



Cultural Cognition of Patents

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Simply making empirical progress is not always enough to influence policy, as demonstrated by the polarized public discourse over issues ranging from climate change¹ to gun control.² The current discourse over patents appears to have a similar pathology, in which cultural values—such as respect for strong property rights or concern about limiting access to knowledge—shape priors and affect the weight given to new information. Just as participants in the gun-control debates often fail to acknowledge the lack of clear evidence that right-to-carry laws either decrease or increase violent crime,³ advocates and policymakers on both sides of the patent wars often fail to acknowledge the ambiguity of evidence on issues such as whether patents promote innovation. In this Essay, I suggest that the “cultural cognition” framework might help scholars to understand this value-based division and to study ways to design and communicate patent experiments so that the resulting knowledge has the impact it should.

I. The Conflict over Patent Facts

To some, the evidence seems clear that strong patent laws promote innovation and are a source of net social utility. In the hearings leading up to the recent America Invents Act, the

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1. See generally Dan M. Kahan, Ellen Peters, Maggie Wittlin, Paul Slovic, Lisa Larrimore Ouellette, Donald Braman & Gregory Mandel, *The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks*, 2 NATURE CLIMATE CHANGE 732 (2012).

2. See generally Dan M. Kahan & Donald Braman, *More Statistics, Less Persuasion: A Cultural Theory of Gun-Risk Perceptions*, 151 U. PA. L. REV. 1291 (2003).

3. See CHARLES F. WELLFORD ET AL., NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., FIREARMS AND VIOLENCE: A CRITICAL REVIEW 2 (2005) (“[D]espite a large body of research, the committee found no credible evidence that the passage of right-to-carry laws decreases or increases violent crime.”); Abhay Aneja, John J. Donohue III & Alexandria Zhang, *The Impact of Right-to-Carry Laws and the NRC Report: Lessons for the Empirical Evaluation of Law and Policy*, 13 AM. L. ECON. REV. 565, 616 (2011) (agreeing with the 2005 NRC report that “it is not possible to determine that there is a causal link between the passage of right-to-carry laws and crime rates” and “underscor[ing] the sensitivity of gun crime estimates to modeling decisions”).

director of the PTO asserted that “[t]he overwhelming evidence of the history of the U.S. patent system suggests that strong IP protection supports, rather than impedes, innovation.”⁴ Scott Kieff asserts that “[e]conomic research over the past sixty years has amply established a causal link between the development of intellectual property and the growth of our national economy.”⁵ Richard Epstein has ridiculed the notion that patents have slowed the software industry down because if “you look at the rate of technological progress [over the past five years], it just doesn’t seem in any way shape or form to have been slowed down.”⁶ Similar statements have been made by judges,⁷ members of Congress,⁸ patent bloggers,⁹ patent lawyers,¹⁰ and business leaders.¹¹

Yet the evidence seems equally indisputable to those advocating weaker patents. Julie Samuels, who holds the Mark Cuban Chair to Eliminate Stupid Patents at the Electronic Frontier Foundation, has written that “we have a consensus in the tech community: The patent system has started to impede, rather than incentivize, innovation.”¹² A recent *Techdirt* article states: “We’ve pointed out over and over and over again that patents are not a proxy for innovation. In fact, there’s little to connect the two at all, except potentially for how

4. *Committee Print Regarding Patent Quality Improvement: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Prop. of the H. Comm. on the Judiciary*, 109th Cong. 130 (2005) (statement of Jon W. Dudas, Under Sec’y of Commerce for Intellectual Prop. and Dir., U.S. Patent & Trademark Office).

5. F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 699 n.4 (2001).

6. *Patent Rights: A Spark or Hindrance for the Economy?*, THE FEDERALIST SOC’Y 8:25 (Oct. 24, 2012), <http://www.fed-soc.org/publications/detail/patent-rights-a-spark-or-hindrance-for-the-economy-podcast>.

7. See, e.g., *Momenta Pharm., Inc. v. Amphastar Pharm., Inc.*, 686 F.3d 1348, 1374-75 (Fed. Cir. 2012) (Rader, C.J., dissenting) (stating that the “academic proposition” that patents could “impede more than stimulate technological advance” has not been verified “in an era of empirical research” because “it does not happen”).

8. See, e.g., Marsha Blackburn, *White House Must Strengthen Foundation of US Innovation*, THE HILL (July 9, 2013), <http://thehill.com/special-reports/innovation-a-intellectual-property-july-2013/309999-white-house-must-strengthen-foundation-of-us-innovation-> (asserting that evidence of the economic contribution of industries that use IP “prove[s] what should be obvious: Strong [IP] rights are essential to expanding economic growth and fostering innovation”).

