What Causes Polarization on IP Policy?

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Polarization on contentious policy issues is a problem of national concern for both hot-button cultural issues such as climate change and gun control and for issues of interest to more specialized constituencies. Cultural debates have become so contentious that in many cases people are unable to agree even on the underlying facts needed to resolve these issues. Here, we tackle this problem in the context of intellectual property ("IP") law. Despite an explosion in the quantity and quality of empirical evidence about the IP system, IP policy debates have become increasingly polarized. This disagreement about existing evidence concerning the effects of the IP system hinders democratic deliberation and stymies progress.

Based on a survey of U.S. IP practitioners, this Article investigates the source of polarization on IP issues, with the goal of understanding how to better enable evidence-based IP policymaking. We hypothesized that, contrary to intuition, more evidence on the effects of IP law would not resolve IP disputes but would instead exacerbate them. Specifically, IP polarization might stem from "cultural cognition," a form of motivated reasoning in which people form factual beliefs that conform to their cultural predispositions and interpret new evidence in light of those beliefs. The cultural cognition framework has helped explain polarization over other issues of national concern, but it has never been tested in a private-law context.

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Our survey results provide support for the influence of cultural cognition, as respondents with a relatively hierarchical or individualistic worldview are more likely to believe strong patent protection is necessary to spur innovation. Additionally, having a hierarchical or individualistic worldview and also viewing patent rights as property rights may be a better predictor of patent strength preferences than either alone. Taken together, our findings suggest that individuals' cultural preferences affect how they understand new information about the IP system. We discuss the implications of these results for fostering evidence-based IP policymaking, as well as for addressing polarization more broadly. For example, we suggest that empirical legal studies borrow from medical research by initiating a practice of advance registration of new projects — in which the planned methodology is publicly disclosed before data are gathered — to promote broader acceptance of the results.

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INTRODUCTION

The rise in the global economic importance of intellectual property ("IP") has been accompanied by a rise in polarization on IP issues.[1] In response to both trends, we have witnessed a dramatic increase in empirical efforts to understand how IP systems function (or fail).[2] Yet this growth in the quality and quantity of evidence on IP issues has not reduced disagreement on socially optimal IP policy. As one prominent example, when Congress was debating patent reform legislation in 2015, over fifty law and economics professors wrote to Congress to respond to those "who claim there is little empirical evidence available to assess the performance of the American patent system."[3] To the contrary, they contended that "a large and increasing body of evidence indicates that the net effect of patent litigation is to raise the cost of innovation and inhibit technological progress, subverting the very purpose of the patent system."[4] This letter in turn sparked a response from another forty professors who called the studies cited by the first letter "flawed, unreliable, or incomplete."[5] Both letters referenced a surge in empirical IP evidence, but diverged starkly concerning the evidence's implications. Despite — or perhaps because of — this trend of polarization, there continues to be a cacophony of calls for further and more precise research to resolve IP policy questions.[6]

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[1] *See infra* Section I.A. We focus here primarily on patent and copyright law, but there is also polarization involving trademarks and trade secrets.

[2] A decade ago, Peter Menell and Suzanne Scotchmer were able to survey IP research in one chapter. Peter Menell & Suzanne Scotchmer, *Intellectual Property Law*, *in* 2 HANDBOOK OF LAW AND ECONOMICS 1473 (A. Mitchell Polinsky & Steven Shavell eds., 2007). Today, the explosion of research on the economics of IP easily fills two volumes on its own. *See* RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Ben Depoorter, Peter Menell & David Schwartz eds., forthcoming 2018).

[3] Letter from Clark D. Asay et al., to Members of the U.S. Congress (Mar. 2, 2015), http://www.unitedforpatentreform.com/files/ip-scholars—letter-to-congress1554891030.pdf.

[4] *Id.*

[5] Letter from Michael Abramowicz et al., to Chuck Grassley, Chairman, Senate Comm. on the Judiciary, et al. (Mar. 10, 2015), https://sls.gmu.edu/cpip/wp-content/uploads/sites/31/2015/03/Economists-Law-Profs-Letter-re-Patent-Reform.pdf.

[6] *See, e.g.*, Lisa Larrimore Ouellette, *Patent Experimentalism*, 101 VA. L. REV. 65 (2015) [hereinafter *Patent Experimentalism*]; *Innovation Law & Policy Empirical Research Initiative*, NYU L. ENGELBERG CTR. ON INNOVATION L. & POLICY, http://www.law.nyu.edu/centers/engelberg/events/empirical-research-initiative (last visited Aug. 31, 2018) [hereinafter *Empirical Research Initiative*] (describing "the need for empirical research" to inform IP policy).

Contrary to the accepted wisdom, we believe that efforts to resolve IP policy disputes through additional empirical work may be destined to fail in the current IP climate. To be clear, we think empirical IP work has value.[7] Our point is that empirical progress does not ineluctably lead to consensus and empirically informed policy. This hypothesis is based on the premise that facts about the IP system do not drive much of the actual opinion about IP policy. Rather, beliefs about the strengths and weaknesses of IP policy often exist prior to, and regardless of, empirical evidence. Of course, some debates focus on the fundamental goals of IP, and such debates could never be resolved through empiricism.[8] But even within the dominant utilitarian perspective, we have more empirical evidence than ever before, yet seemingly even less agreement on what this evidence indicates. Disagreement may persist in part because most people pay no attention to empirical IP work and simply stick to their priors. For example, we suspect that many of the scholars who signed the anti- and pro-patent reform letters did not spend significant time evaluating the empirical studies referenced in those letters. But we believe that even those who *do* engage with the empirical literature are unlikely to change their minds.

The failure of evidence to resolve contentious policy debates is not unique to IP; this phenomenon has been well documented in the literature on "cultural cognition."[9] This literature demonstrates that when particular beliefs on issues such as climate change[10] or gun control[11] become important to defining group identities, people are more likely to use motivated reasoning to credit evidence that

[7] In fact, two of us have engaged in empirical IP studies. *See, e.g.*, Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration That the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391 (2006); Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information?*, 25 HARV. J.L. & TECH. 545 (2012) [hereinafter *Do Patents Disclose*].

[8] *See, e.g.*, ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 33-41 (2011); Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1328 (2015) [hereinafter *Faith-Based*].

[9] *See, e.g.*, Dan M. Kahan, *The Supreme Court, 2010 Term — Foreword: Neutral Principles, Motivated Cognition, and some Problems for Constitutional Law*, 125 HARV. L. REV. 1, 25-28 (2011) [hereinafter *Foreword*].

[10] *See* 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, 732 (2012) [hereinafter *Polarizing Impact*].

[11] *See* Dan M. Kahan & Donald Braman, *More Statistics, Less Persuasion: A Cultural Theory of Gun-Risk Perceptions*, 151 U. PA. L. REV. 1291, 1291-92 (2003) [hereinafter *More Statistics*].

confirms their views and to dismiss evidence that challenges their beliefs on those issues. When factual beliefs become intertwined with cultural identity, new evidence does not bring people closer to a consensus; instead, it polarizes them further.[12]

Cultural cognition research does not serve only to diagnose the problem; it can also help craft solutions. The Cultural Cognition Project has the "explicit normative objective" of identifying ways society can engage in evidence-based policymaking without degrading or excluding any cultural group.[13] Research in line with this goal has identified several mechanisms for mitigating bias and polarization, including methods of communication such as framing, using culturally identifiable experts to communicate the information, imbuing the information with culturally congenial meanings, and presenting the information in the context of small deliberative groups.[14] If cultural cognition does explain IP polarization — if people's views on the strengths and weaknesses on IP policy are indeed culturally driven — these communication techniques might serve to minimize cultural polarization on IP and allow empirical work to influence policy debates.[15]

This raises the question: does cultural cognition influence people's perceptions of the risks and benefits of IP policy, or is the division primarily based on other factors? To answer this question, research is needed on subjects *with strong views on IP policy*. National conversations have formed around the issues of climate change,[16] gun control policy,[17] and mandatory human papillomavirus ("HPV") vaccination,[18] but there is less national focus on the risks and benefits of patent and copyright protection. This is not to say that the general public has no views on IP — from the online pirating of music and videos to the patenting of genes, there are many IP stories that

[12] *See, e.g.*, Dan M. Kahan et al., *Who Fears the HPV Vaccine, Who Doesn't, and Why? An Experimental Study of the Mechanisms of Cultural Cognition*, 34 LAW & HUM. BEHAV. 501, 504-08 (2010) [hereinafter *Who Fears the HPV Vaccine*].

[13] CULTURAL COGNITION PROJECT, http://www.culturalcognition.net (last visited Mar. 1, 2017).

[14] *See* Lisa Larrimore Ouellette, *Cultural Cognition of Patents*, 4 IP THEORY 28, 33-34 (2014) (discussing the research on these techniques).

[15] *See generally id.*; Jeffrey I.D. Lewis & Maggie Wittlin, *Entering the Innovation Twilight Zone: How Patent and Antitrust Law Must Work Together*, 17 VAND. J. ENT. & TECH. L. 517, 566-69 (2015).

[16] *See* Kahan, Peters, Wittlin, Slovic, Ouellette, Braman & Mandel, *Polarizing Impact*, *supra* note 10, at 732.

[17] *See* Kahan & Braman, *More Statistics*, *supra* note 11, at 1292.

[18] *See* Kahan et al., *Who Fears the HPV Vaccine*, *supra* note 12, at 502.

percolate into popular media.[19] One of us has found that the general public tends to view IP law as designed to prevent plagiarism and to believe that IP rights are too strong.[20] However, IP experts likely hold stronger views about IP policy than members of the general public. If cultural conflict is brewing, we should find the strongest evidence of it in the expert community.

There is relatively little evidence on how experts view IP. Recently, James Daily analyzed the signatories to the two letters mentioned at the beginning of this Article, concluding that signatories to the second letter — criticizing the letter that criticized the current patent regime — were more likely to be registered patent attorneys and Republican donors.[21] We are not aware of any other studies of polarization in IP experts' opinions on IP policy.

This Article presents an original study of the factors influencing expert views on IP policy. Given the relatively small number of public commentators on IP issues, we focused on IP practitioners more broadly, who seem likely to be the largest group of people likely to have thought seriously about IP policy and formed views on what works and what does not. Many scholars and commentators are engaged in IP practice, and IP practitioners are primary consumers of IP commentary. In addition, there is significant interaction between scholars and practitioners at conferences, in bar associations, and on IP policy matters. In addition, we were concerned that members of the legal academy would be familiar with our prior work, would anticipate our hypotheses, and would therefore be poor survey subjects. Finally, we have each personally observed polarized IP discussion among practitioners in various fora.

We surveyed 129 IP practitioners from across the United States. We asked these attorneys about their practices, including how they

[19] *See, e.g.*, Joel Achenbach & Carolyn Y. Johnson, *Broad Institute Scientist Prevails in Epic Patent Fight over CRISPR*, WASH. POST (Feb. 15, 2017), https://www.washingtonpost.com/news/speaking-of-science/wp/2017/02/15/broad-institute-scientist-prevails-in-epic-patent-fight-over-crispr; Jenna Wortham, *The Internet Is Where We Share — and Steal — the Best Ideas*, N.Y. TIMES MAG. (June 6, 2017), https://www.nytimes.com/2017/06/06/magazine/the-internet-is-where-we-share-and-steal-the-best-ideas.html.

[20] Anne A. Fast, Kristina R. Olson & Gregory N. Mandel, *Experimental Investigations on the Basis for Intellectual Property Rights*, 40 LAW & HUM. BEHAV. 458, 459-60 (2016) [hereinafter *Experimental Investigations*]; Gregory N. Mandel, Anne A. Fast & Kristina R. Olson, *Intellectual Property Law's Plagiarism Fallacy*, 2015 B.Y.U. L. REV. 915, 931, 942 (2016) [hereinafter *Plagiarism Fallacy*]; *see* Gregory N. Mandel, *The Public Perception of Intellectual Property*, 66 FLA. L. REV. 261, 299 (2014) [hereinafter *Public Perception*].

[21] James E. Daily, *An Empirical Analysis of Some Proponents and Opponents of Patent Reform*, 2016 PATENTLY-O PAT. L.J. 1, 3 (2016).

divided their time between different fields of IP; we asked them about their views on IP policy, including their reform preferences and their opinions on the best justification for having IP laws; and we asked them a battery of questions to determine their cultural worldviews. Finally, we collected demographic information.

Our results supported our hypothesis in part: cultural cognition appears to have some effect on people's IP policy preferences. In particular, subjects high in either "hierarchy," a measure of a person's preference for social stratification, or "individualism," indicating a belief that a person's well-being is his or her own responsibility (both of which correlate with conservativism), were more likely to believe that strong patent rights are necessary to spur innovation. We did not find a similar result with regard to copyright or trademark law, perhaps because few of our respondents have spent significant time on these issues — our sample was heavily skewed toward patent practitioners. Attorneys who had spent more time practicing patent law believed in stronger patent rights, perhaps out of a desire to believe their work is meaningful. In addition, subjects who said that the primary purpose of IP law is to incentivize innovation tended to advocate for stronger patent rights, while those who said the purpose of IP law is to protect people's natural rights in the fruits of their labor or to prevent plagiarism advocated for stronger copyright protection.

As we explain in more detail below, these results can help us prevent further polarization by identifying the correlates of existing divisions. Communicators of IP research can take these sources of division into account and work to remove cultural meaning from patent law by using depolarizing communication techniques.

This Article proceeds in three parts. In Part I, we discuss the polarized scholarly debate on the risks and benefits of strong IP laws, address cultural cognition research as a potential source of that polarization, and explain how this framework might prove helpful for understanding and countering the polarized IP policy discourse. In Part II, we describe our survey methodology and the results of our study. Finally, in Part III, we address implications of our findings for policymakers, researchers, and communicators, including how each of these groups can better promote evidence-based policymaking that counteracts the effects of cultural polarization. For example, we suggest that advance registration of empirical IP studies — as is now required for most medical clinical trials — might reduce cognitive resistance to the results of those studies if they turn out not to be cognitively congenial.

