented from unloading pending the outcome of a patent infringement action. Foreign infringers, if unsuccessful, would not be permitted to bring the goods into the United States.

that foreign party patents are somewhat weaker than domestic party patents and therefore less often enforced. Several additional possibilities will be considered immediately below. First, and most consistent with the theme of this Article, foreign parties may be hesitant to sue because they perceive bias in American courts. Second, cultural considerations may make foreign parties less likely to sue. Third, foreign firms may seek patents for defensive or signaling purposes. Fourth, foreign firms may obtain patents in fields with relatively little litigation.

a. Perceptions of bias.—In theory, perceptions of bias might be focused either on decisionmakers or on the law itself. In recent years, however, great strides have been made towards international harmonization of intellectual property rights.[104] International intellectual property treaties have had two major goals: to establish universal minimum intellectual property standards and to eliminate prejudice against foreign parties in intellectual property laws.[105] In response to its treaty obligations, the U.S. has modified substantive patent laws to eliminate domestic favoritism to level the playing field between foreign and domestic inventors. For example, inventors are often required to provide their dates of invention to obtain a patent either to overcome prior art or to establish priority of invention.[106] Historically, only inventive activity that occurred on U.S. soil would qualify.[107] Foreign inventors who conceived of an invention or built the invention in their home countries could not introduce this evidence to establish their dates of invention. Pursuant to the North American Free Trade Agreement (NAFTA) and the Trade Related Aspects of Intellectual Property (TRIPS), foreign inventors can now establish dates of invention in foreign signatory countries.[108] Accordingly, foreign and domestic inventive activity is treated equivalently under U.S. law.

Indeed, the legislative zeal to eliminate bias has produced patent laws that may now be tipped slightly in favor of foreign inventors.[109] Specifi-

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[104] Edward G. Fiorito, *The "Basic Proposal" for Harmonization of U.S. and World-Wide Patent Laws Submitted by WIPO*, 73 J. PAT. & TRADEMARK OFF. SOC'Y 83 (1991) (summarizing harmonization efforts of the World Intellectual Property Organization).

[105] In addition to establishing universal minimum intellectual property standards governing intellectual property, the TRIPS agreement also included an express prohibition against discriminating among applications according to where the invention occurred—this is, in effect, a prohibition of discriminating against foreign inventions. THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS—THE LEGAL TEXTS § 27 (GATT Secretariat ed., 1994). *Cf.* Toshiko Takenaka, *The Role of the Japanese Patent System in Japanese Industry*, 13 U.C.L.A. PAC. BASIN L.J. 25 (1994) (arguing that patent systems are biased towards nationals).

[106] Proof of invention prior to the patent filing date is often necessary to overcome prior art cited under sections 102(a), (e), or (g) of the patent code. Proof of dates of invention is often necessary in order to establish priority in an interference.

[107] 35 U.S.C. § 104 (2000).

[108] *Id.*

[109] There do appear to be a few vestiges of anti-foreign prejudice left in the U.S. laws. For example, a foreign patent application can be used to secure priority of invention if filed in the United States

cally, the patent laws articulate several activities that could defeat patent rights but only if those activities take place "in this country." If the invention was on sale or in public use "in this country" more than a year before date of the application, no patent may be obtained.[110] Because most invalidating offers for sale or public use are actually attributable to the inventor,[111] this provision limiting patent rights if an invention is offered for sale or put in public use only in this country predominantly limits the rights of domestic inventors. For example, if a domestic inventor makes an offer to sell his invention in the U.S. and then files a patent application thirteen months later, his application will be rejected.[112] Assume the identical activity occurs in Japan; a Japanese inventor makes an offer to sell his invention and then files his U.S. patent application thirteen months later. In this case, the application will be granted. Thus, to the extent that there remains any difference in treatment between U.S. and foreign inventors, the substantive law may actually favor foreign inventors.[113] This suggests that foreign party litigation aversion and differential success are not due to fears of bias in substantive patent law, but rather are attributable to application, as foreign litigants have expressed with great frustration.[114]

b. Cultural litigation aversion.—The lack of enforcement of U.S. patent rights by foreign intellectual property owners may be attributable to the cultural norms of the foreign parties themselves and, in particular, to litigation aversion. Because the bulk of all patents obtained by foreign parties are acquired by Pacific Rim countries, and in particular Japan, the cultural approach to litigation as a dispute resolution mechanism

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within twelve months, 35 U.S.C. § 119 (2000), but it does not count as the U.S. application date, and therefore does not insulate against any 102(b) prior art. *See id* § 119(a). Hence, while earlier filed U.S. applications, such as continuations or provisional applications, will move the inventor's filing date and thereby avoid considerable prior art, foreign patent applications are not provided comparable benefit.

[110] *Id.* § 102(b).

[111] On-sale or public use activity that could bar a patent is usually the inventor's own activity. Of course, if a third party offered for sale or used in public, it would still be a bar. But this would require the third party to have either obtained the invention from the inventor or have independently simultaneously invented. Because the inventor usually maintains control over the invention, it is generally the inventor's own pre-filing activity that falls with the section 102(b) parameters.

[112] The on-sale bar has two requirements: a commercial offer for sale is made, and the invention is ready for patenting. Pfaff v. Wells Elec., Inc., 525 U.S. 55 (1998).

[113] The advantage that any foreign inventors may acquire from being able to file in the United States even after they have offered for sale or used an invention in public in their countries is likely very small. In most foreign countries, on-sale or public use activity any time prior to filing your patent application effects a bar to filing; most countries require absolute novelty—they have no one year grace period. Russel O. Primeaux, *What Every Lawyer Should Know About Intellectual Property*, 46 LA. B.J. 14, 16 (1998) (noting that in most foreign countries there is no grace period); Michael N. Meller, *Principles of Patentability and Some Other Basics for a Global Patent System*, 83 J. PAT. & TRADEMARK. OFF. SOC'Y 359 (2001) (acknowledging that the European patent system requires absolute novelty when patent applications are filed). Foreign parties, therefore, generally file their foreign applications prior to offering an invention for sale or putting it in public use.

[114] *See supra* notes 2–4 and accompanying text.

indeed could have a significant effect on patterns of litigation. In many Asian countries, conflict avoidance is culturally encouraged, and litigation is not considered a socially acceptable form of dispute resolution. One commentator has even suggested that the Japanese believe that bringing a lawsuit is a "disgrace."[115] The low number of Bengoshi (Japanese lawyers) further evidences the aversion to litigation of the society.[116]

Although aversion to conflict could contribute to the low number of foreign filed lawsuits, if foreign cultural aversion to litigation dictates behavior, then we would expect knowledge of this aversion to cause a high number of domestic parties to sue their foreign competitors who compete in the U.S. with great frequency.[117] As one commentator has suggested, "Historically averse to confrontation, the Japanese have often sought to quietly settle disputes. But Japanese companies, believing opponents have taken advantage of them, have become indignant. Now they are learning to put up a fierce fight in court—often exploiting an armory of patents in their defense."[118] Foreign norms might have evolved so that it is acceptable to fight once dragged into court but not to sue. Interestingly, the data reveals that most foreign parties, especially when they are plaintiffs, are significantly less likely to settle cases than their domestic counterparts.[119]

On the other hand, cases initiated by domestic parties against foreign parties are much more likely to be resolved early in the litigation process than are cases brought by foreign parties against domestic parties,[120] sug-

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[115] Linda Coulter, *Japan's Gaiben Law: Economic Protectionism or Cultural Perfectionism?*, 17 HOUS. J. INT'L L. 431, 439–40 (1995).