9. See, e.g., Gene Quinn, *Responding to Critics: My View on Patents & Innovation*, IPWATCHDOG (Sept. 30, 2009), <http://www.ipwatchdog.com/2009/09/30/responding-to-critics-my-view-on-patents-innovation/id=6421> (stating that studies showing ambiguous effects of patents “are done by academics with an agenda,” and that “history is filled with hard, indisputable evidence that shows the positive effects of a strong patent system”).

10. See, e.g., Jeffrey I.D. Lewis & Ryan M. Mott, *The Sky Is Not Falling: Navigating the Smartphone Patent Thicket*, WIPO MAGAZINE, Feb. 2013, at 7 (stating that “[h]istory . . . does not support th[e] assertion” that innovation is blocked by the smartphone patent thicket).

11. See, e.g., Donald J. Rosenberg, *Patent System Isn’t Broken*, N.Y. TIMES, Feb. 21, 2013, at A22 (“[O]ur patent system . . . has been the key to multiple revolutions in technological advancement throughout history”).

12. Julie Samuels, *Patent Trolls Are Draining Our Innovation Economy*, POLITICO (Mar. 6, 2013), <http://www.politico.com/story/2013/03/patent-trolls-are-draining-our-innovation-economy-88517.html>.

patents can hinder and hold back the pace of innovation.”¹³ And a 2013 White House report on patent-assertion entities asserts that they “have had a negative impact on innovation and economic growth.”¹⁴

I have recently reviewed the evidence on whether patents promote innovation and concluded that it is more ambiguous,¹⁵ and other reviews agree.¹⁶ But my goal here is not to point out the methodological flaws in particular studies or in any one person’s review of the evidence—my point is simply that even people who say they agree that the *goal* of the patent system is promote innovation often disagree on the existing *facts*. This is not only a problem for the broad question of whether patents promote innovation in general, but also for more specific questions such as whether patents on human genes,¹⁷ software,¹⁸ or pharmaceuticals¹⁹ are welfare enhancing; whether granting patents that were not needed

13. Mike Masnick, *Over 90% of the Most Innovative Products from the Past Few Decades Were NOT Patented*, TECHDIRT (May 7, 2013), <http://www.techdirt.com/blog/innovation/articles/20130502/10513922919/over-90-most-innovative-products-past-few-decades-were-not-patented.shtml>.

14. PRESIDENT’S COUNCIL OF ECON. ADVISERS, NAT’L ECON. COUNCIL & OFFICE OF SCI. & TECH. POLICY, EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 2 (June 2013), *available at* http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf.

15. Lisa Larrimore Ouellette, *Patent Experimentalism*, 101 VA. L. REV. (forthcoming 2015), *available at* <http://ssrn.com/abstract=2294774>.

16. *See, e.g.*, Bronwyn H. Hall & Dietmar Harhoff, *Recent Research on the Economics of Patents*, 4 ANN. REV. ECON. 541, 546-49 (2012) (concluding that “the effectiveness of the patent system in encouraging innovation” has “proved difficult to answer empirically, largely because of the absence of real experiments”); Adam B. Jaffe, *The U.S. Patent System in Transition: Policy Innovation and the Innovation Process*, 29 RES. POL’Y 531, 531 (2000) (“[R]obust conclusions regarding the empirical consequences for technological innovation of changes in patent policy are few.”).

17. *Compare* Declaration of Joseph E. Stiglitz, Ph.D., Joint Appendix at 695, 704, *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013) (No. 12-398) (“The marginal social benefits of patenting genes clearly do not measure up to the profound costs.”), *with* Brief for the Pharmaceutical Research and Manufacturers of America as Amicus Curiae Supporting Respondents at 19-24, *Ass’n for Molecular Pathology*, 133 S. Ct. at 2107 (“Patent protection of purified and isolated DNA compositions increases access to genetic diagnostic tests because the exclusivity conveyed in a patent grant provides the needed incentive to create the diagnostic tests in the first place.”).

