THE EMPIRICAL REASONABLE PERSON

By Christopher Brett Jaeger

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*By Christopher Brett Jaeger**

The reasonable person standard is central to law and to tort law in particular. But there is much debate about what it means for a person to behave reasonably. Some scholars argue that reasonableness is an economic prescription, dictating that people should take (only) cost-justified precautions. Others contend that reasonableness is grounded in community customs or norms. Interestingly, this scholarly debate has always been more philosophical than empirical. Though it is often lay jurors who determine whether litigants' behavior is reasonable, very little work has examined how laypeople make this determination.

This Article approaches the reasonableness debate from a fresh empirical perspective, examining the factors that influence whether laypeople judge behavior as reasonable. Across four experiments, participants' judgments consistently depended on information about the behavior of others—and never depended on whether precautions were cost-justified. These findings supply the first experimental evidence that lay decision makers understand reasonableness more in behavioral than in economic terms; indeed, they may not understand reasonableness in economic terms at all.

After describing the experimental findings, the Article unpacks some of their implications. First, the Article contends that tort law's reasonable person standard both is and should be informed by observations and beliefs about others' conduct. Second, the Article identifies challenges that arise from conceiving of the reasonable person in economic terms. Finally, the Article raises the possibility that decision makers' understanding of reasonableness varies—and perhaps should vary—depending on the nature of the alleged negligence at issue.

INTRODUCTION

Reasonableness lies at the center of our tort system, yet there is no consensus as to its definition.[1] Tort liability often hinges on whether a litigant behaved as a "reasonable person" would have under the relevant circumstances.[2] But how do we determine what a reasonable person would do? How *should* we?

* Assistant Professor of Law, Baylor Law School; J.D., Vanderbilt Law School; Ph.D. (Psychology), Vanderbilt University. I am grateful to Edith Beerdsen, Ashley Binetti-Armstrong, Sarah Brown-Schmidt, Ed Cheng, Neal Feigenson, Mark Geistfeld, Tonja Jacobi, Owen Jones, Aneil Kovvali, Jon Lane, Dan Levin, Jeff Rachlinski, Sepehr Shahshahani, Jay Silver, David Simson, Larry Solum, Kevin Tobia, Kip Viscusi, and participants at the 2018 Conference on Empirical Legal Studies, the 2019 Lawyering Scholarship Colloquium at NYU School of Law, and the 2019 Scholarship Clinic at NYU School of Law for helpful comments and conversations about this project. I am also grateful to Jack Surminsky for excellent research assistance and to the staff of the *Alabama Law Review* for outstanding editorial work.

1. *See, e.g.*, Benjamin C. Zipursky, *Reasonableness in and out of Negligence Law*, 163 U. PA. L. REV. 2131, 2135 (2015) ("The range of uses of 'reasonableness' in law is so great that a list is not an efficient way to describe and demarcate it.").

2. *See, e.g.*, Blyth v. Birmingham Waterworks Co., 11 Ex. 781, 784 (1856) ("Negligence is the omission to do something which a reasonable man, guided upon those considerations which ordinarily regulate the conduct of human affairs, would do, or doing something which a prudent and reasonable man would not do."); Stephen G. Gilles, *On Determining Negligence: Hand Formula Balancing, the Reasonable Person Standard, and the Jury*, 54 VAND. L. REV. 813, 822 (2001) ("For as long [as] there has been a tort of negligence, American courts have defined negligence as conduct in which a reasonable [person] would not have engaged."); Benjamin C. Zipursky, *Sleight of Hand*, 48 WM. & MARY L. REV. 1999, 2015 (2007) (maintaining that while states define negligence differently, the definitions "circle around what the common law seems to regard as

Legal scholars have debated these questions for decades, particularly the latter, normative question.[3] The debate is often framed in terms of two possibilities.[4] First, the reasonable person might be understood empirically, based on "observed practice or perception."[5] In this view, whether behavior is reasonable depends, at least in part, on the proportion of people who would behave similarly under the circumstances (or, at least, the decision maker's beliefs about that proportion).[6] Second, the reasonable person might be defined by universal logical or ethical principles, regardless of how people actually behave.[7] The most common definition of this type is economic[8]: the reasonable person always chooses the cost-efficient course of conduct.[9] The economic

the same basic idea: an idea of 'ordinary care' that is to be understood in terms of a person who exercises the care that a reasonably careful person would").

3. Some of the articles contributing to this debate include: Zipursky, *supra* note 1; Gilles, *supra* note 2; Zipursky, *supra* note 2; Kevin P. Tobia, *How People Judge What Is Reasonable*, 70 ALA. L. REV. 293 (2018); Mark A. Geistfeld, *Hidden in Plain Sight: The Normative Source of Modern Tort Law*, 91 N.Y.U. L. REV. 1517 (2016); Cristina Carmody Tilley, *Tort Law Inside Out*, 126 YALE L.J. 1320 (2016); Christopher Jackson, *Reasonable Persons, Reasonable Circumstances*, 50 SAN DIEGO L. REV. 651 (2013); Alan D. Miller & Ronen Perry, *The Reasonable Person*, 87 N.Y.U. L. REV. 323 (2012); Richard W. Wright, *Negligence in the Courts: Introduction and Commentary*, 77 CHI.-KENT. L. REV. 425 (2002) [hereinafter Wright, *Negligence in the Courts*]; Richard W. Wright, *Hand, Posner, and the Myth of the 'Hand Formula'*, 4 THEORETICAL INQUIRIES L. 145 (2003) [hereinafter Wright, *The Myth of the Hand Formula*]; Heidi M. Hurd, *The Deontology of Negligence*, 76 B.U. L. REV. 249 (1996); Gregory C. Keating, *Reasonableness and Rationality in Negligence Theory*, 48 STAN. L. REV. 311 (1996); Stephen G. Gilles, *The Invisible Hand Formula*, 80 VA. L. REV. 1015 (1994); Michael Wells, *Scientific Policymaking and the Torts Revolution: The Revenge of the Ordinary Observer*, 26 GA. L. REV. 725 (1992); Raphael Powell, *The Unreasonableness of the Reasonable Man*, 10 CURRENT LEGAL PROBS. 104 (1957).

4. *E.g.*, Tobia, *supra* note 3, at 296 ("One of the most fundamental questions concerns whether reasonableness is a statistical notion (e.g., what is average) or a prescriptive one (e.g., what is good)."); Miller & Perry, *supra* note 3, at 325 ("The primary question has always been whether the content [of the reasonable person standard] should be normative or positive . . . ."). The two possibilities correspond to some degree (though not perfectly) to differing views in a broader debate concerning the purpose and justification of tort law. *See, e.g.*, Tilley, *supra* note 3, at 1327 (noting that "American tort theorists today are 'split between two competing conceptions of tort liability,'" one "economic" and one "moral"); Stephen R. Perry, *The Moral Foundations of Tort Law*, 77 IOWA L. REV. 449, 449 (1991) (dividing proposed justifications of tort into two categories, one of which views tort as "a means for advancing one or more public policies such as . . . the attainment of economic efficiency through deterrence," and the other of which views torts as grounded in "individual moral rights"); Michael Pressman, *The Compatibility of Forward-Looking and Backward-Looking Accounts of Tort Law*, 15 U.N.H. L. REV. 45, 52 (2016) (contrasting the traditional economic view of tort as "a forward-looking institution" whose goal is to incentivize "maximally efficient behavior" with the "corrective justice" view of tort law as seeking to remediate wrongful losses).

5. Miller & Perry, *supra* note 3, at 324 ("[S]hould the reasonable person be defined in accordance with a particular normative ethical commitment, be it welfare maximization [or others], or in accordance with an empirically observed practice or perception?").

6. *See infra* Part I.B.1.

7. *See infra* Part I.B.2.

8. *See, e.g.*, RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 3–4 (8th ed. 2011) (describing reasonableness in terms of economic cost-benefit analysis). There are other principle-based approaches to reasonableness, some of which I briefly describe in *infra* Part I.B.2.b.

9. Miller & Perry, *supra* note 3, at 326 (stating that the economic view reflects "a particular normative commitment—namely, cost efficiency—regardless of the prevailing perception in the relevant society"). The most famous articulation of the economic reasonable person is the Hand Formula, discussed in *infra* Part I.B.2.a. "Doctrinally, the Hand Formula implies that the plaintiff bears the burden of proving that the defendant omitted a cost-justified precaution." Gilles, *supra* note 3, at 1025.

view is tremendously influential in modern scholarship;[10] empirical views have arguably become less fashionable.[11]

Despite this ongoing normative debate, there is little research on a related, and crucial, descriptive question: How do ordinary people (like jurors) conceive of the reasonable person?[12] For all the theoretical claims made about the standard, we know precious little about how laypeople understand it.[13] This is disconcerting, as tort law frequently relies on laypeople to apply the reasonable person standard.[14] Because the standard is "essentially defined by the lay understanding of jurors,"[15] it has been called

10. *See, e.g.*, Miller & Perry, *supra* note 3, at 328 ("The most prominent definition of reasonableness is worded in cost-benefit terms."); Keating, *supra* note 3, at 312 (noting "consensus" around the economic definition, and expressing surprise that tort scholars "typically recast [reasonable care] as a matter of [economic] rationality," such that "[d]ue care is the care that a single rational actor would take if she were to bear both the costs and the benefits of a particular risk imposition"); Zipursky, *supra* note 2, at 2001 ("Professor Posner used [*Carroll Towing*] to energize his entire economic theory of tort law, which, in my view, remains the most celebrated within the legal academy."); Richard W. Wright, *Justice and Reasonable Care in Negligence Law*, 47 AM. J. JURIS. 143, 145 (2002) (observing that the "aggregate-risk-utility test" is prominent in secondary legal authorities, which are "primarily the province of legal academics").

11. *See* Miller & Perry, *supra* note 3, at 371 ("Any judge or juror who claims to understand the nature of the reasonable person from his or her familiarity with the society is mistaken [because] [s]uch a task is not merely difficult or impractical; it is impossible."); *see also* Tobia, *supra* note 3, at 302 ("Although the statistical view has some modern defenders, it has more modern critics.") (footnote omitted).

12. *See* Gilles, *supra* note 3, at 1020 (observing that debate over the descriptive meaning of negligence turns on an open empirical question: "confronted with a blank reasonable person instruction, what will jurors do?"); Ashley M. Votruba, Comment, *Will the Real Reasonable Person Please Stand Up? Using Psychology to Better Understand How Juries Interpret and Apply the Reasonable Person Standard*, 45 ARIZ. ST. L.J. 703, 706 (2013) ("Although scholars and legal theorists have spent much time discussing how the Reasonable Person Standard should be understood, conceptualized, and modified, little attention has been paid to how *jurors* actually interpret and apply the standard as presented by jury instruction.") (footnote omitted).

13. *Cf.* Edward Green, *The Reasonable Man: Legal Fiction or Psychosocial Reality?* 2 LAW & SOC'Y REV. 241 (1967) (using a hypothetical case brought on behalf of a child who fell into an unattended swimming pool to examine how laypeople's verdicts were affected by jury instructions, the seriousness of plaintiff's injury, precaution adequacy (height of protective fence around unattended pool), and risk of accident (neighborhood with many versus few children nearby)); Tobia, *supra* note 3 (examining, with estimates of numerical quantities, the extent to which people's estimates of "average" and "ideal" amounts predict judgments of "reasonable" amounts); W. Kip Viscusi, *Jurors, Judges, and the Mistreatment of Risk by the Courts*, 30 J. LEGAL STUD. 107 (2001) (reporting studies finding that (i) participants often fail to apply cost-benefit analysis in their own hypothetical business decisions, consistently indicating that they would take un-cost-justified precautions; and (ii) participants evaluating punitive damages in hypothetical tort cases often irrationally award punitive damages when corporate defendants undertake explicit cost-benefit analyses); W. Kip Viscusi, *Corporate Risk Analysis: A Reckless Act?*, 52 STAN. L. REV. 547 (2000) (finding that lay participants evaluating punitive damages in hypothetical tort cases often irrationally awarded punitive damages when corporate defendants undertook explicit cost-benefit analyses) [hereinafter Viscusi, *Corporate Risk Analysis*]; W. Kip Viscusi, *How Do Judges Think About Risk?*, 1 AM. L. & ECON. REV. 26, 43 (1999) (finding that judges' responses to similar prompts were more economically rational than those of laypeople, but substantial minorities of judges nevertheless reached economically irrational conclusions).

14. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 8(b) (AM. L. INST. 2010) ("When, in light of all the facts relating to the actor's conduct, reasonable minds can differ as to whether the conduct lacks reasonable care, it is the function of the jury to make that determination.").

15. Mark A. Geistfeld, *Folk Tort Law*, *in* HANDBOOK OF PRIVATE LAW THEORIES (Dagan & Zipursky, eds.) (forthcoming 2020) (manuscript at 2); *see also* Kevin P. Tobia, *Law and the Cognitive Science of Ordinary Concepts*, *in* HANDBOOK ON LAW AND THE COGNITIVE SCIENCES 1 (forthcoming) ("Laypeople's commonsense understandings, or 'ordinary concepts,' are at the root of *many* important legal concepts—ones about the mind, like INTENT and KNOWLEDGE, but also a host of other central legal concepts including CONSENT, REASONABLENESS, and CAUSATION.").

"the most important example of a substantive tort rule that is largely determined by folk law or the understanding that jurors as lay individuals have about the legal obligation."[16] Moreover, a descriptive account of how lay decision makers understand the reasonable person standard can inform what has largely been a data-free normative debate over how the standard should be understood.

This Article begins to fill this gap in the literature. I present a series of four original experiments that investigate lay conceptions of the reasonable person in tort cases. Experiments One and Two supply the first experimental evidence that lay decision makers are more inclined to treat the reasonable person as an empirical standard (based on what others do)[17] than an economic standard (based on cost efficiency).[18] Experiments Three and Four then aim to identify which of two variants of the empirical standard better fits lay intuition: an "averageness" standard or an "aspirational" standard. My findings suggest that both variants have their place—and that which one people apply might depend on contextual factors.

Armed with these descriptive insights, I advance three arguments. First, I contend that, consistent with lay intuition, the reasonable person standard both *is* and *should be*, in part, an empirical standard—i.e., determinations of whether conduct is reasonable are and should be informed by observations and beliefs about real-world behavior. Second, I identify challenges that arise if the reasonable person is conceived in economic terms. Specifically, I argue that implementing even a partially economic standard would likely require substantial changes to tort law. Third, I raise the possibility that the operative conception of the reasonable person varies, and perhaps should vary, based on the nature of the negligence alleged.

More broadly, this Article introduces a new framework for thinking about reasonableness. As others have observed, the reasonable person standard seems to invite an open-ended and largely unstructured inquiry.[19] Inspired by research on judgment and decision-making, this Article seeks to impose some structure by

16. Geistfeld, *supra* note 15, at 1; *see also* Patrick J. Kelley & Laurel A. Wendt, *What Judges Tell Juries about Negligence: A Review of Pattern Jury Instructions*, 77 CHI.-KENT. L. REV. 587, 587 (2002) (observing that "there is no doubt that the jury plays the central role in applying the negligence standard, which is usually described in the scholarly literature as the conduct of the ordinary reasonable person," and noting that often "[s]tate constitutions guarantee the centrality of the jury in applying the negligence standard" because it is considered a question of fact).

17. *See* Miller & Perry, *supra* note 3, at 326 (noting that empirical definitions of reasonableness "derive[] from reality rather than from morality").

18. *Cf.* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW (1987) (contending that, as a descriptive matter, tort rules incentivize economic efficiency); Gilles, *supra* note 2, at 853 ("On the Posnerian view, full information about the Hand Factors would yield 'certain results' because that information would consist of monetized values for PL and B. Those monetized amounts would speak for themselves, leaving no room for judgment.").

19. *See* Geistfeld, *supra* note 15, at 1–2 (observing that tort law's reasonable person standard is "largely undefined" and essentially relies on "the lay understanding of jurors—a folk law of reasonable care"); Zipursky, *supra* note 1, at 2133 ("The word 'reasonable' is . . . if nothing else, vague."); Kenneth S. Abraham, *The Trouble With Negligence*, 54 VAND. L. REV. 1187, 1188–90 (contending "the character of negligence liability remains incompletely recognized" and ultimately hinges on "the finder of fact's own general normative sense of the situation").

conceptualizing reasonableness as the output of a function with multiple inputs.[20] By observing what information decision makers consider or ignore when judging reasonableness, we can illuminate the identities of these inputs and their weights in the function.[21]

Conceiving of reasonableness in this way usefully reframes the debate about the tort law's reasonable person.[22] This debate is often framed as one among mutually exclusive alternatives—the standard is defined *only* in empirical terms or *only* by logical principles.[23] Recently, some scholars have broadly called for a "hybrid" approach,[24] but the structure of such an approach remains unclear. Conceiving of reasonableness as a function can provide structure for a hybrid approach. If reasonableness is a function of multiple inputs, the question is not whether the reasonable person is (or should be) a *purely* empirical or *purely* economic standard. Rather, the question is to what extent empirical and economic considerations—as well as other types of considerations—affect (or should affect) judgments of what is reasonable.

The balance of this Article proceeds as follows. Part I situates the reasonable person standard in American tort law and describes prominent theoretical perspectives on how the standard should be understood and applied. Part II presents my experiments, which investigate how the standard is understood and applied by lay decision makers. Part III explores some of the implications of my experimental findings for the scholarly debate surrounding the reasonable person standard, arguing that the standard both is and should be informed by empirical considerations (i.e., observations of others' conduct). Part III also identifies challenges associated with an economic understanding of reasonableness and raises the possibility that the appropriate conception of the reasonable person should vary across cases. Part IV identifies directions for future research.

20. *See generally* J. FRANK YATES, JUDGMENT AND DECISION-MAKING (1990) (providing an introductory discussion to theories of judgment and decision-making); JEROME R. BUSEMEYER & ADELE DIEDERICH, COGNITIVE MODELING (2010) (introducing basics of building and testing cognitive models). For a brief overview of cognitive models of judgments and decisions in the context of law, see Christopher Brett Jaeger & Jennifer S. Trueblood, *Thinking Quantum: A New Perspective on Decisionmaking in Law*, 46 FLA. ST. U. L. REV. 733, 750–52 (2019). The Hand Formula, discussed in *infra* Part I.B.2.a, also famously conceptualizes reasonableness mathematically, but the approach I propose here involves a behaviorally grounded function—one that captures the (potentially broad) set of inputs that shape reasonableness judgments.

21. Jaeger & Trueblood, *supra* note 20, at 751–52 (providing a stylized example of how researchers can use data to "fit" a cognitive model of a decision).

22. Baron Kelvin famously said in 1883 that "when you can measure what you are speaking about, and express it in numbers, you know something about it . . . ." SIR WILLIAM THOMSON, POPULAR LECTURES AND ADDRESSES 73 (1891).

23. *See, e.g.*, Miller & Perry, *supra* note 3, at 325 ("The primary question has always been whether the content [of the reasonable person standard] should be normative or positive . . . .").

24. *See* Tobia, *supra* note 3, at 296 (arguing that "[r]easonableness is best understood as a hybrid notion that is partly statistical and partly prescriptive"); Zipursky, *supra* note 1, at 2150 (evaluating negligence "involves a kind of judgment that is both normative and descriptive").

I. TORT LAW'S REASONABLE PERSON

People get injured. Often, they get injured as a consequence of others' actions. When this happens, who bears the cost? In the United States, the default rule has long been that those who suffer injuries bear their own costs.[25] Generally speaking, the harm caused by people's actions "lie[s] where it falls."[26]

Tort law reflects an exception to this default rule. Tort claims offer mechanisms for those who suffer injuries as a result of others' conduct to obtain recompense if certain conditions are satisfied.[27] The most common condition is that the injury-causing other acted negligently—that is, failed to act as a *reasonable person* would have acted under the circumstances.

A. The Reasonable Person as the Standard for Negligence

To prevail on a negligence claim—and thus recover compensation from the defendant—a plaintiff must demonstrate (1) that the plaintiff suffered an *injury*, (2) that the defendant owed a relevant *duty* to the plaintiff, (3) that the defendant *breached* that duty, and (4) that the defendant's breach was both the (a) *cause-in-fact* and (b) *proximate cause* of the plaintiff's injury.[28]

The reasonable person standard is foundational to the elements of duty and breach. With respect to duty, the general rule is that people owe one another an "[u]nqualified [d]uty to conduct [themselves] with [r]easonable [c]are for the [p]erson and [p]roperty of [o]thers."[29] A person breaches the duty of care when that person fails to act reasonably carefully—that is, when the person fails to act as carefully as a reasonable person would have acted under the circumstances.[30]

25. *See, e.g.,* Jeffrey J. Rachlinski, *Misunderstanding Ability, Misallocating Responsibility*, 68 BROOK. L. REV. 1055, 1055 (2003) ("An important default principle of tort law in the Anglo-American legal tradition is that harm must 'lie where it falls.'") (quoting OLIVER WENDELL HOLMES, JR., THE COMMON LAW 144 (1949)).

26. *See* Gideon Rosen, *Skepticism About Moral Responsibility*, 18 PHIL. PERSP. 295, 301 (2004) ("You are never obliged to take *every possible step*, no matter how costly, to ensure that no one is harmed by what you do. You are required only to take certain reasonable steps. If you do that much and harm results anyway, then [usually] the harm must 'lie where it falls.'").

27. *E.g.*, JOHN C.P. GOLDBERG ET AL., TORT LAW: RESPONSIBILITIES AND REDRESS 3 (2004). For this reason, some scholars have referred to tort law as the law of "private and privately redressable wrongs." John C.P. Goldberg & Benjamin C. Zipursky, *Torts as Wrongs*, 88 TEX. L .REV. 917, 918 (2010).

28. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 6 cmt. b (AM. L. INST. 2010) (articulating the "five elements of a prima facie case for negligence": duty, failure to exercise reasonable care (i.e., breach), physical harm, factual cause, and "harm within the scope of liability (which historically has been called 'proximate cause')"; John C.P. Goldberg & Benjamin C. Zipursky, *The Restatement (Third) and the Place of Duty in Negligence Law*, 54 VAND. L. REV. 657, 658 (2001) ("A prima facie case of negligence has four elements: duty, breach, causation, and injury.").

29. GOLDBERG ET AL., *supra* note 27, at 51; *see also* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 6 cmt. b (AM. L. INST. 2010) ("Ordinarily, an actor whose conduct creates risks of physical harm to others has a duty to exercise reasonable care.").

30. *E.g.*, Zipursky, *supra* note 2; Kelley & Wendt, *supra* note 16, at 588 (stating that the negligence standard generally requires jurors to decide "whether an ordinary reasonable person would have done what the defendant did under the circumstances").

Through its role in defining the duty and breach elements, the reasonable person standard functionally separates conduct that is negligent (for which the actor will bear the cost of any resultant injuries) from conduct that is faultless (for which the actor will not bear such cost).[31] Stated differently, one is (in theory) assured that one will not be liable for negligence so long as one acts as a reasonable person would act.[32] This reflects a recognition that it is impracticable, if not impossible, for people to take all possible precautions at all times.[33] Almost every activity that people engage in creates some risk of injury to others, but "tort law is not meant to convert everyone into insurers whenever they undertake any action."[34] "[T]he standard man is not infallible" and "[m]istakes in judgment which the standard man might have made in the light of [his] limitations will not amount to negligence."[35]

Importantly, the reasonable person standard is generally understood as an objective standard rather than a subjective one. This means two things. First, it means that the inquiry is whether the defendant's (external) conduct was reasonably careful, not whether the defendant's (internal) intention was to be careful.[36] Second, it means the standard is typically not tailored to the particulars of the defendant; the defendant's conduct is compared to the reasonable conduct of a *generic person*, rather than to the reasonable conduct of a person *with the defendant's specific attributes*.[37] There are some exceptions to this second form of objectiveness—for example, the standard is sometimes tailored for those who are particularly young (a seven-year-old child is held

31. Rachlinski, *supra* note 25, at 1055 ("Defining negligent conduct and administering this definition properly is . . . critical to determining who bears the cost of accidents" and definitions of negligence "all revolve around the reasonableness of a party's behavior.").

32. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 3 (AM. L. INST. 2010) ("A person acts negligently if the person does not exercise reasonable care under all the circumstances."); RESTATEMENT (SECOND) OF TORTS § 283 (AM. L. INST. 1965) ("The standard of conduct to . . . avoid being negligent is that of a reasonable man under like circumstances."); Brown v. Kendall, 60 Mass. 292, 295–96 (Mass. 1850) (holding that "the plaintiff must come prepared with evidence to show either that the [defendant's] *intention* was unlawful, or that the defendant was in *fault*; for if the injury was unavoidable, and the conduct of the defendant was free from blame, he will not be liable").

33. Rosen, *supra* note 26, at 301.

34. Rachlinski, *supra* note 25, at 1055 (citing James A. Henderson, Jr., *Expanding the Negligence Concept: Retreat from the Rule of Law*, 51 IND. L.J. 467, 524–25 (1976)).

35. Fleming James, Jr., *The Qualities of the Reasonable Man in Negligence Cases*, 16 MO. L. REV. 1, 5 (1951).

36. GOLDBERG ET AL., *supra* note 27, at 157.

37. *Id.*; *see also* Rachlinski, *supra* note 25, at 1065 ("The test is not whether someone felt that he did his best to avoid harm, given his own personality, concerns and interests, but whether a reasonable person would have been able to do so."). Some scholars have criticized the general lack of tailoring of the reasonable person, raising the possibility that the standard tends to reflect "the would-be behavior of a theoretical privileged, able-bodied, white, adult male" and that tailoring would improve equity, in the context of Fourth Amendment jurisprudence. Jesse-Justin Cuevas & Tonja Jacobi, *The Hidden Psychology of Constitutional Criminal Procedure*, 37 CARDOZO L. REV. 2161, 2192 (2015). In response to similar concerns in the employment discrimination context, some courts have held that allegations of a hostile workplace are evaluated from the perspective of a reasonable person of the relevant gender or racial or ethnic group. *See* Ellison v. Brady, 924 F.2d 872, 878–79 (9th Cir. 1991) (evaluating objective hostility from the perspective of a reasonable woman). McGinest v. GTE Serv. Corp., 360 F.3d 1103, 1115 (9th Cir. 2004) ("[A]llegations of a racially hostile workplace must be assessed from the perspective of a reasonable person belonging to the racial or ethnic group of the plaintiff.").

to the standard of a reasonable seven-year-old child),[38] who have special expertise (a doctor is held to the standard of a reasonable doctor),[39] or who have physical disabilities (a blind person is held to the standard of a reasonable blind person).[40] But exceptions generally are not made for those with cognitive deficits or disabilities.[41] A vast majority of the time, adults who lack discrete physical disabilities are held to a general standard of reasonableness, not an individually tailored standard.[42]

This point is illustrated by the famous English case of *Vaughan v. Menlove*,[43] a case often described as the origin of the reasonable person standard (though the exact origin of the standard is disputed).[44] Menlove built a haystack near the edge of his property line. Despite repeated warnings that his haystack was a fire hazard, Menlove did a poor job of shaping and maintaining the haystack so as to minimize the risk. The stack caught fire and burned down his neighbor Vaughan's cottages.[45] Vaughan sued. Menlove contended that he was not liable because he had built and maintained the haystack to the best of his (poor) ability.[46] The English court ruled that Menlove was liable: even if Menlove did his best, his actions were unreasonable. He did not exercise "caution such as a man of ordinary prudence would observe" under the circumstances.[47] Menlove was not excused from liability because his haystack-building abilities were below par.

38. *See* Jean Macchiaroli Eggen & Eric J. Laury, *Toward a Neuroscience Model of Tort Law: How Functional Neuroimaging Will Transform Tort Doctrine*, 13 COLUM. SCI. & TECH. L. REV. 235, 265–66 (2012) ("Minors are held to a standard of care appropriate for a person of the actor's age, intelligence, and mental capacity.") (citing Bragan *ex rel.* Bragan v. Symanzik, 687 N.W.2d 881, 884–85 (Mich. Ct. App. 2004)); RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 10 (AM. L. INST. 2010) ("A child's conduct is negligent if it does not conform to that of a reasonably careful person of the same age, intelligence, and experience [subject to two exceptions].").

39. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 12 (AM. L. INST. 2010) ("If an actor has skills or knowledge that exceed those possessed by most others, these skills or knowledge are circumstances to be taken into account in determining whether the actor has behaved as a reasonably careful person."); W. PROSSER, LAW OF TORTS 164 (3d ed. 1964) ("[T]hose who undertake any work calling for special skill . . . are required not only to exercise reasonable care in what they do, but also to possess a standard minimum of special knowledge and ability.") (footnote omitted).

40. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL & EMOTIONAL HARM § 11 (a) (AM. L. INST. 2010) ("The conduct of an actor with a physical disability is negligent only if the conduct does not conform to that of a reasonably careful person with the same disability.").

41. *See, e.g.*, Mayo Moran, *The Reasonable Person: A Conceptual Biography in Comparative Perspective*, 14 LEWIS & CLARK L. REV. 1233, 1242 (2010) ("[I]n contrast both to the treatment of the incapacities of children and of those with physical disabilities, the orthodox position of the law of negligence is that developmental or cognitive disabilities are not circumstances to be factored into the reasonable person test.").

42. James, *supra* note 35, at 1–2 ("[M]any of the actor's shortcomings such as awkwardness, faulty perception, or poor judgment, are not taken into account if they fall below the general level of the community.").

43. (1837) 132 Eng. Rep. 490.

44. *See* Randy T. Austin, Comment, *Better Off with the Reasonable Man Dead or The Reasonable Man Did the Darndest Things*, 1992 BYU L. REV. 479, 480–81 (1992). Austin notes that many (including William Prosser) identify *Vaughan v. Menlove* as the origin of the reasonable person, while others (including Ronald Collins) date the origin of the standard earlier. *See, e.g.*, Ronald K.L. Collins, *Language, History, and the Legal Process: A Profile of the "Reasonable Man"*, 8 RUT.-CAM. L.J. 311, 312 (1977) (tracing the origin back to 1796).

45. Vaughan v. Menlove (1837) 132 Eng. Rep. 490, 491.

46. *Id.*

47. *Id.* at 493.

While sympathy for Menlove tends to be in short supply, the application of *Menlove*'s principle in other cases has caused much consternation. For example, in *Burch v. American Family Mut. Ins. Co.*, the Wisconsin Supreme Court held that a teenaged girl who "was born with cerebral palsy . . . and functions at the cognitive level of a preschooler," [48] was subject "to the same standard of care as that applied to the reasonable person."[49] The standard was not tailored based on the girl's cognitive disabilities. As with any objective standard, it is inevitable that some individuals will be held responsible for "failing to live up to a standard which as a matter of fact they cannot meet."[50]

For better or worse, the objective reasonable person standard is entrenched in American tort law.[51] The reasonable person is endowed with the attributes and abilities[52] expected of a generic member of the community[53] rather than the attributes and abilities of the particular defendant. But what attributes and abilities are expected of a generic member of the community? The reasonable person remains largely an abstract "creature of the law's imagination,"[54] an "empty vessel"[55] for finders of fact to fill with meaning in particular cases.[56]

B. Debate About the Reasonable Person

Legal thinkers have long debated how the reasonable person standard should be defined. This debate has often been framed in dichotomous terms. For example, in their prominent 2012 article on the reasonable person standard, Alan D. Miller and Ronen Perry stated that "[t]he primary question has always been whether the content" of the reasonable person standard should be empirical or principle-based.[57]

48. 543 N.W.2d 277, 278 (Wis. 1996).

49. *Id.* at 280.

50. James, *supra* note 35, at 2.

51. Ian J. Cosgrove, Note, *The Illusive "Reasonable Person": Can Neuroscience Help the Mentally Disabled?*, 91 NOTRE DAME L. REV. 421, 427 (2015) ("[T]he objective 'reasonable person' appears to have entrenched itself beyond dispute."). For a recent argument advocating a less objective standard, *see* Omri Ben-Shahar & Ariel Porat, *Personalizing Negligence Law*, 91 N.Y.U. L. REV. 627, 629 (2016) ("We argue that with the increasing availability of accurate information about actors' characteristics, negligence law should give up much of its objectivity by allowing courts to 'subjectify' the standard of care—that is, to tailor it to the specific actor's tendency to create risks and her ability to reduce them.").

52. Rachlinksi, *supra* note 25, at 1056 ("[D]etermining whether a reasonable person could have avoided an accident requires courts to endow the hypothetical reasonable person with cognitive abilities.").

53. Kelley & Wendt, *supra* note 16, at 621 (suggesting that the reasonable person helps ensure the plaintiff gets "her due—the conduct she could reasonably expect of an individual in the defendant's position, consistent with that community's preexisting safety practices, norms, conventions and associated expectations").

54. FOWLER V. HARPER & FLEMING JAMES, JR.. THE LAW OF TORTS 902 (1956).

55. Steven Hetcher, *Non-Utilitarian Negligence Norms and the Reasonable Person Standard,* 54 VAND. L. REV. 863, 864 (2001).

56. *Id.*; *see also* Geistfeld, *supra* note 15, at 2 (noting the open-ended standard is "essentially defined by the lay understanding of jurors").

57. Miller & Perry, *supra* note 3, at 325.

In this Part, I discuss some prominent empirical and principle-based views in more detail. Part II.B.1 describes empirical views, focusing on two possible empirical interpretations of the reasonable person standard. The first—often equated with the empirical view—is that the reasonable person behaves as average members of the community behave (the "average reasonable person").[58] The second, which has received less scholarly attention to date, is that the reasonable person behaves as above-average members of the community behave (the "aspirational reasonable person"). Part II.B.2 describes principle-based views, focusing predominantly on the economic interpretation of the reasonable person. Finally, Part II.B.3 discusses recent articulations of the idea that reasonableness may reflect a hybrid standard with both empirical and principle-based components.

1. Empirical Reasonableness

Empirical definitions are "founded on the idea that the reasonable person's characteristics can be deduced by observation,"[59] or "approximated using empirically observable data."[60] In other words, the standard is based on the decision maker's experiences with other people, rather than on pure logic or abstract universal principles.

a. The Average Reasonable Person

The most basic empirical definition assumes that the reasonable person behaves how "the great mass of mankind" behaves[61]—that reasonableness is tantamount to conformance with "statistically prevalent norms of conduct."[62] In short, reasonable behavior is average behavior. If the average person would not choose, perceive, or remember something in the circumstances relevant to a case, the reasonable person should not be expected to either.[63] As explained by Miller and Perry:

> This . . . idea of the reasonable person borrowed heavily from the concept of *l'homme moyen* (the average man) developed by the nineteenth-century Belgian statistician Adolphe Quetelet. Quetelet's average man was a representative person formed by averaging measurable variables such as height, weight, and propensity for criminal behavior. Quetelet's specific statistical approach was later discredited, but the idea of an average person with whom an actual

58. *See, e.g.*, Zipursky, *supra* note 1, 2149–50 (defining the "descriptive" interpretation of reasonableness in terms of "modal behavior" and "average persons").

59. Miller & Perry, *supra* note 3, at 327.

60. *Id.* at 371.

61. Osborne v. Montgomery, 234 N.W. 372, 375–76 (Wis. 1931).

62. Heidi M. Hurd & Michael S. Moore, *Negligence in the Air*, 3 THEORETICAL INQUIRIES L. 333, 377 (2002).

63. *See* Christopher Brett Jaeger et al., *Justice is (Change) Blind: Applying Research on Visual Metacognition in Legal Settings* 23 PSYCHOL., PUB. POL'Y, & L. 259, 274 (2017) ("[I]f a majority of people cannot perceive and respond to something, then tort law's 'reasonable person' cannot be expected to perceive and respond to it either.").

> person can be compared has survived and forms the basis of the [empirical] definition of the reasonable person.[64]

This view that the reasonable person reflects a statistical average is often associated with Oliver Wendell Holmes, who famously stated that ascertaining negligence entails "a certain average of conduct"[65] based on how people are "in the habit of acting."[66]

Perhaps the most fundamental argument in support of the average reasonable person standard is linguistic. Since the days of *Vaughan v. Menlove*, the reasonable person standard has often been couched in terms of ordinariness: what would a man of "ordinary prudence" do?[67] Most modern pattern jury instructions on negligence combine the concept of reasonableness with the concept of ordinariness in some manner.[68] For example, Delaware's pattern jury instructions define negligence as "the lack of ordinary care; that is, the absence of the kind of care a reasonably prudent and careful person would exercise in similar circumstances."[69] Dictionary definitions of "ordinary" include "of common quality, rank, or ability" and "of a kind to be expected . . . in the normal course of events."[70] If the language that traditionally accompanies the reasonable person standard suggests the standard refers to what is "common," why should we define it differently?[71]

Beyond the language of jury instructions, substantive doctrine also indicates that community customs are relevant to reasonableness.[72] Though not dispositive, "compliance with the custom of the community, or of others in like circumstances, is evidence that the actor's conduct is not negligent."[73] In defining negligence, the *Restatement (Third) of Torts* uses an example—discussed at greater length below—of a pedestrian slipping on a banana peel, explaining that if most reasonably careful people would have seen the banana peel and avoided slipping, the pedestrian is negligent for failing to do so.[74] Further, the language courts have used when writing about the

64. Miller & Perry, *supra* note 3, at 370 (footnotes omitted).

65. HOLMES, JR., *supra* note 25, at 102.

66. *Id.* at 105. Note, however, when read in context, it is not entirely clear that Holmes intended to equate reasonableness and averageness. *See* Tobia, *supra* note 3, at 299 n.18.

67. (1837) 132 Eng. Rep. 490, 493; *see also* Kelley & Wendt, *supra* note 16, at 622 (contending that because negligence instructions tend to "use the term *ordinary care* and define ordinary care in terms of the conduct of a reasonably careful or reasonably prudent person," the best definition of the negligence standard is built on "the safety conventions of the community and the associated expectations of the plaintiff").

68. Kelley & Wendt, *supra* note 16, at 595–97.

69. Del. P.J.I. Civ. § 5.1.

70. *Ordinary*, MERRIAM-WEBSTER.COM, http://www.merriam-webster.com/dictionary/ordinary (last visited Mar. 5, 2021).

71. Zipursky, *supra* note 1, at 2169 (noting that the language of common jury instructions "does not demand optimal performance or extraordinary care").

72. *See, e.g.*, Wagoner v. Waterslide Inc., 744 P.2d 1012, 1013 (Utah Ct. App. 1987) ("The standards in deciding if a risk is unreasonable are found in the life of the community."); Powell, *supra* note 3, at 120 (reviewing British cases in which it was sufficient, or at least quite helpful, for a defendant to adopt well-recognized practices).

73. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 13 (AM. L. INST. 2010).

74. *Id.* § 3 cmt. k.

reasonable person in opinions has historically included phrases like "the man in the street" and "the man in the Clapham omnibus"—phrases that convey an idea of averageness.[75]

The idea of the reasonable person as an average also comports with psychological research. In a variety of domains, psychologists have observed that the human brain is predisposed toward averages, often tracking statistical regularities in the world around us even without our awareness.[76] For example, research indicates that the concepts and categories in our minds are based on mental averages of previous observations rather than formal definitions comprised of necessary and sufficient features. We classify an animal we encounter as a "dog" based on a mental comparison to previous examples of "dogs" we have encountered rather than by referring to a mental checklist of features such as fur, a tail, four legs, etc.[77] Similarly, decision makers might naturally base concepts of reasonableness on mental averages of observed behaviors rather than formal, deductive definitions.

If the reasonable person represents an average, it is worth considering: an average of what? An average of "the great mass of mankind[?]"[78] Or of the particular community to which the litigants belong? Scholars have largely focused on community-based standards.[79] This makes good sense from both a fairness perspective and a practical perspective: potential litigants bound by the reasonable person standard and jurors tasked with applying it are presumably more familiar with the customs and norms in their own communities than elsewhere.[80]

While there may be some intuitive appeal to defining the reasonable person as a community average, there are also drawbacks to doing so. Mankind, after all, is quite fallible. This point is often illustrated with the so-called "average accident" critique: if we define what is reasonable as what is average, must we then excuse "average accidents"—accidents that occur in situations where most people in the community

75. Austin, *supra* note 44, at 485 (quoting JOHN G. FLEMING, THE LAW OF TORTS 107 n.9 (4th ed. 1971)). For a detailed history of the man on the Clapham omnibus, see Tobia, *supra* note 3, at 333–39.

76. *See, e.g.*, Timothy F. Brady & Aude Oliva, *Statistical Learning Using Real-World Scenes: Extracting Categorical Regularities without Conscious Intent*, 19 PSYCH. SCI. 678, 678 (2008) (discussing "statistical learning," the tendency of people to track and learn statistical regularities of stimuli in their environment ranging from tones to visual shapes to abstract, conceptual categories, all "[w]ithout [c]onscious [i]ntent."). The brain also regularly uses averages in processes such as perception. *See* Ted Jaeger, *Contextual Effects in the Parallel Lines Illusion: Some Implications for Assimilation Theory*, 61 PERCEPTUAL & MOTOR SKILLS 1263, 1263–73 (1985) (discussing cognitive averaging—i.e., assimilation—of object lengths).

77. *See, e.g.*, Douglas L. Medin, *Concepts and Conceptual Structure*, 44 AM. PSYCH. 1469, 1469–71 (1989) (describing psychology's shift away from the "classical view" that concepts and categories have necessary and sufficient features and toward the "probabilistic view" in which categories are defined by clusters of correlated attributes in one's observations).

78. Osborne v. Montgomery, 234 N.W. 372, 375–76 (Wis. 1931).

79. *See, e.g.*, Kelley & Wendt, *supra* note 16; Tilley, *supra* note 3; Catharine Pierce Wells, *Tort Law as Corrective Justice: A Pragmatic Justification for Jury Adjudication*, 88 MICH. L. REV. 2348, 2360–61 (1990) (relating tort law to community norms and observing that "[i]t is a mistake to think that community norms exist apart from their expression in community activity").

80. Kelley & Wendt, *supra* note 16, at 623 (arguing that jurors are tasked with deciding what is reasonable because they represent a cross section of the community).

tend to act carelessly?[81] There may be many situations in which average conduct falls short of what we, as a society, wish to incentivize through tort law.[82]

b. The Aspirational Reasonable Person

One way to address the "average accident" problem is to determine the reasonableness of conduct based on empirical observations and beliefs, but *not* observations and beliefs about what is average. Rather, the reasonable person might be defined based on observations and beliefs about the behavior of the most cautious and capable community members.[83] This is what I term the "aspirational reasonable person standard."

The aspirational reasonable person standard, as I define it, is an empirical standard because it is based on, and constrained by, observations and beliefs about actual human behavior. But, in the aspirational view, the reasonable person is more cautious and capable than most. No one lives up to the aspirational standard all of the time, but, importantly, our observations of human conduct lead us to realistically believe that some subset of the community would live up to the aspirational reasonable person standard in the relevant situation.

This conception of the aspirational reasonable person is perhaps most clearly viewed through a statistical lens. Consider an example from the *Restatement (Third) of Torts*.[84] A pedestrian navigating a crowded sidewalk slips and falls on a banana peel that she failed to see on the ground. Was the pedestrian negligent in doing so? Assume that you are confident, based on your knowledge of the situation and your observations of human behavior, that not everyone would have slipped on the banana peel under the circumstances. Some non-trivial proportion of people would have noticed the banana peel and avoided it. But you are also confident that some non-trivial proportion of people would have failed to notice it and slipped, as the pedestrian did. In short, you can imagine a distribution of conduct in which some percentage of people do not notice the banana peel, and some percentage of people do.

How does the behavioral distribution in your mind relate to whether the pedestrian was negligent? The *Restatement (Third) of Torts* provides a partial answer.[85] Per the

81. Tobia, *supra* note 3, at 301 (discussing the "average accident" problem).

82. Rachlinski, *supra* note 25, at 1061–63; *see also* Wright, *Negligence in the Courts*, *supra* note 3, at 484 (observing that tort law generally does not "defer to the constraints that a particular group deems proper for itself, which rather are always subject to evaluation and possible repudiation as being insufficiently respectful of the rights of others"). Perhaps the most famous case that involved this dynamic is the case of the T.J. Hooper tugboat, in which Judge Learned Hand declared that "there are precautions so imperative that even their universal disregard will not excuse their omission." T.J. Hooper v. Northern Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932).

83. The aspirational reasonable person is, in this sense, "the embodiment of all the qualities we demand of the good citizen . . . if not exactly a model of perfection." FLEMING, *supra* note 75, at 97.

84. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. k (AM. L. INST. 2010).

85. As discussed below, the *Restatement (Third)* generally favors the Hand Formula conception of negligence; however, it notes that "in cases in which the actor's alleged negligence consists mainly in the actor's inattentive failure to advert to the risk, explicit consideration of the [Hand factors] is often awkward,

Restatement, if you believe that the vast majority of people would have noticed and avoided the banana peel, it is "obligatory" that you find the pedestrian negligent.[86] But the *Restatement* does not address tougher cases. What if the proportion of people who would have noticed the banana peel is smaller? Is there a "cutoff" point for this proportion, below which the pedestrian's failure to notice it is not negligent? If so, where is the cutoff? Consider: is the pedestrian negligent if you believe (accurately) that twenty-five percent of pedestrians would have noticed and avoided the banana peel? Your answer to this question is probative of whether you adopt an average or aspirational view of reasonableness.

If the reasonable person standard is an averageness standard, then the "cutoff" for reasonable conduct falls roughly in the middle of the behavioral distribution, in or around the fiftieth percentile.[87] Put differently, reasonableness reflects a behavioral median. Thus, on the averageness view, the pedestrian in the twenty-five percent hypothetical above was *not negligent*. The average person would not have noticed the banana peel, so the pedestrian's failure to notice it was reasonable.

If the reasonable person standard is an aspirational standard, however, the result is different. The aspirational reasonable person's conduct is more cautious and competent than most, and therefore, the "cutoff" for reasonable conduct falls somewhere higher than the middle of the behavioral distribution. Where, exactly, is an open question—one that prior scholarship has not addressed with specificity. For the purposes of this Article, I assume that the aspirational reasonable person's conduct falls at or around the ninetieth percentile.[88] Critically, however, the aspirational reasonable person's conduct cannot fall in the *hundredth* percentile: the aspirational reasonable person cannot do something that no one in the relevant community would do under the circumstances. This is why the aspirational standard, as I define it, is an empirical standard. It is subject to empirical limits on human behavior—or, at least, to decision makers' beliefs about those limits.[89] So, returning to the twenty-five percent hypothetical: on an aspirational view, the pedestrian *was* negligent. The aspirational reasonable person (in the ninetieth percentile of attentiveness) would have noticed the banana peel, so the pedestrian's failure to notice it was unreasonable.

and the actor's conduct can best be evaluated by directly applying the standard of the reasonably careful person." *Id.* § 3 cmt. d. The quoted language seems to imply that "directly applying" the reasonable person standard involves empirical considerations.

86. *Id.*

87. *See supra* Part I.B.1.a.

88. Miller & Perry, *supra* note 3, at 376 ("Common statistical aggregates . . . include the mean, the median, and the 90th percentile."). The choice of the ninetieth percentile here is admittedly somewhat arbitrary; it is intended as a starting point. Of course, it could be that people gravitate toward other aspirational cutoffs (the eightieth percentile, or the seventieth, etc.); this cutoff is something that could be examined empirically.

89. If a decision maker concludes that the reasonable person would do something that the decision maker does not believe any actual person could do, then the decision maker is not applying an aspirational reasonable person standard but rather applying some sort of principle-based reasonable person standard. *See infra* Part I.B.2.