[116] "There were 11,466 registered practicing attorneys [*Bengoshi*] in Japan in 1980. With a population of approximately 116 million, this gave Japan a ratio of one practicing attorney to 10,000 persons. This ratio is . . . in stark contrast to that of the United States; in 1980, 542,205 licensed attorneys gave the US a ratio of one attorney to every 403 persons." David Hood, *Exclusivity and the Japanese Bar: Ethics of Self-Interest?*, 6 PAC. RIM L. & POL'Y J. 199 (1997). Coulter, *supra* note 115, at 444 ("As of 1993, there were slightly more than 14,000 *Bengoshi*. In contrast, America had approximately 850,000 lawyers.").

[117] "[P]erceptions of Japanese firms being soft touches could further incite people in the U.S. to file complaints of patent violations." Victoria Slind-Flor, *Japanese Are Stung on Patents*, NAT'L L.J., Aug. 10, 1992, at 46 (quoting the chairman of Japanese company Canon, Inc., Ryuzaburo Kaku); Helm, *supra* note 4, at D3 ("Many Americans believe that the Japanese are 'an easy target because they are risk-averse and tend to want to settle.'") (quoting attorney Preston Moore).

[118] Helm, *supra* note 61, at C3.

[119] A simple linear regression that tests the impact of foreignness on settlement shows that if either the plaintiff or the defendant is foreign, the case is significantly less likely to settle (both variables are significant at the .001 level). In fact, the cases which are least likely to settle and most likely to go to trial are foreign versus foreign-party cases. Breaking foreign parties down by general continent descriptor of Asian and European produce more detailed results. European and Asian plaintiffs are both significantly less likely to settle their cases; Japanese plaintiffs (a subset of Asian plaintiffs), however, are significantly more likely to settle their cases.

[120] Cases with domestic plaintiffs suing foreign defendants are resolved early 64% of the time, whereas cases brought by foreign plaintiffs against domestic defendants are resolved early 58% of the time. Early resolution indicates that the case was resolved during the pleading stage of the litigation.

gesting that foreign parties pursue cases more vigorously when they initiate suit than when they are sued. If foreign parties are repeat players in the American marketplace, they cannot afford to develop a reputation for litigation aversion, or they will become targets for lawsuits. For foreign competitors to thrive in the U.S. marketplace, they must learn to play by U.S. rules, and those that play, play hard.[121] Foreign companies that develop reputations for not enforcing their patents can expect competitors or potential licensees to exploit this reluctance by infringing their patents.

To the extent that cultural factors do explain the gap between patent acquisition and enforcement rates, the inference that foreign parties generally have relatively strong cases on the merits becomes more likely. Presumably, a foreign party hesitant to engage in litigation would be most likely to overcome that hesitance when infringement is particularly egregious, when a substantial amount of money is at stake, or when the patent is particularly immune to validity challenges. None of these explanations would be consistent with litigation on relatively weak patents.

c. Alternative uses for patents.—The relative rarity of patent enforcement raises an interesting question: Why do foreign companies even bother to obtain patents, if they will not enforce them against infringers? Perhaps there are advantages to patents besides their utility as offensive weapons in patent litigation. For example, patents may generate revenue through licensing without the need to resort to litigation. Even without a credible threat of litigation, some companies, perhaps especially foreign ones, may wish to avoid infringing on competitors' patents. In addition, a mere threat to sue often may be sufficient to induce licensing arrangements, especially with a company that is not well positioned to assess the likelihood that a patent owner would sue or with a company that itself is averse to the possibility of being a defendant in a lawsuit. With prevailing perceptions of xenophobic adjudicators and cultural aversion to conflict, it is doubtful that foreign inventors are somehow better at extracting licensing revenues from their competitors.

Moreover, patents may be valuable apart from their explicit revenue generating functions as signaling mechanisms or defensive weapons. Patents can signal several types of information to competitors and the public generally. First, they convey positive information about the company and its products to the public, giving the public the impression of a technologi-

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[121] *Japanese Firms Ready to Fight Patent Disputes*, N.Y. TIMES NEWS SERV., Nov. 25, 1996 (reporting that although Japanese companies have long had the reputation of being quick to sign licensing agreements to avoid litigation they are increasingly fighting patent suits to "be free of wrongful licensing demands"); Helm, *supra* note 4, at D3 ("Some Japanese executives urged their cohorts to fight lawsuits rather than boosting Japanese corporations' reputation as litigation-shy companies that could always be persuaded to settle."); *Japanese Firms Fight Back as "Patent Wars" Heat Up*, BALT. SUN, Sept. 5, 1992, at 14C (relating the words of Hitachi's General Manager of IP, Katsuo Ogawa: "[w]e want to aggressively utilize intellectual property rights as our biggest asset").

cally sophisticated company or product.[122] Second, patents signal to competitors the patentee's technological advancement in a particular area, which may discourage competition. Patents are often sought to secure for the patent holder not just a monopoly in the product they sell, but also to discourage competition through non-infringing alternatives (often called "patent blocking"). In this way, patentees can further secure market share in the products they commercialize. Third, patent applicants often acquire patents for defensive rather than offensive purposes.[123] Defensive patenting often exists in a crowded art to provide the party with a repertoire of patents to use defensively as counterclaim weapons. These patents are used to strengthen a firm's negotiating position with competitors (*e.g.*, as in cross-licensing). These patents may never be asserted affirmatively, but are maintained for defensive purposes when the patentee is threatened by competitors in a related field. It may be that foreign inventors acquire U.S. patents for these defensive and signaling reasons to gain bargaining power in negotiations with competitors who threaten litigation.

If these alternative uses of patents were more important for foreign firms than for domestic ones, then a plausible inference would be that because foreign firms acquire patents for reasons other than as weapons in litigation, they may be weaker on average when used in litigation. There is little reason, however, to believe that these alternative uses would be particularly common among foreign firms. Indeed, if anything, the signaling benefit of patenting should be more significant on average for domestic firms. U.S. entrepreneurs are more likely to need to impress venture capitalists or widely dispersed shareholders than their foreign counterparts, who generally will rely more on bank financing. Thus, signaling is likely to be more important to American firms. Meanwhile, there is no reason to believe that patent blocking or defensive patenting should be of more importance to a foreign than to a domestic firm. In fact, patent blocking and defensive patenting are only strong strategies if the patentee can reliably enforce the patent.[124]

d. Differences across technology fields.—An additional possible explanation of differential patent rates is that foreign companies are obtaining different types of patents. Figure 2 divides the patents into six technological categories borrowed from the NBER database: Chemical (Chem),

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[122] *See* Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625 (2002) (discussing the value of patents as signaling mechanisms). Professor Long's article explains how patents may be useful informational mechanisms to: (1) convey information about the invention and the firm such as productivity, innovative activity, and firm size; and (2) to signal low future rent discounts. *Id*. at 651–53.

[123] *See* William A. Tanenbaum, *Current Topics in Software Licensing*, 620 PLI/PAT 97, 111–12 (2000).

[124] If the threat of foreign enforcement is hollow because of prejudiced adjudicators, then it is irrelevant whether the foreign patentee has one or twenty patents on a particular technology, American firms will not be deterred from competing. It seems unlikely that patent blocking would, therefore, have greater utility as a strategy for foreign patentees than domestic patentees.