18. *Compare* Timothy B. Lee, *New Zealand Just Abolished Software Patents. Here’s Why We Should, Too.*, WASH. POST (Aug. 29, 2013), <http://www.washingtonpost.com/blogs/the-switch/wp/2013/08/29/new-zealand-just-abolished-software-patents-heres-why-we-should-too> (citing “evidence that most of the patent system’s problems are really problems with software patents”), *with* David Kappos, Under Secretary of Commerce for Intellectual Property and Director of the USPTO, An Examination of Software Patents, Keynote Address at the Center for American Progress (Nov. 20, 2012), *available at* http://www.uspto.gov/news/speeches/2012/kappos_CAP.jsp (“So to those commenting on the smart-phone patent wars with categorical statements that blame the ‘broken’ system on bad software patents, I say—get the facts—they don’t support your position.”).

19. *See* Cynthia Ho, *Drugged Out: How Cognitive Bias Hurts Drug Innovation*, 51 SAN DIEGO L. REV. 419 (2014) (discussing how cognitive biases affect patent policy in the pharmaceutical innovation context).

for innovation will impede other inventors;²⁰ or whether non-practicing entities (NPEs, or “patent trolls”) increase the rewards to innovation.²¹

II. Cultural Cognition Theory and Patent Values

This dynamic would not surprise psychologists, who have observed our tendency to suppress ambiguity, such as by substituting hard questions (do patents promote innovation?) with easy ones (can I think of examples in which patents seemed good or bad?).²² In our desire to make sense of a complex world, we (over)confidently create causal narratives that provide an illusion of understanding.²³ Constructing coherent narratives from a cacophony of information is not easy: we engage in unconscious “motivated reasoning” to change the weight we assign to new evidence in ways that are cognitively congenial.²⁴ Some motivated reasoning is due to confirmation bias: we explain away evidence that does not conform with our prior beliefs and incorporate evidence that does.²⁵ But how do these priors form in the first place, and why is there persistent *division* on some complex issues, including patents? In part, we weigh evidence using a process Dan Kahan and collaborators at the Cultural Cognition Project at Yale Law School, including myself, have termed “cultural cognition”: we form beliefs that cohere with the values of groups we identify with.²⁶ This is usually a good thing: it allows the public to identify the relevant experts and accept the scientific consensus on a diverse range of topics. But when *antagonistic* cultural meanings become attached to issues such as climate change or gun control, cultural cognition can

20. See Judge Richard Posner & Professor Richard Epstein, Debate About the Patent System, PatCon 3 at Chicago-Kent College of Law 48:50 (Apr. 12, 2013), available at <http://www.youtube.com/watch?v=AYLyXJTE2aI> (Epstein: “If you’re talking about patents of sufficiently low value that you can protect [the invention] without incurring the cost [of a patent], the likelihood that they’ll be serious stumbling blocks to somebody else I think is going to be relatively small.” Posner: “That simply is not true.” Epstein: “It simply is true.” Posner: “And anyway, it’s an assertion, right?” Epstein: “Unlike yours, which is a divine revelation!”).

21. Compare James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. 387, 423 (2014) (“Only about 5% [of payments made by patent defendants to NPEs] goes to independent inventors . . .”), with David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 CORNELL L. REV. 425, 443 (2014) (concluding that Bessen and Meurer’s result is driven by three NPEs that “attempted to compete in the marketplace as operating companies before turning to aggressive enforcement of their patent portfolios” and thus did not need to pay individual inventors for these “home grown” patents); and 496: *When Patents Attack... Part Two!*, THIS AM. LIFE (May 31, 2013), available at <http://www.thisamericanlife.org/radio-archives/episode/496/when-patents-attack-part-two> (reporting that an independent inventor who sold his patents to an NPE received \$12 million and royalties on future earnings (“something as high as 18 and 1/2 percent”)).

22. See DANIEL KAHNEMAN, THINKING, FAST AND SLOW 79-80, 97, 130 (2011).

23. See *id.* at 199-202.

24. See generally Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480 (1990).

25. See generally Raymond S. Nickerson, *Confirmation Bias: A Ubiquitous Phenomenon in Many Guises*, 2 REV. GEN. PSYCHOL. 175 (1998).