I. IP POLARIZATION

Whether one believes that strong IP laws are crucial for incentivizing innovation in technology and the arts or that IP laws are more likely to get in the way of innovation, few would dispute that in today's global knowledge economy, optimizing IP policy is important for both U.S. and global economic vitality.[22] U.S. patent and copyright laws exist "[t]o promote the Progress of Science and useful Arts."[23] By making technical and creative knowledge goods more excludable, these laws partially compensate for the market failure stemming from the public-good nature of knowledge.[24] This utilitarian theory has been widely adopted by courts[25] and commentators.[26]

Recognizing this, a number of researchers have undertaken studies of what patent, copyright, and trademark policies best suit the goals of IP.[27] Our goal here is not to highlight the value of any particular study,

[22] *See generally* Joseph E. Stiglitz, Public Policy for a Knowledge Economy (Jan. 27, 1999) (unpublished manuscript), http://akgul.bilkent.edu.tr/BT-BE/knowledge-economy.pdf.

[23] U.S. CONST. art. I, § 8, cl. 8. We focus here primarily on patents and copyrights, but trade secrets serve a similar role. *See* Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 STAN. L. REV. 311, 313-14 (2008). Trademarks are typically justified on different utilitarian grounds, *see* Mark A. Lemley & Mark P. McKenna, *Owning Mark(et)s*, 109 MICH. L. REV. 137, 172-74 (2010), but they too serve as an important innovation incentive, *see* Jason S. George & Lisa Larrimore Ouellette, Trademarks as Innovation Incentives (July 4, 2016) (unpublished manuscript) (on file with authors).

[24] *See generally* Daniel J. Hemel & Lisa Larrimore Ouellette, *Knowledge Goods and Nation-States*, 101 MINN. L. REV. 167, 170 (2016) (reviewing this account).

[25] *See, e.g.*, Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 349 (1991) ("The primary objective of copyright is not to reward the labor of authors, but '[t]o promote the Progress of Science and useful Arts.'"); Graham v. John Deere Co., 383 U.S. 1, 9 (1966) ("The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring forth new knowledge."); Mazer v. Stein, 347 U.S. 201, 219 (1954) ("The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in 'Science and useful Arts.'").

[26] *See, e.g.*, Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1597 (2003) [hereinafter *Policy Levers*] ("To a greater extent than any other area of intellectual property, courts and commentators widely agree that the basic purpose of patent law is utilitarian . . . ."); Peter S. Menell, *The Property Rights Movement's Embrace of Intellectual Property: True Love or Doomed Relationship?*, 34 ECOLOGY L.Q. 713, 725-26 (2007) ("Utilitarian theory has played the principal role in determining the rights of intellectual property owners.").

[27] *See generally* Lemley, *Faith-Based*, *supra* note 8, at 1332-33 (citing a variety of empirical studies); Ouellette, *Patent Experimentalism*, *supra* note 6, at 75-84 (reviewing

so we will not attempt to canvass them all. Rather, in Section I.A, we catalog numerous examples of disagreement over what empirical IP studies actually say and mean. This is not to suggest that any of the scholars or practitioners cited are "wrong" or acting in bad faith. Rather, we are focused on the disagreements themselves, many of which can be explained in terms of differences such as definitional choices or scope. We claim that, collectively, these empirical disagreements are akin to those we have observed over other uncertain policy issues, such as gun control and environmental risks. Section I.B then provides an overview of research on cultural cognition outside the IP context, which has demonstrated the failure of improved empirical evidence to resolve policy disputes in a variety of contexts. Section I.C presents our hypothesis on how this research might apply in the IP space and demonstrates that existing research on what drives people's views on IP is consistent with this hypothesis.

A. Disagreement over Existing IP Evidence

Polarization over IP evidence is seen over even an elementary question: Does IP protection provide a net contribution to the U.S. economy? For example, after a report from the U.S. Patent & Trademark Office ("USPTO") concluded that the most IP-intensive industries contributed $5 trillion and forty million jobs to the U.S. economy in 2010,[28] these figures were both touted as a signal of IP's economic importance[29] and derided as misleading.[30] One response

studies with a variety of methodologies on the extent to which patents promote innovation). For a comprehensive review of empirical studies of all areas of IP, see generally RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW, *supra* note 2.

[28] ECON. & STATISTICS ADMIN. & U.S. PATENT & TRADEMARK OFFICE, INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: INDUSTRIES IN FOCUS vii (2012), https://www.uspto.gov/sites/default/files/news/publications/IP_Report_March_2012.pdf.

[29] *See, e.g.*, Press Release, U.S. Patent & Trademark Office, US Commerce Department Releases New Report Showing Intellectual Property-Intensive Industries Contribute $5 Trillion, 40 Million Jobs to US Economy (Apr. 11, 2012), http://www.uspto.gov/about-us/news-updates/us-commerce-department-releases-new-report-showing-intellectual-property; Renee C. Quinn, *IP Contributes $5 Trillion and 40 Million Jobs to US Economy*, IP WATCHDOG (Apr. 11, 2012), http://www.ipwatchdog.com/2012/04/11/ip-contributes-5-trillion-and-40-million-jobs-to-us-economy/id=24109; *Why Are Trademarks Important?*, INT'L TRADEMARK ASS'N, http://www.inta.org/about/pages/whyaretmsimportant.aspx (last visited Mar. 1, 2017).

[30] *See, e.g.*, Stephan Kinsella, *USPTO/Commerce Dept. Distortions: "IP Contributes $5 Trillion and 40 Million Jobs to Economy*," CTR. FOR STUDY INNOVATIVE FREEDOM (Apr. 20, 2012), http://c4sif.org/2012/04/usptocommerce-dept-distortions-ip-contributes-5-trillion-and-40-million-jobs-to-economy.

even claimed that the study "actually suggested that IP-intensive industries are having a *decreasing* impact on the U.S. economy."[31] The report itself stated that it "does not contain policy recommendations and is not intended to directly advance particular policy issues,"[32] but it has been wielded to support contradictory positions in the IP policy wars.[33]

Disagreement over the relationship between IP protection and economic growth is not limited to this report. For example, Scott Kieff concluded 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."[34] Polk Wagner agrees that "the evidence in favor of intellectual property is, in [his] view, compelling."[35] Mark Lemley, on the other hand, thinks that "it is far from clear that IP is doing the world more good than harm."[36] Amy Kapczynksi similarly concludes that "the contemporary field of information economics itself offers no clear endorsement of IP."[37] Other scholars go even further; for example, Michele Boldrin and

[31] *Innovation in America: The Role of Copyrights, Hearings Before the Subcomm. on Courts, Intellectual Property, and the Internet of the H. Comm. on the Judiciary*, 113th Cong. 15 (2013) (statement of the Computer & Communications Industry Association), http://cdn.ccianet.org/wp-content/uploads/library/CCIA%20Stmt%20on%20Innovation-Role%20of%20Copyrights.pdf.

[32] ECON. & STATISTICS ADMIN. & U.S. PATENT & TRADEMARK OFFICE, *supra* note 28, at vi.

[33] *See also* Ouellette, *Patent Experimentalism*, *supra* note 6, at 121 & nn.228-30 (discussing the report and suggesting that the USPTO is not the best source for new IP evidence due to perceived bias).

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

[35] R. Polk Wagner, *Information Wants to Be Free: Intellectual Property and the Mythologies of Control*, 103 COLUM. L. REV. 995, 996 n.3 (2003).

[36] Lemley, *Faith-Based*, *supra* note 8, at 1335; *see also* Mark A. Lemley, *IP in a World Without Scarcity*, 90 N.Y.U. L. REV. 460, 507 (2015) ("The Internet certainly undermines the logic of IP as an incentive to commercialize works once they are created, but it may also undermine the classic theory of IP as an incentive to create.").

[37] Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 977 (2012). Lemley and Kapczynski are of course far from alone in this view. *See, e.g.*, Eric E. Johnson, *Intellectual Property and the Incentive Fallacy*, 39 FLA. ST. U. L. REV. 623, 624 (2012) ("Without anyone really noticing it, the primary rationale underpinning intellectual property law has become hollow. New strains of thinking in the fields of economics, psychology, and business-management studies now debunk the long-venerated idea that legal authority must provide some artificial inducement to artistic and technological progress.").

David Levine have stated that the empirical case against intellectual property is now "decisive."[38]

Disputes over IP evidence remain pronounced even when one concentrates on particular fields within IP law. Focusing solely on the impact of patent protection, USPTO Director Jon Dudas testified before Congress that "[t]he overwhelming evidence of the history of the U.S. patent system suggests that strong intellectual property protection supports, rather than impedes, innovation."[39] Reaching the contrary conclusion on the same evidence, Julie Samuels, holder of the Mark Cuban Chair to Eliminate Stupid Patents at the Electronic Frontier Foundation, reports that "we have a consensus in the tech community: The patent system has started to impede, rather than incentivize, innovation."[40] Similarly, an analyst in *Techdirt* wrote: "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 patents can hinder and hold back the pace of innovation."[41] And a White House report on patent-assertion entities (commonly called "patent trolls") states that they "have had a negative impact on innovation and economic growth."[42] On the other hand, a number of judges,[43] members of Congress,[44] patent bloggers,[45]

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[38] MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY 243 (2008).

[39] *Committee Print Regarding Patent Quality Improvement: Hearing Before the Subcomm. on Courts, the Internet, & Intellectual Prop. of the H. Comm. on the Judiciary*, 109th Cong. 130 (2005) (statement of Jon W. Dudas, Under Secretary of Commerce for Intellectual Property and Director, U.S. Patent & Trademark Office).

[40] Julie Samuels, *Patent Trolls Hurt Innovation*, POLITICO (Mar. 6, 2013, 9:27 PM), http://www.politico.com/story/2013/03/patent-trolls-are-draining-our-innovation-economy-88517.html.

[41] Mike Masnick, *Over 90% of the Most Innovative Products from the Past Few Decades Were NOT Patented*, TECHDIRT (May 7, 2013, 8:57 AM), http://www.techdirt.com/articles/20130502/10513922919/over-90-most-innovative-products-past-few-decades-were-not-patented.shtml.

[42] EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 2 (2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

[43] *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").

[44] *See, e.g.*, Marsha Blackburn, *White House Must Strengthen Foundation of US Innovation*, HILL (July 9, 2013, 10:27 PM), 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").

patent lawyers,[46] and business leaders[47] view the evidence more similarly to Dudas, finding that the weight of it supports the benefits of patent protection for innovation and the economy.

It is possible that some of this divergence of views is driven by people thinking about different parts of the patent system or different industries. However, even as we drill down to more precise issues within the patent system, this polarized interpretation of the same empirical evidence remains.

Richard Epstein has ridiculed the notion that patents have slowed the software industry 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."[48] James Bessen and Robert Hunt reach a different conclusion about the relationship between patenting and software innovation. They find that more favorable patent protection for software did lead to greater patenting, but this was due to strategic behavior, not an increase in innovation.[49]

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[45] *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").

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

[47] *See, e.g.*, Donald J. Rosenberg, *Patent System Isn't Broken*, N.Y. TIMES (Feb. 21, 2013), https://www.nytimes.com/2013/02/22/opinion/patent-system-isnt-broken.html ("[O]ur patent system . . . has been the key to multiple revolutions in technological advancement throughout history.").

[48] Richard A. Epstein, Adam Mossoff & Dean Reuter, *Patent Rights: A Spark or Hindrance for the Economy?*, THE FEDERALIST SOC'Y 8:25 (Oct. 24, 2012), http://www.fed-soc.org/multimedia/detail/patent-rights-a-spark-or-hindrance-for-the-economy-podcast; *see also* David Kappos, Under Sec'y of Commerce for Intellectual Prop. & Dir. of the U.S. Patent & Trademark Office, An Examination of Software Patents, Keynote Address at the Center for American Progress (Nov. 20, 2012), https://www.uspto.gov/about-us/news-updates/examination-software-patents ("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.").

[49] James Bessen & Robert Hunt, *An Empirical Look at Software Patents*, 16 J. ECON. & MGMT. STRATEGY 157, 182-83 (2007); *see also* 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").

Disagreement over the implications of empirical evidence also plays out on specific questions such as whether patents on human genes are welfare enhancing;[50] whether the returns to pharmaceutical patents are too high or too low;[51] whether granting patents that were not needed for innovation will impede other inventors;[52] whether non-practicing entities ("NPEs", another term for "patent trolls") increase the rewards to innovation;[53] and whether scientists read patents.[54]

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[50] *Compare* Declaration of Joseph E. Stiglitz, Ph.D at 695, 704, Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (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, *Myriad*, 569 U.S. 576 (No. 12-398) ("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.").

[51] *Compare* Hannah Brennan et al., *A Prescription for Excessive Drug Pricing: Leveraging Government Patent Use for Health*, 18 YALE J.L. & TECH. 275, 284-85, 322 (2016) (contending that pharmaceutical companies often receive vastly more than is necessary to efficiently incentivize research and development ex ante), *with* Eric Budish, Benjamin N. Roin & Heidi Williams, *Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials*, 105 AM. ECON. REV. 2044, 2081 (2015) (concluding that there are large social welfare losses due to insufficient effective patent life for cancer drugs that require lengthy clinical trials).

[52] *See* Chicago-Kent College of Law at Illinois Institute of Technology, *Debate About the Patent System*, YOUTUBE 48:50 (Apr. 12, 2013), https://www.youtube.com/watch?v=AYLyXJTE2aI (Professor Richard 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." Judge Richard 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!").

[53] *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* Ira Glass et al., *When Patents Attack . . . Part Two!*, THIS AM. LIFE 41:40 (May 31, 2013), https://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 eighteen-and-a-half percent")); *see also* Joff Wild, *The Executive Office of the US President Publishes a Truly Depressing Report on PAEs*, IAM MAG. (June 4, 2013), http://www.iam-media.com/blog/detail.aspx?g=4ee8dfaa-5f6d-48b6-a656-2d41b7ba1445 ("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

One of the most famous studies of patenting involved a survey of 1500 research and development laboratories in the U.S. manufacturing sector.[55] The authors found that firms protect their intellectual assets through a variety of mechanisms, including patents, trade secrets, lead time, and complementary manufacturing and marketing.[56] This study has been cited by numerous authors both for the proposition that patent protection promotes innovation[57] and for the proposition that patents are unnecessary for innovation.[58]

Debates over data concern not only whether patent protection incentivizes or limits innovation, but also how it affects industry structure and practices. Mark Lemley and Carl Shapiro explicated a concern about "patent holdup" that can occur when weak patents cover a minor component of a complex product.[59] Alexander Galetovic, Stephen Haber, and Ross Levine provide an empirical study that they claim debunks the patent holdup theory by showing that industries with standard-essential patents had the fastest quality-

fact that we have a skewed, one-sided piece of work on our hands.").