Computers and Communication (CnC), Drugs and Medicine (DrgMed), Electrical and Electronics (Elec), Mechanical (Mech), and Other.[125] As Figure 2 shows, both foreign and domestic inventors acquire patents in differing technology fields with different frequencies. Foreign inventors are more highly concentrated in the chemical, electronics, and mechanical fields, and domestic inventors are more highly concentrated in the pharmaceutical and medical and other fields. Consistent with surveys conducted by other researchers, the empirical results demonstrate that litigation overall is more likely to enforce patents in particular technology fields.[126] Comparing patents issued and patents litigated for foreign and domestic inventors shows that both foreign and domestic inventors are more likely to litigate patents in the computers and communications, drugs and medical, and other fields, and less likely to litigate patent in the chemical and electrical fields. Although these results are consistent with survey results of other researchers suggesting that electronic inventions are less likely to be litigated and drugs are more likely to be litigated, these results contradict a survey that concluded that chemical inventions would also be more likely to be litigated.[127]

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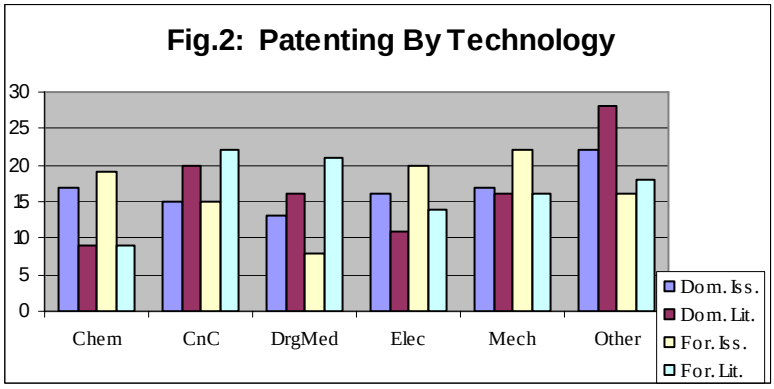
[125] This technology field classification system is based upon the PTO classification system. I have entirely relied on the representations in the NBER database regarding technology class.

[126] *See, e.g.*, Richard C. Levin et al., *Appropriating the Returns from Industrial Research and Development*, 3 BROOKINGS PAPERS ON ECON. ACTIVITY 783, 795–97 (1987) (demonstrating industry variation in patent effectiveness); WESLEY COHEN ET AL., PROTECTING THEIR INTELLECTUAL ASSETS: APPROPRIABILITY CONDITIONS AND WHY U.S. MANUFACTURING FIRMS PATENT (OR NOT) 18 (Nat'l Bureau Econ. Research, Working Paper No. 7552, 2000) (stating that "[t]he legal and qualitative literature as well as our interviews suggest that the reasons firms patent may differ across industries and technologies").

[127] *See* COHEN ET AL., *supra* note 126, at 19. The survey suggested that differences in motives for patenting across industries may be attributable to a distinction between complex and simple (or discrete) technologies. *Id.* at 19–20. It then went on to suggest that chemical and drug inventions that have a discrete number of patentable elements are more likely to be litigated and electrical inventions, which tend to be comprised of a larger number of patentable elements, are less likely to be litigated. *Id.* at 20. This is true, according to the authors, because "in complex product industries, firms often do not have proprietary control over all the essential complementary components." *Id.*



The data thus provide some modest support for the possibility that differences in technology fields may help explain the rarity of patent enforcement by foreign firms. Such firms patent relatively often in the chemical, electrical, and mechanical fields, which tend to have less litigation. Foreign patentees thus may not engage in litigation with the same frequency as domestic parties in part because they obtain disproportionately more patents in technological industries where litigation is not as common. This pattern, however, cannot explain much of the discrepancy, for two reasons. First, the differences in patenting rates by technological field between foreign and domestic inventors are relatively modest and could not explain the ten-fold difference in enforcement rates between foreign and domestic patentees. Second, the differences in litigated technology fields could be a function of the financial and economic climate in 1999–2000 (the time period of terminated litigations that were considered). These years represented an enormous boom in computer and Internet technologies, which would be captured in the CnC category. These years were also prominent for biotechnological and pharmaceutical advances.

3. Direct Comparison of Patents Acquired by U.S. and Foreign Parties.—Along with the equivalence of patent application and grant rates, the disparity between patent acquisition and enforcement rates suggests that litigated foreign party patents are, if anything, likely to be stronger than litigated domestic party patents. Although it is impossible to develop direct measures of the strength of patents, it is possible to compare directly foreign and domestic patents by using proxies for strength. Such examination is important in part because of the conventional wisdom among patent practitioners that many patents acquired by foreign inventors are simply English translations of patents acquired in other countries and are weaker than those

filed in the U.S. by domestic inventors.[128] The patents obtained by foreign inventors could be weaker in that they are more prone to validity attacks or narrower in scope, or concentrated in highly developed technological areas in which many patents have been granted, as considered above. The empirical evidence addressed in this section substantiates that the patents obtained by foreign inventors are systematically different in measurable ways from those obtained by domestic inventors, but the meaning of such differences is not easy to assess.

a. Patent validity.—Since invalidity defenses are brought by accused infringers in nearly all patent litigations, parties whose patents are more open to challenge may be less inclined to enforce them. It seems unlikely, however, that patents with foreign inventors are less valid than the patents issued to U.S. inventors. All U.S. patents are issued by the same patent office and the same examiners.[129] The PTO is a control on the patentability of issued patents that applies equally regardless of inventorship. In addition, because only registered patent agents and attorneys can file patent applications, even the applications themselves are largely prepared by the same attorneys. Finally, as Figure 1 showed, foreign inventors acquire patents at the same rate as they apply for patents, suggesting that applications filed by foreign inventors are no less likely to meet the standards of patentability.[130] At least, it seems implausible that the PTO would be biased in favor of foreign inventors, which would be required for the pool of patents acquired by such inventors to be less valid than the pool acquired by domestic inventors.

One significant difference between the patents granted to foreign inventors and the patents granted to domestic inventors provides some evidence that foreign party patents tend to be more valid than domestic party patents. Specifically, patent citations differ greatly between patents ac-

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[128] As some U.S. patent attorneys have commented,

> But Japan's vulnerability is not so much a function of the American jury system as it is the inherent weakness of many Japanese patents filed in the United States . . . the reams of Japanese corporations' patent applications filed here—many of which are little more than English-language translations of typical Japanese patents covering only narrowly defined technological innovations—probably will not hold up well in infringement litigation in this country.

Slind-Flor, *supra* note 1, at 3 (citing U.S. patent attorneys); *see also* Slind-Flor, *supra* note 117, at 46 (reporting that, although many in Japan attribute lost patent cases to anti-foreign sentiment in the U.S., "others in Japan—and many U.S. patent attorneys—acknowledge that the problem many not be so much U.S. companies' avariciousness as it is the weak protection Japanese-style patents offer in the U.S. marketplace").

[129] Examiners are separated by technical expertise and review all patents applied for regardless of inventorship in a given subject matter.

[130] If the PTO data suggested that foreign inventors constitute 60% of all U.S. patent applications but only 45% of all issued patents, then it may support the notion that the foreign inventions as claimed in the applications were less likely to meet the standards of patentability. But this is not the case, and even if it was, if the examiners successfully prevented the unqualified applications from issuing, then it still would not explain why foreign parties are not enforcing their issued patents.

quired by foreign and domestic inventors, as illustrated in Table 6. This table shows the mean number of citations made and received by patents issued to domestic and foreign inventors and also reports adjusted numbers that control for year of patent issuance by dividing the unadjusted numbers by the average number of citations in all patents issued in the same year.[131] Regardless of which set of numbers is used, the data indicate that patents acquired by foreign inventors cite fewer previously issued U.S. patents during prosecution than do patents acquired by domestic inventors. At the same time, patents acquired by foreign inventors are cited less often than domestic patents in subsequent patent applications.