26. See generally Dan M. Kahan, *The Supreme Court, 2010 Term—Foreword: Neutral Principles, Motivated Cognition, and Some Problems for Constitutional Law*, 125 HARV. L. REV. 1, 19-26 (2011).

lead to persistent division on the relevant facts.²⁷ Cultural cognition theory examines worldviews along two dimensions that have proven to be effective predictive indicators of the latent group-based values that drive motivated reasoning: hierarchy/egalitarianism (i.e., relative preference for social orderings in which authority is tied to social rankings) and individualism/communitarianism (i.e., belief that an individual's wellbeing is the responsibility of the individual vs. the collective).²⁸

There have been no empirical studies (yet!) on the impact of cultural cognition on beliefs about intellectual property, although Greg Mandel has presented important results on public perceptions of intellectual property.²⁹ But these cultural worldviews may also be reasonably predictive of the divergent views on patents. People with a hierarchical, individualistic worldview tend to value commerce and industry and be suspicious of government regulation. They likely value intellectual property rights as protecting an individual's natural rights and supporting industry, and they will thus find it congenial to discount any evidence that supports restrictions on these rights. In contrast, those with an egalitarian, communitarian worldview "are morally suspicious of commerce and industry, which they see as sources of social disparity and vehicles of noxious self-seeking."³⁰ They likely see intellectual property rights as a source of increasing inequality, and will thus find it congenial to believe that intellectual property is not welfare enhancing.

Of course, these (testable) hypotheses could be wrong, or could change; for example, if patents come to be viewed more as a government-sanctioned tax that restricts private industry and impedes individual entrepreneurs,³¹ those with a hierarchical, individualistic worldview may be less dismissive of evidentiary claims about the harms of patents.³² Or

27. See, e.g., Kahan, Peters, Wittlin, Slovic, Ouellette, Braman & Mandel, *supra* note 1, at 732; Kahan & Braman, *supra* note 2, at 1291.

28. See Kahan, *supra* note 26, at 23.

29. In a study of the general public (and not patent stakeholders in particular), Mandel found that "having lower income, being older, being more educated, and having less experience with intellectual property all correlate with the desire for stronger intellectual property protection," and that "for certain intellectual property rights, conservatives prefer stronger rights to liberals, women prefer stronger rights to men, and minorities prefer stronger rights to whites." Greg Mandel, *The Public Psychology of Intellectual Property*, 66 FLA. L. REV. (forthcoming 2014) (manuscript at 3), available at <http://ssrn.com/abstract=2240335>.

30. Kahan, *supra* note 26, at 24.

31. Cf. Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. 303, 312 (2013) (describing how patents impose a "shadow" tax on patented goods); Mark A. Lemley, *The Regulatory Turn in IP*, 36 HARV. J.L. & PUB. POL'Y 109 (2013) (noting the dual character of IP as both property and regulation).

32. Some conservatives—who are more likely to be hierarchical individualists—have expressed skepticism about intellectual property, although conservatives are still more likely to favor stronger intellectual property rights. See, e.g., Dave Weigel, *What Does a Smart Person Do at CPAC?*, SLATE (Mar. 15, 2013), http://www.slate.com/articles/news_and_politics/politics/2013/03/derek_khanna_the_young_republican_lost_his_job_in_the_house_for_having_the.html (describing how Derek Khanna wrote a memo for the House Republican

different value-based measures may prove to be more predictive of views about intellectual property.³³ My claim is simply that cultural cognition likely contributes to the dysfunctional public discourse over patents, and that given the importance of patent law in the world economy—and thus the importance of truly evidence-driven patent policy—it is worth empirically investigating this dynamic.

III. Making Progress in the Patent Wars

The study of cultural cognition could make at least two contributions to the patent debate: it could improve both the *communication* of new evidence on patents and *how we generate* that evidence. Communication of patent-related evidence seems to suffer from similar problems as in the climate change and gun control debates: new evidence is trumpeted by those who find it cognitively congenial and dismissed by attacking the methodology or the source of the evidence by those who don't.

The science communication and decision research literature has begun to suggest plausible strategies for how to communicate empirical results in ways that reduce culturally divisive motivated reasoning, such as framing,³⁴ having communication performed by “culturally identifiable” experts,³⁵ presenting information along with a culturally congenial meaning,³⁶ or focusing on local, audience-specific effects.³⁷ Studies have also shown that individuals are more open-minded when their group identity is affirmed than when they are encouraged to be objective and rational.³⁸ But these problems are far from solved, with very

Study Committee arguing that intellectual property rights “were viewed as pure capitalism, when they should be treated as a government monopoly at its worst,” which led to the memo being retracted and Khanna being ousted).

33. For an explanation of why cultural worldviews are generally preferable to political orientation measures (such as liberal/conservative or Democrat/Republican), see Dan Kahan, *Politically Nonpartisan Folks Are Culturally Polarized on Climate Change*, CULTURAL COGNITION PROJECT BLOG (June 21, 2012), <http://www.cultural-cognition.net/blog/2012/6/21/politically-nonpartisan-folks-are-culturally-polarized-on-cl.html>.