[54] *See* Ouellette, *Do Patents Disclose*, *supra* note 7, at 548-49 & nn.92-96 (giving examples of how "[o]ne of the most cited studies" on patent disclosures has been frequently miscited). Ouellette's own survey results have been cited on both sides of the patent disclosure debate. *Compare* J. Jonas Anderson, *Nontechnical Disclosure*, 69 VAND. L. REV. 1573, 1574 (2016) (citing Ouellette, *Do Patents Disclose*, *supra* note 7, as showing that patent disclosure "leads to valuable dissemination of information"), *and* Clark D. Asay, *Does Innovation Mean Patent Licensing Demands?*, 101 IOWA L. REV. ONLINE 74, 82 n.33 (2016) (citing Ouellette as showing that "many [nanotechnology] researchers rely on patents for technical information"), *with* Colleen V. Chien, *Opening the Patent System: Diffusionary Levers in Patent Law*, 89 S. CAL. L. REV. 793, 828-29, 829 n.239 (2016) (citing Ouellette as "reinforc[ing] a dim view of patents as sources of information"), *and* Jonathan S. Masur, *The Use and Misuse of Patent Licenses*, 110 NW. U. L. REV. 115, 135 n.86 (2015) (citing Ouellette as "finding that patents are less than perfect disclosure devices").

[55] Wesley M. Cohen, Richard R. Nelson & John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Firms Patent (Or Not)* 4 (Nat'l Bureau of Econ. Research, Working Paper No. 7552, 2000).

[56] *Id.* at 5.

[57] *See, e.g.*, Cecil D. Quillen, Jr., *Innovation and the U.S. Patent System*, 1 VA. L. & BUS. REV. 207, 210 & n.9 (2006) (citing Cohen et al., supra note 55, at 17-18, as evidence that patents are necessary for innovators seeking to commercialize their inventions by allowing them to protect themselves from others who have patents).

[58] *See, e.g.*, Michael J. Meurer & Craig Allen Nard, *Patent Policy Adrift in a Sea of Anecdote: A Reply to Lichtman*, 93 GEO. L.J. 2033, 2034 & n.7 (2005) (citing Cohen et al., supra note 55, as evidence that "patent protection plays a relatively modest incentive role in most industries").

[59] Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1991 (2007).

adjusted price declines in the U.S. economy,[60] an analysis that Mark Lemley describes as "preposterous[]."[61]

Michael Heller and Rebecca Eisenberg famously suggested the "tragedy of the anticommons," in which numerous patent holders could make transaction costs so great that it frustrates socially desirable innovation activity.[62] Heller and Eisenberg identify particular concerns in biomedical research.[63] On the other hand, a study by David Adelman and Katheryn DeAngelis "finds little evidence that the rise in biotechnology patenting is adversely affecting innovation,"[64] and Jonathan Barnett disputes whether there is any evidence supporting the anticommons thesis.[65] As another example, Christopher Cotropia and Mark Lemley suggest that there is little evidence that much direct copying of patented products takes place,[66] while Ted Sichelman concludes that the evidence suggests that significant direct copying does occur.[67]

These empirical debates are not limited to patent law. Steven Hetcher concludes "that money can indeed incentivize creativity [in copyright industries],"[68] a view that is shared by Scott Turow.[69] Others think that the best evidence suggests that copyright incentives play little role in spurring creative production. For example, Rebecca Tushnet concludes that "[w]hat empirical evidence exists does not engender confidence that increases in copyright protection spur

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60 Alexander Galetovic, Stephen Haber & Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. COMPETITION L. & ECON. 549, 572-73 (2015).

61 Lemley, *Faith-Based*, *supra* note 8, at 1336 & n.24.

62 *See* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 700-01 (1998).

63 *Id.* at 701.

64 David E. Adelman & Kathryn L. DeAngelis, *Patent Metrics: The Mismeasure of Innovation in the Biotech Patent Debate*, 85 TEX. L. REV. 1677, 1678 (2007).

65 *See* Jonathan M. Barnett, *The Anti-Commons Revisited*, 29 HARV. J.L. & TECH. 127, 130 (2015).

66 Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1422 (2009).

67 Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 544 n.143 (2014) ("These figures very likely understate the amount of copying present in the marketplace.").

68 Steven Hetcher, *Desire Without Hierarchy: The Behavioral Economics of Copyright Incentives*, 48 U. LOUISVILLE L. REV. 817, 823 (2010).

69 Scott Turow et al., Opinion, *Would the Bard Have Survived the Web?*, N.Y. TIMES (Feb. 15, 2011), http://www.nytimes.com/2011/02/15/opinion/15turow.html (arguing that copyright skepticism "ignores centuries of scientific and technological progress based on the principle that a creative person should have some assurance of being rewarded for his innovative work").

creativity,"[70] and Julie Cohen has written that "[e]verything we know about creativity and creative processes suggests that copyright plays very little role in motivating creative work."[71]

So too for trademark law. For example, Laura Bradford finds that "modern consumer emotion research provides a sturdier justification for dilution protection,"[72] while Graeme Austin believes that "likelihood of confusion and dilution analyses [are incapable of] captur[ing] the empirical reality of the consumer experience,"[73] and Rebecca Tushnet concludes that the theory of dilution "does not rest on sufficient empirical evidence to justify its adoption."[74]

In the IP-related field of covenants-not-to-compete, Orly Lobel turns to empirical studies of differences in covenants-not-to-compete laws across jurisdictions to demonstrate that limitations on enforcing non-compete agreements lead to increased employee movement and, consequently, increased innovation.[75] Jonathan Barrett and Ted Sichelman analyze precisely the same data and find it wanting, concluding that "[t]here is little compelling ground for the view that barring noncompetes and other limitations on employee mobility promotes innovation."[76]

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[70] Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513, 517-18 (2009).

[71] Julie E. Cohen, *Copyright as Property in the Post-Industrial Economy: A Research Agenda*, 2011 WIS. L. REV. 141, 143; *see also* JESSICA SILBEY, THE EUREKA MYTH: CREATORS, INNOVATORS, AND EVERYDAY INTELLECTUAL PROPERTY 2 (2015) (concluding from interviews with people in creative industries that copyright incentives play a minor role); Lawrence Lessig, *Free(ing) Culture for Remix*, 2004 UTAH L. REV. 961, 973 (2004) (arguing for a rebalancing of copyright law); Diane Leenheer Zimmerman, *Copyrights as Incentives: Did We Just Imagine That?*, 12 THEORETICAL INQUIRIES L. 29, 47 (2011) ("The work of scholars who study innovation and creativity, if accurate, renders questionable the assertion that the degree to which people are willing to devote themselves to creative pursuits depends primarily, or even significantly, on the promise of a potential pot of economic rewards.").

[72] Laura R. Bradford, *Emotion, Dilution, and the Trademark Consumer*, 23 BERKELEY TECH. L.J. 1227, 1230 (2008).

[73] Graeme W. Austin, *Tolerating Confusion About Confusion: Trademark Policies and Fair Use*, 50 ARIZ. L. REV. 157, 157 (2008).

[74] Rebecca Tushnet, *Gone in Sixty Milliseconds: Trademark Law and Cognitive Science*, 86 TEX. L. REV. 507, 507 (2008). For an alternative view of the importance of empirical evidence in trademark debates, see Jeremy Sheff, *Marks, Morals and Markets*, 65 STAN. L. REV. 761, 814-15 (2013) (suggesting that traditional trademark justifications are belied by empiricism, but that understanding trademark law through a moral obligations framework can make sense of the doctrine).

[75] *See* ORLY LOBEL, TALENT WANTS TO BE FREE: WHY WE SHOULD LEARN TO LOVE LEAKS, RAIDS AND FREE RIDING 49-50 (2013).

[76] Jonathan M. Barnett & Ted Sichelman, *Revisiting Labor Mobility in Innovation*

At this point, some readers might wonder whether the problem with making empirical conclusions related to IP policy is simply that the existing evidence is too inconclusive. And indeed, we tend to agree with scholars such as those at NYU School of Law who see "major gaps in our empirical understanding that impede effective policy analysis" and a "need [for] a greater understanding of how law and policy affect innovation and creative production."[77]

But if the problem were merely empirical uncertainty, then we would expect to see both a *consensus about that uncertainty* and a *trend of convergence* as more empirical evidence is produced. That is, on the former point, IP experts would agree that the current evidence base is too thin for any strong conclusions. Instead, this Section has demonstrated that there is no such consensus: on a wide variety of IP issues, experts have looked to the same evidence and drawn contradictory conclusions. Similarly, on the latter point, this Section also demonstrates that we are not moving toward convergence; if anything, the IP policy debates appear more polarized than ever.

Based on our experience with the Cultural Cognition Project, we hypothesize that these interpretations of empirical IP studies are often driven by ex ante beliefs about the effectiveness (or lack thereof) of the IP system, as opposed to neutral analyses of the evidence. That is, in some cases, conclusions about what the evidence supports effectively exist prior to the evidence itself. To motivate this hypothesis, the following Section reviews what has been learned about cultural cognition in other contexts.

B. Dysfunctional Public Discourse and Cultural Cognition

Our pessimism about the ability of further evidence to resolve IP policy disputes does not stem from doubts about the ability of empirical study to address these questions. Instead, we suspect that the same dynamics that prevent agreement on the risks of climate change and gun control are emerging in IP policy debates. In each of these areas, democratic deliberation is hindered by the related dynamics of *cultural cognition* and *biased assimilation of information*. In short, people have a tendency to develop perceptions of risk that cohere with their cultural worldviews,[78] and they tend to accept,

Markets, (Univ. S. Cal. Ctr. For L. & Soc. Sci. Research Paper No. CLASS16-13, 2016), https://ssrn.com/abstract=2758854.

[77] *Empirical Research Initiative*, *supra* note 6.

[78] *See* Dan M. Kahan, *The Cognitively Illiberal State*, 60 STAN. L. REV. 101, 103 (2007) ("Cultural cognition refers to a collection of psychological mechanisms that

reject, and interpret new evidence in ways that further entrench those preexisting perceptions.[79] If IP policy positions are becoming infused with antagonistic cultural meanings, then, new information is more likely to further polarize than it is to depolarize.

Americans are sharply divided on a number of important policy questions: Is anthropogenic climate change real, and does it pose a serious threat? Does gun control protect or endanger the wellbeing of innocents? Does the death penalty deter murder?[80] Researchers — including ourselves, Dan Kahan at Yale Law School, and others — have attributed polarization on these issues to a psychological mechanism called "cultural cognition." Cultural cognition is "the tendency of members of close-knit social groups to conform their assessments of evidence on disputed risks to the positions that predominate among their peers."[81]

To determine these peer groups, researchers have drawn on the work of Mary Douglas and Aaron Wildavsky[82] and mapped cultural worldviews along two dimensions: hierarchy versus egalitarianism and individualism versus communitarianism.[83] People with a *hierarchical* worldview have a relative preference for social stratification — for a clear and stable social order in which opportunities and obligations are based on recognized status.[84] People with an *egalitarian* worldview, on the other hand, believe distinctions like gender and class should

moor our perceptions of societal danger to our cultural values.").

[79] *See* Charles G. Lord, Lee Ross & Mark R. Lepper, *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 J. PERSONALITY & SOC. PSYCHOL. 2098, 2099 (1979) [hereinafter *Biased Assimilation*] ("[I]ndividuals will dismiss and discount empirical evidence that contradicts their initial views but will derive support from evidence, of no greater probativeness, that seems consistent with their views."); Charles G. Lord & Cheryl A. Taylor, *Biased Assimilation: Effects of Assumptions and Expectations on the Interpretation of New Evidence*, 3 SOC. & PERSONALITY PSYCHOL. COMPASS 827, 830 (2009) ("[A]ssumptions and expectations can alter the very nature and meaning of how the new evidence . . . is perceived.").

[80] *See* Dan M. Kahan et al., *The Second National Risk and Culture Study: Making Sense of — and Making Progress in — the American Culture War of Fact* 1 (Yale Law Sch., Public Law Working Paper No. 154, 2007), http://ssrn.com/abstract=1017189.

[81] Dan Kahan & Ashley R. Landrum, *A Tale of Two Vaccines — and Their Science Communication Environments*, *in* THE OXFORD HANDBOOK OF THE SCIENCE OF SCIENCE COMMUNICATION 165, 166 (Kathleen Hall Jamieson, Dan M. Kahan & Dietram A. Scheufele eds., 2017).

[82] MARY DOUGLAS & AARON WILDAVSKY, RISK AND CULTURE 138-39 (1982).

[83] *See, e.g.*, Dan M. Kahan, Donald Braman, John Gastil, Paul Slovic & C. K. Mertz, *Culture and Identity-Protective Cognition: Explaining the White-Male Effect in Risk Perception*, 4 J. EMPIRICAL LEGAL STUD. 465, 468-69 (2007).

[84] *See id.*

not play a role in social ordering.[85] Along the second dimension, more *individualistic* people believe that each person's wellbeing is his own responsibility, whereas *communitarians* believe that individual welfare is a collective responsibility.[86]

These cultural worldviews shape people's policy preferences. Those with egalitarian and communitarian values "are morally suspicious of commerce and industry, which they see as sources of social disparity and vehicles of noxious self-seeking," whereas those with comparatively hierarchical and individualistic views are more suspicious of any "restrictions on commerce and industry, activities they value on material and symbolic grounds."[87] (Note that egalitarian and communitarian values are highly correlated, as are hierarchical and individualistic values.[88]) Cultural worldviews have thus been highly predictive of people's perceptions of risk and other facts related to contentious policy issues. For example, egalitarian communitarians are more likely than hierarchical individualists to believe that climate change poses a great risk to human health, safety, or prosperity.[89] They are also more likely to believe that private gun ownership poses a large risk.[90] On the other hand, hierarchical individualists are more likely to believe that gun *control* increases crime[91] and to be concerned

[85] *See* Dan M. Kahan, David A. Hoffman & Donald Braman, *Whose Eyes Are You Going to Believe?* Scott v. Harris *and the Perils of Cognitive Illiberalism*, 122 HARV. L. REV. 837, 859 (2009).