Table 6: Citations in and to Patents Issued to Inventors, by Alienage

	Mean U.S. Citations Made	Mean Adj. U.S. Citations Made	Mean U.S. Citations Received[132]	Mean Adj. U.S. Citations Received
All Domestic Inventors	11.7	1.3	3.5	1.1
All Foreign Inventors	6.4	0.7	2.6	0.9

Patent citation data has become a popular tool for economists studying patents and innovation. Economists have suggested that patent citation data is useful as an indicator of spillovers, measuring the extent to which knowledge flows and the direction of such flows.[133] Economists have operated on the premise that the fewer citations on the face of a patent, the more original

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[131] As commentators have cautioned, patent citation data needs to be placed in temporal context because citation practice has changed over the years. NBER DATA, *supra* note 24, at 25–27 ("[T]he average patent issued in 1999 made twice as many citations as the average patent issued in 1975 (10.7 versus 4.7).").

[132] The number of citations received is artificially low because of the truncation of the data. The patents considered were those issued from 1990–1999. A patent issued in 1999, is not likely to have received many citations in 1999. In fact, a patent will receive just 50% of their citations in the first 10 years after issuance, 75% within 20 years. *Id.* at 17.

[133] *See, e.g.*, Manuel Trajtenberg, *A Penny for Your Quotes: Patent Citations and the Value of Innovation*, 21 RAND J. ECON. 172 (1990); Ricardo J. Caballero & Adam B. Jaffe, *How High are the Giant's Shoulders: An Empirical Assessment of Knowledge Spillovers and Creative Destruction in a model of Economic Growth*, 8 NAT'L BUREAU OF ECON. RESEARCH MACROECONOMICS ANNUAL (1993) (positing that patent citations are indicators of spillovers); Jaffe et al., *supra* note 49 (finding that patent citations are localized geographically, implying that regions are more likely to utilize knowledge created locally over knowledge from remote regions); Adam B. Jaffe & Manuel Trajtenberg, *International Knowledge Flows: Evidence From Patent Citations*, 8 ECONOMICS OF INNOVATION & NEW TECHNOLOGY 105 (1999) (using patent citations as a measure of the rate at which knowledge diffuses which in turn has important implications for technological change and economic growth); Adam B. Jaffe et al., *Knowledge Spillovers and Patent Citations: Evidence From a Survey of Inventors*, AM. ECON. REV. 215 (2000).

the invention must be. If this assumption is accurate, then foreign party patents are more original than domestic party patents. Yet a consideration of citations received immediately places this conclusion into doubt. Presumably, more innovative patents receive more citations, yet domestic inventors have a slight edge in citations received.

Recognizing that the number of citations alone may be an insufficient basis to draw strong conclusions about patents, economists have suggested that patent citations could be variables in formulas to produce more sophisticated indicators of the originality and generality of invention.[134] This theory seems to have been widely accepted by economists studying patents and innovation, and it focuses not only on the raw number of U.S. patent citations adjusted by year, but also on the technology classes of those citations. In the NBER database, a patent that tends to cite U.S. patents in its own or related technological classes (as measured by the PTO classification system) is deemed less original than another patent with the same number of raw citations from unrelated technology fields. Thus, holding the number of citations constant, the more the citations in the patent draw from different technology classes, the more original the invention is assumed to be, on the premise that patents that make connections across technology fields are more likely to represent breakthroughs than those that rely entirely on existing technology fields. Similarly, the more citations a patent receives in subsequent applications from a range of technology fields, the more general it is assumed to be.

There are, however, alternative explanations besides originality to account for an invention whose patent cites an unusually high percentage of cites from other technology fields. First, the originality variable may indicate the extent to which an invention clearly lies within one technology field rather than in a gray area between two or more fields. Perhaps inventions that are not clearly in one technology field on average are more original or general than others, but the association is not self-evident or inexorable. Second, a patent applicant may have some ability and incentive to manipulate the number of citations in the patent document. A patent applicant who includes fewer citations to other relevant patents may increase the chance of receiving a patent from the PTO, but such patents might have a lower probability of being found valid in court. If this is the case, then economists have it exactly backward. Patents that include more citations or more diverse citations are more likely to be valid.[135]

Some legal background may help clarify the second explanation. Any U.S. patents cited as prior art on a granted patent were either disclosed to

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[134] *See, e.g.*, Manuel Trajtenberg et al., *University Versus Corporate Patents: A Window on the Basicness of Invention*, 5 ECON. OF INNOVATION & NEW TECH. 19 (1997); NBER DATA, *supra* note 24, at 6 (utilizing patent citation data to measure originality and generality of patented inventions).

[135] An applicant might also seek to bury bad prior art by citing a large number of marginally relevant or cumulative references to the examiner.

the PTO by the applicant or found by the examiner. The patent applicant has a duty to disclose all known prior art that materially bears on the question of patentability.[136] If the patent applicant knows of such prior art and does not disclose it, the applicant commits inequitable conduct, and the patent can later be held unenforceable.[137] The patent applicant is under no duty, however, to conduct a search into the relevant field to ascertain whether its invention is patentable.[138] In fact, because knowledge of other patents might constitute actual knowledge that could subject a company to a finding of willful patent infringement and accordingly treble damages and attorneys fees, there is a disincentive to search related technology fields for prior art. Because patent applicants do have a legal duty to disclose patents that they are aware of, low originality scores may reflect that the applicant decided only to cite prior art that it already knew about, but not to seek out prior art from other technological fields.

The obligation to search the prior art falls solely on the patent examiner, who determines the patentability of the claimed invention. Commentators have extensively criticized the adequacy of the patent examination procedure for issuing valid patents.[139] Critics have opined that patent examiners have insufficient time to search and evaluate prior art,[140] and in fact, have a financial incentive to issue patents.[141] If many invalid patents are issued because of inadequate time on the part of patent examiners to search and evaluate the prior art, then patents with lower numbers of patent cita-

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[136] 37 C.F.R. § 1.156 (2000). However, the Patent Office recently asked Congress to increase patent filing and examination fees and requested that the PTO be able to reduce examination fees for applicants who submit their own search report to the Patent Office with their application in order to encourage searching by applicants to assist the Patent Office. *See* Brenda Sandburg, *Creativity Comes with Higher Price Tag*, THE RECORDER, July 2, 2002, at 1.

[137] In fact, all related patents could be unenforceable under the doctrine of unclean hands. Accordingly, inequitable conduct is a deadly sin.

[138] *See, e.g.*, FMC Corp. v. Hennessy Indus., 836 F.2d 521, 526 n.6 (Fed. Cir. 1987) ("As a general rule, there is no duty to conduct a prior art search, and thus there is no duty to disclose art of which an applicant could have been aware.").

[139] *See, e.g.*, Julie E. Cohen, *Reverse Engineering and the Rise of Electronic Vigilantism: Intellectual Property Implications of "Lock-Out" Programs*, 68 S. CAL. L. REV. 1091, 1177–80 (1995); Andy Johnson-Laird, *Looking Forward, Legislating Backward?*, 4 J. SMALL & EMERGING BUS. L. 95, 120–24 (2000); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577 (1999); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 316–22. In fact, one commentator has gone so far as to argue that "the PTO doesn't do a very detailed job of examining patents, but we probably don't want it to. It is 'rationally ignorant' of the objective validity of patents . . . ." Lemley, *supra* note 97, at 1497.

[140] *See* Lemley, *supra* note 97, at 1500 (noting that patent examiners have on average only 18 hours per patent application to determine patentability—a process that takes place over 2–3 years); Thomas, *supra* note 139, at 314 (estimating that patent examiners spend sixteen to seventeen hours on each patent application).