It is important to keep in mind that the distributions discussed in this Part relate to observations and beliefs about behavior *under the particular circumstances of the case*. These are not distributions of behavior *over time*. Over extended periods of time, any human will inevitably exhibit some lapses in attention and care.[90] For example, over a ten-hour car drive, any driver is bound to have moments where her eyes or mind wander. Even if such lapses are rare for a litigant (far rarer than for anyone else in the community), it does not mean these lapses are "reasonable" for the purposes of tort law. As stated in the *Restatement (Third)*, fallibility "over a period of time is a reality the jury is not in a position to consider."[91] The reasonable person standard is therefore unrealistic with respect to the consistency of the person's performance over time. This is an important aspect of tort law,[92] but it is largely beyond the scope of this Article. Both the average and aspirational standards, as I define them above, focus on observations and beliefs about behavior under the particular circumstances of the case. Neither relies on observations and beliefs about litigants' conduct over extended periods (or, more broadly, about whether the litigant's general character is best described as prudent or negligent).[93]

Aspirational interpretations of the reasonable person have at times been the subject of mockery.[94] Some have commented on the absurd lengths to which the reasonable person goes in the name of caution, "get[ting] out of his car at every railroad crossing to check for oncoming trains" or "disobeying the direct requests of a gunman at point blank range."[95] Others have noted the tension between aspirational interpretations and the language of "ordinariness" that often accompanies the reasonable person standard.[96] Nevertheless, an aspirational standard has advantages. It addresses the

90. Mark F. Grady, *Res Ipsa Loquitur and Compliance Error*, 142 U. PA. L. REV. 887, 898 (1993) ("In a lifetime of cargo door inspections, even a reasonable person may forget once or twice."); Lee Anne Fennell, *Accidents and Aggregates*, 59 WM. & MARY L. REV. 2371, 2374 (2017) ("It is impossible for human beings to be perfectly consistent in taking precautions that must be repeated over and over in real time, such as alertly scanning the road while driving.").

91. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 3 (AM. L. INST. 2010). Because tort law's reasonable person avoids inevitable human lapses in attention over time, he or she is "infallible in a way that ordinary people are not." *Id.* § 3 cmt. k. It is immaterial whether a plaintiff's injury resulted from the only lapse of care in the defendant's lifetime or whether the defendant experiences hundreds of lapses per day. The focus of a negligence case is on the particular set of circumstances that led to the injury in that case.

92. *See supra* note 89.

93. *Cf.* Grady, *supra* note 90, at 905 ("A legal system that wishes to avoid strict liability for compliance errors—while maintaining deterrence—ultimately has to try the defendant's character.").

94. A.P. HERBERT, MISLEADING CASES IN THE COMMON LAW 10–11 (1930) (noting that the reasonable person "invariably looks where he is going . . . will inform himself of the history and habits of a dog before administering a caress . . . never swears, gambles, or loses his temper . . . [and] uses nothing except in moderation").

95. Austin, *supra* note 44, at 489 (citing Noll v. Marian, 32 A.2d 18, 19–20 (Pa. 1943); Baltimore & Ohio R.R. v. Goodman, 275 U.S. 66, 69–70 (1927)).

96. Kelley & Wendt, *supra* note 16, at 608–09 (contending it would be a mistake for a juror to think the "legal standard of conduct in negligence is higher than what we ordinarily expect of others in the community" and reporting that some states include in their pattern jury instructions a provision "specifically pointing out that the hypothetical person is not an extraordinarily cautious or exceptionally careful person"); Zipursky, *supra* note 1, at 2156 ("[N]egligence law plainly does not aim so high as to require defendants to excel. This

"average accident" problem, incentivizing citizens to be more careful than the average person. It might also make the reasonableness inquiry more "intuitive and tractable."[97] That is, in many cases, it might be easier for decision makers to imagine what the most careful or vigilant people *can* do than to estimate what most people *would* do.[98]

2. *Principle-Based Reasonableness*

Although the reasonable person's historical roots are empirical[99] (at least in part),[100] contemporary legal thought tends to focus more on principle-based definitions. Scholars have contended that principle-based definitions are preferable precisely because they flow from universal principles rather than limited observations of human behavior.[101] Indeed, Miller and Perry have argued that a purely empirical definition of the reasonable person is "logically unacceptable."[102] The President of the Supreme Court of the United Kingdom, Lord Reed, has also dismissed the notion that empirical information about human behavior is relevant to ascertaining what is reasonable:

> It follows from the nature of the reasonable man . . . that it would [be] misconceived for a party to seek to lead evidence from actual passengers on the Clapham omnibus as to how they would have acted in a given situation or what they would have foreseen, in order to establish how the reasonable man would have acted or what he would have foreseen. Even if the party offered to prove that his witnesses were reasonable men, the evidence would be beside the point.[103]

If what is reasonable is not based on observations or beliefs about human behavior, how do we determine what is reasonable? Scholars have argued that various sets of principles provide better guidance. The most commonly invoked are principles of economics.[104]

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is indeed the point of saying that negligence law requires, in most cases, only *ordinary* care (rather than extraordinary care).").

97. Rachlinski, *supra* note 25, at 1065.

98. *Id.*; *see also* Matt King, *Against Personifying the Reasonable Person*, 11 CRIM. L. & PHIL. 725, 731 (2017) (arguing, in the context of criminal law, that "our interest should not be in what the reasonable person would do, but in what the reasonable person could do").

99. Miller & Perry, *supra* note 3, at 377 ("[T]he earliest concept of the reasonable person was taken as an analogy from the then-developing field of statistics . . . ."); Michael Wells, *supra* note 3, at 727 ("Before World War II, the central (though not exclusive) methodology in addressing tort problems was to make rules that reflected, in a straightforward way, the social expectations of the laymen whose conduct they governed.").

100. *See* Tobia, *supra* note 3, at 333–39 (making a historical argument that the reasonable person standard was always understood in hybrid terms).

101. *See* Miller & Perry, *supra* note 3, at 391.

102. *Id.*; *see also* Peter Westen, *Individualizing the Reasonable Person in Criminal Law*, 2 CRIM. L. & PHIL. 137, 138 (2008) (asserting, in the criminal context, that "'reasonableness' is not an empirical or statistical measure of how average members of the public think, feel, or behave").

103. Healthcare at Home Ltd. v. Common Servs. Agency (2014) 4 All ER 210 at [3].

104. *See supra* note 10; *see also* LANDES & POSNER, *supra* note 18.

a. The Economic Reasonable Person

The most famous economic definition of the reasonable person is Judge Learned Hand's "Hand Formula."[105] Per the Hand Formula, "it is negligent to omit a precaution if the reduction in expected accident costs would have been greater than the costs of the precaution."[106] Put differently, the Hand Formula treats negligence as tantamount to "omitt[ing] a cost-justified precaution."[107] Under the Hand Formula, determining whether a litigant's behavior is negligent requires decision makers to balance three considerations: (1) the probability of the behavior leading to an accident, (2) the magnitude of the cost if that accident occurs, and (3) the cost to the litigant of taking precautions to prevent the accident from happening.[108] These inputs are most commonly quantified in terms of dollars.[109] "[I]f the probability be called P; the injury, L; and the burden [of taking precautions], B; liability depends upon whether B is less than L multiplied by P: i.e., whether $B < PL$."[110]

This economic view of the reasonable person is principle-based, rather than empirical, because "[t]he standard is predetermined by a particular normative commitment—namely, cost efficiency—regardless of the prevailing perception [or conduct] in the relevant society."[111] On a purely economic standard, a defendant is negligent whenever he or she fails to take cost-effective precautions, even if there is not a single person in society who would have taken the precautions under the circumstances. Conversely, "conduct is deemed reasonable if it is cost-effective, even if no one truly believes it to be reasonable."[112]

Proponents of the economic standard have sometimes argued that their view is not only normatively desirable, but also descriptively accurate—or, at least, it would be if decision makers had full information.[113] Posner has posited that cases tend to hinge

105. United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).

106. Gilles, *supra* note 2, at 818.

107. Gilles, *supra* note 3, at 1025 ("Doctrinally, the Hand Formula implies that the plaintiff bears the burden of proving that the defendant omitted a cost-justified precaution.").

108. Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 32 (1972) ("Discounting (multiplying) the cost of an accident if it occurs by the probability of occurrence yields a measure of the economic benefit to be anticipated from incurring the costs necessary to prevent the accident.").

109. To be sure, there are other approaches to quantifying the inputs of the Hand Formula. For an overview, see Gilles, *supra* note 2 at 819–20. Quantifying the inputs in terms of dollars was long the approach championed by Richard Posner and William Landes. *Id.* at 819; *see also* Posner, *supra* note 108, at 33 ("Perhaps, then, the dominant function of the fault system is to generate rules of liability that if followed will bring about, at least approximately, the efficient—the cost-justified—level of accident and safety."). In recent years, advocates of the economic view are increasingly embracing *happiness* maximization, rather than *wealth* maximization, as the goal of tort law—but as a practical matter, happiness still tends to be operationalized in terms of dollars. Pressman, *supra* note 4, at 53 (citing Richard Posner, *Wealth Maximization and Tort Law: a Philosophical Inquiry*, *in* PHILOSOPHICAL FOUNDATIONS OF TORT LAW (David G. Owen ed., 1995)).

110. *Carroll Towing*, 159 F.2d at 173.

111. Miller & Perry, *supra* note 3, at 326.

112. *Id.*

113. *See* McCarty v. Pheasant Run, Inc., 826 F.2d 1554, 1557 (7th Cir. 1987) (asserting the Hand Formula tends to have "greater analytic than operational significance" because ordinarily, "the parties do not give the jury the information required to quantify the variables that the Hand Formula picks out as relevant");

on "rough judgments" of reasonableness only because of the "[c]onceptual as well as practical difficulties in monetizing personal injuries."[114] On this strong view of the economic standard, if people were to develop perfect methods for monetizing injuries, then the Hand Formula would capture all negligence decisions.[115] Some proponents of the economic view have suggested that jurors given a generic reasonable person instruction will "arrive at results consistent with cost-benefit analysis at least as often as they would if given an explicit Hand Formula instruction."[116]

The Hand Formula has been tremendously influential within the academy. The American Law Institute largely adopted the Hand Formula as the standard of reasonableness in the *Restatement (Third) of Torts*:

> A person acts negligently if the person does not exercise reasonable care under all the circumstances. Primary factors to consider in ascertaining whether the person's conduct lacks reasonable care are the foreseeable likelihood that the person's conduct will result in harm, the foreseeable severity of any harm that may ensue, and the burden of precautions to eliminate or reduce the risk of harm.[117]

However, some scholars have criticized the *Restatement (Third) of Torts*' inclusion of the Hand Formula on grounds that it "is rarely cited and seldom applied by American courts."[118] More broadly, many scholars have criticized the Hand Formula as both a descriptive and normative account.[119]

Gilles, *supra* note 2, at 853 ("On the Posnerian view, full information about the Hand Factors would yield 'certain results' because that information would consist of monetized values . . . leaving no room for judgment.").

114. *McCarty*, 826 F.2d at 1557.

115. *See id.*; Gilles, *supra* note 2, at 853 ("Posner's pragmatic hope is plainly that [rough] judgments will gradually be displaced as the obstacles to monetization are overcome."); Posner, *supra* note 108, at 33 ("Where the measures necessary to avert the accident would have consumed excessive resources, there is no occasion to condemn the defendant for not having taken them.").

116. Gilles, *supra* note 3, at 1020.

117. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 3 (AM. L. INST. 2010). Richard Wright observes that, particularly in light of the comments and notes, the *Restatement (Third)* "adopts an almost totally unconstrained, reductionist cost-benefit test of reasonableness in negligence law." Wright, *Negligence in the Courts*, *supra* note 3, at 430–31.

118. Miller & Perry, *supra* note 3, at 333; *see also* Hetcher, *supra* note 55, at 864 (arguing that the proposed draft *Restatement (Third)* "dramatically overstates the role of utilitarian, cost-benefit analysis in the reasonable person standard, and it dramatically understates the role of non-utilitarian negligence norms in this standard"); Zipursky, *supra* note 1, at 2153 ("None of the fifty states define 'negligence' (the breach element) in terms of the Hand Formula . . . ."); Wright, *The Myth of the Hand Formula*, *supra* note 3, at 151–52 ("Apart from one very limited exception, the aggregate-risk-utility test still does not appear in standard form jury instructions, and the Hand formula continues to be rarely mentioned in all but two United States jurisdictions: the state of Louisiana and Posner's own court, the U.S. Court of Appeals for the Seventh Circuit.") (footnotes omitted). *But see* Gilles, *supra* note 2, at 815 ("[T]he Hand Formula balancing approach is recognized as authoritative by judicial opinions in a majority of states, by the leading torts treatises, and by most contemporary torts scholars.").

119. *See, e.g.,* Zipursky, *supra* note 1, at 2134 (contending that the Hand formula "grossly misrepresents what 'negligence' really is"); Wright, *The Myth of the Hand Formula*, *supra* note 3, at 148 ("[T]he aggregate-risk-utility test is infrequently mentioned by the courts, almost never included in jury instructions, rarely actually employed in judicial opinions, and almost never explains the actual results reached by the courts."); JENNIFER K. ROBBENNOLT & VALERIE P. HANS, THE PSYCHOLOGY OF TORT LAW 42–51 (2016)

b. Other Principle-Based Definitions

Though the economic definition is the most frequently discussed principle-based definition of the reasonable person, there are many others. Detailed discussion of these other definitions is beyond the scope of this Article, but I briefly highlight several here.

Some contend that the proper understanding of the reasonable person is grounded not in utility (or cost-efficiency), but rather in justice.[120] Justice in this context is often defined with reference to Kant's "equal freedom" imperative.[121] On this view, the foundational principle is that people are ends, not means, and their dignity and freedom should not be encroached by others.[122] Thus, behavior is unreasonable if it creates a foreseeable risk of encroaching upon another's human freedom.[123]

Another principle-based view would replace the obligation to behave reasonably with an ethic of care and concern for others.[124] Advocating for this position, Leslie Bender argued that the focus of tort law "should be on interdependence and collective responsibility rather than on individuality, and on safety and help for the injured rather than on 'reasonableness' and economic efficiency."[125]

(expressing skepticism, given what psychologists know about judgment and decision-making, that jurors conceive of negligence in terms of the Hand Formula).

120. Wright, *The Myth of the Hand Formula*, *supra* note 3, at 273–74 (contending that "the criteria of reasonableness that actually are applied" by courts implement "basic principles of justice," rather than "the morally bankrupt utilitarian-efficiency theory that underlies the Hand formula's aggregate-risk-utility test").

121. *See, e.g.*, Wright, *supra* note 10, at 166 (noting that an interactive justice view of tort law "allows a person to engage in conduct which creates risks to others' persons and property, but if and only if the allowance of such conduct by everyone in similar circumstances will increase everyone's equal freedom, rather than increasing some persons' external freedom at the expense of others' external freedom"); Ernest J. Weinrib, *Toward a Moral Theory of Negligence Law*, 2 L. & PHIL. 37 (arguing for a vision of tort law grounded in Kantian principles); Miller & Perry, *supra* note 3, at 350 ("The Kantian definition of reasonableness is the strongest rival of the economic definition.").

122. Miller & Perry, *supra* note 3, at 350 ("Kant's basic axiom is that 'freedom (independence from being constrained by another's choice), insofar as it can coexist with the freedom of every other in accordance with a universal law, is the only original right belonging to every person by virtue of his or her humanity.'") (quoting IMMANUEL KANT, THE METAPHYSICS OF MORALS § 237 (Mary Gregor ed. trans., Cambridge Univ. Press 1996) (1797)).

123. Miller & Perry, *supra* note 3, at 350. Like the Hand Formula, this definition has occasionally appeared in the language of common law tort decisions. *See id.* at 351 n.126 (reviewing cases).

124. *Id.* at 361–66; Leslie Bender, *Feminist (Re)Torts: Thoughts on the Liability Crisis, Mass Torts, Power, and Responsibilities*, 1990 DUKE L.J. 848, 904 ("An ethic of responsibility and care, based on perceptions of human beings as interconnected and mutually dependent, would enrich our legal post-event understanding of responsibility.").

125. Leslie Bender, *A Lawyer's Primer on Feminist Theory and Tort*, 38 J. LEGAL. EDUC. 3, 4 (1988). Reasonableness, it has been observed, has often been defined relative to a male perspective; for example, only recently have we seen "the emergence of a normative view that the standard of reasonable care in negligence cases should be set at a level that makes the physical premises or the workplace or other space controlled by the defendant equally safe for men and women." Martha Chamallas, *Will Tort Law Have Its #MeToo Moment?*, 11 J. TORT L. 39, 55 (2018).

Other influential principle-based theories are grounded in reciprocity,[126] virtue ethics,[127] and community values.[128] It should be noted that while community values may, at first blush, sound like an empirical basis for defining reasonableness, there is a distinction between the abstract values held by a community (e.g., respect, mutual care, self-determination) and observable conduct that reflects those values.[129]

3. Hybrid Reasonableness

Two recent articles have articulated the idea that laypeople's reasonableness judgments reflect a hybrid of empirical and principle-based standards. The first, a 2015 article by Benjamin Zipursky, provides a thorough exploration of "varieties of reasonableness in the law," including tort law.[130] Zipursky notes that the various approaches to reasonableness he discusses are not mutually exclusive,[131] and asserts that deciding whether conduct is reasonable "involves a kind of judgment that is both normative [principle-based] and descriptive [empirical]."[132]

Building on this idea, a 2018 article by Kevin P. Tobia expressly argues that, throughout the law, "reasonableness" both is and should be a hybrid concept.[133] This argument is built in part on three empirical studies of how people assess "reasonable" quantities.[134] In these studies, Tobia asked participants to estimate one of (i) the average, (ii) the ideal, (iii) the reasonable, or (iv) the "legally reasonable" quantity of something—for example, the number of calories consumed per day; the number of books read per year; the number of days to accept a contract; and the interest rate for a loan.[135] The results show that estimates of the "reasonable" and "legally reasonable" amounts were predicted by, and fell between, estimates of the average and of the ideal

126. *See* Geistfeld, *supra* note 3; Geistfeld, *supra* note 15; George P. Fletcher, *Fairness and Utility in Tort Theory*, 85 HARV. L. REV. 537, 542 (1972) ("[A] victim has a right to recover for injuries . . . resulting from nonreciprocal risks.").

127. *See generally* Heidi Li Feldman, *Prudence, Benevolence, and Negligence: Virtue Ethics and Tort Law*, 74 CHI.-KENT L. REV. 1431 (1998).

128. *See generally* Tilley, *supra* note 3.

129. *See* Tobia, *supra* note 3, at 314 (proposing a vocabulary for discussing theories of reasonableness that distinguishes between "community values," "community customs," and "community norms").

130. Zipursky, *supra* note 1, at 2133.

131. *Id.* at 2145 (explaining that the categories of reasonableness described in Zipursky's article "are not put forward as jointly exhaustive or as mutually exclusive"). Elsewhere in the article, Zipursky appears to reject each of the average, aspirational, and economic definitions of reasonableness outlined above, suggesting some combination is needed. *See id.* at 2150 (explaining that reasonableness is not a question "of head counting in a straightforward empirical way, as the putative descriptivist imagines"); *id.* at 2156 ("[N]egligence law plainly does not aim so high as to require defendants to excel."); *id.* at 2134 ("[T]he Hand formula grossly misrepresents what 'negligence' really is.").

132. *Id.* at 2150.

133. Tobia, *supra* note 3, at 296 ("Reasonableness is best understood as a hybrid notion that is partly statistical and partly prescriptive.").

134. *Id.* at 316–29.

135. *Id.*

provided by other participants.[136] Using this data, Tobia argues that the concept of reasonableness is best understood, and should be understood, as a hybrid between the average and the "ideal."[137] However, the factors that contribute to a hybrid standard (for example, what makes something "ideal"?), and their relevance in the context of torts, remain open for debate.

C. A Lay Perspective of the Reasonable Person

The scholarly debate about the reasonable person is both interesting and important, but it tends to be disconnected from discussion of how lay decision makers encounter, understand, and apply the standard.[138] The juror's experience with the reasonable person is much different than that of legal theorists. Jurors are typically introduced to the reasonable person after the exhausting and unfamiliar effort of sitting through a trial.[139] While struggling to track the technical-sounding jury instructions,[140] jurors hear the judge say something about a "reasonably prudent person," or "reasonable people" exercising "ordinary care."[141]

The juror likely gets no more guidance about the reasonable person standard.[142] The judge may not even be permitted to answer clarifying questions about the instruction.[143] Thus, jurors are generally not told whether or how to use their empirical observations, their sense of community customs or norms, the Hand Formula, or any other conceptual framework for reaching a decision.[144]

So, what do jurors do? Some have speculated that "naked" reasonable person jury instructions might invoke economic considerations, functioning "as a heuristic through which juries . . . determine negligence by asking how a person who bore both the costs and benefits of care would have behaved."[145] Others suggest that framing negligence

136. *Id.* at 329 ("[A]cross various domains, a striking pattern emerged: the reasonable quantity was intermediate between divergent average and ideal quantities.").

137. *Id.* at 329–43.

138. Wright, *supra* note 10, at 143 (noting the "little appreciated but clearly demonstrable disjunction between the law as it actually exists in practice and the law as it is interpreted and described in most secondary sources (e.g., treatises, casebooks, and the American Law Institute's successive Restatements) . . . .").

139. The juror's experience is well summarized by Ashley M. Votruba, *supra* note 12, at 704–06.

140. *See* Edith Greene & Michael Johns, *Jurors' Use of Instructions on Negligence*, 31 J. APPLIED SOCIAL PSYCH. 840, 850 (2001) (reporting low comprehension of jury instructions in a mock jury study; most notably, under 40% of participants correctly answered a subsequent multiple-choice question about the definition of negligence); *see also* Robert P. Charrow & Veda R. Charrow, *Making Legal Language Understandable: A Psycholinguistic Study of Jury Instructions*, 79 COLUM. L. REV. 1306 (1979) (advocating for simpler, more comprehensible jury instructions).

141. *See* Gilles, *supra* note 3, at 1017 ("[C]ourts ordinarily instruct [juries] to determine whether the actor behaved as a 'reasonably prudent person' would have under the circumstances.").

142. For a comprehensive survey of jury instructions concerning the reasonable person, see Kelley & Wendt, *supra* note 16.

143. Votruba, *supra* note 12, at 706.

144. *See id.* at 705 (noting jurors "are largely left to their own devices to decide what is considered negligent behavior in this circumstance with only the vague, undefined concept of the reasonable person as their guide.").

145. Gilles, *supra* note 3, at 1019.

in terms of ordinary conduct invites jurors to weigh empirical considerations.[146] The bottom line, however, is that we do not know. Little empirical work has directly addressed this question.[147] "Although scholars and legal theorists have spent much time discussing how the Reasonable Person Standard should be understood, conceptualized, and modified, little attention has been paid to how *jurors* actually interpret and apply the standard as presented by jury instruction."[148]

The experiments I describe in the next Part address this gap. They examine, empirically, whether mock jurors use an average, aspirational, or economic definition of the reasonable person when determining liability in negligence cases.

II. INVESTIGATING LAY CONCEPTIONS OF THE REASONABLE PERSON

I conducted four original experiments examining how lay decision makers understand and apply the reasonable person standard. The first two experiments tested whether lay decision makers interpret the reasonable person in empirical or economic terms. The third and fourth experiments focused on the finer distinction between the average and aspirational understandings.

The four experiments involved a common logic. Participants played the part of jurors, deciding negligence cases. For each case, I gave participants the relevant economic or empirical information, then observed how it affected their decisions. More specifically, each case included information that was critical under at least one interpretation of the reasonable person—information about whether the defendant's course of conduct was cost-justified (critical on an economic view), or information about what portion of the population would have acted differently under the circumstances (critical on an empirical view). Meanwhile, all of the other information in each case was held constant. It is, of course, unlikely that either economic or empirical information would be presented to jurors in such clear terms in real litigation. But observing how this information affects laypeople when it is available and unambiguous provides insight as to what laypeople consider relevant when evaluating negligence and thus provides a valuable window into lay understanding of reasonableness.

To be clear, I did not expect participants' decisions to uniformly reflect any single view of the reasonable person (average, aspirational, economic, or otherwise). But I expected their decisions would be more consistent with some views than others. My aim was to identify which view of reasonableness best matched participants' decisions. Stated more broadly, my goal was to understand how empirical and economic considerations factor into the function of reasonableness.

146. Kelley & Wendt, *supra* note 16, at 619 ("It seems to us that a jury would interpret that standard not as an invitation to engage in cost-benefit analysis, but as an invitation to determine how reasonably careful people in their community would in fact act in light of all the circumstances . . . .").

147. *Cf.* Green, *supra* note 13 (presenting an experiment finding that several factors implicated by the Hand Formula affected participants' negligence judgments in a hypothetical attractive nuisance case).

148. Votruba, *supra* note 12, at 706.

Parts II.A through II.D describe the four experiments. Part II.E summarizes the key experimental findings.