[86] *See id.*

[87] Kahan, *Foreword*, *supra* note 9, at 23-24.

[88] Based on the data from a nationally representative sample, r = 0.62. *See* Dan M. Kahan et al., *Geoengineering and Climate Change Polarization: Testing a Two-Channel Model of Science Communication*, 658 ANNALS AM. ACAD. POL. & SOC. SCI. 192, 194 (2015) [hereinafter *Geoengineering and Climate Change*] (analyzing and discussing the data used to calculate this correlation).

[89] *See* Kahan, Peters, Wittlin, Slovic, Ouellette, Braman & Mandel, *Polarizing Impact*, *supra* note 10, at 734.

[90] *See* Dan M. Kahan, *Vaccine Risk Perceptions and Ad Hoc Risk Communication: An Empirical Assessment* 28 fig.11 (Cultural Cognition Project Risk Perception Studies Report No. 17, 2014), https://ssrn.com/abstract=2386034; *see also* Dan M. Kahan, Hank Jenkins-Smith & Donald Braman, *Cultural Cognition of Scientific Consensus*, 14 J. RISK RES. 147, 159 (2011) (stating that hierarchical individualists are more likely to believe in a scientific consensus that laws permitting the concealed carry of handguns decrease violent crime) [hereinafter *Scientific Consensus*].

[91] *See* Kahan, Jenkins-Smith & Braman, *Scientific Consensus*, *supra* note 90, at 159; *see also* Dan M. Kahan, Ellen Peters, Erica Cantrell Dawson & Paul Slovic, *Motivated Numeracy and Enlightened Self-Government*, 1 BEHAV. PUB. POL'Y 54, 69 (2017) (finding that conservative Republican subjects are more likely to interpret data correctly when it supports an increase in crime due to gun control rather than a decrease in crime).

that vaccination of schoolgirls against HPV, a sexually transmitted infection, promotes sexual activity.[92]

Many issues are not culturally polarizing. There is no bitter national debate on the risks and benefits of pasteurization or chemotherapy or intestacy law. However, "culturally antagonistic memes" that link positions on an issue to opposing cultural worldviews can polarize people on previously neutral topics.[93] In a recent study, Dan Kahan and his collaborators created polarization on the dangers posed by the Zika virus by associating its spread with either global warming or illegal immigration.[94] Kahan has expressed concern that President Donald Trump's statements suggesting that vaccines cause autism could polarize the citizenry on the safety of childhood vaccinations: Trump has become a cultural symbol, so his assertions — and any attempts to fight them — come imbued with cultural significance.[95] Issues do not polarize the public because they are necessarily contentious; rather, in at least some instances, they polarize because they acquire cultural meaning.

Once a factual position acquires a cultural meaning congenial to one cultural group and hostile to another, people begin to assimilate new evidence in ways that support their cultural group's positions. Through a process of *biased assimilation*,[96] they both seek out and credit evidence that confirms their view and reject evidence that contradicts it.[97] One study of HPV-vaccine risk perceptions found that while hierarchical individualists were more likely than egalitarian communitarians to believe the vaccine was risky, this polarization actually *increased* after subjects read opposing arguments containing facts about the risks and benefits of mandatory vaccination.[98] Those

[92] *See* Kahan et al., *Who Fears the HPV Vaccine*, *supra* note 12, at 511.

[93] *See* Dan M. Kahan, Kathleen Hall Jamieson, Asheley Landrum & Kenneth Winneg, *Culturally Antagonistic Memes and the Zika Virus: An Experimental Test*, 20 J. RISK RES. 1, 1 (2017) [hereinafter *Culturally Antagonistic Memes*]; Gregory N. Mandel, *Technology Wars: The Failure of Democratic Discourse*, 11 MICH. TELECOMM. TECH. L. REV. 117, 120-21 (2005).

[94] Kahan, Jamieson, Landrum & Winneg, *Culturally Antagonistic Memes*, *supra* note 93, at 16.

[95] *See* Dan Kahan, *"Fake News" — Enh. "Alternative Facts Presidency" — Watch Out! (Talk Summary & Slides)*, CULTURAL COGNITION PROJECT BLOG (Feb. 20, 2017, 9:10 AM), http://www.culturalcognition.net/blog/2017/2/20/fake-news-enh-alternative-facts-presidency-watch-out-talk-su.html.

[96] *See* Lord, Ross & Lepper, *Biased Assimilation*, *supra* note 79, at 2099.

[97] *See* Kahan et al., *Who Fears the HPV Vaccine*, *supra* note 12, at 504, 509.

[98] *See id.* at 508. It is notable that both cultural groups found the vaccine riskier after reading the arguments; however, the risk perceived by hierarchical individualists increased more. *Id.* at 509.

predisposed to find the arguments against the vaccine persuasive gave them more weight than those predisposed to reject them.[99] Similarly, when subjects read newspaper editorials that made opposite claims about the risks of climate change, they evaluated the reliability of the editorials in accordance with their preexisting views on the subject.[100] People who are most numerate and scientifically literate — those best able to understand and process new scientific information — are in fact the *most* polarized on the issue of climate change.[101] New information does not convince polarized people to change views that are entwined with their cultural identities. If anything, it entrenches those views.

These dynamics have the potential to endanger public discourse. In a "polluted science-communication environment"[102] — where positions on scientific or empirical issues have taken on cultural meaning — informed democratic deliberation is nigh impossible. As the studies above suggest, on polarized issues, arguments based on empirical study can drive people farther apart instead of helping them reason toward common ground. Thus, "[c]ulturally polarized democracies are less likely to adopt policies that reflect the best available scientific evidence on matters . . . that profoundly affect their common interests."[103]

Although researchers have explored a number of promising ways to decrease polarization and foster deliberation in a polarized world,[104] there is no better solution than avoiding polarization in the first instance. If we can observe the potential for polarization on an issue — by, say, determining the source of disagreement between people who are particularly well-informed about or invested in the issue —

[99] *See id.* at 510.

[100] Adam Corner, Lorraine Whitmarsh & Dimitrios Xenias, *Uncertainty, Scepticism and Attitudes Towards Climate Change: Biased Assimilation and Attitude Polarisation*, 114 CLIMATIC CHANGE 463, 472 (2012).

[101] *See* Kahan, Peters, Wittlin, Slovic, Ouellette, Braman & Mandel, *Polarizing Impact*, *supra* note 10, at 734.

[102] Dan Kahan, *Why We Are Poles Apart on Climate Change*, 488 NATURE 255, 255 (2012).

[103] *Id.*

[104] *See, e.g.*, Andrea Felicetti et al., *Collective Identity and Voice at the Australian Citizens' Parliament*, 8 J. PUB. DELIBERATION, Apr. 2012, at 2 (arguing from example that local participatory deliberations can foster a sense of community identity); Kahan et al., *Geoengineering and Climate Change*, *supra* note 88, at 202-03 (polarization on climate change was mitigated when researchers offered geoengineering as a potential remedy, thereby changing the cultural meaning of climate change); Kahan et al., *Who Fears the HPV Vaccine*, *supra* note 12, at 510 (mitigating polarization on HPV vaccination risks by employing culturally counterintuitive communicators).

we may be able to prevent polarization in the general public and preserve the potential for informed democratic policymaking. Here, we tackle the potential for polarization, and depolarization, in the IP policy sphere.

C. Cultural Cognition and IP

As Section I.B demonstrated, the cultural cognition framework has helped improve researchers' descriptive understanding of the dysfunctional public discourse on issues ranging from gun control to climate change to the HPV vaccine. Based on this framework's widespread utility, we hypothesize that these cultural worldviews might also help explain the polarization we have observed in IP policy discussions. In particular, given that hierarchical individualists generally value commerce and industry and are suspicious of government regulation of private property rights, it seems likely that they would favor strong IP protection. And if egalitarian communitarians view IP as supporting commerce and industry and increasing inequality, they will likely prefer weaker IP rights.

We note, however, that the valence of the effect of cultural worldviews on IP policy preferences depends on the cultural meaning that patents have acquired — and this meaning need not be pro-big-business. As Mark Lemley has emphasized, IP protection can also be understood as a form of government regulation that *interferes* with free markets.[105] If hierarchical individualists come to view IP primarily in these terms, they may find its protection less cognitively congenial. Similarly, it is possible to view IP as a means for individual innovators to compete with established wealthy businesses, thereby *decreasing* inequality.[106]

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[105] *See* Mark A. Lemley, *The Regulatory Turn in IP*, 36 HARV. J.L. & PUB. POL'Y 109, 110 (2013) ("One way to view IP — the way Richard Epstein does — is to say: IP is a property regime; it is something around which parties can freely contract. . . . But another way to view IP rights is to say, 'this is a government restriction on what people can do with their own physical property and their own ideas.' . . . The problem is that IP is both.").

[106] *See, e.g.*, Christopher A. Cotropia, *The Individual Inventor Motif in the Age of the Patent Troll*, 12 YALE J.L. & TECH. 52, 55 (2010) ("The patent system has traditionally taken the individual inventor motif to heart and seen patents as a vehicle to both fuel individual inventors and protect them from large corporations."); Justin Hughes & Robert P. Merges, *Copyright and Distributive Justice*, 92 NOTRE DAME L. REV. 513, 516 (2016) (noting that "copyright provides the basis for the income and wealth of most of the wealthiest African Americans in the United States" and arguing that "copyright in its current form is a powerful tool to empower creative individuals economically").

There is relatively little evidence with which to test these competing hypotheses. Although the polarization on IP described in Section I.A hinders evidence-based IP policymaking, there is little empirical work on what shapes people's views on IP — or even on what those views *are* — either among the general public or among experts. In the remainder of this Section, we briefly review the existing evidence and explain why this evidence is consistent with our hypothesis that the cultural cognition framework might apply in the IP space.

The most significant work in popular attitudes toward IP rights among the U.S. general public comes from a series of studies conducted by Gregory Mandel, Kristina Olson, and Anne Fast.[107] Among other results, they found that female, older, wealthier, and more conservative individuals tended to believe that compliance with IP laws is more important than did, respectively, male, younger, less wealthy, and more liberal people.[108] They also found that Americans tend to have very low knowledge of IP law, and that individuals' knowledge of IP law generally does not affect their opinions about what the law should be.[109] Of course, this does not prove that their opinions are driven by cultural groups, but it is at least consistent with the finding that additional information does not lead to consensus on culturally polarizing issues.[110] Finally, the studies reveal that lay individuals tend to conceive of IP law as designed to prevent plagiarism, rather than its traditionally accepted incentivist justification.[111] The authors conclude: "Taken as a whole, these results [indicate] that there are certain cultural divides concerning attitudes towards intellectual property rights, divides that are likely to affect intellectual property related actions, politics, and discourse."[112]

There is even less evidence on what drives IP policy preferences among legal experts such as judges, practitioners, and commentators. The only study we are aware of that attempts to map judicial ideology to patent decisions is quite dated: it looked at patent decisions by the U.S. Court of Appeals for the D.C. Circuit from 1942 to 1972 and concluded that "all dissents by liberals opposed patent applicants,

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[107] Fast, Olson & Mandel, *Experimental Investigations*, *supra* note 20; Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20.

[108] Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 959.

[109] *Id.* at 961-62.

[110] *See supra* notes 97–98 and accompanying text.

[111] Fast, Olson & Mandel, *Experimental Investigations*, *supra* note 20, at 458; Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 917.

[112] Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 970.

while all dissents by conservatives favored applicants."[113] A study by John Allison and Mark Lemley of Federal Circuit patent validity decisions from 1989 to 1996 was not able to draw any conclusions related to political leanings because the sample was dominated by Republican-appointed judges, though at least some of these judges were very likely to find patents invalid.[114] At the Supreme Court level, Matthew Sag, Tonja Jacobi, and Maxim Sytch looked at IP decisions from 1954 to 2006 and found a minor ideological effect: the more conservative a Justice is, the more the Justice votes in favor of the IP owner, but there was no effect for liberal Justices.[115]

We are aware of only one other effort to study IP policy preferences: a short recent *Patently-O* paper by James Daily.[116] He studied the signatories of the dueling letters from law and economics professors on patent reform mentioned in the Introduction: the pro-patent-reform letter from fifty-one professors arguing that "a large and increasing body of evidence indicates that the net effect of patent litigation is to raise the cost of innovation and inhibit technological progress,"[117] and the anti-patent-reform letter from forty different professors expressing "deep concerns with the many flawed, unreliable, or incomplete studies about the American patent system that have been provided to members of Congress."[118] He found donations to Republican candidates and causes to be statistically significantly correlated with signing the second letter rather than the first ($p = 0.04$) — although it was a weak effect — and he noted that "[p]erhaps the most interesting conclusion that can be drawn is that there are *not* very many significant differences in the signatories' backgrounds."[119]

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[113] Lawrence Baum, *The Federal Courts and Patent Validity: An Analysis of the Record*, 56 J. PAT. OFF. SOC'Y 758, 771-72 n.38 (1974).

[114] John R. Allison & Mark A. Lemley, *How Federal Circuit Judges Vote in Patent Validity Cases*, 27 FLA. ST. U. L. REV. 745, 752, 755 (2000); *see also* Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 334 (2007) ("As far as we are aware, no scholar has presented evidence arguing that patents represent the type of politically charged area that leads *individual judges* appointed by Presidents from different parties to view patents differently." (emphasis added)).

[115] Matthew Sag, Tonja Jacobi & Maxim Sytch, *Ideology and Exceptionalism in Intellectual Property: An Empirical Study*, 97 CALIF. L. REV. 801, 806 (2009).

[116] Daily, *supra* note 21.

[117] Letter from Clark D. Asay et al., *supra* note 3.

[118] Letter from Michael Abramowicz et al., *supra* note 5.

[119] Daily, *supra* note 21, at 3, 9.

In sum, as a theoretical matter, cultural cognition offers at least a partial explanation of the polarized IP policy discourse. The scant existing evidence is consistent with that theory in suggesting that at least among the general public, IP policy views might not depend on IP policy knowledge and that even among experts, IP policy preferences might have some political valence.

II. SURVEY OF IP PRACTITIONERS

As explained in the Introduction, to determine whether cultural cognition or other factors are driving polarization in IP policy debates, it is necessary to study subjects who have strong views on IP policy. We thus focused our study on IP practitioners. This Part describes our methodology and our primary results.