[141] Merges, *supra* note 139, at 609 ("The current bonus system [for examiners] is believed to skew incentives in favor of granting patents.").

tions may be more likely invalid. One empirical project appeared to confirm the common wisdom that patents are more likely to be held invalid when the court is considering prior art that was not originally before the patent examiner (*i.e.*, not cited on the patent itself).[142]

Table 7: Patent Citations in Cases Determining Validity of Patents (n=314)		
	Valid	Invalid
Mean U.S. Patent Cites Made	15	11
Mean Foreign Patent Cites Made	3	2
Mean Other Cites Made	4	6
Mean Total Cites Made	22	19
Mean Adj. U.S. Cites Made[143]	1.83	1.35
Mean U.S. Cites Received	16	10
Mean Adj. U.S. Cites Received	2.83	2.13
Originality	.46	.41
Generality	.43	.40

As Table 7 suggests, validity is significantly associated with by the number of patent citations made and received,[144] but the magnitude of the

[142] John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 A.I.P.L.A. Q.J. 185, 232–33 (1998) ("The likely result therefore confirms the conventional wisdom and the results of earlier work, which concluded that uncited prior art is a more effective tool for invalidating patents than cited prior art."). All prior art considered by the examiner in assessing patentability would be cited on the patent itself.

[143] Adjusting for the total cites (U.S. patents, foreign patents, and other prior art cites) by mean number of U.S. cites per year produces the following results: Valid = 2.69; Invalid = 2.23. Although there is no way of adjusting the total cites by the mean total cites on issued patents each year because the NBER database is limited to U.S. patent cites only, the U.S. citation practice should produce a close approximation. U.S. citation practice has changed quite substantially over the years. For issued patents, the average patent issued in 1999 made twice as many cites as the average patent issued on 1975 (10.7 versus 4.7). This disparity is even greater among litigated patents where the average litigated patent that was issued in 1999 had 20.4 cites and the average litigated patent that issued in 1975 had 5.0 cites. For foreign cites, the changes in citation practice though equally if not more dramatic will have a smaller impact on the magnitude of the total citations. While the averages are unavailable for all issued patents, the average litigated patent that issued in 1999 had 2.4 foreign cites and the average litigated patent that issued in 1975 had 0.0 foreign cites.

[144] A linear regression demonstrates that both citations made and citations received significantly affect validity. *But see* Allison & Lemley, *supra* note 142, at 230 (finding no statistical significance in the raw number of citations per patent on validity). There are several possible explanations for their differing outcome. First, it must be noted that the datasets are quite different. The Allison & Lemley empirical study covers a different time period (opinions from 1989–1996) than this study (cases terminated 1999–2000). The Allison & Lemley study does not cover all patent terminations or a random or representative set of patent terminations. Their study is limited to cases in which a reported opinion exists. *See* Kevin M. Clermont & Theodore Eisenberg, *Litigation Realities*, 88 CORNELL L. REV. 119, 126 (2002) (criticizing empirical studies whose dataset is limited to reported court opinions as a "skewed

effect is relatively small. Originality and generality measures, meanwhile, do not vary significantly with patent validity. Table 7 includes data on citations to foreign patents as well. Unfortunately, the NBER database includes data only on citations to U.S. patents. In fact, the economists who have quantified and analyzed patent citation data have thus far limited their analysis to counting citations to other U.S. patents.[145] Citations to U.S. patents are not the only form of prior art the PTO considers in determining whether to grant patents. Prior art often includes issued foreign patents and printed publications.[146] Moreover, there is reason to believe that U.S. patents would not be the best proxy for citations generally when comparing U.S. patents acquired by foreign and domestic inventors. Researchers have demonstrated that geography impacts knowledge spillovers,[147] so foreign inventors are more likely to be aware of related local technology—or at least they are likely to be aware sooner—than of related technology in other countries. Using only citations to other U.S. prior art patents is thus particularly problematic when comparing foreign and domestic inventors. Because the NBER database does not track cites of foreign patents, I researched all prior art cited in the 6861 patents that were litigated.[148] This could not be done for all issued patents; hence the results reported in Table 6 on issued patents likely underreport prior art disclosed and considered during prosecution of foreign party patents.

The most relevant comparison for purposes of assessing the impact of patent characteristics on case strength (in order to determine whether do-

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sample"). It therefore misses almost all jury decisions because juries do not generate or publish opinions. The dataset collected and used in this study includes all validity decisions made for all patent cases terminated during the two year time period of this study. Finally, Allison & Lemley only measure the raw number of citations, not citations adjusted by year. Because citation practice has changed over the years, you cannot compare the number of citations on a patent issued in 1990 with the number of citations on a patent issued in 2000. Control by year is crucial before comparisons can be made.

[145] *See* NBER DATA, *supra* note 24, at 6 (counting only U.S. patent citations).

[146] *See, e.g.*, 35 U.S.C. § 102(a) (2000) (negating patentability when an invention is patented (foreign or domestic) or described in a printed publication prior to the applicant's invention); 35 U.S.C. § 102(b) (2000) (negating patentability when an invention is patented (foreign or domestic) or described in a printed publication more than one year before the date of the patent application).

[147] Jaffe & Trajtenberg, *International Knowledge Flows*, *supra* note 133, at 130 (examining foreign patent citations (comparing U.S., Japan, Great Britain, France, and Germany) and concluding that "the [empirical] results confirm our earlier finding that there is a significant geographic localization of knowledge flows"); Jaffe et al., *supra* note 49 (noting that spillovers as measured by U.S. patent citations are usually in close geographic proximity).

[148] While obviously the characteristics of litigated and issued patents differ quite substantially as a quick glance at Tables 3 and 4 prove, for purposes of comparing foreign and domestic inventors, and for the limited purpose of examining the likely citation of foreign prior art in patents, the smaller database of litigated patents serves as a proxy for all issued patents. I am not meaning to suggest that issued and litigated patents would be likely to cite the same number of foreign patents and other prior art, but rather that they are likely to do so in the same proportions for foreign and domestic inventors. In short, the litigated data shows that, although foreign inventors are more likely to cite foreign prior art then domestic inventors, they still cite significantly less prior art overall to the examiner.

mestic parties win more jury trials because they are enforcing stronger patents) is between the foreign and domestic party patents for tried cases involving mixed alienage, as detailed in Table 8.

Table 8: Citations to and by Patents That Are Tried				
Type of Trial	Jury	Jury	Judge	Judge
Patentee	U.S.	Foreign	U.S.	Foreign
Infringer	Foreign	U.S.	Foreign	U.S.
Mean U.S. Patent Cites	9	16	7	6
Mean Foreign Patent Cites	1	10	2	2
Mean Other Prior Art Cites	5	2	5	8
Mean Adj. Total Cites[149]	1.99	3.64	1.51	1.82
Originality	.42	.59	.25	.37
Mean Cites Rec'd	18	8	9	18
Mean Adj. Cites Rec'd	2.73	1.21	1.51	2.65
Generality	.51	.29	.23	.43
Claims	16	13	10	10

Although it is true that both foreign and domestic inventors litigate patents with higher mean citations than their pool of issued patents, there is a large disparity among those patents selected for litigation. Patents litigated by foreign parties include significantly more citations and have a higher originality measure in both judge and jury trials than patents litigated by domestic parties. This provides further evidence that litigated foreign party patents are stronger (more likely valid) than litigated domestic party patents. Given the relatively small but significant distinctions in numbers of citations in patents found to be valid and those found to be invalid, and the much larger distinction in the number of citations in patents tried by foreign versus domestic parties, the empirical results suggest that foreign party patents are significantly stronger than their domestic counterparts. In fact, in jury trials, the patents litigated by foreign parties are remarkably strong as measured by citations made (3.64 total cites and originality measure of .59

[149] The adjustment was by mean U.S. citation rate according to the year of patent issuance. As explained, this is a close proxy for adjustment by total cites, because citation practice for foreign prior art has not changed significantly over time the way that citation practice for U.S. patent prior art has.