A. Experiment One: Empirical versus Economic

1. Overview

My first experiment[149] investigated whether lay decision makers define the reasonable person in empirical or economic terms. Participants decided four hypothetical negligence cases. Each involved an injured plaintiff suing the defendant for failing to take a particular precaution that would have prevented the plaintiff's injury. Participants received two critical pieces of information about each case. First, participants were told what percentage of those in the defendant's position would have chosen to take the relevant precaution—either 10% or 90% (the "empirical information"). This information should affect negligence determinations if participants apply an empirical standard. Second, participants were told whether the precaution either was or was not cost-justified, as defined by the Hand Formula (the "economic information"). This information should affect negligence determinations if participants apply an economic standard.[150] I found that empirical information significantly affected participants' negligence determinations while economic information did not.

2. Method

a. Participants

Participants were recruited through Amazon Mechanical Turk,[151] an online platform frequently used by researchers in the social sciences and in law.[152] Researchers have found that Mechanical Turk provides as reliable of data as traditional student

149. For an introduction to experimental techniques, see*, e.g.*, GEOFFREY KEPPEL & THOMAS D. WICKENS, DESIGN AND ANALYSIS: A RESEARCHER'S HANDBOOK (4th ed. 2004). Researchers use experimental designs to study whether changes in certain variables they manipulate—called independent variables—result in changes in measured outcomes of interest—called dependent variables. GLENN GAMST ET AL., ANALYSIS OF VARIANCE DESIGNS: A CONCEPTUAL AND COMPUTATIONAL APPROACH WITH SPSS AND SAS §§ 1.3–1.3.4 (2008). The chief advantage of experimental designs is that experimenters can "hold constant the variables they are not testing." Russell Korobkin & Chris Guthrie, *Psychological Barriers to Litigation Settlement: An Experimental Approach*, 93 MICH. L. REV. 107, 119 (1994). This allows researchers to infer that the manipulation of the independent variable *caused* the change in the dependent variable; outcome differences cannot "be attributed to variables that were the same across comparison groups." *Id.* at n.56.

150. *See supra* Part I.B.2.a.

151. Specifically, the study was constructed using IBM's Qualtrics survey software, available at https://www.qualtrics.com. Participants were recruited through Amazon Mechanical Turk, where they followed a link to the Qualtrics survey.

152. *See, e.g.*, Roseanna Sommers & Vanessa K. Bohns, *The Voluntariness of Voluntary Consent: Consent Searches and the Psychology of Compliance*, 128 YALE L.J. 1962, 1988 (2018); Avani Mehta Sood, *Attempted Justice: Misunderstanding and Bias in Psychological Constructions of Criminal Attempt*, 71 STAN. L. REV. 593, 614 (2019); Justin Sevier, *Testing Tribe's Triangles: Juries, Hearsay, and Psychological Distance*, 103 GEO. L.J. 879, 905 (2014); Tobia, *supra* note 3, at 318.

samples, and from a more representative group of participants.[153] Indeed, "a recent comparative study by an interdisciplinary team of business, law, and psychology scholars found that [Mechanical Turk] participants had higher levels of attentiveness than participants recruited by a more costly commercial survey firm or by an in-person university lab."[154]

The final sample of ninety-nine English-speaking U.S. residents[155] included fifty-eight men and forty-one women, ranging in age from twenty years to sixty-eight years with an average age of 37.16 years.

b. Procedure

An initial instruction screen informed participants that they would be playing the role of a juror deciding four lawsuits, which would be described in brief vignettes. Participants were instructed to assume that all facts presented in the vignettes were completely accurate. After clicking to continue, participants were informed that all of the lawsuits they would decide involved allegations of negligence. They then reviewed a representative jury instruction defining negligence (taken from the pattern civil jury instructions for the State of Delaware).[156] To facilitate comprehension, participants had to correctly answer a question about the jury instruction's definition of negligence before proceeding with the study. (Note, however, that participants did not need to memorize the jury instruction; it was reprinted on each subsequent screen of the study.)[157]

After reviewing the jury instruction, participants decided four hypothetical cases, presented in random order.[158] Each case appeared on its own screen, which included

153. *See, e.g.*, Michael Buhrmester et al., *Amazon's Mechanical Turk: A New Source of Inexpensive Yet High-Quality Data?*, 6 PERSPS. ON PSYCH. SCI. 3 (2011); Krin Irvine et al., *Law and Psychology Grows Up, Goes Online, and Replicates*, 15 J. EMPIRICAL LEGAL STUD. 320 (2018); Adam J. Berinsky et al., *Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk*, 20 POL. ANALYSIS 351 (2012); Jeremy Kees et al., *An Analysis of Data Quality: Professional Panels, Student Subject Pools, and Amazon's Mechanical Turk*, 45 J. ADVERT. 141 (2017).

154. Sood, *supra* note 152, at 614–15; Irvine et al., *supra* note 153, at 322 (reporting finding that participants on Mechanical Turk "are significantly more attentive than subjects in other subject pools").

155. I initially collected responses from 100 participants. However, I wanted to be certain that no participant took the study more than once. Therefore, I systematically excluded any responses that (1) came from the same Mechanical Turk ID as a prior response, (2) came from the same IP address as a prior response, or (3) came from the same geographic location as a prior response. In Experiment One, one response was excluded on these grounds, leaving ninety-nine responses for analysis. I used these exclusion criteria in all four experiments.

156. Del. P.J.I. Civ. § 5.1. The precise language of this jury instruction is included in the Appendix. This pattern jury instruction was selected after reviewing the pattern jury instructions catalogued in Kelly & Wendt, *supra* note 16, on the bases that it is both straightforward and representative: like "most pattern jury instructions on negligence", it combines the concept of "ordinary care and the concept of the conduct of a reasonably careful person or one of her close relatives." *Id.* at 595. No other jury instructions were used in my experiments or in any pilot studies.

157. I did not ask participants to memorize any materials in the study, as my research interest was in how participants understand and apply the reasonable person standard to factual scenarios, not in how well jurors remember the standard or the scenarios.

158. Order was randomized with IBM's Qualtrics, available at https://www.qualtrics.com.

the written vignette relaying the facts of the case,[159] the representative Delaware jury instruction,[160] and two critical questions eliciting (i) the participant's verdict, and (ii) his or her confidence level in that verdict. Once participants answered the critical questions and proceeded to the next case, they could not return to change their responses.

Each case followed the same basic pattern.[161] An initial orienting sentence told participants who was suing whom for what. For example, one opening sentence read as follows: "The plaintiff, Patrick Pendleton, is suing the defendant, Dolman Transportation, claiming that Dolman Transportation's negligence caused him injury."[162] The next ten to twelve sentences described a factual scenario in which the defendant opted not to take a precaution that would have prevented the plaintiff's subsequent injury.[163] In the example case of *Pendleton v. Dolman Transportation*, the plaintiff suffered burns in a car accident that would have been prevented if the defendant had purchased and used chemical-hauling trucks with specially reinforced sides.

The closing sentences of the vignette provided the empirical information and the economic information (the independent variables[164] in my experiment). With respect to empirical information, participants were directly told that either 10% or 90% of others in the defendant's position would have taken the relevant precaution. For example, in *Pendleton v. Dolman Transportation*, participants were informed that [either 10% or 90%] of those in Dolman Transportation's position would have chosen to buy the new chemical-hauling trucks with specially reinforced sides. With respect to the economic information, participants were directly told whether the relevant precautions were cost-justified (B<PL)[165] or not cost-justified (B>PL)[166]. For example, participants were told that purchasing the specially reinforced trucks would have been expected to save $50,000 of costs to society and that the specially reinforced trucks cost [either

159. *See infra* Appendix pp. 949–55. Vignettes ranged from 322 to 379 words in length. *Id.*

160. *See supra* note 157.

161. Two of the four case vignettes—*Sanders v. A & G Cosmetics* and *Windsor v. International Computers*—were adapted from vignettes used in Daniel Kahneman et al., *Shared Outrage and Erratic Awards: The Psychology of Punitive Damages*, 16 J. RISK & UNCERTAINTY 49, 81, 84 (1998).

162. *Infra* Appendix pp. 950–51.

163. In Experiment One, the defendants were always informed corporate actors making decisions without time pressure and with full information about the costs and benefits of the precaution—the situation to which the Hand Formula most readily applies. Note that, as a legal matter, the difference between corporate and individual defendants is inconsequential; the reasonable person standard applies to people and corporations alike. *See, e.g.*, Valerie P. Hans, 48 DEPAUL L. REV. 327, 350 ("[J]udges often admonish jurors to treat corporations the same as individual parties.").

164. "Independent variables . . . can be conceptualized as input factors [or] treatment conditions" that are manipulated by the experimenter in order to measure their influence on the dependent variable. GLENN GAMST ET AL., ANALYSIS OF VARIANCE DESIGNS: A CONCEPTUAL AND COMPUTATIONAL APPROACH WITH SPSS AND SAS § 1.3.3 (2008) (emphasis omitted).

165. Specifically, in the cost-justified condition, B = .5(PL). *See infra* Appendix pp. 950–51, 954–55.

166. Specifically, in the non-cost-justified condition, B = 1.5(PL).

$25,000 or $75,000] more than the older trucks that Dolman Transportation purchased instead.[167] The full text of all case vignettes is included in the Appendix.

For each participant, each possible combination of empirical information and economic information was randomly assigned to one (and only one) of the four case vignettes.[168] This design is summarized in Table 1. The order of the empirical and economic information was counterbalanced such that each participant saw the empirical information first in two cases and the economic information first in the other two cases.[169]

Table 1

	Economic information indicates negligence	**Economic information indicates no negligence**
Empirical information indicates negligence	90% would have taken precaution Precaution was cost-justified (B < PL)	90% would have taken precaution Precaution was not cost-justified (B > PL)
Empirical information indicates no negligence	10% would have taken precaution Precaution was cost-justified (B < PL)	10% would have taken precaution Precaution was not cost-justified (B > PL)

Table 1. Summary of experimental design in Experiments One and Two. Each participant acted as a juror for four cases. Each cell in the 2x2 grid above corresponds to one case.

Beneath each case vignette, participants saw the jury instructions and the two critical questions. The first question asked participants to render a verdict: was the defendant negligent?[170] The second asked participants to rate their confidence in their verdict on a scale from 0 (not at all confident) to 10 (extremely confident).

Participants' verdicts and confidence ratings were combined to create a 21-point scale reflecting their evaluation of the case. A score of 21 reflected that the participant was extremely confident that the defendant was negligent; a score of 0 reflected that

167. The specific Hand formula inputs (i.e., anticipated probability and magnitude of loss) were also specified in the scenario.

168. These assignments were randomized using IBM's Qualtrics, available at https://www.qualtrics.com.

169. The sequence in which the empirical information and the economic information were presented had no effect on participants' verdicts.

170. Specifically, participants were asked: "Do you find that the defendant, [Defendant's Name], was negligent?" Participants chose one of two options: "No. The defendant was not negligent," or "Yes. The defendant was negligent."

the participant was extremely confident that the defendant was not negligent.[171] I refer to this 21-point scale as a measure of "perceived negligence" or as a "negligence rating." These negligence ratings, along with participants' binary negligence verdicts, served as the dependent variables in all of my experiments (i.e., the outcomes compared across experimental conditions).[172]

c. Hypotheses

If participants conceive of the reasonable person in empirical terms, they should rate the defendant as more negligent when 90% (as opposed to 10%) of those in a similar position would have taken the relevant precaution. If participants conceive of the reasonable person in economic terms, then participants should rate the defendant as more negligent for declining to take a cost-justified precaution ($B < PL$) than a precaution that was not cost-justified ($B > PL$).[173] Of course, these possibilities are not mutually exclusive; both could occur.[174]

171. Specifically, participants who found the defendant was not negligent were assigned a score equal to 10 minus their confidence rating. Participants who found the defendant was negligent were assigned a score equal to 11 plus their confidence rating.

172. *See, e.g.*, GAMST ET AL., *supra* note 164, § 1.3.2 ("[A] useful way to conceptualize [dependent variables] is as outcome variables or outcome measures." (italics omitted)). In experimental techniques, researchers are investigating whether manipulating the independent variable affects the dependent variable. *Id.* § 1.3.4; *see also* Zipursky, *supra* note 1, at 2150.

173. Gilles, *supra* note 2, at 853 ("On the Posnerian view, full information about the Hand Factors would yield 'certain results' because that information would consist of monetized values . . . leaving no room for judgment.").

174. *See supra* Part I.B.3 (discussing hybrid approaches to reasonableness).

3. Analyses and Results

Statistical analyses[175] revealed that empirical information significantly affected participants' negligence ratings.[176] As expected, participants rated defendants as more negligent when 90% of similarly situated others would have taken the precaution than when 10% of similarly situated others would have done so (see Figure 1).[177] Economic information had no significant effect on negligence ratings.[178] Empirical information affected participants' ratings significantly more than economic information did.[179]

175. All statistical analyses in my experiments were conducted with IBM SPSS Statistics Version 26. For all tests conducted, my threshold for statistical significance was set at $p < .05$, per the custom in psychological research. *See* Sood, *supra* note 152, at 615 (citing ARTHUR ARON ET AL., STATISTICS FOR PSYCHOLOGY 112–13 (5th ed. 2009)). In all of my experiments, I analyzed negligence ratings using a repeated-measures analysis of variance. "Analysis of variance (ANOVA) is a statistical technique used to evaluate the size of the difference between sets of scores." GAMST ET AL., *supra* note 164, § 1.1. ANOVA is among the most common analyses in psychological research as it has a number of desirable features, including robustness to non-normally distributed data. *See, e.g.*, María J. Blanca et al., *Non-normal Data: Is ANOVA Still a Valid Option?*, 29 PSICOTHEMA 552 (2017). While the use of ANOVA to analyze responses based on scales (such as the 21-point scale for negligence ratings) is customary and expected in the psychology and law-and-psychology literatures, *see, e.g.*, Jaeger et al., *supra* note 63, at 267–73; Sood, *supra* note 152, at 618 n.112, 620 n.114, 621 n.116; Yuval Feldman et al., *Anchoring Legal Standards*, 13 J. EMPIRICAL LEGAL STUD. 298, 308–11 (2016); Jessica Bregant et al., *Intuitive Jurisprudence: Early Reasoning About the Functions of Punishment*, 13 J. EMPIRICAL LEGAL STUD. 693, 705–09 (2016), there has been a history of interdisciplinary debate around whether such data should instead be treated as ordinal and analyzed using nonparametric tests. That debate is immaterial here, however, because in all four experiments, the same patterns of results obtain with nonparametric analyses. When reporting the results of ANOVAs, I report effect sizes using partial eta squared, which is "the proportion of total variation attributable to the factor, partialling out (excluding) other factors from the total nonerror variation." Charles A. Pierce et al., *Cautionary Note on Reporting Eta-Squared Values from Multifactor ANOVA Designs*, 64 EDUC. & PSYCH. MEASUREMENT 916, 918 (2004) (citation omitted). When reporting differences across conditions, I report effect size in terms of standard deviations (Cohen's *d*).

176. $F(1, 98) = 38.184$, $p < .001$, Partial Eta Squared = .280.

177. 90% Mean = 15.252, Standard Deviation (SD) = 5.742; 10% Mean = 10.268, SD = 6.034; $t(98) = 6.179$, $p < .001$, $d = .621$. Some may wonder whether the significant relationship between empirical information and negligence ratings is a byproduct of my repeated-measures design. Each participant responded to four case vignettes; perhaps the changes in empirical information captured participants' attention and led them to compare that information across cases. To address this possibility, I compiled and analyzed a data set that included only participants' verdicts for the first case they encountered. Even with this data set, participants' negligence ratings were higher in the 90% condition (Mean = 15.209, SD = 7.507) than the 10% condition (10% Mean = 9.214, SD = 8.416), $t(97) = 3.680$, $p < .001$. The same pattern held for participants' first negligence verdicts: 32 of 43 participants found the defendant negligent in the 90% condition, versus 23 of 56 participants in the 10% condition, $\chi^2(1) = 10.955$, $p = .001$. This indicates that empirical information was influencing negligence verdicts from the beginning of the study. In addition, the findings were not driven by one or two particular case vignettes; results were consistent for each of the four of the case vignettes used in the study. For each of the four vignettes, a higher proportion of participants found the defendant negligent in the 90% condition than in the 10% condition. These differences are significant or very nearly significant even when each case vignette is analyzed individually (all p's < .06), whereas participants' verdicts did not vary with economic information for any of the four cases (all p's > .30).

178. $F(1,98) = 2.279$, $p = .134$, Partial Eta Squared = .023. Participants' mean negligence rating when the defendant omitted a cost-justified precaution was 13.308 (SD = 5.596); participants' mean negligence rating when the defendant omitted a non-cost-justified precaution was 12.202 (SD = 5.707). There was no interaction between empirical information and economic information, $F(1,98) = 3.074$, $p = .083$, Partial Eta Squared = .030.

179. To test the relative influence of empirical information and economic information, I conducted a paired-samples t-test comparing (i) the effect of empirical information on each participants' negligence rating

Figure 1

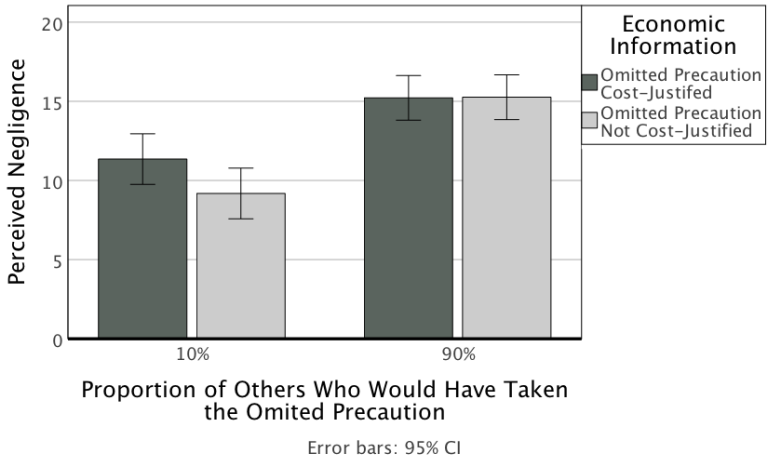

Figure 1. Perceived negligence, on a 21-point scale, by condition (Experiment One).

Precisely the same pattern emerged when I analyzed participants' binary negligence verdicts.[180] Participants were significantly more likely to render a verdict of negligence in 90% cases than in 10% cases (see Figure 2).[181] Economic information had no effect.[182]

(mean negligence rating in 90% cases minus mean negligence rating in 10% cases) to (ii) the effect of economic information on each participants' negligence rating (mean negligence rating in cost-justified cases minus mean negligence rating in non-cost-justified cases). This revealed that empirical information was more influential, $t(98) = 3.619$, $p < .001$, $d = .364$.

180. With respect to participants' binary negligence verdicts, I conducted a generalized estimating equation, or "GEE," analysis, using my independent variables (empirical and economic information) to predict verdicts. GEE is akin to regression but can be conducted with repeated-measures data. *See, e.g.*, Paolo Ghisletta & Dario Spini, *An Introduction to Generalized Estimating Equations and an Application to Assess Selectivity Effects in a Longitudinal Study on Very Old Individuals*, 29 J. EDUC. & BEHAV. STAT. 421, 421–22 (2004) (explaining that "[g]eneralized estimating equations (GEE) are a convenient and general approach to the analysis of . . . correlated data," noting they can be applied to dichotomous data, and observing that they "relax several assumptions of traditional regression models"). My GEE analysis revealed that empirical information affected participants' verdicts, $\chi^2(1) = 25.782$, $p < .001$. Economic information did not, $\chi^2(1) = 2.145$, $p = .143$. There was no interaction, $\chi^2(1) = 1.578$, $p = .209$. For a complete contingency table summarizing participants' verdicts by condition, see the Appendix, *infra* pp. 956–57.

181. Participants were more likely to find the defendant negligent in the 90% empirical information condition (77% of participants) than in the 10% empirical information condition (49% of participants), $\chi^2(1) = 30.200$, $p < .001$.

182. *See supra* note 177.

Figure 2

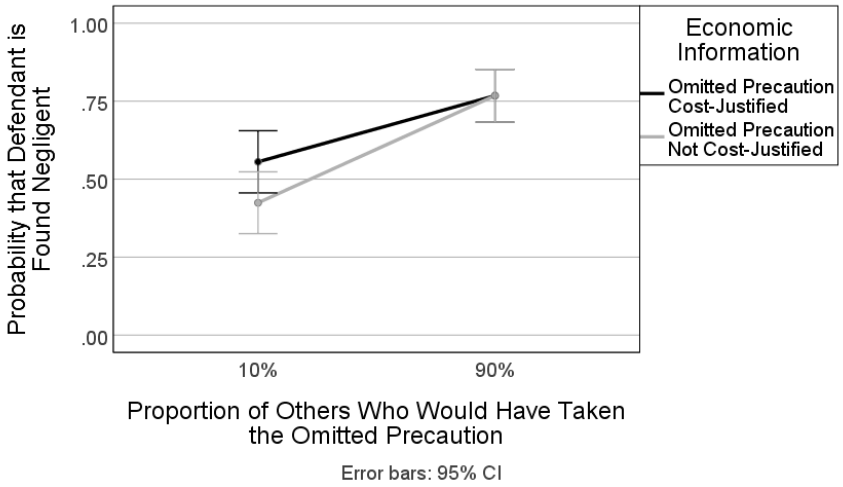

Figure 2. Probability of a participant finding the defendant negligent by condition (Experiment One).

I conducted one final analysis that reflects a different approach to the data. Specifically, I categorized individual participants by the pattern of their negligence verdicts.[183] I was interested in two patterns: (i) participants who always found the defendant negligent in the 90% cases but never in the 10% cases, consistent with a "pure" empirical standard; and (ii) participants who always found the defendant negligent for omitting a cost-justified precaution but never for omitting a non-cost-justified precaution, consistent with a "pure" economic standard. I found that participants were more likely than chance to render verdicts consistent with a pure empirical standard (N = 19).[184] The same was not true of a pure economic standard (N = 5).[185] Participants were significantly more likely to apply a pure empirical standard than a pure economic standard.[186]

While this alternative analysis provides some additional support for an empirical perspective, it should be noted that only 24 of 99 participants gave responses consistent with either a pure empirical or pure economic standard. The other 75 participants were being influenced by some combination of those factors and other factors. Interestingly,

183. There were 16 potential patterns of verdict across cases (2^4 = 16).

184. To evaluate whether the frequencies of participants in each category differed significantly from the frequencies that would be expected by chance, I conducted a chi-square analysis, per custom in psychological research. *See, e.g.*, Jaeger et al., *supra* note 63, at 271 (using chi-square analyses to test whether frequencies differed significantly from chance); Sood, *supra* note 152, at 619–20, 625–26, 632, 640–41 (same); Sommers & Bohns, *supra* note 152, at 1984–85, 1985 n.92 (same). Here, the test revealed that more participants' responses were consistent with a pure empirical standard (N = 19) than chance would predict, $\chi^2(1) = 28.300$, $p < .001$.

185. $\chi^2(1) = .243$, $p = .622$.

186. $\chi^2(1) = 8.167$, $p = .004$.

a substantial share of participants (42%) actually found the defendant negligent when empirical and economic information both suggested the defendant was not negligent—i.e., where the defendant's conduct was both customary and economically justified. This underscores that considerations beyond custom and cost-justification influenced participants' judgments. (It also raises the possibility that some participants imposed something closer to a strict liability standard, a possibility I will revisit in Part IV.)

B. Experiment Two: Empirical versus Economic, Revisited

1. Overview

In Experiment One, empirical considerations influenced negligence determinations, while economic considerations did not. But Experiment One arguably has one important limitation: one could argue that the result may have been driven by differing magnitudes of the empirical and economic manipulations. For the empirical manipulation, participants were told that either 90% or 10% of those in the defendants' position would have acted differently—a 9:1 ratio between conditions. For the economic manipulation, however, the cost of taking the precaution was either 150% or 50% of expected cost of failing to do so—effectively a 3:1 ratio. Of course, these magnitudes reflect comparisons of information across case vignettes. Thus, as a practical matter, this difference could not explain the results of Experiment One: participants could not have known or compared the ratio between conditions until they responded to multiple cases, yet even when I analyzed only each participant's first verdict, the pattern of results was the same.[187] Further, there is little theoretical basis to suggest the magnitude matters, at least for economic information; on a strict economic standard, the ratio is irrelevant. However, it is at least plausible that, over the course of the experiment, the difference in magnitudes caused participants to pay more attention to, and therefore place more weight on, empirical considerations relative to economic considerations than they otherwise would have.