In short, confirming our central hypothesis, hierarchical subjects and egalitarian subjects split over the effectiveness of patent rights, with more hierarchical IP attorneys favoring stronger patent protection. Individualism also tended to predict a preference for stronger patent protection. However, we observed no similar cultural division over copyright policy. We discovered several additional predictors of IP policy preference: for example, lawyers who devote a larger portion of their practice to patent law tend to believe patent rights are effective, as do lawyers who work with certain technologies, including pharmaceuticals. Lawyers who believe that the primary purpose of IP law is to incentivize creation believe in stronger patent rights, whereas lawyers who believe that the purpose of IP law is to protect people's natural rights in their own creations or to prevent plagiarism believe in stronger copyright protection. Interestingly, the attorneys in our sample were far more likely to say that the purpose of the IP system is incentivizing creation than the general public, a plurality of whom believe IP exists to prevent plagiarism.[120]

We present these results and others in detail below after a short description of our survey methodology. In addition, we have posted our data and code online,[121] so interested readers can replicate our findings or perform additional analysis.

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[120] *See* Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 931.

[121] Lisa Ouellette, *Codebook and Data for "What Causes Polarization on IP Policy?" (with Maggie Wittlin and Gregory N. Mandel)*, HARV. DATAVERSE (Oct. 13, 2018), https://doi.org/10.7910/DVN/1NLNUI.

A. Methodology

Our study focused on IP practitioners, a group likely to be knowledgeable and opinionated about IP policy issues.[122] To recruit IP practitioners from diverse practice environments, we used two different methods to target survey recipients: the Martindale online lawyer directory, which primarily includes practitioners at smaller firms,[123] and the Vault 2015 rankings of the top twenty-five IP law firms, which include some of the largest and most prestigious IP firms in the country.[124]

In the summer and fall of 2015, we distributed our survey through the online Qualtrics survey platform to 453 lawyers from the Martindale sample and 499 lawyers from the Vault sample.[125] We invited these lawyers "to participate in an online research survey about how IP practitioners view different IP policy issues," and we stated that their responses would be completely anonymous. To encourage participation, we offered participants the opportunity to enter a sweepstakes for five seventy-five-dollar Amazon gift certificates.[126]

We received 129 total responses: seventy-two responses from the Martindale sample and fifty-seven from the Vault sample, for response rates of 16% and 11%, respectively. Non-response bias is less of a concern here than for some surveys because it does not seem

[122] *See supra* paragraph following note 21.

[123] *See Advanced Search for Lawyers, Law Firms & Organizations*, MARTINDALE, http://www.martindale.com/Find-Lawyers-and-Law-Firms.aspx (last visited Mar. 1, 2017). The Martindale database was searched in November 2014 for lawyers who listed "Patents" or "Copyrights" as a practice area, resulting in a list of 3282 lawyers. Only paid Martindale subscribers are searchable by practice area, and we found that few of the largest law firms were paid subscribers. We randomly selected 500 of these lawyers, for whom we gathered their firm name, state, and email address. Our emails to a number of these addresses ended up bouncing back as undeliverable, so we actually emailed only 453 lawyers.

[124] *See 2015 Best Law Firms for Intellectual Property*, VAULT, http://www.vault.com/company-rankings/law/best-law-firms-in-each-practice-area/?sRankID=20&rYear=2015 (last visited Mar. 1, 2017). In early 2015, we visited the online lawyer directory for each of the twenty-five firms on this list, and we gathered email addresses for approximately ten percent of the firm's U.S. lawyers who practice patent or copyright law. This resulted in 536 email addresses, of which thirty-seven turned out to be non-functioning, so we ultimately emailed 499 lawyers from Vault firms.

[125] We emailed fifty lawyers from each group in May 2015; another fifty from each group in July 2015; and the remainder in November 2015.

[126] *See generally* Weimiao Fan & Zheng Yan, *Factors Affecting Response Rates of the Web Survey: A Systematic Review*, 26 COMPUTERS HUM. BEHAV. 132 (2010) (reviewing the literature on incentives to increase online survey response rates). To maintain anonymity, respondents were redirected to a separate spreadsheet to enter the sweepstakes after their survey responses were recorded.

particularly plausible that lawyers' likelihood of responding to a survey on IP policy is correlated with whether their cultural cognition profiles predict their view on IP policy. Nonetheless, we checked whether our respondents varied from non-respondents in terms of gender, region, years in practice, firm size, and practice focus (patents, copyrights, or trademarks, and litigation, acquisition, or transactional work), and we found no statistically significant differences between the two groups.[127]

We first asked respondents a series of background questions on their IP practice environment. We then asked their opinions on a number of IP policy matters, including their overall reform preferences, their view on specific issues such as whether it is acceptable to circumvent digital rights management ("DRM") protections and whether patents are necessary for software innovation, and their opinion on the best explanation for having IP laws. Next, we gave respondents a ten-question multiple-choice quiz to assess their familiarity with IP doctrine.[128] After these IP-related questions, we asked twelve questions to determine their cultural cognition profile (degree of hierarchy and individualism), as well as their views on various potential risks that have been examined in prior cultural cognition studies: private gun ownership, nuclear power, government regulation of businesses, and global warming. The survey concluded with demographic questions (including political views). Question order within each section was randomized. The full survey instrument

[127] Although responses were not linked to respondents, Qualtrics recorded whether the survey was completed. For two hundred randomly selected lawyers from the sample — sixty each of nonrespondents from the Vault and Martindale samples, and forty each of the respondents from each pool — online biographies were used to record observable characteristics (gender, region, years in practice, practice environment, and estimated time spent on different practice areas). Based on a two-tailed t-test, there were no statistically significant differences in any of these characteristics at the 10% level.

[128] For example, one question was as follows:

> If an invention is patented, may others legally make the invention for any non-commercial use or resell a copy of the invention that they legally purchased?
>
> (a) only make for non-commercial use
>
> (b) only resell a legal copy
>
> (c) both
>
> (d) neither

is available online,[129] and the specific questions are discussed in more detail below.

B. Sample Characteristics

As noted above, our sample consisted of 129 IP attorneys. Like IP practitioners in general, our respondents were heavily skewed toward patent practitioners: only two out of 129 respondents reported spending more than 50% of their time on copyright practice, and only fourteen spend more than 50% of their time on trademarks. In contrast, ninety-three respondents reported spending more than 50% of their time on patent practice, and forty-three practice only patent law.

Demographically, our respondents were more likely to be male, white, young, and wealthy than a representative sample of the U.S. population. Nearly three-quarters of our subjects were male.[130] Of our respondents, 83% were white, 10% described their ethnicity as East Asian or South Asian, and the remaining subjects described themselves as African American, Latino, Middle Eastern, bi-racial, or "other." Four-fifths were between twenty-five and fifty-four years old, with the remaining subjects fifty-five or older. The respondents were high earners: Of the 88% of subjects who reported their income, only two earned under $100,000 per year, and 32% reported earning $400,000 or more. Our subjects came from all regions of the United States, with most subjects living in either the Pacific (40%) or Mid-Atlantic (28%) regions. The attorneys were politically diverse: 32% Democrat, 21% Republican, and 17% Independent, with the remainder belonging to no political party or to some other party.

As illustrated in Figure 1, the IP attorneys surveyed differed from a nationally representative sample on the cultural measures, hierarchy and individualism. Compared to a national sample of 1500 U.S. adults surveyed for another Cultural Cognition Project study,[131] the IP attorneys were highly egalitarian. While the nationally representative sample had hierarchy scores evenly distributed across the entire spectrum, our attorneys clustered at the low end of the scale, with over three-quarters of our subjects on the egalitarian side of the scale.

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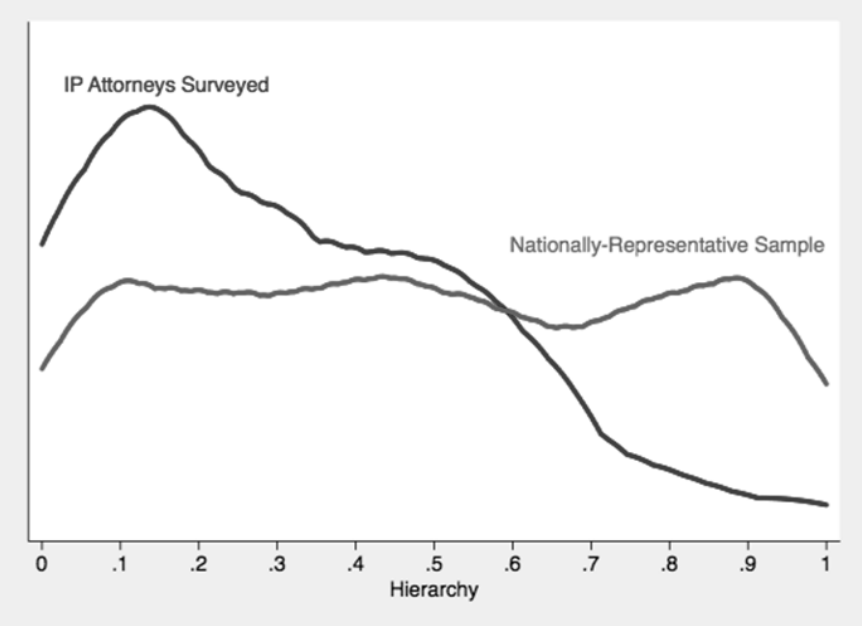
[129] *See* Ouellette, *supra* note 121.

[130] Out of 128 respondents who indicated their gender, ninety-five selected "Male," thirty-three selected "Female," and none selected "Other gender identity."

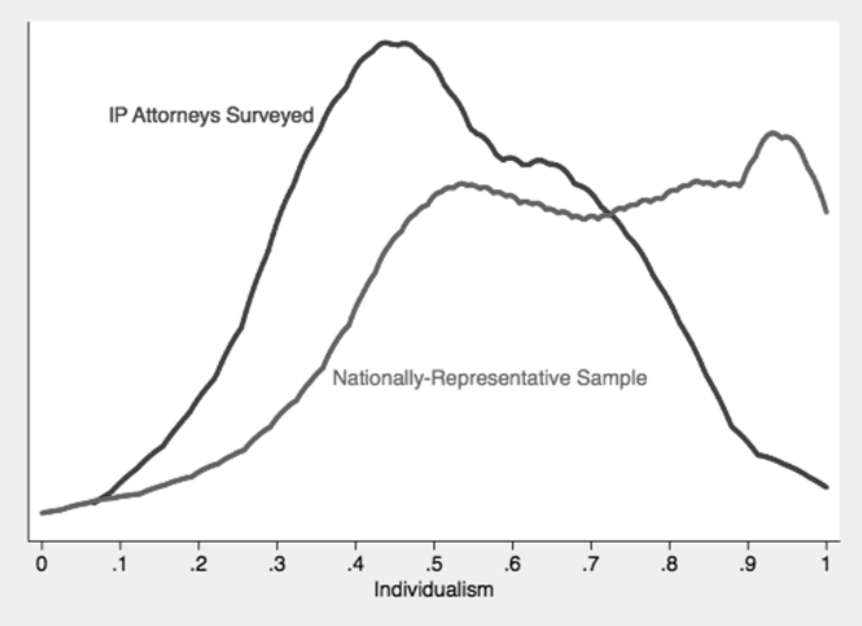
[131] Kahan et al., *Geoengineering and Climate Change*, *supra* note 88, at 196-205. Our survey and the geoengineering study used the same form of the cultural worldview test, so our results are directly comparable.

Figure 1. A density plot of hierarchy scores for both a sample of 129 IP attorneys (mean = 0.31) and a 1431-person nationally representative sample (mean = 0.49).



Similarly, the IP attorneys scored lower on individualism than the national sample, as shown in Figure 2. While the broader sample clustered at the higher end of the individualism scale, the IP attorneys fell into a more normal distribution with a mean near the middle of the scale.

Figure 2. A density plot of individualism scores for both a sample of 129 IP attorneys (mean = 0.53) and 1431-person nationally representative sample (mean = 0.68).



Our subjects were therefore substantially more egalitarian and communitarian — traits correlated with being liberal and a Democrat — than the nation as a whole. This result is consistent with the recent finding that U.S. lawyers "lean to the left of the ideological spectrum."[132] In addition, it is consistent with the respondents' education level. In another nationally representative dataset collected by the Cultural Cognition Project,[133] subjects with a postgraduate degree scored a third of a standard deviation below average in hierarchy and individualism.[134]

[132] Adam Bonica, Adam S. Chilton & Maya Seny, *The Political Ideologies of American Lawyers*, 8 J. LEGAL ANALYSIS 277, 292 (2016).

[133] Dan M. Kahan, *Culture, Cognition, and Consent: Who Perceives What, and Why, in Acquaintance-Rape Cases*, 158 U. PA. L. REV. 729, 765 (2010).

[134] This is based on original analysis of the data gathered for the acquaintance rape study, looking at the average score for subjects who responded that they had a postgraduate degree. *See id.* at 782.

C. Testing Cultural Cognition Hypotheses

As discussed in Section I.C, we hypothesized that hierarchs and individualists would be more likely to favor strong IP protection and to believe that protection is necessary to incentivize creation.[135] To test our hypotheses, we examined two measures of overall preference for stronger patent protection and stronger copyright protection. *PatentStrength* combined each subject's responses to two questions about the benefits of patent protection and need for reform (Cronbach's $\alpha = 0.74$).[136] *CopyrightStrength* is based on each subject's responses to a question about the need for copyright reform,[137] and *TrademarkStrength* is based on a question about trademark enforcement in the absence of consumer confusion.[138] All three variables range from 0 to 1, with higher values indicating a greater preference for stronger IP protections.

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[135] *But see supra* notes 105–06 and accompanying text (explaining why we would expect a different result if IP comes to be viewed more as government interference in the marketplace).