versus 1.99 and .42, respectively for patents litigated by domestic parties), yet it is in exactly these cases that foreign parties experience their lowest win rates. This further supports the notion that the magnitude of xenophobic jury bias is larger than that suggested by win rate data alone. Even though the patent characteristic data provides evidence of the comparative strength of the pool of litigated foreign party patents, foreign party win rates in jury trials remain low. In contrast, in bench trials where the characteristics of the pool of foreign party patents are suggestive of stronger patents (higher citations made, originality, and generality), foreign parties win more often (54% of the cases).[150] In sum, even though foreign parties acquire nearly half of all U.S. patents and bring only one tenth of all U.S. litigation to enforce their patents, and the patents they do litigate at trial seem stronger than the patents of domestic parties, foreign parties lose significantly more often than domestic ones in jury trials.

b. Patent scope.—Foreign parties would be less likely to bring suit if their property rights were very narrow. A man with 100 acres of property is more likely to experience trespass than a man with 1 acre (all else being equal). A broad, "pioneering" patent covering basic technology would entitle its owner to exclude a wide range of competition, whereas a narrow patent on an invention that represents a small advance in a crowded art is not as likely to be infringed. Conventional wisdom among patent attorneys is that foreign inventors generally file U.S. patent applications based upon previously filed foreign patent applications,[151] and that foreign patents are often narrowly drafted to protect incremental advances.[152]

The data in Table 9 compare patents acquired by foreign and domestic inventors, once again adding a variable measuring the number of claims to other variables discussed in the previous section.[153] The mean number of claims per patent is indeed significantly less for foreign applicants. It has been suggested that the number of claims may be indicative of patent

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[150] This is also true for cases resolved on motion where the win rate was 57% in favor of domestic parties. In these cases, the patent characteristic data (cites made, originality, cites received, and generality) all support the fact that domestic parties had stronger patents in these cases.

[151] In fact, more than half of the litigated patents that had foreign inventors relied upon their foreign filing date for priority purposes. A foreign inventor who first files for a patent in her home country is encouraged to rely on this filing when she files her U.S. application, because the U.S. PTO will recognize the foreign filing date for priority purposes for her U.S. application. 35 U.S.C. § 119 (a) (2000) (permitting use of foreign filing date for priority purposes as long as U.S. application is filed within twelve months of foreign filing). Reliance on a foreign filing limits the foreign inventor to only claiming in her U.S. application what is supported by her foreign application. If her foreign application is drafted very narrowly, her U.S. patent rights will be similarly restricted.

[152] Victoria Slind-Flor, *Japanese Are Stung on Patents*, NAT'L L.J., Aug. 10, 1992, at 14 (reporting former PTO Commissioner Harry F. Manbeck remark that Japanese inventors "file scads and scads of patents on seemingly small differences"); Helm, *Fear of Litigation*, *supra* note 61, at C3 (reporting that Japanese patents are generally more narrowly drafted than U.S. patents).

[153] The characteristic information is virtually the same if I separate the patents by assignee rather than inventor.

"scope" or "breadth."[154] If these economic indicators are reliable, foreign patent applicants acquire more limited, narrow property rights than do domestic applicants. This is consistent with popular perceptions that foreign patentees acquire narrower patents.

Table 9:[155] **Patents Issued to Foreign & Domestic Inventors**

	Mean Adj. U.S. Patent Cites Made	Mean Adj. U.S. Patent Cites Received	# of Claims	Generality	Originality
All Domestic Inventors	1.3	1.1	15	.29	.42
All Foreign Inventors	0.7	0.9	12	.25	.33

The theory that the number of patent claims in a granted patent correlates to patent breadth makes little intuitive or logical sense, however. A patentee could file a patent with a single very broad claim or 50 narrow claims. According to some economists, the second patent (with 50 claims) would be 50 times broader than the single claim patent, but the correct interpretation easily could be the reverse. Drafters of patents sometimes file many narrow claims because they cannot succeed with a single broad claim. It is thus impossible *a priori* to determine whether the difference between patents with 15 claims on average and those with 12 claims on average indicate that one set or the other is narrower. There is thus no reason to believe that the number of claims in a given patent varies in any consistent way with patent scope or with the likelihood of patent enforcement efforts.[156]

Perhaps the most that can be said about data on the number of claims is that the number may correlate with patent value.[157] Filing more claims costs an applicant more money. The minimum PTO application fee covers twenty claims (three independent and seventeen dependent).[158] If the appli-

[154] LANJOUW & SCHANKERMAN, *supra* note 24.

[155] Again the acknowledgment must be made that all of the citation data on issued patents in Table 5 is limited to studies of U.S. patent prior art and excludes all foreign patent citations made and received, as well as all other forms of prior art that could be cited on the patent.

[156] Other proposed measures of patent scope or breadth include the number of subclasses into which the PTO assigns a patent. *See* Joshua Lerner, *The Importance of Patent Scope: An Empirical Analysis*, 25 RAND J. ECON. 319, 320–32 (1994) (validating the IPC classifications as a proxy for patent scope).

[157] By patent value, I mean value to the applicant, rather than value to society. Other economic measures of value to the applicant, also known as patentee's strategic stakes, include number of self-citations to the litigated patent and the lag between patent issuance and suit. *See* Deepak Somaya, The Duration of Patent Litigation: Firm Strategies and Litigation Tactics in Computers and Research Medicines (on file with author).

[158] The minimum fee is $750.00 for a regular applicant and $375.00 for a small entity applicant.

cant wishes to submit more than twenty claims or more than three independent claims, she must pay an additional per claim fee.[159] The PTO fees are, moreover, pennies compared to the attorney expenses associated with patent drafting and prosecution. Prosecuting a patent application averages from $10,000 to $30,000.[160] The bulk of such expenses are spent drafting and prosecuting the claims, so more claims will raise prosecution fees.

A comparison of the results in Table 9 with those in Table 8, indicating respectively, the number of claims in issued patents with the number of claims in patents that were subject to a trial, might at first seem to undermine this theory. Patents litigated to trial include slightly fewer claims. A comparison, however, of the broader pool of litigated patents with the pool of issued patents does substantiate the idea that claims correlate to value.[161] This suggests that patent value is a strong predictor of litigation, but that other considerations determine which cases settle. Therefore, the finding that patents issued to domestic parties and patents litigated by domestic parties have more claims than those of their foreign counterparts seems equivocal at best. Even if the number of claims is a measure of patent value, perhaps foreign patent applicants value their patents less because the patents are inherently narrower, but it is also possible that they value them less because they anticipate that the value of the patents in litigation in U.S. courts will be less as a result of bias in such courts. Either factor could explain the relatively small difference in the number of claims filed.

B. Theoretical Models of Case Selection

1. Divergent Expectations and Asymmetric Stakes Models.—If all legal disputes or even a random subset of legal disputes were litigated, then the inferences that could be drawn from win rate data would be straightforward. If legal rules or adjudicators favored one side, the outcomes would reflect the bias. Tried cases, however, are not a random or representative sampling of all legal disputes, and even litigations filed are not a random subset of all legal disputes.[162]

See U.S. PAT. & TRADEMARK OFF., PTO FEES–FY 2003, *at* http://www.uspto.gov/web/offices/ac/qs/ope/fee20030101.htm (last modified Apr. 15, 2003) (listing patent application fees).

[159] The fee is $84.00 for each additional independent claims and $18.00 for each dependent claim ($42.00 and $9.00 for small entity applicants). *See id.*

[160] *See* Lemley, *supra* note 97, at 1498.

[161] Patents issued to foreign parties average twelve claims, whereas patents litigated by foreign parties average seventeen claims. Similarly, patents issued to domestic parties average fifteen claims, whereas patents litigated by domestic parties average twenty claims.