Experiment Two ruled out this possibility. Experiment Two used the same manipulation of empirical information: participants were told that either 90% or 10% of others would have taken the critical precaution. However, I increased the magnitude of my economic manipulation in Experiment Two, using a 9:1 ratio between the cost of taking precautions and the expected cost of failing to do so (effectively creating an 81:1 ratio across conditions). For example, if the cost of taking a precautionary measure in a given vignette was $100,000, then the expected cost of failing to take the precaution was either $900,000 in the cost-justified condition ($B < PL$), or $11,111 in the non-cost-justified condition ($B > PL$).

Even with this adjustment to the magnitude of my manipulations, the results of Experiment Two replicated the results of Experiment One. Empirical information, but not economic information, affected participants' assessments of negligence.

187. *See supra* note 175.

2. Method

a. Participants

I recruited 111 English-speaking U.S. residents using Amazon Mechanical Turk (67 men, 43 women, and 1 participant who preferred not to identify).[188] Participants ranged in age from 20 years to 69 years with an average age of 35.23 years.

b. Procedure

Experiment Two used the same procedures as Experiment One, except that I adjusted the magnitude of the economic manipulation as described in the experiment overview above.[189]

c. Hypotheses

Experiment Two tested the same hypotheses as Experiment One.

3. Analyses and Results

Experiment Two replicated the precise pattern of effects I observed in Experiment One. Empirical considerations again affected participants' negligence ratings (see Figure 3),[190] while economic considerations did not.[191] Empirical information affected

188. I recruited 120 participants, but 9 responses were excluded because they came, or could have come, from the same participant as an earlier response. For the specifics of my exclusion criteria, see *supra* note 155.

189. *See supra* Part II.B.1.b.

190. Paralleling Experiment One, I conducted a two-way repeated-measure ANOVA. *See supra* note 175. It revealed that empirical information significantly affected negligence ratings, $F(1, 110) = 15.083$, $p < .001$, Partial Eta Squared = .121. Participants rated defendants as significantly more negligent in cases in the 90% condition (Mean = 15.126, SD = 5.168) than in the 10% condition (Mean = 12.104, SD = 6.048), $t(110) = 3.884$, $p < .001$, $d = .369$. As in Experiment One, the effect replicated when analyzing only participants' first negligence ratings (90% Mean = 16.921, SD = 5.539; 10% Mean = 12.767, SD = 7.753; $t(109) = 3.191$, $p = .002$, $d = .608$). It also held when analyzing only participants' first negligence verdicts: 45 of 51 participants found the defendant negligent in the 90% condition, versus 38 of 60 participants in the 10% condition, $\chi^2(1) = 9.063$, $p = .003$. These analyses demonstrate that the effect of empirical information was present from the start of the study. Further, similar to Experiment One, the pattern of results was consistent across case vignettes. For each of the four vignettes, a higher proportion of participants found the defendant negligent in the 90% condition than in the 10% condition. These differences are significant or very nearly significant even when each case vignette is analyzed individually (all p's < .11), whereas participants' verdicts did not vary with economic information for any of the four cases (all p's > .37).

191. Economic information had no effect on negligence ratings, $F(1,110) = .074$, $p = .787$, Partial Eta Squared = .001. Participants' mean negligence rating was 13.527 when defendant omitted a cost-justified precaution versus 13.703 when the defendant omitted a non-cost-justified precaution. Economic information did not interact with empirical information, $F(1,110) = .530$, $p = .468$, Partial Eta Squared = .005.

participants' negligence determinations significantly more than economic information did.[192]

Figure 3

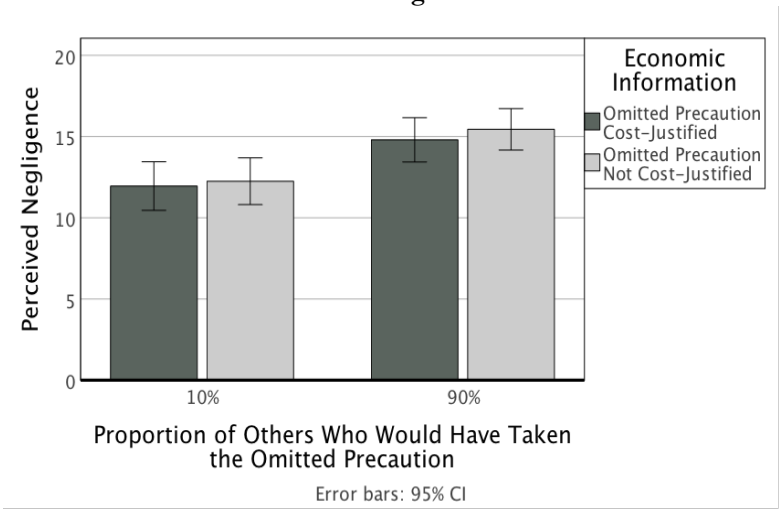

Figure 3. Perceived negligence, on a 21-point scale, by condition (Experiment Two).

The pattern was the same with participants' binary verdicts (see Figure 4). Empirical information mattered.[193] Economic information did not.[194]

192. For explanation of this contrast, see *supra* note 177. I found empirical information affected participants' perceived negligence significantly more than economic information, $t(110) = 3.376$, $p < .001$, $d = .320$.

193. I conducted a GEE analysis parallel to the one in Experiment One. *See supra* note 180. As in Experiment One, empirical information had an omnibus effect on participants' verdicts, $\chi^2(1) = 14.727$, $p < .001$. Participants were more likely to find the defendant negligent in the 90% empirical information condition (77% of participants) than in the 10% empirical information condition (59% of participants), $\chi^2(1) = 15.430$, $p < .001$. For a complete contingency table summarizing participants' verdicts by condition, see the Appendix, *infra* pp. 956–57.

194. $\chi^2(1) = .209$, $p = .647$. Further, economic information did not interact with empirical information, $\chi^2(1) = .689$, $p = .406$.

Figure 4

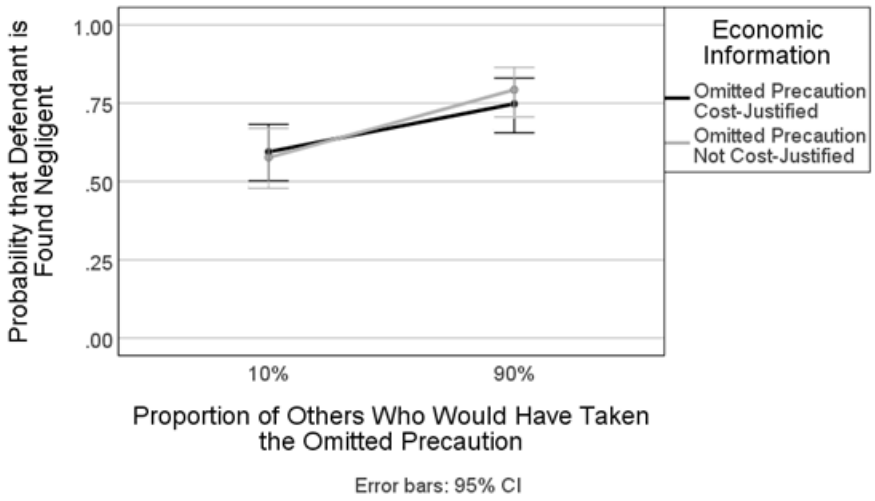

Figure 4. Probability of a participant finding the defendant negligent by condition (Experiment Two).

As in Experiment One, I conducted an alternative analysis categorizing individual participants based on the pattern of their verdicts. Again, participants were more likely than chance to respond consistent with a pure empirical standard (N = 15)[195] but not a pure economic standard (N = 4).[196] Participants were significantly more likely to render verdicts consistent with a pure empirical standard than a pure economic standard.[197]

C. Experiment Three: Average versus Aspirational

1. Overview

In Experiments One and Two, lay understanding of reasonableness was more influenced by empirical considerations (the proportion of the population that would have taken the relevant precaution) than by economic considerations (whether the relevant precaution was cost-justified).[198] This raises a follow-up question: How are participants using the empirical information? Specifically, does their use of the

195. $\chi^2(1) = 9.995$, p = .002.

196. $\chi^2(1) = 1.327$, p = .249.

197. $\chi^2(1) = 6.368$, p = .012.

198. This was true despite the fact that the cases presented were the type of cases to which the Hand Formula most neatly applies. *See* Zipursky, *supra* note 1, at 2158 (suggesting that it may be difficult, conceptually, to apply the Hand Formula beyond "the domain of precautions negligence").

information reflect an average or an aspirational understanding of reasonableness? Experiments Three and Four explore this question.

In Experiment Three, participants again decided cases in which they had empirical information about what percentage of others would have taken a crucial precaution that the defendant did not take. The critical feature of Experiment Three was that this empirical information could reflect any of five different conditions, ranging from 0% to 90%. Manipulating this percentage across five levels allowed me to probe where along the continuum empirical information begins influencing negligence judgments.

2. Method

a. Participants

Sixty English-speaking U.S. residents were recruited through Amazon Mechanical Turk (28 men, 31 women, and 1 who preferred not to identify). Participants ranged in age from 20 years to 71 years, with an average of 39.2 years.

b. Procedure

Experiment Three's procedures paralleled the first two experiments, with three exceptions. First, in Experiment Three, participants responded to five negligence cases rather than four. The five cases included the four cases from Experiments One and Two, plus *Lawson v. TGI International* (which was adapted from a prior study by Daniel Kahneman, David Schkade, and Cass Sunstein).[199]

Second, Experiment Three tested one independent variable (empirical information), rather than two. The vignettes used in Experiment Three did not include any economic information about whether the precautions were cost-justified. Rather, every vignette ended with empirical information.

Third, in Experiment Three, there were five empirical information conditions: 0%, 10%, 25%, 50%, or 90% of others in the defendant's position would have taken the precaution the defendant failed to take. I chose these five levels based on implications of the average and aspirational standards. Specifically, values are concentrated on the low end of the continuum (0%, 10%, and 25%) to allow for evaluation of the aspirational standard. On a pure aspirational standard, participants should not find defendants negligent in the 0% condition but should find them negligent over some low threshold (here, I have suggested around 10%).[200] In contrast, on a purely average standard, a participant would not find defendants negligent until some point around 50% on the continuum (perhaps right at 50%, perhaps 50.0001%, or perhaps 51% or 55%).[201]

199. Kahneman et al., *supra* note 161. The vignette can be viewed in the Appendix, *infra* p. 952.

200. *See supra* note 88.

201. I did not include, for instance, a 70% condition because I am unfamiliar with any theoretical basis for predicting that the difference between 51% and 70% would matter. Such a difference certainly might

Each of the five empirical information levels was randomly assigned to one (and only one) of the five case vignettes. Thus, each participant decided one case in the 0% condition, one case in the 10% condition, and so on, but which case was in which condition varied across participants.

I adapted the instructions participants reviewed in Experiment Three to reflect these procedural changes. Otherwise, the instructions used in Experiment Three were identical to those used in Experiments One and Two. Experiment Three employed the same dependent measures as the prior studies.

c. Hypotheses

Both the average and the aspirational view of the reasonable person standard predict a substantial jump in negligence determinations when the proportion of the population that would take the relevant precaution exceeds a certain threshold. But the views predict different thresholds. If decision makers tend toward an average standard, one would expect the jump to occur around the 50% threshold, where it becomes clear that most people would have taken the relevant precautions. If decision makers tend toward an aspirational standard, however, the jump should occur at a much lower threshold (perhaps around 10%), where it becomes clear that the most careful among us would have taken the precautions.

3. Analyses and Results

As in the first two experiments, empirical information significantly affected participants' negligence determinations.[202] But it was not clear from my data whether participants' use of empirical information reflected an average standard or an aspirational standard. Rather, the relationship appears more linear than either an average or aspirational view would predict.

Participants' negligence ratings in the 90% condition[203] significantly exceeded ratings in each of the 0%,[204] 10%,[205] and 25%[206] conditions.[207] There were no

affect negligence verdicts, but it would not be predicted by either the average or the aspirational reasonable person standard as I have defined them. As discussed *infra* Part IV, future research might be conducted with empirical information evenly spaced along the continuum.

202. A one-way repeated-measures ANOVA revealed an omnibus effect of empirical information, $F(4, 236) = 6.651$, $p < .001$, Partial Eta Squared = .101. For discussion of repeated-measures ANOVA, see *supra* note 175.

203. Mean = 15.767, SD = 5.806.

204. Mean = 10.850, SD = 6.854; $t(59) = 4.223$, Bonferroni-corrected $p < .001$, $d = .545$.

205. Mean = 11.800, SD = 6.556; $t(59) = 3.633$, Bonferroni-corrected $p = .006$, $d = .469$.

206. Mean = 12.033, SD = 6.628; $t(59) = 2.951$, Bonferroni-corrected $p = .045$, $d = .381$.

207. These findings are based on Bonferroni-corrected paired comparisons of each condition to each other condition. These comparisons also identified a difference between the 50% condition and the 0% condition, $t(59) = 3.233$, Bonferroni-corrected $p = .020$, $d = .417$.

significant differences among the 0%, 10%, and 25% conditions (see Figure 5). The pattern is the same with binary negligence verdicts (see Figure 6).[208]

At first blush, these findings may appear to support an average interpretation of reasonableness. But while negligence ratings and verdicts increased significantly between the 25% and 90% conditions, my data do not indicate an identifiable jump near the 50% threshold (as an average standard would predict). Rather, the relationship between empirical information and negligence appears mostly linear. That is, negligence determinations appear to increase with the proportion of others who would have avoided injuring the plaintiff, without any especially noticeable jumps, across the spectrum.[209]

Figure 5

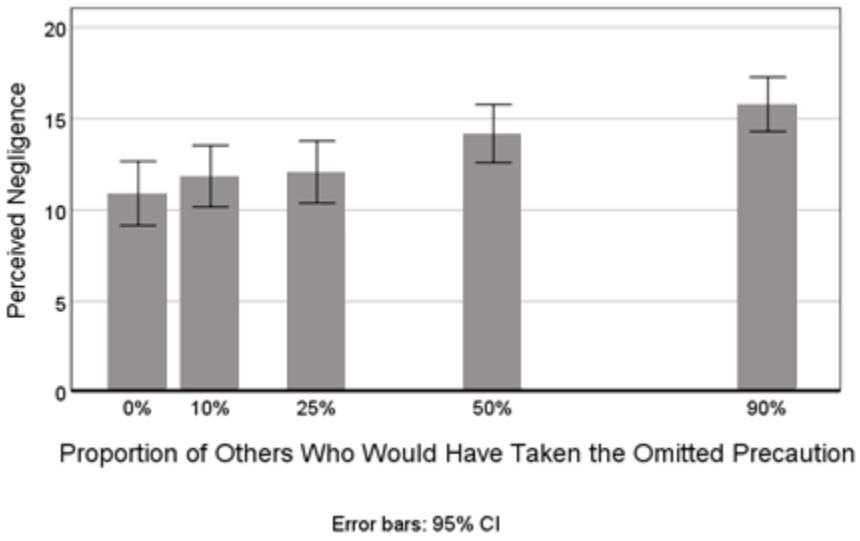

Figure 5. Perceived negligence, on a 21-point scale, by condition (Experiment Three). Bars are spaced in proportion to the differences between conditions.

208. GEE analysis again revealed a significant effect of empirical information on negligence verdicts, $\chi^2(4) = 14.998$, $p = .005$. The pattern of differences among conditions was identical to that described for the analysis of negligence ratings. For discussion of GEE, see *supra* note 180. For a complete contingency table summarizing participants' verdicts by condition, see *infra* Appendix, p. 956.

209. Future research might further investigate this possibility, as described *infra* Part IV.

Figure 6

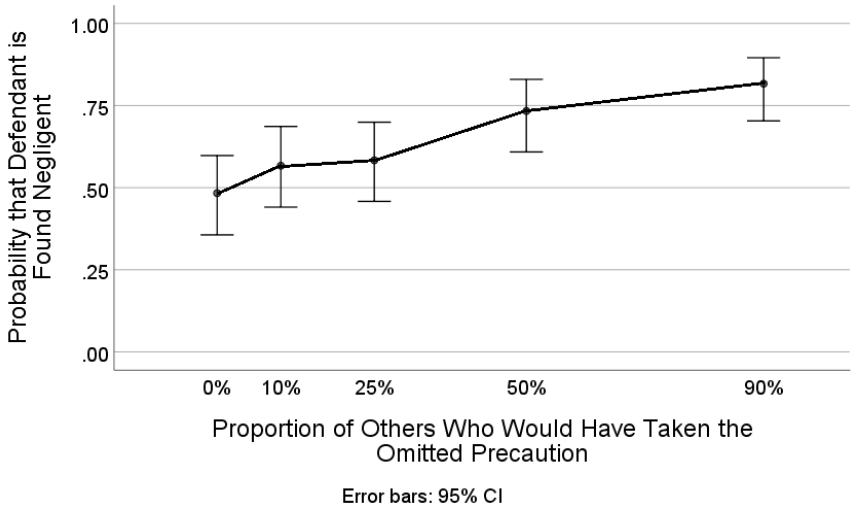

Figure 6. Probability of a participant finding the defendant negligent by condition (Experiment Three). Points are spaced in proportion to the differences between conditions.

As in the prior experiments, I also analyzed the verdict patterns of individual participants. In this experiment, I was particularly interested in identifying the point (if any) on the continuum of empirical information where participants tipped from finding the defendant was not negligent to finding the defendant was negligent. I categorized participants as using an average standard if their responses were consistent with a tipping point somewhere in the middle of the continuum around 50% (and at the very least higher than 25%).[210] I categorized participants as demonstrating an aspirational standard if their responses were consistent with a tipping point somewhere above 0% but no higher than 25%.[211]

Table 2 summarizes participants' verdict patterns. Participants in this study exhibited an aspirational pattern at above chance rates (N = 10).[212] The same is not true for an average pattern (N = 5).[213] However, the difference between the aspirational pattern and the average pattern was not statistically significant.[214]

210. This category included two verdict patterns: (1) participants who found the defendant was negligent only in the 50% and 90% cases and (2) participants who found the defendant was negligent only in the 90% case.

211. This category also included two verdict patterns: (1) participants who found the defendant was negligent in all but the 0% case and (2) participants who found the defendant was negligent in all but the 0% and 10% cases.

212. $\chi^2(1) = 11.111, p < .001$.

213. $\chi^2(1) = .444, p = .505$.

214. $\chi^2(1) = 1.667, p = .197$.

Table 2

Verdict Pattern	# of Participants
Aspirational: Negligent at 10% & Up	3
Aspirational: Negligent at 25% & Up	7
Average: Negligent at 50% & Up	4
Average: Negligent at 90% Only	1
Other	45

Table 2. Participants' verdict patterns in Experiment Three.

In sum, Experiment Three provided more evidence that empirical information affects negligence decisions. But it did not provide clear support for the average or aspirational view.

D. Experiment Four: Additional Contexts

1. Overview

In my first three experiments, empirical information about what others would do consistently influenced participants' negligence determinations. But the first three experiments also involved a fairly homogeneous group of case vignettes. All cases involved corporate defendants that chose not to take some specific precaution. This is the type of case frequently imagined in the tort literature (perhaps because it is the type of case to which the Hand Formula is most readily applied). But negligence arises in a variety of other contexts. Negligence cases often involve individual defendants and can arise from failures of a number of cognitive processes other than decision-making.[215] Does the relationship I have observed between empirical information and negligence judgments hold across contexts? Or do the results differ when negligence does not lie in bad decisions but in flawed perceptions, faulty memory, or slow reactions?

Experiment Four investigated these questions. Like Experiment Three, Experiment Four probes whether lay decision makers' use of empirical information is more consistent with an average or aspirational standard. But Experiment Four does so using a broader universe of negligence cases.

215. *See* Rachlinski, *supra* note 25, at 1056 ("If the reasonable person, using her attention, memory and perceptual abilities, would have avoided an accident, then the fact that an accident occurred implies that the actor was engaged in unreasonable conduct."); Jaeger et al., *supra* note 63, at 263 (discussing how negligence cases might arise from visual failures).

I found, as in prior experiments, that empirical information significantly affected negligence ratings and verdicts. Further, in Experiment Four, more participants' verdict patterns reflected an average interpretation of reasonableness than an aspirational interpretation. However, other analyses yielded mixed evidence.

2. Method

a. Participants

Fifty-three English-speaking U.S. residents (thirty-nine men and fourteen women) completed this experiment through Amazon Mechanical Turk.[216] Participants ranged in age from 21 years to 71 years, with an average age of 33.09 years.

b. Procedure

The experimental procedures were identical to Experiment Three except that the case vignettes were replaced with five new case vignettes. The new vignettes all involved individual defendants, and the cases were designed to capture a variety of cognitive failures that could potentially underlie a negligence claim. Specifically, one case hinged on the defendant's visual perception, one on the defendant's auditory perception, one on the defendant's memory, one on the defendant's reaction time, and one on the defendant's decision-making.[217]

c. Hypotheses

Like Experiment Three, Experiment Four tested whether participants' use of empirical information is more consistent with an average or aspirational interpretation of reasonableness.

3. Analyses and Results

For the fourth time in four experiments, empirical considerations significantly affected both participants' negligence ratings[218] and verdicts.[219] Participants' negligence ratings in the 90% condition[220] were significantly greater than those in each of the four

216. I solicited sixty responses, but seven were excluded because they came, or could have come, from the same participant as an earlier response. *See supra* note 155 (describing the specifics of my exclusion criteria).

217. The decision-making case was an adaptation of the *Pendleton v. Dolman Transportation* vignette used in the previous two experiments, revised to streamline the scenario and to present the defendant as an individual named Donald Dolman. For case vignettes, see *infra* Appendix, pp. 949–55.

218. A one-way repeated-measures ANOVA revealed an omnibus effect of empirical information, $F(4,208) = 9.789$, $p < .001$, Partial Eta Squared = .158. For discussion of ANOVA, see *supra* note 175.

219. GEE analysis indicates that empirical information affects negligence verdicts, $\chi^2(4) = 25.992$, $p < .001$. For a discussion of GEE, see *supra* note 180.

220. Mean = 13.736, SD = 6.884.

other conditions,[221] which did not differ significantly from one another (see Figure 7). The same pattern held for binary negligence verdicts (see Figure 8).[222] While these findings are broadly consistent with the average reasonable person standard, a closer look at the data reveals that other explanations are possible. Specifically, while the data are consistent with a jump somewhere between the 50% and 90% empirical information conditions (as predicted by the average view), they are also consistent with a fairly linear relationship between empirical information and negligence.[223]

Figure 7

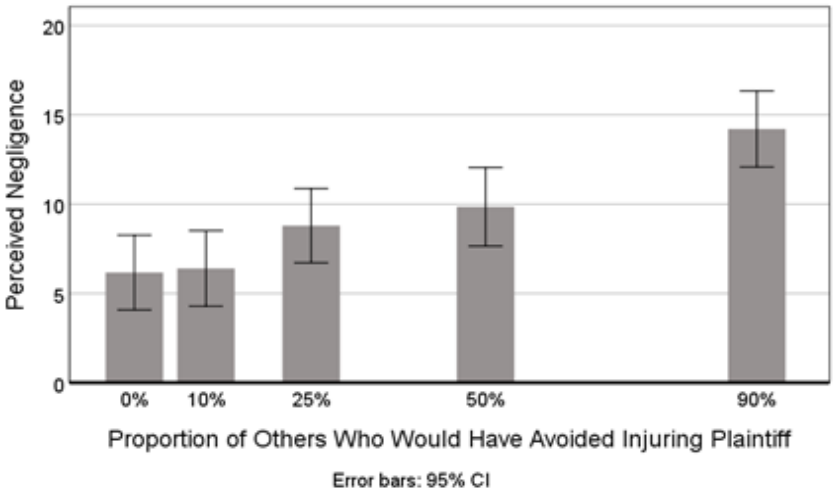

Figure 7. Perceived negligence, on a 21-point scale, by condition (Experiment Four). Bars are spaced in proportion to the differences between conditions.