[136] Cronbach's α is "a measure of the internal consistency" of a scale, in other words, "the extent to which to which all the items in a test measure the same concept or construct." Mohsen Tavakol & Reg Dennick, *Making Sense of Chronbach's Alpha*, 2 INT'L J. MED. EDUC. 53, 53 (2011). Chronbach's α is larger — closer to one — when scale items are correlated with each other. *Id.*

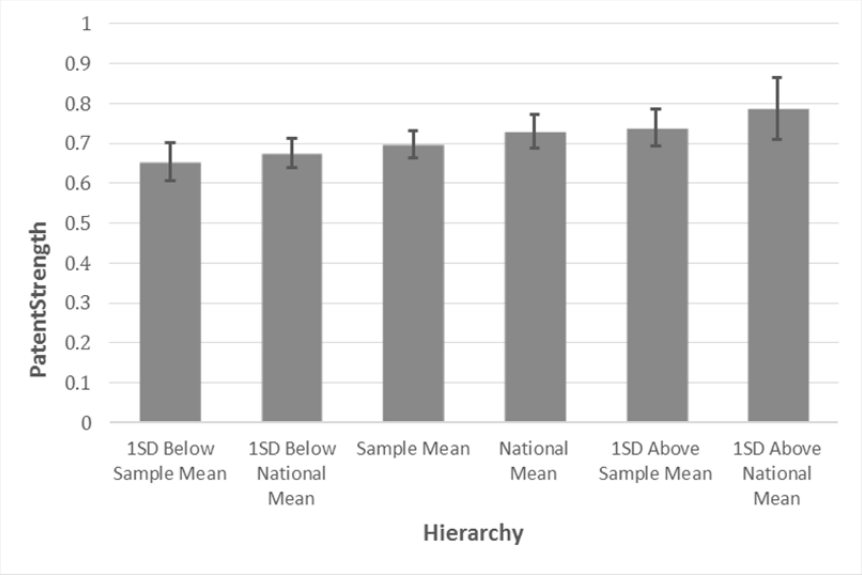
Subjects were asked (1) "Overall, what kind of reform (if any) do you think is needed for U.S. [patent] laws" (ranging from "substantially stronger protection" to "substantially weaker protection"), and were asked how strongly they agreed with the following statement: (2) "Strong patent protection is necessary to spur a desirable level of innovation." Responses to additional patent-related policy questions were not included in *PatentStrength* because they did not correlate sufficiently well with these other measures. *See* Alberto Trobia, *Cronbach's Alpha*, *in* ENCYCLOPEDIA OF SURVEY RESEARCH METHODS 168, 169 (Paul J. Lavrakas ed., 2008) ("Some authors have proposed a critical value for alpha of 0.70, above which the researcher can be confident that the scale is reliable. The logic of this rule is that with an alpha of 0.70 or greater, essentially 50% (or more) of the variance is shared among the items being considered to be scaled together. Others have proposed the value of 0.75 or the stricter 0.80. If alpha is less than 0.70, it is recommended that the scale be modified, for example, by deleting the least correlated item, until the critical value of 0.70 is finally reached or hopefully exceeded."); *see also* Amy Janan Johnson, *Reliability, Cronbach's Alpha*, *in* THE SAGE ENCYCLOPEDIA OF COMMUNICATION RESEARCH METHODS 1414, 1415 (Mike Allen ed., 2017) ("Generally, Cronbach alphas above .70 are considered sufficiently high in reliability.").

[137] Subjects were asked "Overall, what kind of reform (if any) do you think is needed for U.S. [copyright] laws." Responses to additional copyright-policy questions were not combined with this measure due to insufficient correlation.

[138] Subjects were asked how strongly they agreed with the following statement: "Companies with valid trademarks should be able to prevent others from using similar symbols, even if no one would be confused."

We found some support for our hypotheses. Most notably, *PatentStrength* correlated significantly with both hierarchical values (r = 0.22, p = 0.01) and individualism (r = 0.19, p = 0.03).[139] Figure 3 shows the predicted *PatentStrength* scores for an IP attorney one standard deviation below the sample mean in hierarchy, one standard deviation below the national mean in hierarchy, at the sample mean, at the national mean, one standard deviation above the sample mean, and one standard deviation above the national mean.[140]

Figure 3. N = 127. Estimated values of *PatentStrength* following a univariate linear regression on hierarchy (β = 0.18, SE = 0.07). Confidence intervals reflect a 95% level of confidence.

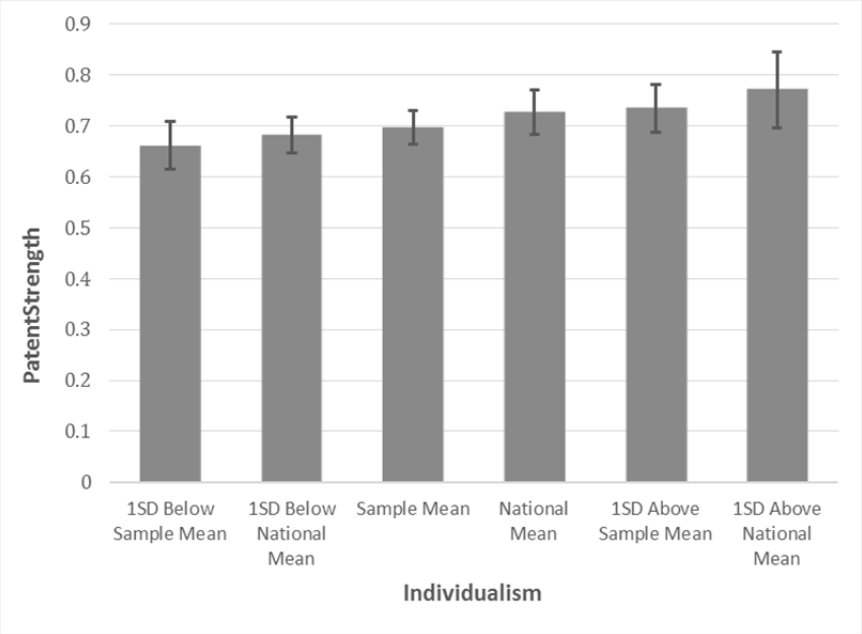


[139] Pearson's correlation coefficient (represented by r) indicates the strength of the correlation between two variables, with 0 indicating no relationship, 1 indicating perfect positive correlation, and -1 indicating perfect negative correlation. Joel K. Shapiro, *Correlation*, *in* ENCYCLOPEDIA OF SURVEY RESEARCH METHODS, *supra* note 136, at 154, 154-55. The probability value or p-value (represented by p) indicates "the likelihood that the statistical result was obtained by chance alone," with low p-values (such as under 0.05) signifying that the result was unlikely to have occurred by chance. Trent D. Buskirk, *P-Value*, *in* ENCYCLOPEDIA OF SURVEY RESEARCH METHODS, *supra* note 136, at 647, 647-48.

[140] In Figure 3 and subsequent figures, "β" represents the regression coefficient and "SE" represents the standard error.

Similarly, Figure 4 shows how *PatentStrength* varies with individualistic values among our subjects.

Figure 4. N = 127. Estimated values of *PatentStrength* following a univariate linear regression on individualism (β = 0.19, SE = 0.09). Confidence intervals reflect a 95% level of confidence.



These results support our hypothesis that hierarchical and individualistic attorneys are more likely to believe that strong patent rights are necessary for innovation.[141] Our findings suggest that IP

[141] Our study was likely underpowered, which could affect our results. A statistical test's "power" is "the probability that it correctly rejects the null hypothesis." Andrew Gelman & John Carlin, *Beyond Power Calculations: Assessing Type S (Sign) and Type M (Magnitude) Errors*, 9 PERSP. ON PSYCHOL. SCI. 641, 641 (2014). Power varies with the sample size, effect size, and desired significance level. Researchers (and funders) often demand a power of 0.80 before they attempt a study — otherwise the chances of incorrectly finding no effect are too low. *See id.* at 643. We had no reliable basis for estimating an effect size in advance of our study. For a correlation coefficient of 0.2 and a sample size of 127 (the number of responses who answered both *PatentStrength* questions), our power was approximately 0.6. For a correlation coefficient of 0.15, the power was 0.4, and for a coefficient of 0.25, it was 0.8. *See Power Calculation for Pearson's & Spearman's Correlation*, STATISTICAL DECISION TREE, https://www.anzmtg.org/stats/PowerCalculator/PowerCorrelation (last visited July 6, 2018). We *did* obtain significant results, so the main concern of power analysis is moot. However, Andrew Gelman and John Carlin have demonstrated that underpowered studies may obtain

disputes, at least in part, follow the same dynamics as other cultural policy disputes in the United States.

We found zero support, however, for a correlation between cultural values and copyright or trademark policy preferences. Neither hierarchy ($r = -0.13$, $p = 0.20$) nor individualism ($r = -0.09$, $p = 0.39$) predicted *CopyrightStrength*. Similarly, there was no correlation between *TrademarkStrength* and either hierarchy ($r = -0.05$, $p = 0.57$) or individualism ($r = -0.04$, $p = 0.63$). But as noted above, there were very few copyright- or trademark-focused attorneys in our sample. We cannot conclude from our data whether practitioners focused more heavily on copyright and trademark law would demonstrate greater cultural polarization over policy disputes in these areas.

Political party and political self-identification provide little additional explanatory power because they correlate with cultural values: Democrats and liberals tend to hold egalitarian and communitarian values while Republicans and conservatives tend to be hierarchs and individualists; libertarians tend to be highly individualistic. Table 1 shows that was true for our sample, as well.

Table 1. Mean Cultural Variables for Different Political Groups

	Hierarchy	Individualism
Democrat (n = 41)	0.16	0.39
Republican (n = 27)	0.53	0.64
"Liberal" or "Very Liberal" (n = 51)	0.16	0.42
"Conservative" or "Very Conservative" (n = 23)	0.51	0.61
Libertarian (n = 17)	0.49	0.73

It is unsurprising, then, that we found some correlation between these measures and patent policy positions. Being a Democrat correlated negatively with *PatentStrength* ($r = -0.19$, $p = 0.03$), while being a Republican correlated positively ($r = 0.22$, $p = 0.01$). Identifying as

results with the wrong sign or exaggerated magnitude. Gelman & Carlin, *supra* note 141, at 643-46. They note that problems with exaggerated magnitude begin where power is less than 0.5 and problems with sign begin to arise when power is less than 0.1. *Id.* at 643-44. Although we have no reason to believe that our correlation coefficients are far off from the true effect, because we know so little about what correlation to expect, the possibility remains that the true effect is very small, and our study has greatly exaggerated its magnitude.

conservative as opposed to liberal did not correlate significantly with *PatentStrength* ($r = 0.10$, $p = 0.30$).[142] Being a libertarian also did not significantly correlate with this measure ($r = -0.04$, $p = 0.67$). There were no significant correlations between political party or self-identification and copyright policy preferences.

When subjects considered the specific question of whether patent protection is necessary for pharmaceutical development, they evinced at least as much cultural division as they did on the *PatentStrength* measure.[143] Belief that pharmaceutical companies will develop new drugs only if they have patent protection correlated significantly with hierarchy ($r = 0.26$, $p < 0.01$) but, somewhat surprisingly, it did not correlate with individualism at the 5% level ($r = 0.15$, $p = 0.08$). It also correlated positively with being a Republican ($r = 0.24$, $p < 0.01$) and negatively with being a Democrat ($r = -0.21$, $p = 0.02$). Unlike *PatentStrength*, this measure correlated positively with identifying as conservative ($r = 0.25$, $p = 0.01$) and libertarian ($r = 0.18$, $p = 0.04$). Conservatives appear to more clearly recognize a need for patents in the specific context — the pharmaceutical industry — where they are most universally valued.[144]

D. Other Sources of Motivated Reasoning

Cultural cognition is only one form of the more general phenomenon of motivated reasoning — "the unconscious tendency of individuals to process information in a manner that suits some end or goal extrinsic to the formation of accurate beliefs."[145] For example, people are motivated to perceive a referee's calls in favor of their home team as accurate and calls in favor of the opposing team as inaccurate;[146] to credit or discredit information about the validity of intelligence tests, depending on how they were told they performed on

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[142] Political self-identification is here measured on a five-point scale from "very liberal" to "very conservative." Libertarians are not included in this measure.

[143] This question asked subjects to agree or disagree with the statement: "Without strong patent protection, many pharmaceutical firms would no longer develop new drugs."

[144] *See* Burk & Lemley, *Policy Levers*, *supra* note 152, at 1581-82, 1616-17, 1679 n.392 (describing the industry-specific nature of innovation and the comparatively high importance of patents in the pharmaceutical industry).

[145] Kahan, *Foreword*, *supra* note 9, at 19. *See generally* Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480 (1990).

[146] *See* Albert H. Hastorf & Hadley Cantril, *They Saw a Game: A Case Study*, 49 J. ABNORMAL & SOC. PSYCHOL. 129, 131-33 (1954).

a test;[147] and to credit or discredit a study of the effects of caffeine consumption, depending on the study's conclusions and how much caffeine the person consumes.[148]

Motivated reasoning might explain several additional results, although we note that it is difficult to make causal arguments based on correlational data and that the following explanations are non-exclusive. First, we found that *PatentStrength* was strongly correlated with the percentage of an attorney's practice time that is devoted to patent law ($r = 0.42$, $p < 0.001$). The correlation is even stronger between *PatentStrength* and an interaction variable, *TotalPatentTime*, generated by multiplying the percent of time devoted to patent law by the length of time the attorney has been practicing ($r = 0.47$, $p < 0.001$). Further, *PatentStrength* is positively correlated with the percent of the lawyer's time spent on IP rights acquisition ($r = 0.27$, $p < 0.01$) and negatively correlated with the percent of the lawyer's time spent on transactional work or IP licensing ($r = -0.24$, $p < 0.01$). There was also a correlation between the percent of time the respondent spends representing IP owners, as opposed to accused infringers, although this was not significant at the 5% level ($r = 0.16$, $p = 0.06$).[149]

People want to believe their work is meaningful.[150] Attorneys who devote themselves to patent law, then, may be motivated to believe that the patent system is necessary for product innovation — they may want to believe that their work actually helps spur technological development and doesn't just shift money between companies. This is particularly true for lawyers who focus on patent acquisition: If patents work, they are adding value by getting patents for their clients; if patents do not work, they are directly fostering a useless or even harmful system. Similarly, patent lawyers may have made arguments about the importance of patent rights to courts and, in doing so, may have internalized the positions they advanced.[151] Transactional

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[147] *See* Robert S. Wyer, Jr. & Dieter Frey, *The Effects of Feedback About Self and Others on the Recall and Judgments of Feedback-Relevant Information*, 29 J. EXPERIMENTAL SOC. PSYCHOL. 540, 541-42 (1983).