[162] As Karl Llewellyn observed, litigated cases bear the same relationship to disputes "as does homicidal mania or sleeping sickness, to our normal life." KARL N. LLEWELLYN, THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY 58 (2d ed. 1951); *see also* Priest & Klein, *supra* note 28, at 4 ("For the rate of plaintiff verdicts to be an accurate measure of the influence of a legal standard, *of judicial or jury attitudes*, or of the substantive fairness of any adjudicatory process, litigated disputes must be representative of the entire class of underlying disputes.") (emphasis added); Theodore Eisenberg, *Litigation*

Economists and legal scholars have developed several formal economic models that predict the selection of tried cases—which cases fail to settle and proceed to trial.[163] These models assume that litigants act rationally[164] in pursuit of a single goal in litigation, wealth maximization.[165] The divergent expectations model proposed by George L. Priest and Benjamin Klein predicts that the tendency for plaintiffs to win at trial will approach a probability of 50% as the fraction of cases going to trial approaches zero.[166] According to this theory, because of the high transaction costs of trial,[167] tri-

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Models and Trial Outcomes in Civil Rights and Prisoner Cases, 77 GEO. L.J. 1567, 1568 (1989) (suggesting that tried cases might not reflect the pool of all disputes).

[163] *See* Leandra Lederman, *Which Cases Go To Trial?: An Empirical Study of Predictors of Failure to Settle*, 49 CASE W. RES. L. REV. 315, 322–24 (1999) (discussing three formal models for predicting the selection of cases for trial: divergent expectations, asymmetrical stakes, and asymmetrical information).

[164] Scholars have in recent years questioned the rational actor assumption underlying economic decision and choice models. *See, e.g.*, Cass R. Sunstein, *Behavioral Analysis of Law*, 64 U. CHI. L. REV. 1175 (1997); Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998) (suggesting that traditional law and economics analysis would benefit from increased attention to insights about actual human behavior, which have been shown to vary systematically from rational assumptions); Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1055 (2000) (reporting that "[t]here is simply too much credible experimental evidence that individuals frequently act in ways that are incompatible with the assumptions of rational choice theory"). One scholar has explained how parties behave irrationally, but systematically, when comparing expected gains and expected losses. Jeffrey J. Rachlinski, *Gains, Losses, and the Psychology of Litigation*, 70 S. CAL. L. REV. 113, 116–18 (1996) (recommending incorporation of behavior decision theory into economic modeling of case selection and outcome). Professor Rachlinski observes framing affects party behavior in the litigation context. In particular, he finds that "[w]hen people choose among potential gains, they tend to be risk-averse, but when they choose among potential losses, they tend to be risk-seeking." *Id.* at 123.

[165] Commentators criticize the economic models of selection effect theory as not predictive of the set of tried cases, because not all parties to a litigation behave in a rational, wealth-maximizing fashion.

> The model's basic assumptions of wealth maximization and completely rational behavior ring hollow in the ears of lawyers who have observed the behavior of litigants. . . . Litigants litigate not just for money, but to attain vindication; to establish precedent; 'to express their feelings;' to obtain a hearing; and to satisfy a sense of entitlement regarding use of the courts, all of which can easily preclude out of court settlement. Moreover, their decisions to settle or litigate may be affected by the context of the choice, the frame in which it is presented, the identity of the person describing the choice, whether the litigants have faced similar choices before, the litigants' self-serving biases concerning the fairness of their position, habit, unyielding conceptions of justice and myriad other factors.

Russell Korobkin & Chris Guthrie, *Psychology, Economics, and Settlement: A New Look at the Role of the Lawyer*, 76 TEX. L. REV. 77, 78 (1997).

[166] Priest & Klein, *supra* note 28, at 4–5. The divergent expectations model, and its 50% prediction, depends upon the following assumptions: (1) the parties have equal stakes; (2) the parties have equal information; (3) the parties are risk-neutral; (4) the parties do not differ in how they value monetary (damages) and nonmonetary (injunctive) awards; and, (5) the parties do not engage in strategic behavior with regard to division of surplus transaction costs. *See* Moore, *Judges, Juries, and Patent Cases*, *supra* note 21, at 376–77.

[167] Patent litigation routinely costs each side in excess of $1.5 million if a case proceeds to trial. *See* AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, REPORT OF ECONOMIC SURVEY 2001, at 84–85.

als will occur only when either or each side overestimates its own probability of success. That is, trial is most likely where outcome estimations diverge, creating mutual optimism about the outcome.[168] Parties will, of course, estimate their probability of success by considering in a myriad of factors such as the decisional standard and any perceived adjudicator bias. Mutual optimism about success, according to the Priest-Klein model, is most likely to occur in close cases. The selection hypothesis predicts that "tried cases tend to cluster close to the governing decision standard, regardless of the underlying distribution of disputes relative to that standard."[169] The implication of this theory is that the plaintiff will win 50% of all tried cases.[170]

The asymmetrical stakes variant of this model[171] provides for alteration of the 50% implication.[172] In the asymmetric stakes model, the disputes selected for trial will no longer tend to be the close cases gravitating towards 50%. Rather, the cases selected should tend to be those in which the party with greater stakes has a higher probability of success. As Priest and Klein explain, "where the stakes are greater to defendants than to plaintiffs, relatively more defendant than plaintiff victories ought to be observed in disputes that are litigated."[173] A similar analysis applies to asymmetrical litigation costs. Commentators have noted, for example, that frivolous suits are particularly likely to be filed when plaintiffs have much lower litigation costs than defendants.[174] When such suits proceed to trial, the party with the higher litigation cost will generally win.

2. Application to Foreign Party Bias Hypothesis.—Applying this theory to the hypothesis concerning foreign party bias, the selection of cases for trial[175] ought not to reveal any bias even if such bias exists, as long as it is accurately perceived by the parties. In fact, the win rate for foreign

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[168] Priest & Klein, *supra* note 28, at 19–20.

[169] Samuel R. Gross & Kent D. Syverud, *Getting to No: A Study of Settlement Negotiations and the Selection of Cases for Trial*, 90 MICH. L. REV. 319, 324 (1991).

[170] Priest & Klein, *supra* note 28, at 17.

[171] Symmetric stakes means that the plaintiff stands to gain exactly what the defendant stands to lose. For example, if the plaintiff wins the suit, it will receive $1,000,000 in damages from the defendant. Here the plaintiff wins $1 million and the defendant loses $1 million. There is $1 million at stake to each party, no more, no less. There are many circumstances in which one party to the dispute may have more to gain or more to lose then the dollar value of the dispute. It could be that one party is likely to be a repeat player in this type of litigation and therefore is particularly concerned with the precedential value of the decision, or particularly concerned with their reputation as a disputant. It could also be that there is actually an asymmetry in the stakes where there is a significant difference in transaction costs to the parties.

[172] Priest & Klein, *supra* note 28, at 24–26.

[173] *Id.* at 25.

[174] *See, e.g.*, Chris Guthrie, *Framing Frivolous Litigation: A Psychological Theory*, 67 U. CHI. L. REV. 163, 172–73 (2000).

[175] The subset of tried patent cases is nearly zero. *See* Moore, *Forum Shopping*, *supra* note 72, at 913 (finding that only 5% of all patent suits are resolved via trial).

parties ought to be greater than 50% as a result of their higher transaction costs. Parties to a dispute will estimate their probabilities of success factoring in the perceived prejudice against foreigners, just as they factor in the decisional standard and the burdens of proof. Hence, tried cases are not those cases that are inherently close on the merits, but those cases that are close on the merits after adjustment for adjudicator bias. If the parties, therefore, both accurately assess the adjudicator bias, they will factor it into their outcome estimations, and any biases in the win rate data should be masked.