221. Negligence ratings in the 90% condition were greater than those in the 0% condition ($M = 6.604$, $SD = 6.721$), $t(52) = 5.546$, Bonferroni-corrected $p < .001$, $d = .762$; greater than those in the 10% condition ($M = 6.830$, $SD = 6.804$), $t(52) = 4.897$, Bonferroni-corrected $p < .001$, $d = .673$; greater than those in the 25% condition ($M = 9.038$, $SD = 6.622$), $t(52) = 3.252$, Bonferroni-corrected $p = .020$, $d = .447$; and greater than those in the 50% condition ($M = 9.943$, $SD = 7.020$), $t(52) = 2.997$, Bonferroni-corrected $p = .042$, $d = .412$. See Figure 7 for a visual representation of differences.

222. Participants were more likely to find the defendant negligent in the 90% condition than in any other condition. The other four conditions did not differ significantly from one another. For a complete contingency table summarizing participants' verdicts by condition, see *infra* Appendix, p. 956.

223. Future research might further investigate this possibility, as described *infra* Part IV.

Figure 8

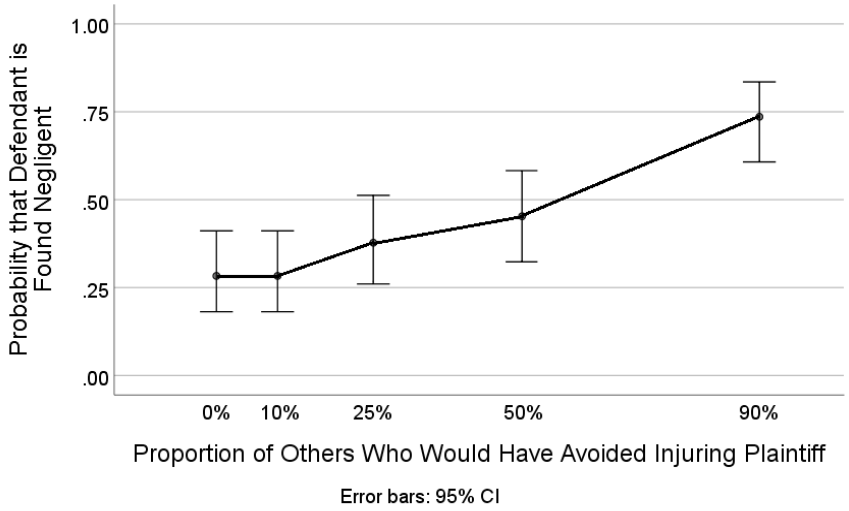

Figure 8. Probability of a participant finding the defendant negligent by condition (Experiment Four). Points are spaced in proportion to the differences between conditions.

However, my alternative analysis of participants' individual verdict patterns did provide support for the average interpretation. Using the same categories as Experiment Three, I found the verdict patterns of 18 of 53 participants were consistent with a pure average standard—well above chance.[224] In contrast, only 4 of 53 participants rendered verdicts consistent with a pure aspirational standard.[225] Participants were significantly more likely to demonstrate an average standard than an aspirational standard.[226] Table 3 summarizes participants' verdict patterns.

224. $\chi^2(1) = 69.480$, $p < .001$.
225. $\chi^2(1) = .152$, $p = .696$.
226. $\chi^2(1) = 8.909$, $p = .003$.

Table 3

Verdict Pattern	# of Participants
Aspirational: Negligent at 10% & Up	1
Aspirational: Negligent at 25% & Up	3
Average: Negligent at 50% & Up	10
Average: Negligent at 90% Only	8
Other	31

Table 3. Participants' verdict patterns in Experiment Four.

Overall, these findings demonstrate that participants were influenced by empirical information and suggest that, at the individual level, participants' negligence verdicts were more consistent with an average view of reasonableness than an aspirational view. Similar to Experiment Three, however, the global averages do not provide clear support for either an average or aspirational standard—Figures 7 and 8 both appear consistent with a linear relationship between empirical considerations and negligence judgments.

E. Summary of Key Findings

As a descriptive matter, my data indicate that laypeople understand the reasonable person standard in more empirical terms than economic terms (if they understand the standard in economic terms at all). Across all four experiments, empirical considerations (i.e., information about how others would act under the relevant circumstances) affected participants' negligence ratings and verdicts. The effects were not small;[227] they were most strikingly reflected in participants' binary negligence verdicts. Across all studies, participants who were told that 90% of people in the defendants' position would have avoided injuring the plaintiff found the defendant negligent 77.3% of the time.[228] Participants who were told that 10% of people would have avoided injuring the plaintiff, on the other hand, found the defendant negligent

227. The difference between participants' negligence ratings between the 10% conditions (i.e., where 10% of people would have avoided injuring the plaintiff) and the 90% conditions (i.e., where 90% of people would have avoided injuring the plaintiff) was .62 standard deviations in Experiment One, .37 standard deviations in Experiment Two, .47 standard deviations in Experiment Three, and .67 standard deviations in Experiment Four. Researchers in the social sciences typically consider differences of .5 standard deviations to be "medium-sized" and differences of .8 standard deviations to be "large." *See* Marnie E. Rice & Grant T. Harris, *Comparing Effect Sizes in Follow-Up Studies: ROC Area, Cohen's* d*, and* r, 29 L. & HUM. BEHAV. 615, 617 (2005) ("Cohen stated that the values of *d* for small, medium, and large effects, respectively, are .2, .5, and .8 . . . .").

228. 392 of 507 cases across all four experiments.

only 50.5% of the time.[229] Thus, shifting only the one piece of empirical information made a 27 percentage-point difference in the likelihood that the participant would find the defendant negligent.

In contrast, I found no evidence that economic considerations affected participants' negligence determinations. Participants did not seem to care whether precautions were cost-justified under the Hand Formula. Participants found the defendant negligent 66.5% of the time when the precautions were cost-justified,[230] and 63.3% of the time when the precautions were not.[231] While we cannot infer from this null finding that economic considerations never have any effect on negligence decisions,[232] my experiments suggest that economic considerations matter far less than empirical considerations. And this is true even though participants were considering precisely the type of case where economic considerations ought to matter most: cases in which the costs and benefits were clearly defined (and even known to the decision maker, who had ample time to weigh them). If economic considerations have no effect in this context, there may be few contexts in which they do have an effect.[233]

The absence of an effect of economic information indirectly bolsters my conclusions about the effect of empirical information, ruling out the possibility that participants just responded to whatever pieces of information they were provided. Not every independent variable had an effect on participants' negligence judgments. This indicates that participants were selective about the type of information they used when judging whether conduct was reasonable.

In sum, as a descriptive matter, my studies support a partly empirical view of the reasonable person. (It is important to re-emphasize that my studies support only a *partly* empirical view because empirical information did not explain all of the variability in participants' responses.) What is less clear, however, is which variant of empirical view best matched lay understanding.

Experiments Three and Four sought to disentangle whether participants' treatment of empirical information reflected an average or an aspirational understanding of reasonableness. These studies produced mixed findings. Greater-than-chance minorities of participants gravitated toward an aspirational standard in Experiment Three and toward an average standard in Experiment Four. Meanwhile, at a global level, both experiments are consistent with the possibility of a linear relationship in which

229. 256 of 507 cases across all four experiments.

230. 262 of 394 cases across Experiments One and Two.

231. 249 of 394 cases across Experiments One and Two. For a complete summary of participants' binary negligence verdicts in my experiments, see *infra* Appendix, p. 957.

232. *See, e.g.*, Reuven Dar et al., *Misuse of Statistical Tests in Three Decades of Psychotherapy Research*, 62 J. CONSULTING & CLINICAL PSYCH. 75, 76 (1994) (observing that null hypothesis tests "cannot be used to confirm the null hypothesis"; one cannot "conclud[e] that groups were equivalent . . . by showing that there were no statistically significant differences between them").

233. *Contra* Gilles, *supra* note 2, at 853 ("On the Posnerian view, full information about the Hand Factors would yield 'certain results' because that information would consist of monetized values for PL and B. Those monetized amounts would speak for themselves, leaving no room for judgment.").

perceived negligence increases with the proportion of others who would have avoided the accident, and at a roughly steady rate.

III. IMPLICATIONS

The experiments described in Part II provide descriptive insights into how laypeople understand the reasonable person standard. Part III relates my findings to existing tort doctrine and explores some of their prescriptive implications. Specifically, Part III presents three ideas of how my findings (if reinforced with additional research)[234] can and should inform broader scholarly debate about the reasonable person standard.

Before proceeding, I want to clarify the scope of the arguments presented in this Part. These arguments address the reasonable person standard as it operates within the contemporary American tort system. They do not address the (vastly) broader question of whether the reasonable person standard should play such a central role in tort law in the first place. In other words, this Part takes as a given that the reasonable person standard is used to separate negligent conduct from faultless conduct, and that (for reasons discussed below) the question of reasonableness is typically conceived of as one for the jury rather than the judge. Building on my experimental findings, my aim is to offer some thoughts as to how law should understand the reasonable person standard within this institutional context.

A. The Reasonable Person Standard Is and Should Be a Partly Empirical Standard

Some scholars have argued that, properly understood, reasonableness is not—or at least should not be—informed by observations and beliefs about others' behavior.[235] Some prominent jurists appear to concur.[236]

Nevertheless, in my experiments, participants consistently used information about how other people would have acted to decide whether conduct was reasonable.[237] These findings tell us something about what the reasonable person standard is. Lay concepts often provide the foundation of legal concepts.[238] When it comes to the reasonable person standard, in particular, several theorists have argued the legal concept and lay concept are essentially coextensive.[239]

234. As with any initial experimental results, the findings reported in Part II should be replicated and reinforced with additional research.

235. *See* Miller & Perry, *supra* note 3, at 326 (arguing that principle-based definitions of reasonableness are "categorically preferable" because an empirical definition "is a logical impossibility").

236. Healthcare at Home Ltd. v. Common Servs. Agency [2014] UKSC 49, [3] (appeal taken from Scot.) (concluding that "how [other people] would have acted in a given situation or what they would have foreseen" is "beside the point" when it comes to reasonableness).

237. *See supra* Part II.

238. Tobia, *supra* note 15, at 1; *see also* Bregant et al., *supra* note 175, at 696.

239. *See* Geistfeld, *supra* note 15, at 2 (observing that the reasonable person standard is "essentially defined by the lay understanding of jurors," who have considerable "discretion to determine the behavioral

But even assuming "legal reasonableness" and "lay reasonableness" are distinct, a partly empirical understanding is already baked into the legal concept. As discussed above,[240] the modal pattern jury instruction for negligence empowers jurors to draw on their observations and beliefs about customary behavior. Despite the *Restatement (Third) of Torts*'s move toward an economic definition of reasonableness, it continues to recognize the role of custom in negligence law.[241] Section 13 provides that a litigant's compliance with the customs of the community or of similarly situated others is evidence that the litigant behaved reasonably, and conversely, that a litigant's departure from the customs of the community or of similarly situated others is evidence that the litigant behaved unreasonably.[242] Thus, the legal concept outlined in the *Restatement (Third) of Torts* is empirical—but only partly so. While the *Restatement* treats custom as an important factor in assessing reasonableness, it is not dispositive. Customary behaviors can be deemed unreasonable, and deviations from custom can be deemed reasonable.[243] This is broadly consistent with the lay intuition observed through my experiments: Information about others' behavior influenced participants' negligence judgments but did not dictate them completely.

In addition to comporting with doctrine in this way, my findings have implications for the normative debate about the reasonable person. Indeed, on some views, the fact that laypeople view the reasonable person in partially empirical terms is, in itself, a normative argument that law should do the same. This argument comes in two forms.

The first form of the argument focuses on language. The major premise is that a term's legal meaning should reflect how the term is ordinarily understood.[244] Here, my findings[245] suggest that the ordinary understanding of reasonableness incorporates empirical (and not economic) concerns. Therefore, the legal meaning of reasonableness should do the same.

The second form of the argument proceeds from a broader premise: Law ought to reflect popular conceptions of what is just.[246] In the criminal law context, Tom Tyler

obligations in most cases"); *see also* Abraham, *supra* note 19, at 1191 (observing that in what Abraham calls "unbounded" negligence cases, the content of the reasonable person standard is largely in the fact finder's discretion, as the fact finder "simultaneously determines for itself what would constitute reasonable behavior under the circumstances and then applies this norm to the situation at hand"); Steven Hetcher, *The Jury's Out: Social Norms' Misunderstood Role in Negligence Law*, 91 GEO. L.J. 633, 633 (2003) (noting the jury's important role in defining negligence).

240. *See infra* Part I.B.1.a.

241. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 13 (AM. L. INST. 2010). "Custom plays a powerful role in the law" and has bearing on "reasonable care." *Id.* § 13 cmt. a.

242. *Id.* § 13.

243. *Id.* § 13 cmts. b, c.

244. *See* Tobia, *supra* note 3, at 340–41 (describing both a strong form of this argument—"the ordinary meaning of *reasonable* actually determines its (appropriate) legal meaning and application"—and a weaker form—the "ordinary meaning informs the legal effect of . . . reasonableness, alongside other factors").

245. *See supra* Part II. Tobia's empirical work with reasonable quantities also tends to suggest that beliefs about what is common correlate with beliefs about what is reasonable. *See* Tobia, *supra* note 3, at 329 (summarizing findings).

246. *See, e.g.*, Paul H. Robinson, *Democratizing Criminal Law: Feasibility, Utility, and the Challenge of Social Change*, 111 NW. U. L. REV. 1565, 1565 (2017) (in the context of criminal law, advocating "shaping criminal law rules to track the justice judgment[] of ordinary people"); Calvin Woodward, *Thoughts on the Interplay Between*

has advocated for what he terms "empirical jurisprudence": "creating legal procedures based upon the results of research about the public" such that "legal practices [are] linked to public judgments [of] fairness."[247] The concept of empirical jurisprudence has been influential in criminal law,[248] and the idea that law should, as a normative matter, track lay conceptions of justice has been extended to other contexts[249] including tort law.[250]

Both of these arguments suggest that we should align the legal concept of reasonableness with the lay concept.[251] Assuming, as my data suggest, that lay reasonableness is a partly empirical concept, legal reasonableness should be too.

Many readers may be skeptical of collapsing descriptive and normative claims in this way. The "is-ought" distinction dates back to David Hume.[252] It has been said that "'[o]ught to' can never be inferred following a set of 'is' premises";[253] the fact that behavior "is dominant in practice does not make it normatively just."[254]

There are, however, structural and institutional reasons to think that tort law's reasonable person standard, in particular, should reflect lay understanding. Decisions about whether litigants' behavior was reasonable have long been recognized as a

Morality and Law in Modern Legal Thought, 64 NOTRE DAME L. REV. 784, 796–97 (1989) (describing a view, grounded in ideas of the Historical School of Jurisprudence, that law should be based on citizens' views of morality).

247. Tom R. Tyler, *Legitimacy and Criminal Justice: The Benefits of Self-Regulation*, 7 OHIO ST. J. CRIM. L. 307, 333 (2009).

248. *See, e.g.*, Joshua Kleinfeld, *Manifesto of Democratic Criminal Justice*, 111 NW. U. L. REV. 1367 (2017) (the opening piece of a 2017 Northwestern Law Review Symposium on the democratization of criminal justice); Paul H. Robinson & John M. Darley, *Intuitions of Justice: Implications for Criminal Law and Justice Policy*, 81 S. CAL. L. REV. 1, 9 (2007); Tom R. Tyler & John M. Darley, *Building a Law-Abiding Society: Taking Public Views About Morality and the Legitimacy of Legal Authorities into Account When Formulating Substantive Law*, 28 HOFSTRA L. REV. 707, 728 (2000).

249. *See, e.g.*, Tess Wilkinson-Ryan, *Do Liquidated Damages Encourage Breach? A Psychological Experiment*, 108 MICH. L. REV. 633, 669 (2010) (extending the idea that law should track lay conceptions of justice to the context of contract law).

250. Govind C. Persad, Note, *Risk, Everyday Intuitions, and the Institutional Value of Tort Law*, 62 STAN. L. REV. 1445, 1446 (2010) ("[T]he intuitions and values of ordinary people regarding the problems of mass risk and mass harm deserve a place in our legal system . . . ."); Tobia, *supra* note 3, at 341 ("Some scholars note that reasonableness theories should be informed by how the community or law itself describes, treats, or applies reasonableness, particularly in the tort-law context." (citing Tilley, *supra* note 3, at 1327)).

251. Persad, *supra* note 250, at 1447 ("Tort tends to be more willing to privilege the intuitions of non-experts . . . . There is value in retaining this perspective as part of our societal arsenal of responses to risk and harm."). This value is implicit when scholars evaluate approaches to tort law in terms of how well they comport with moral intuition. *See, e.g.*, Wells, *supra* note 79, at 2351 ("A corrective justice justification for tort law has a strong intuitive basis . . . ."); John C.P. Goldberg & Benjamin C. Zipursky, *Tort Law and Responsibility*, *in* PHILOSOPHICAL FOUNDATIONS OF THE LAW OF TORTS 17, 23 (John Oberdiek ed., 2014) ("[C]omparative fault often tracks ordinary notions of responsibility and fault, so much so that it is now difficult to grasp why courts were once attracted to an across-the-board rule of contributory negligence.").

252. DAVID HUME, A TREATISE OF HUMAN NATURE 469–70 (Dover Publ'ns 2003) (1739).

253. Natàlia Cugueró-Escofet & Marion Fortin, *One Justice or Two? A Model of Reconciliation of Normative Justice Theories and Empirical Research on Organizational Justice*, 124 J. BUS. ETHICS 435, 447 (2014).

254. *Id.*; *see also* T.J. Hooper v. Northern Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932) ("[T]here are precautions so imperative that even their universal disregard will not excuse their omission.").

"function of the jury."[255] This designation reflects important democratic values[256]: it allows laypeople, as jurors, to dictate expectations of conduct in their community.

The Seventh Amendment of the U.S. Constitution (and similar provisions in state constitutions) protect litigants' right to a jury trial in many civil cases, including most negligence cases.[257] Nevertheless, courts often intervene, granting summary judgment when they determine that a reasonable jury could not find for one of the parties.[258] While it has been argued that courts' routine use of summary judgment violates the Seventh Amendment,[259] its use is now widely entrenched and, as a practical matter, unlikely to change.

But grants of summary judgment on the basis that litigants' conduct is (or is not) reasonable have the potential to raise unique problems. Imagine a negligence case headed for a trial, at which (consistent with my experimental findings) lay jurors would evaluate the reasonableness of litigants' under a partly empirical, and not at all economic, standard of reasonableness. Imagine further that the court handling the case understands reasonableness in exclusively economic terms. If the court steps in and grants summary judgment to the defendant on purely economic grounds, it not only resolves a question that would typically go to the jury but does so based on different criteria than the jury would have applied.[260] By using summary judgment in this way, the court effectively imposes upon the defendant a different set of expectations than his or her community would have imposed, thus doubly undermining the democratic function of the negligence jury.[261]

In sum, contemporary tort law places the reasonable person standard at the center of negligence analysis and primarily allocates responsibility for fleshing out the standard

255. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 8 (AM. L. INST. 2010).

256. *See, e.g.*, Laura Gaston Dooley, *Our Juries Our Selves: The Power Perception and Politics of the Civil Jury*, 80 CORNELL L. REV. 325, 349–60 (1995) (outlining the democratic value placed on the jury throughout English and American history).

257. *See, e.g.*, Suja A. Thomas, *Why Summary Judgment is Unconstitutional*, 93 VA. L. REV. 139, 142 (2007) (explaining that the Seventh Amendment preserved the right to jury trial in civil cases that existed in English common law in 1791).

258. *Id.* at 143.

259. *See id.*

260. Richard Wright has long expressed alarm at the mismatch between the economic view of tort law's reasonable person, prevalent in academic legal texts, treatises, and Restatements, and the more justice-oriented views "people commonly prefer." Wright, *The Myth of the Hand Formula*, *supra* note 3, at 146–47.

261. Other freestanding arguments for a partly empirical reasonable person standard are beyond the scope of this Article. For historical arguments in favor of a partly empirical standard, see Tobia*, supra* note 3, at 333–39 (reviewing the history of the reasonable person standard, including a discussion of Clapham at the time the phrase "the man on the Clapham omnibus" was coined). *See also* Miller & Perry, *supra* note 3, at 370 ("Early tort theorists 'conceived of reasonableness as conformity with statistically prevalent norms of conduct.'"). For a fairness-based argument in favor of a partly empirical standard, see Rachlinksi, *supra* note 25, at 1058, stating that "[e]ven though the law defines the reasonable person in idealized terms rather than in terms consistent with actual behavior, the reasonable person test is intended to describe an ideal to which all can, if they try, conform." *See also* Jaeger et al., *supra* note 63, at 274 ("[H]olding a driver liable for failing to react to avoid an accident when no human could have done so cuts against basic notions of fairness and justice.").

to members of the community acting as jurors. These commitments (and the values they reflect) are undermined if the legal concept of reasonableness applied by courts deviates grossly from the lay concept of reasonableness prominent in the community. If the community understands reasonableness in partly empirical terms (as my data suggest), then courts should too.

I reiterate that nothing in this Part III.A is meant to suggest that (lay or legal) reasonableness is or should be a purely empirical concept. The data do not support such a descriptive claim—participants' negligence judgments clearly depended on factors beyond empirical information. Further, a normative argument for a purely empirical standard would also face substantial problems, from "average accidents" to industries that lag in safety due to self-interest or inattention.[262] Thus, I advocate for a partly empirical, rather than purely empirical, standard. Information and beliefs about others' behavior are, and should continue to be, a significant piece of the reasonableness puzzle.[263]

B. Implementing an Economic Standard Would Likely Require Substantial Changes to Tort Law

If reasonableness judgments should be at least partly empirical, as I have argued, what should the other part(s) be? What else belongs in the function? There are a number of contenders, including considerations relating to justice, Kantian equal freedom, virtue ethics, and more.[264] Here, though, I focus on the idea that economic considerations (i.e., cost-justification) should be a significant factor.[265]

My data present problems for the economic view, at least as a descriptive matter. It simply does not appear intuitive for lay decision makers to think of the reasonable person in economic terms.[266] Even when the needed information was given, participants were unconcerned with whether defendants' actions were cost-justified.[267] These findings are in tension with the idea that, when given full information, decision makers will apply an economic understanding of reasonableness.[268]

One could argue that lay indifference to economic considerations supports a direct normative case against the economic reasonable person standard. This argument would

262. *See* RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. b (AM. L. INST. 2010); T.J. Hooper v. Northern Barge Corp., 60 F.2d 737, 740 (2d Cir. 1932).

263. *Cf.* Gilles, *supra* note 2, at 853–54 (demonstrating that on a strict economic view, the Hand Formula leaves no room for other considerations); Healthcare at Home Ltd. v. Common Servs. Agency [2014] UKSC 49, [3] (appeal taken from Scot.) (suggesting that evidence of how other ordinary people would act under the circumstances is "beside the point").

264. *See generally supra* Part I.B.2.a.

265. *See supra* Part I.B.2.b.

266. *See supra* Parts II.A.1, II.E; *see also supra* note 13.

267. If participants factored cost-justification into their negligence decisions, it was given far less weight than empirical observation. *See* discussion *supra* Part II.E.

268. *See supra* notes 111–16 and accompanying text. Indeed, my findings may help to explain why no states instruct juries to apply the Hand Formula. *See supra* note 118 and accompanying text.

parallel arguments in favor of a partly empirical standard in Part III.A above: the meaning or application (or both) of legal concepts should mirror popular intuition, and popular intuition does not align with economic reasonableness. I am not making this argument at this time, however. I am loath to advance a normative argument based on claims about popular intuition armed with only null results in initial experiments.[269]

Here, I will instead focus on less direct, "translational" challenges my findings raise for the economic standard. Even if data on lay understanding does not tell us which laws to implement, they "can help us decide *how* to implement the laws once we decide what laws to have."[270] Let us consider then what would happen if the legal community unanimously decided that the reasonable person standard should be an economic standard. Our challenge is to implement the standard. What would this take?

Though my data suggest that people do not intuitively conceive of reasonableness in economic terms, it is clearly possible for them to do so. Before running my experiments, I piloted my Experiment One materials in a small class of Law & Economics JD/PhD students at Vanderbilt University. Those students near-unanimously applied a purely economic reasonable person standard. And, of course, many legal scholars conceive of reasonableness in economic terms.[271] But short of empaneling juries of law professors and trained economists, how might law push people toward an economic standard?