[148] *See* Kunda, *supra* note 145, at 485 (discussing Bonnie R. Sherman & Ziva Kunda, *Motivated Evaluation of Scientific Evidence* (Am. Psychol. Soc'y Convention Paper, 1989)).

[149] *CopyrightStrength* and *TrademarkStrength* did not correlate significantly with amount of time spent on copyright law or with these other practice-time variables.

[150] *See generally* Christopher Michaelson et al., *Meaningful Work: Connecting Business Ethics and Organization Studies*, 121 J. BUS. ETHICS 77, 78 (2014) (reviewing the literature on meaningful work, including the "potential dark side . . . which can be invoked to rationalize manipulative and even unethical behaviors").

[151] *Cf.* Zev J. Eigen & Yair Listokin, *Do Lawyers Really Believe Their Own Hype, and*

attorneys, on the other hand, do not need to convince a patent examiner that an invention is worthy of a patent or convince a court that their client's rights are important: the patent is typically a given in their work, and they need only work out the terms of the deal.

To be sure, there are other possible explanations for the correlation between time devoted to patent practice and *PatentStrength* that do not implicate motivated reasoning: for example, experienced patent lawyers may have heard clients discuss the relationship between patent rights and research and development at their own companies. Given the number of experienced patent lawyers who had a first career as an engineer or scientist, there may be an even higher-than-usual level of alignment between lawyer and client beliefs concerning IP. And of course the causation may run in the other direction: people invested in the patent system may choose to spend more time practicing patent law.

Relatedly, we found some correlation between the technologies that a lawyer's practice involves and a lawyer's beliefs about IP policy. Most scholars agree that patents are most highly valued in the pharmaceutical industry.[152] We found that those whose practices involved chemistry, including traditional pharmaceuticals, were more likely to believe in the benefits of strong patent rights ($r = 0.20$, $p = 0.02$). There was also a correlation, though significant only at the 10% level, between a practice involving biotechnology (including genetics) and *PatentStrength* ($r = 0.15$, $p = 0.09$). This may suggest that these lawyers agree with the conventional wisdom that certain technological areas such as pharmaceuticals need patents to incentivize innovation, because research is a costly investment, whereas other technologies such as software do not. However, these correlations became insignificant when we controlled for the percent of the subject's practice devoted to patent law, so it may be that people who work in these industries simply devote more time to patent practice and are therefore motivated to believe patents are important.

We observed a significant negative correlation between *PatentStrength* and a practice involving almost any of the copyright technologies, including motion pictures ($r = -0.25$, $p < 0.01$), sculpture ($r = -0.20$, $p = 0.03$), software (copyright practice) ($r = -0.26$, $p < 0.01$), television or radio ($r = -0.21$, $p = 0.02$), and written work,

Should They? A Natural Experiment, 41 J. LEGAL STUD. 239, 239 (2012) (finding that "following participation in moot court contests, students overwhelmingly perceive that the legal merits favor the side that they were randomly assigned to represent").

[152] *See, e.g.*, Burk & Lemley, *Policy Levers*, *supra* note 26, at 1581-82, 1616-17, 1679 n.392.

such as books or newspapers ($r = -0.18$, $p = 0.04$). However, there was no statistically significant correlation between any area of technology and *CopyrightStrength*, our measure of belief in strong copyright laws.

Finally, we hypothesized that geographical region might have an effect: those who work in regions with more patent-reliant industries (such as pharmaceuticals) might be more likely to view patents favorably than those in areas where the technology may depend less on patent protection (such as software). If this is so, attorneys in the Mid-Atlantic region, traditionally a pharmaceutical hub,[153] should score higher on *PatentStrength* than attorneys in the far West, known for its software technology. Indeed they do: *PatentStrength* is positively correlated with living in the Mid-Atlantic ($r = 0.28$, $p = 0.001$) and negatively correlated with living in the Pacific region ($r = -0.18$, $p = 0.04$). Unsurprisingly, the correlation is also strong between *PatentStrength* and an interaction variable that takes the value 1 for subjects who live in the Mid-Atlantic and practice either in biotechnology or chemistry ($r = 0.24$, $p < 0.01$). Notably, the correlation with living in the Mid-Atlantic remains significant even when we control for technology (specifically biotechnology and chemistry, including pharmaceuticals) ($\beta = 0.12$, $SE = 0.04$). Similarly, the negative correlation with living in the Pacific remains even if one controls for software patent work ($\beta = –0.08$, $SE = 0.04$). This suggests that a regional IP policy culture may form around local industry.

E. Beliefs About Basis of IP Law

We also explored the participants' perceptions of the basis for the IP system. We asked our subjects, "What do you think is the best explanation for having IP rights and laws?" and gave them the following six choices (where we have also noted our shorthand label for each choice):

- IP laws incentivize creation and commercialization of innovations by allowing people to profit off of their creations and inventions. ("incentive")
- IP laws protect the inherent, natural rights of people in their creations and inventions. ("natural rights")

[153] *See* Tara Nurin, *Can Biotechnology Provide the Cure for What Ails New Jersey's Economy?*, N.J. SPOTLIGHT (Apr. 6, 2016), http://www.njspotlight.com/stories/16/04/05/can-biotechnology-provide-the-cure-for-what-ails-new-jersey-s-economy (noting that "pharma" has "support[ed] the state's economy . . . for more than a century").

- IP laws enable people to express their identity through their creations and inventions. ("expression")
- IP laws prevent people from plagiarizing another person's creation or invention and wrongly claiming these works as their own. ("anti-plagiarism")
- There is no good explanation for having IP rights and laws. ("no good explanation")
- Another reason. Please explain: _____

Respondents overwhelmingly opted for the first option, with 101 of 129 (78%) respondents choosing "incentive" as the best explanation for IP laws. Additionally, ten subjects chose "natural rights," ten chose "anti-plagiarism," one chose "no good explanation," and seven gave other reasons that were mostly variations on incentive theory.[154]

The IP attorneys' opinions on the justification for IP laws are substantially different from the results of surveys of the American public. When queried about their perceptions of the basis for IP rights, 37% of the general population identified anti-plagiarism, 26% selected incentives, 26% selected natural rights, and 11% identified an expressive basis.[155]

The attorneys' positions on the basis of IP rights only weakly predicted their positions on the need for IP rights. Believing that the best rationale for IP laws is grounded in either incentives or natural rights correlated with *PatentStrength*, but only at the 10% level ($r = 0.16$, $p = 0.08$). By contrast, subjects who believed in anti-plagiarism had the highest mean values for *CopyrightStrength* (mean = 0.53, compared with 0.45 for other rationales), although the difference was not statistically significant ($p = 0.36$).

We also asked subjects which of the following two statements they agreed with more:

- Patents and copyrights are private property rights. ("property rights")

[154] Two cited the Constitution's IP Clause; four noted that IP's incentive must be balanced with rights of the public; and one simply noted that trademark law has a different explanation from copyright and patent law.

[155] *Cf.* Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 931 & tbl.1 (reporting results for the general public).

- Patents and copyrights are government interventions in the markets for inventions and creations. ("government intervention")
- Neither. Please explain: _____ ("neither")

This question probed whether IP attorneys think of patents and copyrights as the kind of property rights protected by a free-market, capitalist system or whether they think of them as government *intervention* into that sort of system — a limitation on market freedom.

Of 103 subjects,[156] sixty-seven responded that patents and copyrights are "private property rights," while twenty-eight responded that they are "government interventions."[157] Eight subjects provided their own response. A belief that patents and copyrights are private property rights correlated significantly with *PatentStrength* ($r = 0.21$, $p = 0.03$), and with having a worldview that is hierarchical ($r = 0.31$, $p < 0.01$) and individualistic ($r = 0.31$, $p < 0.01$). Notably, *PatentStrength* was more strongly predicted by the interaction of the belief that IP rights are private property rights with the variables for hierarchy ($r = 0.28$, $p < 0.01$) or individualism ($r = 0.24$, $p = 0.01$) than for either hierarchy alone ($r = 0.22$, $p = 0.01$) or individualism alone ($r = 0.19$, $p = 0.03$). This suggests that while understanding IP rights as property rights versus government regulation does not, on its own, drive polarization on IP policy, these understandings may interact with cultural worldview to exacerbate divisions. Hierarchical individualists, who tend to favor free markets and the rights of businesses, may be

156 This number includes only the subjects in the non-pilot wave of the study. We phrased this question differently in our pilot study. The two statements in that version were:

- IP law protects private property rights.
- IP law represents government interference in the free market.

However, all twenty-six pilot subjects who responded to this question gave the first answer: property rights. We reformulated the question to better separate people who see IP rights as similar to other property right from people who see IP rights as an external intervention into the market. Here, we analyze only our non-pilot pool.

157 This survey was conducted before the Supreme Court decided to hear a case on whether a form of administrative review of granted patents violates the Constitution by extinguishing private property rights through a non-Article III forum without a jury. Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC, 137 S. Ct. 2239 (2017) (granting the petition for writ of certiorari). If the survey were conducted now, press related to the *Oil States* case may cause results to be more skewed toward "private rights."

more likely to support strong patent rights if they believe they align with these values.

F. Other Predictors and Non-Predictors

We investigated whether other subject characteristics predicted positions on IP policy.

Age correlated significantly with *PatentStrength* ($r = 0.18$, $p = 0.04$), with older attorneys favoring stronger rights, a result that is consistent with studies of the general population.[158] This correlation held even when we controlled for hierarchy ($\beta = 0.03$, $p = 0.02$). The coefficient was no longer significantly different from 0, however, when we controlled for income. Income itself was not significantly correlated with *PatentStrength*.

Unlike age, gender did not significantly correlate with our subjects' beliefs about patent policy. We did, however, find some correlation between gender and belief about copyright policy, with women believing in the value of copyright protection more than men ($r = 0.23$, $p = 0.02$).[159] This difference is consistent with prior studies of the general population's attitudes about IP rights.[160]

We also tested whether knowledge of IP, as measured by our knowledge quiz,[161] predicted beliefs about IP policy. We calculated each subject's quiz score, where a correct answer scored one point, an incorrect answer got zero points, and no response received 0.25 points.[162] Quiz score did not correlate significantly with either *PatentStrength* or *CopyrightStrength*.

Our prior cultural cognition work has found that science literacy and numeracy exacerbate cultural polarization.[163] We hypothesized that IP expertise might similarly exacerbate polarization over IP policy issues. However, that did not appear to be the case here: subjects with

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158 *See* Mandel, Fast & Olson, *Plagiarism Fallacy*, *supra* note 20, at 957-60; Mandel, *Public Perception*, *supra* note 20, at 300-01.

159 The survey also included a third option, "Other gender identity," which none of the respondents selected.

160 *See* Mandel, Fast & Olson, *Plagiarism Fallacy, supra* note 20, at 957-60; Mandel, *Public Perception*, *supra* note 20, at 304.

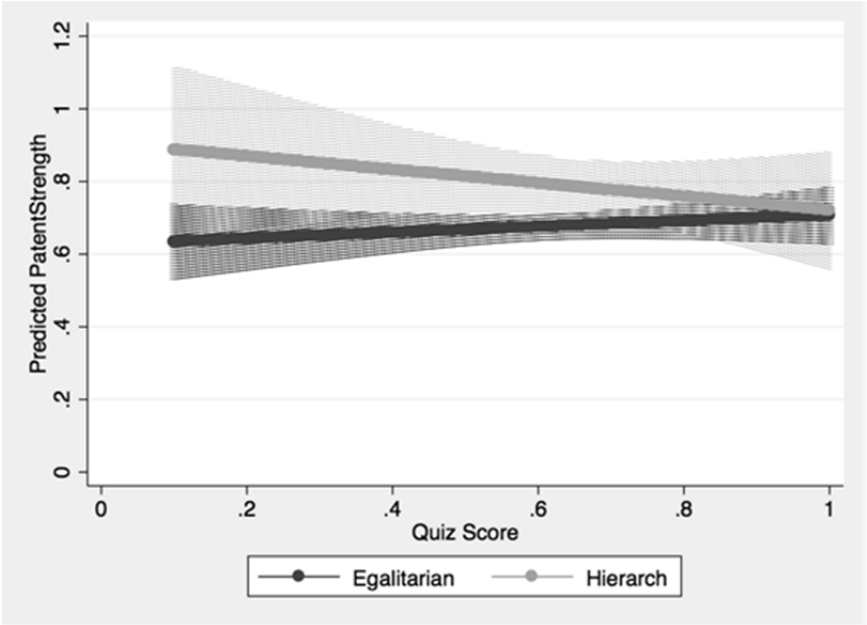
161 *See supra* note 128 and accompanying text.

162 The score that we used was the subject's average score for each question. We calculated average, instead of total, score because we dropped one question after the pilot study and added an additional question in the main survey, so totals would be higher for the main survey if we simply added all of the responses.

163 Kahan, Peters, Wittlin, Slovic, Ouellette, Braman & Mandel, *Polarizing Impact*, *supra* note 10, at 733.

higher quiz scores were less polarized than subjects with lower quiz scores, as illustrated in Figure 5.

Figure 5. Predicted *PatentStrength* values for subjects one standard deviation below the national mean in hierarchy and one standard deviation above the national mean in hierarchy following a regression on hierarchy, quiz score, and the interaction of the two.



IP knowledge, then, does not appear to have the same effect as numeracy or science knowledge does in polarizing people on other issues. These results have significant implications for the ability to work towards greater consensus through the dissemination of greater information, as discussed in the following section.

III. TOWARD EVIDENCE-BASED IP POLICYMAKING

We think few scholars would disagree with the goal of evidence-based IP policymaking.[164] But this goal is stymied by the strong

[164] Whether evidence-based policy will continue to be espoused as desirable by U.S. *government officials*, however, is alarmingly unclear under the Trump administration. *See, e.g.*, J.B. Wogan, *Evidence-Based Programs Risk Losing Funding Under Trump*, GOVERNING (Mar. 1, 2017), http://www.governing.com/topics/health-human-services/gov-omb-social-innovation-fund.html. For purposes of this Article, we set aside the rise of "alternative facts" and assume that actual facts are of interest to

disagreement canvassed in Section I.A about what the growing body of evidence actually says. Polarization not only hinders current deliberations — it also makes funding additional research a risky bet, given that it is far from clear that new studies or policy experiments will actually lead to greater consensus. It is thus essential to examine the source of these disagreements, as well as whether IP polarization can be reduced by changes in how empirical IP research is designed or conducted.