34. See Teresa A. Myers, Matthew C. Nisbet, Edward W. Maibach & Anthony A. Leiserowitz, *A Public Health Frame Arouses Hopeful Emotions About Climate Change*, 113 CLIMATE CHANGE 1105, 1106 (2012).

35. See Dan M. Kahan, Donald Braman, Geoffrey L. Cohen, John Gastil & Paul Slovic, *Who Fears the HPV Vaccine, Who Doesn't, and Why? An Experimental Study of the Mechanisms of Cultural Cognition*, 34 LAW & HUM. BEHAV. 501 (2010).

36. See Dan M. Kahan, Hank C. Jenkins-Smith, Tor Tarantola, Carol L. Silva & Donald Braman, *Geoengineering and the Science Communication Environment: A Cross-Cultural Experiment*, ANNALS AM. ACAD. POL. & SOC. SCI. (forthcoming 2014), available at <http://ssrn.com/abstract=1981907>.

37. See P. Sol Hart & Eric C. Nisbet, *Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies*, 39 COMM. RES. 701 (2012); see also *The Science of Science Communication*, NAT'L ACAD. OF SCI. (May 21, 2012), http://www.nasonline.org/programs/sackler-colloquia/completed_colloquia/science-communication.html (conference on empirical research on science communication).

38. See, e.g., Geoffrey L. Cohen, David K. Sherman, Anthony Bastardi, Lillian Hsu, Michelle McGoeys & Lee Ross, *Bridging the Partisan Divide: Self-Affirmation Reduces Ideological Closed-Mindedness and Inflexibility*

little evidence from outside the lab. And the literature has barely begun to think about how to *conduct* the experiments in ways that reduce cultural division.

In a separate work I have argued that drawing robust conclusions about the causal effects of patent laws is difficult due to the focus on uniformity in patent policy, and I have called for greater variation through both randomized policy experiments and a governance structure known as “experimentalism.”³⁹ But before policymakers invest in costly policy experiments, it is important to have confidence that the results of those experiments will actually have a policy impact. Thus, in future work with the Cultural Cognition Project, I plan to begin to tackle the question of how to communicate results in a way that is meaningful to various stakeholders within the patent community. These stakeholders include scholars, practitioners (including patent prosecutors and litigators), innovators (including both patentees and those who have opted not to patent their inventions), entrepreneurs, or ordinary voters who have become interested in patent policy in response to increased high-profile media attention.⁴⁰

For example, a recent study showed that subjects’ ability to draw correctly a casual inference from (fabricated) data on a politically charged issue—whether a gun ban increased or decreased crime—varied based on whether the correct result was consistent with the subjects’ ideological predispositions.⁴¹ We could conduct a similar study in the patent context, with the numbers representing the results from a purported patent experiment, such as whether banning patents on software led to increased or decreased R&D spending in the software industry. It would be valuable to see whether respondents’ positions on the hierarchy/egalitarianism and individualism/communitarianism axes are in fact predictive of their interpretation of the patent experiment results (or whether some alternative measure is more predictive). And we could also test whether cultural divergence is lessened through different ways of presenting the results.

In addition to the science communication strategies mentioned above,⁴² it might help to present results in a way that acknowledges (rather than ignores) conflicting prior work

in *Negotiation*, 93 J. PERSONALITY & SOC. PSYCHOL. 415 (2007).

39. Ouellette, *supra* note 15.

40. In 2012, the *Wall Street Journal* published 75 articles with “patent” in the headline, the *Washington Post* published 87, and the *New York Times* published 78 (including a front-page feature, Charles Duhigg & Steve Lohr, *The Patent, Used as a Sword*, N.Y. TIMES, Oct. 7, 2012, at A1). See also 496: *When Patents Attack... Part Two!*, *supra* note 21. As previously noted, Greg Mandel has begun to study public perceptions of intellectual property. See *supra* note 29.

41. Dan M. Kahan, Ellen Peters, Erica Cantrell Dawson & Paul Slovic, *Motivated Numeracy and Enlightened Self-Government* (Cultural Cognition Project, Working Paper No. 116, 2013), available at <http://ssrn.com/abstract=2319992>.

42. See *supra* notes 34-38 and accompanying text.

on the subject. For example, a 2013 White House announcement on patent trolls⁴³ mostly had general suggestions for improving the patent system that are supported even by some trolls,⁴⁴ but the report's anti-patent-troll framing and citations to one-sided evidence⁴⁵ resulted in negative reaction from pro-patent commentators.⁴⁶ The report may have gained more widespread support if the introductory framing material had been written in a way that was more appealing to those with diverse values.