Parties, however, may underestimate or overestimate the degree of bias or prejudice. Win rates thus may deviate from 50% if the extent of prejudice against foreign parties is misunderstood by the parties. If parties systematically believe adjudicators to be biased when in fact they are not biased, the win rate ought to be higher for the party against whom the adjudicator was thought to be prejudicial. Assume, for example, that there are equal stakes between the parties, and that the parties perceive that juries favor domestic over foreign litigants. If the perception is accurate as to the existence of the bias and its magnitude, then the win rate ought to be 50%. If the perception is inaccurate, however, then the win rate for the foreign party will likely be greater than 50%, because the parties factored this belief into their decisions regarding which cases to settle and which cases to try. Because the parties believed that the adjudicator would be prejudiced against the foreign party, only cases which were objectively stronger for foreign parties would have been selected for trial.

When a perception of bias exists, as this Article has substantiated with both anecdotal and hard data, there are three possible outcomes. First, parties might accurately perceive the degree of bias, and the Priest-Klein win-rate of 50% results. Second, one or both of the parties might underestimate the magnitude of the prejudice against foreign litigants, resulting in a win rate for foreign parties below 50%, as this study found. Third, one or both parties might overestimate the magnitude of the prejudice against foreign parties, resulting in a win rate for foreign parties above 50%, as Clermont and Eisenberg appeared to show. The magnitude of the win rate differential would reflect the magnitude of the error between the prediction and the actual amount of prejudice.

Meanwhile, asymmetrical stakes or asymmetrical litigation costs may have an effect as well. Asymmetrical litigation costs are likely in cases between domestic and foreign parties, because of the expense associated with litigating cases abroad. Thus, foreigners' higher litigation costs provide an additional reason that foreigners should win more than half of cases and makes more startling the finding that foreigners win considerably less than half. This study's results are thus best interpreted as indicating an underestimation by the parties of the extent of prejudice by juries against foreigners, and a roughly accurate estimation by the parties of the extent of prejudice, if any, by judges.

CONCLUSION

In a separate study using a different dataset, I compared the results of judge and jury trials without regard to the alienage of the parties and concluded that there are substantial differences in judge and jury decisionmaking, with the differences generally suggesting that judges are superior decisionmakers.[176] This Article shows that jury decisions discriminate against foreign parties. The result, however, is less likely to reveal conscious animus by jurors than it is to emphasize the difficulty that jurors have in resolving patent disputes. If alienage matters when it should not, so too may a variety of factors that affect how sympathetic a party appears regardless of whether those factors are legally relevant. The apparent discrimination that this Article reveals may thus further call into question jurors' competence even in cases between domestic parties.

Because the Seventh Amendment prohibits abolition of juries in many federal cases, including most patent disputes, the most obvious reform—substitution of judge for jury decisionmaking—is unavailable. The impression that American courts are hostile to foreign parties thus is likely to have unavoidable economic implications in the intellectual property context.[177] The anticipated difficulty of enforcing intellectual property rates may discourage foreign companies from entering U.S. markets or from developing products that will appeal to consumers in the United States. Moreover, in the last decade, the United States and foreign countries have entered into agreements to harmonize intellectual property laws in order to enhance global competition.[178] Free trade agreements aim to reduce barriers to entry for foreign competition and to stimulate economic growth.[179] Americans have long complained of "informal trade barriers" embedded in Japanese

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[176] Moore, *Judges, Juries, and Patent Cases*, *supra* note 21.

[177] *See* Himelstein, *supra* note 2, at 101 ("Some lawyers even say some clients resist U.S. markets altogether because of litigation fears. While such setbacks do occur, most international legal experts say the advantages of doing business in the U.S. ultimately outweigh any negative impressions of American juries. Just as long as they don't get sued.").

[178] *See* Susan K. Sell, *The Origins of a Trade Based Approach to Intellectual Property Protection*, 17 SCI. COMM. 163 (1995) ("One of the most significant new issues in international trade is the protection of intellectual property."); Robert Weissman, *A Long, Strange TRIPS: The Pharmaceutical Industry Drive to Harmonize Global Intellectual Property Rules, and the Remaining WTO Legal Alternatives Available to Third World Countries*, 17 U. PA. J. INT'L ECON. L. 1069 (1996) ("[I]ntellectual property protection has become a central part of the free trade agenda, as well as the major global trade agreements.").

[179] As John Barrett observed,

> [F]ree trade agreements . . . have helped fuel the economic prosperity that the world has seen at the end of the twentieth century. Their major premise is that by removing trade barriers, consumers will benefit from the comparative advantages that different nations have in producing goods. Those nations that have a resource, technological, labor, or other type of advantage will be able to produce a better product at a lower cost to the consumer if artificial barriers protecting domestic producers are removed.

John A. Barrett, Jr., *The Global Environment and Free Trade: A Vexing Problem and a Taxing Solution*, 76 IND. L.J. 829, 831 (2001).

cultural and business practices,[180] but jury bias equally well could be considered such a barrier. Implementation of the international treaties NAFTA and TRIPS has eliminated much domestic favoritism that existed in substantive U.S. intellectual property laws.[181] Even if the underlying substantive law is not discriminatory, though, when xenophobic bias or the perception of such bias prejudices the implementation of the law, the goals of free trade are undermined. The perception of systematic discrimination against foreign parties by juries in patent cases functions as an implicit trade barrier and arguably may even be a violation of the United States trade obligations under NAFTA and TRIPS.[182] While the immediate effect of such a trade barrier on American consumers may be more equivocal than that of tariffs or quotas that directly lead to higher prices, other countries may be more hesitant to open their markets to American competition when U.S. courts are viewed skeptically. The perceptions, and verifiable accuracy of the perceptions, of xenophobic bias in the U.S. patent litigation process likely have substantial impact on international trade and foreign relations and undermine confidence in the U.S. legal process for foreign and domestic parties alike.

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[180] David E. Dreifke, Note, *The Foreign Commerce Clause and the Market Participant Exception*, 25 VAND. J. TRANSNAT'L L. 257, 259 (1992) (arguing that "aided by informal, but nonetheless protectionist, trade barriers entrenched in Japanese custom, Japan only sparingly imports finished goods from the United States"); Nancy J. Linck & John E. McGarry, *Patent Procurement and Enforcement in Japan—A Trade Barrier*, 27 GEO. WASH. J. INT'L L. & ECON. 411, 411 (1993) (finding that the Japanese patent system acts as a trade barrier to U.S. competition in Japan).

[181] In fact, substantive patent law may now actually favor foreign over domestic inventors in some small respects. *See infra* notes 104–113 and accompanying text.

[182] There are essentially three types of recognized trade barriers that an imported product can face: tariffs, import quotas, and product standards and specifications. Product standards and specifications prevent products that do not comply with the standards from being imported into the U.S. Product specifications and standards could include: mandatory inspections for health reasons (agricultural products and pharmaceuticals), minimum product design standards (emissions control devices on cars), or labeling requirements (nutritional information on food packaging). Barrett, *supra* note 179, at 851. Although these standards would apply equally to foreign and domestic products, they may create expense and delay for foreign companies that need to modify their products to comply with the standards of each foreign country to which they would like to export products. *Id.* Discriminatory legal enforcement, like product standards and specifications, is a less transparent form of trade barrier. *Cf.* Michael I. Krauss, *NAFTA Meets the American Tort Process:* O'Keefe v. Loewen, 9 GEO. MASON L. REV. 69 (2000) (discussing a case brought against the U.S. under NAFTA by a foreign company claiming that the U.S. judge violated NAFTA's fair and equal treatment provision by allowing repeated xenophobic arguments throughout trial).