Our results show some support for cultural cognition on patent law issues. Most notably, we found that more hierarchical respondents were more likely to believe in a need for strong patent rights than were more egalitarian respondents. And we found no correlation between IP knowledge and patent policy preferences. This suggests that patent policy may be susceptible to cultural polarization in the same way as other contentious issues, such as climate change and gun control.

A. Changing How IP Research Is Communicated

An implication of this finding is that those communicating patent law research may be able to borrow techniques from the science communication and decision research literature that have been shown to reduce culturally motivated cognition. For example, audiences are more receptive to information about climate change when it is framed in terms of its public health effects and its local impact,[165] and they are more open-minded regarding information on U.S. foreign policy or abortion when their group identity is affirmed than when they are encouraged to be rational.[166] Polarization on patent policies might similarly be reduced by changing *how patent information is framed*,

at least some policymaking audiences, which at the very least likely includes judges. *Cf.* Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1119-20 (2003) ("There should be little question that the patent statute, as currently structured, contemplates policy-oriented judicial development of patent common law.").

165 *See* P. Sol Hart & Erik C. Nisbet, *Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies*, 39 COMM. RES. 701, 717 (2012); Teresa A. Myers et al., *A Public Health Frame Arouses Hopeful Emotions About Climate Change*, 113 CLIMATE CHANGE 1105, 1108 (2012); *see also* Dan M. Kahan, *Climate-Science Communication and the Measurement Problem*, 36 ADVANCES POL. PSYCHOL. 1, 33-36 (2015) (explaining how four politically diverse counties in Southeast Florida have overcome climate change polarization to adopt climate action plans).

166 *See* Geoffrey L. Cohen et al., *Bridging the Partisan Divide: Self-Affirmation Reduces Ideological Closed-Mindedness and Inflexibility in Negotiation*, 93 J. PERSONALITY & SOC. PSYCHOL. 415, 416 (2007).

such as by emphasizing patents as regulations rather than patents as property rights, or by providing salient examples of how different policies might affect those of the same cultural worldview. Whether these strategies are effective in the patent context is an important avenue for further research.

We did not, however, find a similar cultural influence on beliefs about copyright policy. Yet scholars are divided on the benefits of strong copyright protection.[167] This suggests that other factors — possibly different cultural groups — may be driving polarization on copyright issues. For example, copyright policy preferences were strongly correlated with both age and gender (older people and women prefer stronger copyright protection). It is possible that cultures affiliated with different generations are more powerful drivers of copyright beliefs. Future work should explore potential motivators of copyright polarization, looking at larger, more diverse populations. Those studies can use our findings about age and gender as a jumping-off point for testable hypotheses.

Our results also indicate that unlike for patent law, attorneys with greater knowledge of IP law tended to converge in their views on copyright law to a greater extent than those with less knowledge. Working to disseminate information on IP law and policy may therefore be one way to reduce polarization in the copyright space.

For all aspects of IP policy, more work should be done both to explore further the causes of motivated reasoning and to measure the impact of different interventions, such as changing how new evidence is communicated to help it make the impact it should.

B. Changing How IP Research Is Conducted

Even before all the causal factors that shape prior beliefs on IP policy are pinned down, there are some interventions concerning how empirical IP research is conducted that likely could address many forms of biased assimilation of information. For example, the recent *Open Letter on Ethical Norms in Intellectual Property Scholarship* — drafted by Robin Feldman, Mark Lemley, Jonathan Masur, and Arti Rai and signed by almost fifty other IP scholars — advocates for practices such as increased disclosures of funding sources and of the data necessary to replicate any empirical result.[168] Many scholars

[167] *See supra* notes 68–71 and accompanying text.

[168] Robin Feldman, Mark A. Lemley, Jonathan S. Masur & Arti K. Rai, *Open Letter on Ethical Norms in Intellectual Property Scholarship*, 29 HARV. J.L. & TECH. 339, 347-51 (2016) [hereinafter *Open Letter on Ethical Norms*].

already engage in these practices, and we think their more widespread adoption can only be beneficial.

But we could do more. One novel intervention that seems particularly promising would be the advance registration of empirical IP studies, as well as of empirical legal studies more broadly. This practice is already widespread in medical scholarship and research. To register a study, researchers submit, and thereby commit to, a hypothesis, research design, and plan for data analysis.[169] Registration aims to improve accuracy by reducing publication bias[170] and preventing researchers from altering their methodology mid-study to obtain a preferred result.[171] It also seems likely to us that advance registration would promote broader acceptance of the results of empirical studies on controversial topics. (Though we did not pre-register this study, we did state our hypotheses in advance in our IRB application.)[172]

Registration of most medical clinical trials is required by U.S. law to promote transparency and objectivity in interpreting their results,[173] and several psychological research journals permit or require pre-registration.[174] To further encourage use of the clinical trials registry, the *New England Journal of Medicine* has declared that it and its member journals "will require, as a condition of consideration for publication, registration in a public trials registry."[175] Advance

[169] Joseph E. Gonzales & Corbin A. Cunningham, *The Promise of Pre-Registration in Psychological Research*, AM. PSYCHOL. ASS'N (Aug. 2015), http://www.apa.org/science/about/psa/2015/08/pre-registration.aspx.

[170] *Why Should I Register and Submit Results?*, NAT'L INSTS. HEALTH, https://clinicaltrials.gov/ct2/manage-recs/background (last visited Mar. 13, 2017).

[171] *See* Gonzales & Cunningham, *supra* note 169.

[172] For example, we wrote: "The goal of this project is to measure this division [over IP policy issues] and to figure out whether there are factors that can explain it, including IP practice area, political views, or the 'cultural cognition' framework (which has helped explain polarization over divisive issues such as global warming and gun control)."

[173] The website for registering clinical trials, ClinicalTrials.gov, which is maintained by the National Library of Medicine and the National Institutes of Health, was created in 2000, *ClinicalTrials.gov Background*, NAT'L INSTS. HEALTH, https://clinicaltrials.gov/ct2/about-site/background (last visited Mar. 1, 2017), and was made mandatory for more types of clinical trials and trial information by the Food and Drug Administration Amendments Act of 2007, Pub. L. No. 110-85, § 801, 121 Stat. 904-22 (2007) (codified as amended at 21 U.S.C. §§ 331-360j (2018); 42 U.S.C. § 282 (2018)).

[174] *See* Gonzales & Cunningham, *supra* note 169.

[175] Editorial, *Clinical Trial Registration: A Statement from the International Committee of Medical Journal Editors*, 351 NEW ENG. J. MED. 1250, 1250 (2004).

registration appears to have increased the accuracy of reported trial results,[176] which presumably promotes confidence in the reported results.[177] Advance registration of IP studies could thereby promote acceptance of the eventual results by those whose cultural worldview is most threatened by those results, particularly if different experts have the opportunity to evaluate the study methodology before it is conducted.

Although there is not yet any formal registry for empirical legal studies, one step in this direction is the Roundtable on Empirical Methods in Intellectual Property, which will be held for the fifth time in 2018.[178] Attendees must describe proposed empirical IP projects for which they have not "substantially begun data collection."[179] Past roundtables have involved discussion of about a dozen proposed projects, each of which was evaluated by a different empirical IP expert.[180] These roundtables force empirical IP researchers to commit their proposals to paper in a semi-public way before the results are known, and they also give other researchers the opportunity to assess the proposed methodology, which may generate greater acceptance of whatever the results turn out to be.[181]

We are not aware of anyone who has directly studied the effect of advance registration on cultural cognition, or of anyone who has suggested registration of empirical legal studies. It seems highly plausible, however, that if experts from different cultural worldviews

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[176] *See, e.g.*, Agnès Dechartres et al., *Association Between Trial Registration and Treatment Effect Estimates: A Meta-Epidemiological Study*, 14 BMC MED. 100, 108 (2016) (concluding that unregistered trials tend to be reported with larger treatment effects).

[177] *See* Clinical Trials Registration and Results Information Submission, 81 Fed. Reg. 64,982, 64,986 (Sept. 21, 2016) (to be codified at 42 C.F.R. pt. 11) (reviewing the scientific benefits related to registration, including ensuring accountability and facilitating review by other readers).

[178] *Roundtable on Empirical Methods in Intellectual Property*, NW. SCH. L., http://www.law.northwestern.edu/research-faculty/conferences/ip/index.html.

[179] *Roundtable on Empirical Methods in Intellectual Property,* CARDOZO L., https://cardozo.yu.edu/programs-centers/intellectual-property-information-law-program/roundtable-empirical-methods-ip-2018.

[180] *See Program: Roundtable on Empirical Methods in Intellectual Property*, CARDOZO L., https://cardozo.yu.edu/programs-centers/intellectual-property-information-law-program/roundtable-empirical-methods; E-mail from Christopher Buccafusco, Professor, Cardozo Law, to 2016 Roundtable on Empirical Methods in Intellectual Property Conference Participants (Apr. 25, 2016, 8:29 AM) (on file with authors).

[181] One concern might be that this approach would drive scholars to ask narrower questions that are more likely to produce an outcome in line with their view. But we think that outside input at this initial stage could create constraints on misleading questions as well as misleading methodologies.

can evaluate the methodology in advance, they would have a strong motivation to accept results that are obtained with their approved method. In future empirical work, we recommend testing this hypothesis by seeing whether subjects have less disagreement on the meaning of culturally polarizing data if they are first asked to approve of the method by which the data is collected before they see the results.

A different potential intervention would be to encourage joint empirical projects by researchers with different priors on some aspect of the IP system — especially if those priors are publicly known, such as through their signatures on opposing amicus briefs related to the issue or their disagreement in print. The science communication literature suggests that having results communicated by "culturally identifiable" experts is one way to reduce culturally divisive motivated reasoning.[182] It seems likely that consumers of a new empirical study would be even more likely to adopt non-congenial results if one of the *authors* of the study is perceived to be from their own "group." And as with advance registration of empirical legal studies, this hypothesis could be tested: one could measure whether subjects have less disagreement on the meaning of new results if they know that one of the authors holds a similar worldview.

Of course, getting researchers with different worldviews on IP or other empirical legal issues to collaborate might be challenging. But there are numerous centers, conferences, and law review symposia dedicated to improving the evidence base for IP,[183] and even more for empirical legal studies, broadly speaking.[184] The opportunity to receive funding for the collaboration or to publish the results — whatever they might be — in a prestigious journal might be sufficient inducement. For a forward-thinking law review looking for an

[182] *See* Kahan et al., *Who Fears the HPV Vaccine*, *supra* note 12, at 510-13.

[183] *See, e.g.*, HOOVER IP2, https://hooverip2.org/about ("Our goal, in short, is to bring data to a debate that has been long on rhetoric, but short on facts, dispassionately gathered and analyzed."); *Empirical Research Initiative*, *supra* note 6 (describing the goal of "support[ing] data-driven reform of intellectual property law and other legal rules that affect innovation"); *Roundtable on Empirical Methods in Intellectual Property*, *supra* note 178.

[184] *See, e.g.*, Richard H. McAdams & Thomas S. Ulen, *Introduction to Symposium: Empirical and Experimental Methods in Law*, 2002 U. ILL. L. REV. 791 (2002); CTR. EMPIRICAL RES. L., http://cerl.wustl.edu (stating, as a core mission, "to promote and support research relating to law and legal institutions"); *The Society for Empirical Legal Studies: Conferences*, CORNELL U. L., http://www.lawschool.cornell.edu/SELS/conferences.cfm; PROGRAM ON EMPIRICAL LEGAL STUDIES, CLAREMONT MCKENNA COLLEGE, EMPIRICAL LEGAL STUDIES REPLICATION CONFERENCE (2017), http://www.lawschool.cornell.edu/SELS/upload/PELSReplicatonConferenCallforPapers.pdf.

innovative approach to making a real difference in policy debates, it seems like an experiment worth trying.

CONCLUSION

Our novel survey of IP practitioners has provided some support for the hypothesis that cultural cognition influences expert views on IP policy and thus drives the polarized public discourse over IP. One reason we do not see results here that are as strong as in some prior cultural cognition work may be that, to our knowledge, this study presents the first attempt to apply cultural cognition theory to issues of private law. Cultural cognition was developed in the context of public regulation of risk,[185] and prior studies have maintained this focus on public law. For most issues that have been studied previously under the cultural cognition model, the risks to human health, the environment, or the social fabric are clear and already well recognized in public discourse. For IP policy, on the other hand, some people might focus simply on the concept of rights and not think about the risk of fewer creative works being produced. That is, even though our respondents predominantly selected the "incentives" basis when primed to provide a justification for IP law, they may tend to conceive of IP issues as more about "rights" than about "risk," and that may change how their concerns interact with their cultural worldviews. Investigating which worldview dimensions tend to affect individuals' opinions about private rights is a promising area for further study.

Although diagnosing the cause of polarization in IP policy debates may be more difficult than for other cultural debates, we believe that the promise of evidence-based decision-making may be greater for IP policy than for these other areas. Unlike for many policy disagreements, parties on different sides of IP debates tend to agree on the utilitarian objective of promoting innovation through IP law.[186] If we asked people of differing cultural worldviews for their opinions on the *goals* of climate, gun, or welfare policy, we would get starkly different answers. But, if we asked about the goals of IP policy, we would get significant agreement from policymakers and experts regarding the desire for greater creativity and innovation. This commonality makes IP policy a particularly fruitful area in which to study culturally motivated reasoning and outcomes.

As explained above, however, we need not fully diagnose the causes of motivated reasoning in IP policy discussions in order to prescribe

[185] *See* DOUGLAS & WILDAVSKY, *supra* note 82.

[186] *See supra* notes 25–26 and accompanying text.

some solutions. In particular, we think that promoting discussion and acceptance of an empirical methodology for tackling a given factual disagreement will help ensure that once the study is conducted, the results will actually settle the dispute. IP scholars have recently drawn attention to the importance of disclosure and replicability of empirical IP data, and of disclosure of any sources of research funding.[187] We hope that by drawing awareness to the potential for cultural cognition and other sources of motivated reasoning among IP experts, we can encourage IP scholars not just to produce more empirical studies, but also to produce them in a way that allows the results to have the impact they should.

[187] *See* Feldman, Lemley, Masur & Rai, *Open Letter on Ethical Norms*, *supra* note 168, at 347-49.