The first approach that comes to mind is likely revamping jury instructions.[272] My data suggest that the generic, representative reasonableness jury instructions my participants viewed[273] did not lead to an economic interpretation. Scholars have previously raised the idea of modifying negligence instructions to more explicitly reflect the Hand Formula and have identified some potential approaches to doing so.[274] For example, a more flexible approach would include with the jury instructions "an open-ended Hand Formula . . . telling the jury to balance the [factors] without telling it *how* to balance them."[275] A more stringent approach would explicitly instruct jurors on the "how."[276]

Would revamped instructions lead jurors to apply an economic standard? While it is an open empirical question, I strongly suspect the answer is "no." Research tends to show that jurors are less sensitive to jury instructions than one might expect.[277] Rather

269. Dar et al., *supra* note 232, at 76 (stating that one cannot "conclud[e] that groups were equivalent . . . by showing that there were no statistically significant differences between them").

270. Roseanna Sommers, *Commonsense Consent*, 129 YALE L.J. 2232, 2302 (2020).

271. *See, e.g.*, POSNER, *supra* note 8.

272. *See* Kelley & Wendt, *supra* note 16, at 619 ("It seems to us that a jury would [not] interpret [the] standard . . . as an invitation to engage in cost–benefit analysis."); Wells, *supra* note 3, at 732 (showing that negligence jurors "are not instructed in a utilitarian vein to apply cost–benefit analysis").

273. Del. P.J.I. Civ. § 5.1.

274. *See, e.g.*, Gilles, *supra* note 2, at 821 (contemplating what enforcement of a cost–benefit standard at the jury level might look like).

275. *Id.*

276. *Id.*

277. *See, e.g.*, Francis X. Shen et al., *Sorting Guilty Minds*, 86 N.Y.U. L. REV. 1306, 1322 (2011) ("Jury instructions made no difference in subjects' ability to make these distinctions [among mental states under the

than following precise instructions, jurors tend to apply more general concepts about what they think is just.[278] This is particularly true where jurors come to the case equipped with some preconceptions about, or "lay prototypes" of, the relevant legal concepts.[279] Researchers have found that lay decision makers often have trouble comprehending negligence jury instructions, in particular,[280] and there is evidence that they are often averse to cost–benefit analysis.[281] For these reasons, I expect that so long as jurors are asked to decide whether behavior is "reasonable" or whether the defendant was "negligent," they will continue to largely ignore economic considerations.

Assume this is the case: Due to lay prototypes and cognitive constraints, jury instructions do not work. What else might we try?[282] A related, but more difficult, alternative would be to "rebrand" negligence. That is, the language of the jury instructions—and of the tort more broadly—could be reformulated to avoid concepts of reasonableness and negligence altogether, instead activating other concepts in jurors' minds. The "reasonable person" standard might become the "rational person" standard.[283] Perhaps the tort could be relayed to the fact finder under a label other than negligence.[284] That said, it might also be that jurors are more responsive to the deep structure of the task (allocating responsibilities and costs among parties) than to the specific terminology used. Ultimately, whether this sort of rebranding would have the intended effect is another open empirical question.

If rebranding is ineffective, more drastic action may be needed to implement an economic standard of reasonableness. Some have noted that it is peculiar that jurors

Model Penal Code]."); *see also* Matthew R. Ginther et al., *Decoding Guilty Minds: How Jurors Attribute Knowledge and Guilt*, 71 VAND. L. REV. 241, 264–66, 272–73 (2018) (showing that jurors were not influenced by a jury instruction requiring a *mens rea* of "knowledge").

278. Norman J. Finkel, *Commonsense Justice and Jury Instructions: Instructive and Reciprocating Connections*, 6 PSYCH. PUB. POL'Y & L. 591, 591 (2000) (arguing that jurors come to legal decisions equipped with sophisticated "commonsense justice," but the distinctions they draw are often "conflated and collapsed by instructional schemes that afford no opportunity for jurors to register their distinctions").

279. *E.g.*, Vicki L. Smith, *Prototypes in the Courtroom: Lay Representations of Legal Concepts*, 61 J. PERSONALITY & SOC. PSYCH. 857, 869 (1991) (arguing that because lay decision makers' "prototypes of crime categories can influence both their perceptions of fact situations and their categorization decisions," jury instructions must aim for "concept revision, not merely concept formation").

280. *See* Greene & Johns, *supra* note 140, at 850 (documenting poor comprehension of jury instructions, particularly with respect to the meaning of negligence).

281. Viscusi, *Corporate Risk Analysis*, *supra* note 13, at 552–59 (using both experimental studies and case analyses to argue that jurors are more likely to impose punitive damages when corporate defendants engage in explicit cost–benefit analysis).

282. *See* R.G. Lipsey & Kelvin Lancaster, *The General Theory of Second Best*, 24 REV. ECON. STUD. 11, 11–12 (1956).

283. *See* Keating, *supra* note 3, at 312 (distinguishing between use of "reasonableness" to mean "acting in accordance with principles that fix fair terms of cooperation" and use of "reasonableness" to mean economic rationality); Igor Grossman et al., *Folk Standards of Sound Judgment: Rationality Versus Reasonableness*, 6 SCI. ADVANCES, Jan. 2020, at 1, 6–11.

284. *See* Zipursky, *supra* note 1, at 2169 ("[T]he language and ideas of negligence doctrine regarding reasonableness actually lead somewhere and capture some concepts—they are not simply an invitation to ruminate about optimal risk levels.").

decide reasonableness at all.[285] Traditionally, lawyers divide the world into questions of fact and questions of law.[286] Jurors decide only questions of fact; questions of law are reserved for the court.[287] The tort of negligence presents something of an exception to the traditional arrangement. Whether the defendant's behavior was reasonable is treated as a question of fact, but the answer also typically decides the question of law.[288] Recognizing this anomaly and considering our assumed goal of implementing an economic reasonable person standard, one route might be to recast reasonableness as a question of law for the court to decide. It may be that most laypeople simply will not understand the concept of reasonableness in economic terms. Trained judges might be better equipped to implement an economic standard than jurors.

The point of this thought exercise is this: Translational challenges can arise where legal standards do not align with popular intuitions.[289] My data suggest that the economic reasonable person standard might present such translational challenges.[290] If so, conforming law to an economic conception of reasonableness would likely take substantial work. If jurors are insensitive to the particulars of jury instructions, as prior research suggests,[291] it might require upending fundamental features of negligence law, such as who decides the issue of reasonableness.

285. Kelley & Wendt, *supra* note 16, at 590 ("We ordinarily ask juries to decide questions of fact, but in negligence cases we ask the jury to determine what the defendant did, and then make a qualitative judgment about that action."); Feldman, *supra* note 127, at 1462 (noting that commentators have struggled to make sense of the roles of the judge and jury in deciding negligence, and that given the "model of division of labor in the legal system that reserves normative questions to the lawgiver—judge or legislature—assigning the question of defendant's negligence to the jury can seem anomalous at best and an evasion of official responsibility at worst").

286. Stephen A. Weiner, *The Civil Jury Trial and the Law-Fact Distinction*, 54 CAL. L. REV. 1867, 1867 (1966) ("The categories of 'questions of law' and 'questions of fact' have been the traditional touchstones by which courts have purported to allocate decision-making between judge and jury."). For recent social scientific investigation of this distinction, see Sepehr Shahshahani, *The Fact-Law Distinction: Strategic Factfinding and Lawmaking in a Judicial Hierarchy*, 37 J. L. ECON. & ORG. 1 (2021).

287. Weiner, *supra* note 286, at 1867 (recounting the maxims that "judges do not answer a question of fact" and "juries do not answer a question of law" (quoting 3 EDWARD COKE, COMMENTARY ON LITTLETON 460 (Thomas ed. 1818))).

288. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 8 (AM. L. INST. 2010) ("When, in light of all the facts relating to the actor's conduct, reasonable minds can differ as to whether the conduct lacks reasonable care, it is the function of the jury to make that determination.").

289. Sommers, *supra* note 270.

290. The translational problems that constrain an economic approach to reasonableness may not constrain other principle-based normative approaches. For example, my findings are arguably consistent with a virtue-based (or Aretaic) perspective of reasonableness. From an Aretaic perspective, the reasonable person is the virtuous person, who, among other things, internalizes society's norms and positive laws—at least insofar as those norms and laws are consistent with human flourishing. Lawrence B. Solum, *Natural Justice: An Aretaic Account of the Virtue of Lawfulness*, *in* VIRTUE JURISPRUDENCE 167, 190 (Colin Farrelly & Lawrence B. Solum eds., 2008). From such a perspective, information about others' conduct is relevant when assessing reasonableness: the reasonable person operates under (at least some) internalized community norms. *Id.* at 172, 179.

291. *See supra* notes 138, 280–81 and accompanying text.

C. Toward a Cognitively Contextual Reasonable Person

A third, more tentative suggestion is that the reasonable person standard may vary, and perhaps should vary, based on "cognitive context." Put differently, perhaps the operative understanding of reasonableness should depend on the type or nature of cognitive process involved in the alleged negligence.

Before proceeding, I want to be explicit about how this idea relates—and does not relate—to my experiments. I make no descriptive claim that lay understanding of reasonableness varies based on cognitive context. It may or may not. I did not design my experiments to test this proposition; cognitive context was not one of my independent variables. I was led to consider the possibility only by post hoc comparisons of participants' negligence judgments in Experiments Three and Four. These post hoc comparisons revealed that, relative to participants in Experiment Three, participants in Experiment Four (i) perceived defendants as less negligent,[292] (ii) were more inclined to apply what looked like a pure averageness standard,[293] and (iii) were (descriptively, though not quite statistically) less inclined to apply what looked like a pure aspirational standard.[294]

These observations might be explained in a couple of ways. First, Experiment Three involved corporate defendants, whereas Experiment Four involved individuals. Although, as a formal matter, tort law applies the same standard of reasonable care to companies and individuals alike,[295] the discrepancies between Experiments Three and Four may reflect that laypeople nevertheless hold companies to "higher standards of responsibility than individuals."[296]

But the differences might also be explained, at least in part, by the particular cognitive processes involved in the alleged negligence. In Experiment Three, all of the cases involved reasoned decisions about whether to take precautions, made without any explicit urgency. Experiment Four, however, involved a variety of cognitive contexts beyond decision-making (e.g., failures of vision and hearing), under varying degrees of

292. In Experiment Four, participants' mean negligence rating was 9.08 (SD = 8.188), and they found the defendant negligent 43% of the time. In Experiment Three, participants' mean negligence rating was 12.92 (SD = 6.622), and they found the defendant negligent 64% of the time.

293. In Experiment Four, 18 of 53 participants applied a pure average standard, versus 5 of 60 in Experiment Three, $\chi^2(1) = 11.402$, $p < .001$.

294. In Experiment Four, 4 of 53 participants applied a pure aspirational standard, versus 10 of 60 in Experiment Three. This difference was not statistically significant, $\chi^2(1) = 2.156$, $p = .142$.

295. *See, e.g.*, RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. g (AM. L. INST. 2010).

296. Neil Vidmar, *The Performance of the American Civil Jury: An Empirical Perspective*, 40 ARIZ. L. REV. 849, 871 (1998) ("In short, there is emerging evidence that the public believes business corporations should be held to higher standards of responsibility than individuals."); *see also* NEIL VIDMAR & VALERIE P. HANS, AMERICAN JURIES: THE VERDICT 278 ("[A]lthough the actions of a person and a corporation are evaluated using much the same criteria, more is expected of a reasonable corporation than a reasonable person."); Shari Seidman Diamond & Jessica M. Salerno, *Empirical Analysis of Juries in Tort Cases*, *in* RESEARCH HANDBOOK ON THE ECONOMICS OF TORTS 414, 424 (Jennifer H. Arlen ed., 2013) ("Jurors find corporations liable more often than they find individuals liable because they expect more of the reasonable corporation than of the reasonable individual.").

time constraints. Other commentators have observed that the tort of negligence encompasses different categories of conduct that may lend themselves to different legal analyses.[297] Here, I suggest that the two-system theory of cognition might provide a natural dividing line between different categories of negligence—and that decision makers may judge (and perhaps should judge) these different categories of negligence under different standards of reasonableness.

The two-system theory divides the universe of cognitive processes into two types, or levels, which are thought to be products of two distinct cognitive systems.[298] System 1 processes are fast, efficient, not subject to conscious control, and automatic (i.e., they unfold without effort).[299] Examples include basic processes like seeing and hearing. When awake and alert, we cannot stop ourselves from recognizing a friend's face when we see it or "orient[ing] to the source of a sudden sound."[300] System 2 processes are slow, drain cognitive resources, are subject to conscious control, and require effort.[301] The classic examples are deliberative decision-making and reasoning; solving a complex math problem or applying the Hand Formula requires System 2 cognition.

My tentative proposal, then, is that defendants whose alleged negligence stems from System 2 processes (e.g., the defendant manufacturer declined to invest in certain safety features) should be held to a higher, more aspirational standard of care than defendants whose alleged negligence stems from System 1 processes (e.g., the defendant driver failed to timely see a pedestrian in the road), whose conduct might be evaluated with something closer to an average standard. This approach would, in effect, hold defendants' reasoned decisions to a more exacting standard of care than their unconscious snap reactions (or failures to react).

To clarify, I am not suggesting (as others have) that reasonableness standards should be individually customized to the particular *attributes* of particular defendants, "subjectifying" the standard.[302] Rather, I am suggesting that the reasonable person standard might be adjusted based on the nature of the *conduct* leading to the plaintiff's injury—something tort law already considers, broadly speaking, because the reasonable

297. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmts. d, k (AM. L. INST. 2010) (distinguishing between analysis of advertent negligence and inadvertent negligence); Zipursky, *supra* note 1, at 2169 (distinguishing between "performance negligence" and "precaution negligence").

298. *See* Keith E. Stanovich & Richard F. West, *Individual Differences in Reasoning: Implications for the Rationality Debate*, 23 BEHAV. & BRAIN SCIS. 645, 658 (2000) (establishing the generic labels System 1 and System 2 to emphasize the two-system view they advocate is "prototypical" in psychology); DANIEL KAHNEMAN, THINKING, FAST AND SLOW 19–97 (2011) (providing perhaps the most famous articulation of two-system theory).

299. Stanovich & West, *supra* note 298, at 658–59.

300. KAHNEMAN, *supra* note 298, at 21.

301. Stanovich & West, *supra* note 298, at 658–59.

302. *See* Ben-Shahar & Porat, *supra* note 51, at 629 ("We argue that with the increasing availability of accurate information about actors' characteristics, negligence law should give up much of its objectivity by allowing courts to 'subjectify' the standard of care—that is, to tailor it to the specific actor's tendency to create risks and her ability to reduce them.").

person standard is embedded in the particular circumstances of the case.[303] Further, I am not suggesting that we tailor the standard by qualifying it with additional descriptors (e.g., "the reasonable below-average driver"). Rather, I am suggesting tailoring the threshold set by the standard itself, adopting a different definition of reasonableness for different categories of cases.

Differentiating between System 1 and System 2 cases in this manner may lead to fairer outcomes, nudging the reasonable person standard closer to "an ideal to which all can, if they try, conform."[304] Further, it may do so without sacrificing the generality (and thus, the usefulness) of the standard on the altar of individualization,[305] maintaining the Holmesian idea that we are entitled to expect certain, consistent levels of care from our neighbors.[306] Future work might more fully examine this idea, along with potential practical and theoretical objections to it.

IV. CAVEATS AND FUTURE DIRECTIONS

Experimental investigation of the intuitions underlying legal concepts is a promising field of research.[307] The concept of reasonableness appears particularly ripe for study, given both its open-ended nature and jurors' central role in shaping its meaning.

The studies I present in this Article indicate that lay understanding of reasonableness is more empirical than economic. Stated differently, I found that empirical considerations consistently affected participants' negligence judgments but found no significant effect of economic considerations. Given that these are the initial experiments, I am wary of drawing too broad of conclusions. Future work is needed to reinforce and expand upon these findings.[308]

303. Kelley & Wendt, *supra* note 16, at 621 ("[Jury] instructions ask the jury to identify what would be ordinary care *under the circumstances* . . . ." (emphasis added)).

304. Rachlinski, *supra* note 25, at 1058.

305. *See* Tobia, *supra* note 3, at 348 (cautioning that if the reasonable person standard is individualized along too many dimensions, its useful generality "suffers a death by a thousand cuts").

306. HOLMES, JR., *supra* note 25, at 102 (stating that while an individual may have sub-par skills, "[h]is neighbors accordingly require him, at his proper peril, to come up to their standard, and the courts which they establish decline to take his personal equation into account."); *see also* Kelley & Wendt, *supra* note 16, at 621.

307. This growing field of inquiry has been termed "experimental jurisprudence" by some. *See* Joshua Knobe & Scott J. Shapiro, *Proximate Cause Explained: An Essay in Experimental Jurisprudence*, 88 U. CHI. L. REV. 165, 171 (2021); Kevin P. Tobia, *Testing Ordinary Meaning*, 134 HARV. L. REV. 726, 805 n.279 (2020); James A. Macleod, *Ordinary Causation: A Study in Experimental Statutory Interpretation*, 94 IND. L.J. 957, 1015 (2019); Shlomo Klapper et al., *Ordinary Meaning from Ordinary People*, 12.1 U.C. IRVINE L. REV. (forthcoming 2021) (manuscript at 6) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3593917).

308. One natural question is whether the same patterns would emerge in studies with different participant pools or study materials that more closely simulated actual jury service. While this may be worth investigating, there is little empirical reason to think changing presentation format would substantially change the results. *See* Robert J. MacCoun, *Comparing Legal Factfinders: Real and Mock, Amateur and Professional*, 32 FLA. ST. U. L. REV. 511, 512 (2005) (observing that a prominent meta-analysis "found little indication that either stimulus case realism (for example, paper-pencil versus audiotape versus videotape) or study population (for example, student versus general community) systematically influences research conclusions," suggesting that

One important factor to evaluate in future work is jury instructions. While the participants in my studies received standard negligence jury instructions, such instructions (with their references to ordinariness) are arguably framed in language that is more compatible with an empirical standard than an economic standard. Future work can manipulate the jury instructions given to participants to evaluate whether more economically oriented instructions nudge participants toward a more economic understanding of reasonableness.[309] If so, it would highlight a path forward for those who are normatively committed to an economic standard of reasonableness.[310] Conversely, if the instructions have little or no effect, it would provide more support for the argument that implementing an economic standard requires fundamental changes to tort law.[311] Research in this vein might also probe the difference between instructions about the reasonable person versus instructions about the rational person.[312]

While empirical considerations consistently influenced decision makers' negligence verdicts in my studies, they were not by any means dispositive. The majority of variation in participants' negligence verdicts was attributable to other factors. Thus, the reasonable person standard is undoubtedly more than an empirical standard. Indeed, in Experiments One and Two, a significant number of participants found the defendant negligent even where both empirical and economic information indicated non-negligence. And in Experiments Three and Four, a substantial number of participants found the defendant negligent for failing to do something that no one else would have done (in the 0% condition).

I suspect this pattern reflects a combination of two things. First, in evaluating reasonableness, participants likely weigh inputs other than empirical and economic information (i.e., principle-based, non-economic considerations, such as reciprocity of risk). Future empirical work can and should identify such additional inputs and evaluate their effects on lay judgments.

Second, some participants' judgments may not involve the legal concepts of reasonableness or negligence at all. Doctrinal work has observed pockets of what is functionally strict liability in what would seem to be negligence cases.[313] And prior

"efforts to maximize realism . . . have more to do with research marketing than scientific validity") (citing Brian H. Bornstein, *The Ecological Validity of Jury Simulation: Is the Jury Still Out?*, 23 LAW & HUM. BEHAV. 75 (1999))).

309. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 (AM. L. INST. 2010); *see also* ROBBENNOLT & HANS, *supra* note 119, at 52 (noting that the proposition that decision makers evaluating negligence would find it useful to refer to the Hand Formula for guidance is "a proposition that merits empirical testing"); Gilles, *supra* note 2, at 821 (contemplating what enforcement of a cost–benefit standard at the jury level might look like).

310. I am skeptical that simply changing the jury instructions will cause participants to apply an economic standard for the reasons discussed *supra* Part III.B.

311. *See supra* Part III.B.

312. *See supra* note 283 and accompanying text.

313. *See* Geistfeld, *supra* note 3, at 1586–88 (contending that tort law effectively imposes a form of strict liability on actors for whom the reasonable person standard is behaviorally unrealistic and that this can be explained by the nonreciprocal risks such actors create).

experimental work reveals that, in some cases, a substantial percentage of lay decision makers will impose something closer to a strict liability standard than a negligence standard, even when instructed to apply a negligence standard.[314] This phenomenon could also help explain participants' inclination to find negligence in my experiments, and future research could help illuminate this phenomenon and when it occurs. Such work need not be experimental. One interesting approach would be surveying real-life jurors about what factors drove their decisions, or more generally, what role the concept of reasonableness played in the cases they decided.[315]

Future research might also further clarify the contributions of empirical considerations to negligence judgments. Are people considering what an average person would do or what an above average person would do? One limitation of Experiments Three and Four is that the empirical information participants reviewed was limited to five specific conditions—either 0%, 10%, 25%, 50%, or 90% of others would have avoided causing the injury that the defendant caused. While these conditions were chosen for their relevance to the average and aspirational hypotheses,[316] they were not evenly spaced along the number line. Further work might use more conditions, evenly spaced, to trace the shape of the relationship between empirical information and negligence across the number line or might explore in more detail the area around 50%. Doing so could provide a more nuanced account of how participants treat empirical information and, therefore, how they conceptualize the reasonable person. Interestingly, the aggregated data are consistent with the possibility that the relationship between empirical information and reasonableness is linear. A linear relationship is not predicted by either the average or the aspirational view—or, to my knowledge, by any other existing theoretical perspective on reasonableness. The linear trend might reflect that the modal participant treats the relationship as linear, or it might reflect that participants are relatively evenly divided between competing understandings of empirical reasonableness, with the line falling between the competing views.

Another variable that likely affects reasonableness judgments is whether the defendant is a corporate entity or an individual. Even though legally the same standard applies to corporations and people, a strong body of work indicates that participants likely hold business corporations to "higher standards of responsibility than individuals."[317] But how does this anti-corporate bias manifest in the reasonableness function? Does corporate status change how people conceptualize and weigh other

314. Joseph Sanders et al., *Must Torts Be Wrongs? An Empirical Perspective*, 49 WAKE FOREST L. REV. 1, 44 (2014). Interestingly, there are findings suggesting that, in some contexts, mock jurors are more likely to find a defendant negligent when instructed in the language of negligence than when instructed in the language of strict liability. Richard L. Cupp Jr. & Danielle Polage, *The Rhetoric of Strict Products Liability Versus Negligence: An Empirical Analysis*, 77 N.Y.U. L. REV. 874, 923–24, 937 (2002).

315. *See* Hans, *supra* note 163, at 349–52 (describing juror survey research on the treatment of individual versus corporate defendants); NEAL FEIGENSON, LEGAL BLAME: HOW JURORS THINK AND TALK ABOUT ACCIDENTS 162–69 (Bruce D. Sales et al. eds., 2000) (analyzing actual jurors' statements about their deliberation in accident cases).

316. *See supra* Parts II.C.2.b, II.D.2.b.

317. Vidmar, *supra* note 296, at 871.

inputs in the function, such as empirical considerations? Do people apply a more aspirational standard to corporations, perhaps on the assumption that corporate decision makers may be more professional, qualified, or educated than most?

Future research can also explore the role of motivated cognition in shaping reasonableness judgments.[318] This Article has largely assumed that a lay decision maker's conception of the reasonable person is constant. However, it could be that laypeople are flexible in their conceptions; they may (consciously or unconsciously) apply a different standard if needed to help them reach a desired outcome.[319] Future studies with case vignettes or simulated trial materials might manipulate the cases to include information that is (at least in theory) legally extraneous but that paints the litigants in a particularly sympathetic or unsympathetic light. Researchers could then evaluate whether jurors' constructions of reasonableness shift accordingly.