Many of these science communication strategies may allow one to combat either simple confirmation bias or the tendency to agree with others with similar pro- or anti-patent views without an understanding of *why* different people form pro- or anti-patent views in the first place. But if the cultural cognition framework or other value-based measures turn out to be predictive, it opens up a broader range of prescriptions. For example, if hierarchical individualists tend to be pro-patent because they value industry and are skeptical of governments picking winners, emphasizing that there are non-patent solutions that still support industry and do not require the government to pick winners (e.g., R&D tax credits⁴⁷) may make them more open to new data suggesting that patents are not working well in some areas. Similarly, if egalitarian communitarians tend to be anti-patent because they view patents as increasing inequality, emphasizing ways in which patented technologies have benefitted marginalized populations may make them more open to new data suggesting that patents do provide a strong incentive for innovation in some areas.

While the science communication literature has focused on how to *communicate* new evidence, it may also be fruitful to examine if *who conducts* the experiments matters. Results may develop a culturally divisive meaning when they are conducted by researchers whose past work has exclusively supported one side of the patent debates, or when they are funded by organizations with well-known normative commitments. This is not to imply that considering a researcher's motivations is irrational—researchers, after all, are also prone to motivated reasoning—but the factual disagreement over patents is exacerbated when commentators scrutinize only those studies that they do not find cognitively congenial.

43. Press Release, The White House, Fact Sheet: White House Task Force on High-Tech Patent Issues (June 4, 2013), available at <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues>; EXEC. OFFICE OF THE PRESIDENT, *supra* note 14.

44. See “Notorious Patent Troll” Supports 10 out of 12 of the White House’s “Anti-Troll” Measures, IPNAV (June 6, 2013), <http://www.ipnav.com/blog/e2809cnotorious-patent-trolle2809d-supports-10-out-of-12-of-the-white-houseee28099s-e2809canti-trolle2809d-measures>.

45. See Joff Wild, *The Executive Office of the US President Publishes a Truly Depressing Report on PAEs*, IAM MAGAZINE (June 4, 2013), <http://www.iam-magazine.com/blog/Detail.aspx?g=4ee8dfaa-5f6d-48b6-a656-2d41b-7ba1445> (“In all studies looking at trolls, NPEs and PAEs I apply what I call the ‘Bessen & Meurer test’. If their finding that US operating companies incurred \$29 billion of direct costs as the result of NPE/PAE activity in 2011 is reported uncritically I know for a fact that we have a skewed, one-sided piece of work on our hands.”).

46. Gene Quinn, *Obama on Patent Trolls – Much Ado About Nothing*, IPWATCHDOG (June 4, 2013), <http://www.ipwatchdog.com/2013/06/04/obama-on-patent-trolls-much-ado-about-nothing/id=41268>.

47. See generally Hemel & Ouellette, *supra* note 31.

We could conduct similar experiments to evaluate whether cultural division is reduced if respondents know that particular results emerged from collaborations between pro- and anti-patent researchers, or that there was a public notice-and-comment process *before* the experiment was conducted to allow stakeholders to critique the methodology. Preregistration of scientific studies has been hypothesized to improve trust in science,⁴⁸ and it may be effective in the social sciences as well.

Conclusion

The uncertainty in how to conduct experiments and communicate their results such that the resulting knowledge has the impact it should is just as real as uncertainty about the best patent policies. This Essay has focused on patent policy, and I think the cultural cognition framework may be particularly helpful in resolving empirical uncertainty in this context. But this uncertainty about designing and communicating the results of empirical studies in the social sciences is not limited to patent policy—it is a problem with gathering policy-consequential data in any field where that data is imbued with antagonistic cultural meanings. And yet we lack a coherent theory of when the group-identity-protective mechanisms of cultural cognition will be implicated, or of when policy debates over facts will arise through other sources of motivated reasoning. Before the government (or a private funder) invests in any costly empirical study, it should have some confidence that the outcome will actually settle the factual disagreement. Evidence-based policymaking should be evidence-based all the way down, and should thus borrow from and contribute to the science communication literature on how to design and communicate experiments in ways that respect differing values and promote open-minded consideration.

48. See Chris Chambers et al., *Trust in Science Would Be Improved by Study Pre-Registration*, THE GUARDIAN (June 5, 2013), <http://www.guardian.co.uk/science/blog/2013/jun/05/trust-in-science-study-pre-registration>.