Another interesting avenue of research might begin from the premise that, consistent with my findings, the reasonable person standard is partly empirical. Assuming that people's evaluations of negligence cases are informed by their beliefs and intuitions about what other people would do in the relevant circumstances, are those beliefs and intuitions accurate? Research in cognitive psychology demonstrates that people often misjudge their own and others' cognitive abilities and behavioral tendencies. For instance, people often systematically misestimate what generic others can see,[320] what they know,[321] and how resistant they are to coercion.[322] If similar misestimates occur in the context of negligence cases, they might lead to biased verdicts. Specifically, if judges and jurors believe that people can typically see, hear, remember, and do more than they actually can, then the reasonable person becomes something closer to a reasonable superhero.[323]

Beyond the question of how tort law defines reasonableness, there is the related-but-distinct question of what evidence is relevant when determining whether conduct is reasonable. In most cases, of course, jurors lack concrete empirical

318. Scholarship on motivated reasoning suggests that the interpretation of legal standards can be unconsciously shaped by preferred results. *See, e.g.*, Sood, *supra* note 152, at 645–49, 660; Avani Mehta Sood, *Cognitive Cleansing: Experimental Psychology and the Exclusionary Rule*, 103 GEO. L.J. 1543, 1580–87, 1596–1603 (2015) [hereinafter Sood, *Cognitive Cleansing*]; Dan M. Kahan, *The Supreme Court 2010 Term–Forward: Neutral Principles, Motivated Cognition, and Some Problems for Constitutional Law*, 125 HARV. L. REV. 1, 7–9, 19–26, 73–76 (2011).

319. *See* Sood, *Cognitive Cleansing*, *supra* note 318, at 1547 (defining motivated cognition as "a less-than-conscious tendency to reason toward one's preferred result").

320. *See, e.g.*, Daniel T. Levin & Bonnie L. Angelone, *The Visual Metacognition Questionnaire: A Measure of Intuitions about Vision*, 121 AM. J. PSYCH. 451, 451 (2008) ("Not only do people express disbelief when told about change blindness, but . . . they grossly overpredict their performance in a wide range of circumstances . . . .").

321. *E.g.*, Raymond S. Nickerson, *The Projective Way of Knowing: A Useful Heuristic That Sometimes Misleads*, 10 CURRENT DIRECTIONS PSYCH. SCI. 168, 171–72 (2001) (noting that people often assume others have knowledge they do not have).

322. Sommers & Bohns, *supra* note 152, at 2004–05, 2011–19.

323. Rachlinski, *supra* note 25, at 1057 (observing that if lay decision makers overestimate others' capabilities, "the reasonable person is actually a superhero"); Jaeger et al., *supra* note 63, at 275 (finding that overestimates of what others can see affected negligence verdicts in mock cases).

information about what others would have done under the circumstances (just as they typically lack concrete economic information about the costs of harms and precautions).[324] Jurors are left to their hunches and intuitions.[325] However, there are cases where such empirical information exists. Perhaps recordings from the traffic camera trained on the relevant intersection show that most people see the stop sign behind the bush; perhaps a social scientist has systematically studied how pedestrians react, or fail to react, to sidewalk impediments; perhaps industry data show that it is not customary for storage facilities to have the latest fire prevention equipment. Should evidence of this sort be admitted, given its connection to lay understanding of reasonableness?[326] Or is it "beside the point"?[327]

In sum, there are a number of paths forward from here. Many of the paths I discussed in this Part involve empirical questions. This is in line with one of my overarching goals in this Article: bringing data to the reasonableness debate. However, while I contend that empirical approaches have much to offer the debate, I do not mean to suggest that the reasonableness debate can be resolved through empirical work alone. The variety of approaches reflected in the scholarly discussion of reasonableness—historical, linguistic, philosophical, and doctrinal, to name a few—are needed to propel the discussion forward.

CONCLUSION

Is reasonableness an empirical standard based on observation of community behavior?[328] An economic standard based on whether precautions are cost-justified?[329] Something else altogether?[330] This Article examined these questions from a scientific perspective, injecting data into what has largely been a data-free debate. Four studies provided experimental evidence that lay decision makers understand reasonableness in more empirical than economic terms. Indeed, participants in the experiments were entirely unaffected by whether precautions were cost-justified.

These findings highlight an important disconnect between the way many legal theorists conceive of the reasonable person standard and the way lay decision makers

324. *See* McCarty v. Pheasant Run, 826 F.2d 1554, 1557 (7th Cir. 1987) (suggesting that judges must settle for rough intuitions about reasonableness due to "[c]onceptual as well as practical difficulties in monetizing personal injuries").

325. Rachlinski, *supra* note 25, at 1057 (describing reasonableness as an "an intuitively based standard").

326. *See* FED. R. EVID. 401(b) (stating that evidence is relevant if "the fact is of consequence in determining the action"); FED. R. EVID. 402 (explaining that relevant evidence is generally admissible); FED. R. EVID. 403 (providing that relevant evidence may be excluded if its probative value is outweighed by its potential to prejudice, confuse the issues, or mislead the jury).

327. Healthcare at Home Ltd. v. Common Servs. Agency [2014] UKSC 49, [3] (appeal taken from Scot.).

328. *Contra* Miller & Perry, *supra* note 3, at 370–71 (defining the empirical standard and ultimately rejecting its practical application as "impossible").

329. Posner, *supra* note 108, at 33 (suggesting the function of fault rules is to bring about "the efficient—the cost-justified—level of accidents and safety").

330. *See supra* Part I.B.2.b (describing other principle-based theories).

apply it.[331] Legal scholars have sometimes been critical of the idea that the reasonable person standard is informed by observations and beliefs about what other people would do.[332] But in the experiments presented here, it was precisely that information that influenced people most. My findings indicated that lay participants put more weight on information about community customs than many tort theorists would expect and much less weight on cost-justification than many tort theorists would expect. Using these data, the Article argued that the reasonable person standard both is and should be understood, in part, in empirical terms.

More generally, this Article sought to reframe debate concerning the reasonable person standard by treating judgments of conduct's reasonableness as functions of multiple inputs. This conception of reasonableness allows for more precise discussion and leaves more room for nuanced give-and-take than a debate pitched in terms of generic characterizations. It also invites the sort of descriptive work needed to build a bridge between tort theory and application. By observing what inputs affect lay reasonableness judgments, scholars can gain insight into the lay concept of reasonableness, and its alignment—or misalignment—with tort theory. Approaching the problem from this perspective offers deeper insight into what reasonableness is and what it ought to be.

331. *See supra* note 138 and accompanying text.

332. Miller & Perry, *supra* note 3, at 371, 375–87.

APPENDIX

Vignettes Used in Experiments One and Two

Windsor v. International Computers

The plaintiff, Janet Windsor, is suing the defendant, International Computers, claiming that International Computers's negligence caused her injury.

Janet Windsor developed a rare form of skin cancer. After a long course of painful chemotherapy, doctors were able to cure the cancer.

Janet, who has worked as a secretary for years, believed that her cancer had been caused by the computer monitor that she used at her job. That monitor was manufactured by International Computers.

International Computers is a company that manufactures components of computer systems, including monitors. The type of International Computers monitor that Janet Windsor used, the IC5000, emits small amounts of a certain type of radiation that most doctors believe can cause skin cancer.

International Computers was aware that the IC5000 monitors emitted this radiation before putting the monitors on the market. International Computers was also aware that most doctors believed the radiation can cause skin cancer.

International Computers could have used an enhanced manufacturing technique to reduce the IC5000's radiation emissions before putting the monitors on the market. However, after reviewing the relevant manufacturing and medical information and meeting with safety and health consultants, the company chose to continue with its regular manufacturing technique.

Assume the following facts are true:

Given all of the information available at the time, [10% OR 90%] of companies in International Computers's position would have used an enhanced manufacturing technique to reduce radiation emissions before putting their monitors on the market.

International Computers's choice to use the regular manufacturing technique rather than the enhanced manufacturing technique led to an expected increase of three (3) cases of skin cancer among monitor users, each of which would be expected to cause [EXPERIMENT ONE: $100,000; EXPERIMENT TWO: $300,000] of damage.

This means that if it had used the enhanced manufacturing technique, International Computers would have been expected to save [EXPERIMENT ONE: $300,000; EXPERIMENT TWO: $900,000] of costs to other members of society. Using the enhanced manufacturing technique would have cost International Computers [EXPERIMENT ONE: $150,000 OR $450,000; EXPERIMENT TWO: $100,000 OR $8,100,000] more than using the regular technique.

Vaughan v. Menlove Farms

The plaintiff, Vincent Vaughan, is suing the defendant, Menlove Farms, Inc., claiming that Menlove Farms's negligence caused him injury.

Vincent Vaughan works as a farmer in the western United States. He has a profitable farm, growing and selling corn, barley, wheat, and hay, as well as livestock.

Vincent is a careful farmer, and one thing he is very concerned about is keeping his hay dry. Moist hay is more likely to catch fire, and hayfires are a big risk to his business.

Vincent bought a special piece of hay-drying farm equipment. Vincent uses the equipment to make sure his hay is dry before storing it, reducing the risk of hayfires on his farm.

Menlove Farms operates a profitable farming business of its own on the property right next to Vincent Vaughan's farm.

Menlove Farms stores its hay in a large barn near the border between its property and Vincent's property.

Menlove Farms does not use special farm equipment to help ensure its hay is dry. Menlove Farms considered buying hay-drying farm equipment about a year ago, but after reviewing the relevant information and meeting with consultants, the company decided not to buy the equipment.

A few months ago, some moist hay in the Menlove Farms barn caught fire. The fire spread from the Menlove Farms barn to Vincent's property, badly damaging Vincent's crops and destroying several of Vincent's barns.

Assume the following facts are true:

Menlove Farms's choice not to buy special hay-drying farm equipment led to a 1% greater risk of a hayfire. Such a hayfire would be expected to cause $5,000,000 of damage.

This means that if it had purchased the special hay-drying farm equipment, Menlove Farms would have been expected to save $50,000 of costs to other members of society. Purchasing the special hay-drying farm equipment would have cost Menlove Farms [EXPERIMENT ONE: $25,000 OR $75,000; EXPERIMENT TWO: $5,555 OR $450,000].

Given all of the information available at the time, [10% OR 90%] of companies in Menlove Farms's position would have purchased the special hay-drying farm equipment.

Pendleton v. Dolman Transportation

The plaintiff, Patrick Pendleton, is suing the defendant, Dolman Transportation, claiming that Dolman Transportation's negligence caused him injury.

Dolman Transportation is a trucking company. About a year ago, Dolman Transportation expanded into the long-distance chemical hauling business.

Dolman Transportation bought several special chemical-hauling trucks for its fleet. When choosing its chemical-hauling trucks, Dolman Transportation had the choice of buying brand new, top-of-the-line, very expensive trucks that had all sides of the hauling tank specially reinforced, or older, less expensive trucks that only had the special reinforcement in the back.

After reviewing the relevant safety information and meeting with safety consultants, Dolman Transportation chose to buy the older, less expensive trucks. The reason was that the brand new, top-of-the-line trucks were only safer in the very rare event that another car collided with the side of the hauling tank. In any other type of accident, the older trucks would be just as safe.

On July 16, one of Dolman Transportation's chemical-hauling trucks was hauling chemicals along a highway. Patrick Pendleton was driving in the other lane when his tire suddenly and unexpectedly blew out, causing his car to swerve and hit the side of the hauling tank on the Dolman Transportation truck.

The collision caused an explosion. The explosion left Patrick Pendleton with severe burn injuries. If the sides of the hauling tank had been specially reinforced, the explosion would not have occurred, and Patrick would not have suffered the burn injuries.

Assume the following facts are true:

Given all of the information available at the time, [10% OR 90%] of companies in Dolman Transportation's position would have chosen to buy the brand new, top-of-the-line chemical-hauling trucks with specially reinforced sides.

Dolman Transportation's choice to purchase the older chemical-hauling trucks without side reinforcements led to a 1% greater risk of a side-crash-related explosion. Such an explosion would be expected to cause [EXPERIMENT ONE: $5,000,000; EXPERIMENT TWO: $10,000,000] of damage.

This means that if it had purchased the brand new, top-of-the-line chemical-hauling trucks, Dolman Transportation would have been expected to save [EXPERIMENT ONE: $50,000; EXPERIMENT TWO: $100,000] of costs to other members of society. Purchasing the brand new, top-of-the-line chemical-hauling trucks would have cost Dolman Transportation [EXPERIMENT ONE: $25,000 OR $75,000; EXPERIMENT TWO: $11,111 OR $900,000] more than purchasing the older chemical-hauling trucks.

Sanders v. A & G Cosmetics

The plaintiff, Carl Sanders, is suing the defendant, A & G Cosmetics, claiming that A & G's negligence caused him injury.

Carl Sanders used Nalene, an over-the-counter baldness treatment available at drugstores. While a small amount of hair did grow back, he also had a severe adverse reaction, leaving him with permanent damage to the skin on his head and hands and a weakened immune system for life.

A & G Cosmetics is a company that sells many different cosmetic products, including wigs, "weaves," and chemical solutions designed to combat baldness. Nalene is one of the chemical solutions sold by A & G Cosmetics.

A & G Cosmetics tested Nalene extensively before putting it on the market. Based on the testing, A & G Cosmetics expected that Nalene would be effective in promoting hair growth in about 50% of customers.

In addition, based on its testing, A & G Cosmetics was aware of a very small possibility that a customer could have a severe adverse reaction—such as the one Carl had—to one of the rare chemicals in Nalene.

Before putting Nalene on the market, A & G Cosmetics could have changed its Nalene formula to an alternate formula that used different chemicals. Doing so would have reduced the risk of a severe adverse reaction. However, after reviewing the relevant manufacturing and medical information and meeting with safety and health consultants, the company decided to continue with its regular formula.

Assume the following facts are true:

A & G Cosmetics's choice to use the regular formula rather than the alternate formula led to an expected increase of three (3) cases of severe adverse reactions among Nalene users, each of which would be expected to cause $100,000 of damage.

This means that if it had used the alternate formula for Nalene, A & G Cosmetics would have been expected to save $300,000 of costs to other members of society. Using the alternate formula for Nalene would have cost A & G Cosmetics [EXPERIMENT ONE: $150,000 OR $450,000; EXPERIMENT TWO: $33,333 OR $2,700,000] more than using the regular formula.

Given all of the information available at the time, [10% OR 90%] of companies in A & G Cosmetics's position would have switched to the alternate formula to reduce the risk of severe adverse reactions before putting their chemicals on the market.

Vignettes Used in Experiment Three

Experiment Three used the same four vignettes used in Experiments One and Two but edited so as to provide only empirical information. (Paragraphs concerning economic information were cut.) Further, in Experiment Three, the percentage provided for the empirical information variable could be 0%, 10%, 25%, 50%, or 90%.

Experiment Three also included the following fifth vignette:

Lawson v. TGI International

The plaintiff, Mary Lawson, is suing the defendant, TGI International, claiming that TGI International's negligence caused her injury.

Mary Lawson worked for years as a contractor in one of TGI International's manufacturing plants in Anytown before she developed chronic anemia. Although after a hospital stay she is now better, the condition has not fully been cured.

Mary Lawson believes that her exposure to benzene at TGI International's Anytown manufacturing plant caused her condition.

TGI International is a company that manufactures high-tech machine parts. Several years ago, the scientists at TGI International discovered that workers in the Anytown plant were often exposed to benzene, a substance that can cause anemia and leukemia.

TGI International considered buying new, state-of-the-art equipment and implementing "clean" manufacturing techniques that would have reduced workers' exposure to benzene. However, after identifying the cost of buying the new equipment and implementing "clean" techniques, reviewing the relevant manufacturing and medical information, and meeting with safety and health consultants, the company chose to continue with its regular manufacturing technique.

Assume the following facts are true:

Given all of the information available at the time, [X]% of companies in TGI International's position would have bought new, state-of-the-art equipment and implemented "clean" manufacturing techniques.

Vignettes Used in Experiment Four

Vision Case

The plaintiff, Paul Peterson, is suing the defendant, Dan Denning, claiming that Dan Denning's negligent driving caused him an injury.

On the night of March 1, Paul Peterson was walking home after going bowling at a bowling alley near his house. At a traffic light at the intersection of Mulberry Street and Sycamore Lane, Paul began crossing Mulberry Street using the pedestrian crosswalk. While crossing, Paul saw a wallet sitting in the road near the crosswalk. Paul knew the owner would want his or her wallet returned, so Paul leaned over to pick it up. But as he bent over, he lost his balance and fell forward, striking his head on the pavement, knocking him unconscious.

At the same time, Dan Denning was driving home on Mulberry Street after visiting a family member in the hospital. As Dan approached the traffic light, Dan did not see Paul lying unconscious on the road. Because the traffic light was green, Dan continued driving until he ran over the unconscious Paul's legs, causing Paul significant injury.

Assume it is a fact that, given the conditions at the time of the accident, [X]% of drivers in Dan's position would have seen Paul.

Hearing Case

The plaintiff, Pamela Precourt, is suing the defendant, Darla Dexter, claiming that Darla Dexter's negligence caused injuries to her young daughter, Patty Precourt.

Pamela Precourt's daughter, Patty, attended a small daycare that Darla Dexter ran from her home in Anytown. Darla Dexter was a certified childcare professional, and Pamela had always been satisfied with the care Darla provided for Patty.

Patty was in Darla's care at 2:00 p.m. on June 1, when the Anytown tornado sirens began going off. A small but rapidly moving storm cell had just spawned a tornado on the edge of town, and it was headed for Darla's house. Darla had a windowless, interior room to which she could take the four children in her care in the event of a tornado. But inside her house with the children on June 1, she was unable to hear the sirens going off.

Because Darla did not hear the sirens, she did not move the children to the interior room. At 2:03 p.m., three minutes after the siren went off, the tornado hit Darla's home, breaking out her windows and causing other damages. Glass from a broken window cut Patty Precourt, injuring her and causing her to need an emergency surgery.

Assume it is a fact that, given Darla's location and circumstances between 2:00 and 2:03 p.m., [X]% of people in Darla's position would have heard the sirens.

Memory Case

The plaintiff, Priscilla Porter, is suing the defendant, Dr. Danielle Dull, claiming that Dr. Dull's negligence caused her injury.

Priscilla Porter was a patient in the Anytown Hospital, where she arrived on May 1 seeking treatment for flu-like symptoms. The evening she was admitted, Dr. Dull was trying to identify the cause of her symptoms, and after reviewing her history and doing some research, Dr. Dull realized that she likely had a very dangerous and fast-acting

type of infection that needed to be treated with IV antibiotics. Dr. Dull started walking down the hallway to instruct a nurse to order and administer the IV antibiotics. But before he could give the instruction, another nurse, Nurse Nancy, grabbed Dr. Dull by the arm, frantically screaming "code blue, code blue!" A patient on another ward was in deep trouble.

Dr. Dull rushed into a room with Nurse Nancy to find a patient who had seemed perfectly fine earlier in the day crashing. Over the next two hours, Dr. Dull worked frantically with the team of nurses scrambling in and out of the room and managed to stabilize the patient. When the situation was finally resolved, Dr. Dull was one hour past the scheduled end of his shift and totally frazzled. He went home and went to bed and forgot to mention Priscilla's infection or her need for IV antibiotics to anyone.

Dr. Dull returned to the hospital the next morning and, remembering Priscilla's case, ordered the IV antibiotics. But Priscilla had gotten much worse overnight, and she ultimately had to have a leg amputated due to complications from the infection. If Priscilla had started antibiotics the previous night, she would not have lost her leg.

Assume it is a fact that, given the circumstances on the evening of May 1, [X]% of doctors in Dr. Dull's position would have remembered to order the IV antibiotics before the next morning.

Reaction Time Case

The plaintiff, Peter Peck, is suing the defendant, Darrell Dunn, claiming that Darrell Dunn's negligent driving caused him injury.

Peter Peck is 81 years old and no longer drives. On Sunday, June 15, Peter attended services at the church across the street from his house, as was his custom. After church, Darrell Dunn, a friend of Peter's son, picked Peter up to drive him to a physical therapy appointment.

The physical therapist's office was located 15 miles up the highway from Peter's house. Peter rested in the passenger seat as Darrell drove along the highway, obeying the 70 mile-per-hour speed limit.

10 miles into the drive, a deer darted out onto the highway in front of Darrell's vehicle. Darrell was momentarily startled, but as soon as he processed what was happening, he slammed the brakes on his car.

Unfortunately, the car did not stop before it hit the deer. After the collision, the injured deer jumped onto the windshield, shattering it and causing significant injury to Peter.

Assume it is a fact that, given the conditions at the time of the accident, [X]% of drivers in Darrell's position would have been able to react (i.e., brake) in time to stop the car before it hit the deer.

Decision-making Case

The plaintiff, Patrick Pendleton, is suing the defendant, Donald Dolman, claiming that Donald Dolman's negligence caused him injury.

After years working as an accountant, Donald Dolman decided he wanted to change careers and travel more. Donald started his own trucking company, which focused on hauling chemicals over long distances.

Donald needed to buy a special truck for hauling chemicals. He could either buy a brand new, top-of-the-line, very expensive truck that had all sides of the hauling tank specially reinforced, or an older, less expensive truck that only had the special reinforcement in the back.

After reviewing all of the information he could find and speaking with some safety consultants, Donald Dolman chose the older, less expensive truck. Donald reasoned that the brand new, top-of-the-line truck would only be safer in the very rare event that another car collided with the side of the hauling tank. In any other type of accident, the older truck would be just as safe.

On July 16, Donald Dolman was hauling chemicals along a highway in his truck. Patrick Pendleton was driving in the other lane when his tire suddenly and unexpectedly blew out, causing his car to swerve and hit the side of Donald's hauling tank.

The collision caused an explosion. The explosion left Patrick Pendleton with severe burn injuries. If the sides of the hauling tank had been specially reinforced, the explosion would not have occurred, and Patrick would not have suffered the burn injuries.

Assume it is a fact that, given all of the information available at the time, [X]% of people in Donald Dolman's position would have chosen to buy the brand new, top-of-the-line truck with specially reinforced sides.

Jury Instructions Used in Experiments

The judge asks you to decide whether the defendant, [Defendant's Name], was negligent.

In connection with this question, the judge provides the following instructions:

This case involves claims of negligence. Negligence is the lack of ordinary care; that is, the absence of the kind of care a reasonably prudent and careful person would exercise in similar circumstances. That standard is your guide. If a person's conduct in a given circumstance doesn't measure up to the conduct of an ordinarily prudent and careful person, then that person was negligent. On the other hand, if the person's conduct does measure up to the conduct of a reasonably prudent and careful person, the person wasn't negligent.

The mere fact that an accident occurred isn't enough to establish negligence.

Contingency Tables Summarizing Negligence Verdicts by Condition

Experiment One

	Empirical Information – 10% Take Precaution	Empirical Information – 90% Take Precaution	**Row Total**
Economic Information – Precautions Were Cost-Justified (B<PL)	55 of 99	76 of 99	131 of 198
Economic Information – Precautions Were Not Cost-Justified (B>PL)	42 of 99	76 of 99	118 of 198
Column Total	97 of 198	152 of 198	**249 of 396 (Grand Tot)**

Table A1. Number of participants finding defendant negligent in each condition in Experiment One. Note that each participant responded to four cases, one in each cell.

Experiment Two

	Empirical Information – 10% Take Precaution	Empirical Information – 90% Take Precaution	**Row Total**
Economic Information – Precautions Were Cost-Justified (B<PL)	66 of 111	83 of 111	149 of 222
Economic Information – Precautions Were Not Cost-Justified (B>PL)	64 of 111	88 of 111	152 of 222
Column Total	130 of 222	171 of 222	**262 of 392 (Grand Tot)**

Table A2. Number of participants finding defendant negligent in each condition in Experiment Two. Note that each participant responded to four cases, one in each cell.

Experiment Three

Empirical Information Condition	# Finding Defendant Negligent
0	29 of 60
10	34 of 60
25	35 of 60
50	44 of 60
90	49 of 60
Grand Total	**191 of 300**

Table A3. Number of participants finding defendant negligent in each condition in Experiment Three. Note that each participant responded to five cases, one in each cell.

Experiment Four

Empirical Information Condition	# Finding Defendant Negligent
0	15 of 53
10	15 of 53
25	20 of 53
50	24 of 53
90	39 of 53
Grand Total	**113 of 265**

Table A4. Number of participants finding defendant negligent in each condition in Experiment Four. Note that each participant responded to five cases, one in each cell.