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Working Paper



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Clarifying Relative Plausibility: A Rejoinder

Ronald J. Allen* & Michael S. Pardo**

We are extremely grateful to Jonathan Doak and the *International Journal of Evidence & Proof* for hosting this symposium and to all of the contributors for engaging so carefully, thoughtfully, and critically with our work and the larger issues embedded within it. In our target article for this symposium, we asserted and defended two related propositions: first, that a general shift toward explanationism as the best explanation of juridical proof was underway, and, second, that presently the best explanation of explanationism and the legal system is the relative plausibility theory that has evolved over the last three decades.¹ In passing, we analyzed three general critiques of relative plausibility, two of which (Kevin Clermont and Dale Nance) offered opposing explanations of juridical proof and the third involved an attempt to defuse the conjunction paradox while entertaining the possibility that relative plausibility may be the best explanation of juridical proof in general (David Schwartz & Elliott Sober).

Is a general shift toward explanationism underway? Although some commentators remain skeptical,² and others question how best to characterize it as a conceptual matter,³ this symposium in our opinion further confirms the shift that we identified. Sean Sullivan, for example, in discussing many of the underlying details, agrees that “a paradigm shift is underway in scholarship on legal fact-finding,” adding that “[s]o much recent work points in the same direction . . . that those unable to perceive this shift could only be those who refuse to see.”⁴ On the merits—whatever one calls it (a paradigm shift, conceptual revolution, or something else)—

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¹ Ronald J. Allen & Michael S. Pardo, Relative Plausibility and its Critics (this issue).

² See Frederick Schauer, One Small Step Towards a Metatheory of Evidence and Proof (this issue). We agree with Schauer’s assertion that whether a paradigm shift is occurring is an empirical, sociological claim; Schauer argues that our conclusion regarding such a shift is premature and that more consensus on particular details is needed. See *id.*

³ See Amalia Amaya, The Explanationist Revolution in Evidence Law (this issue) (discussing the shift toward explanationism in evidence law as a revolution in styles of reasoning and inferential methods).

⁴ Sean P. Sullivan, Challenges for Comparative Fact-Finding (this issue), at 1.

thirteen of the twenty commentaries appear to conclude that it is occurring or has occurred.⁵ Clermont, one of the critics of relative plausibility, believes that his explanation entails relative plausibility,⁶ and Nance, while having few good words to say about relative plausibility, embraces its core while continuing to subscribe to a version of probabilism.⁷ Two commentators, Jonah Gelbach and Marcello Di Bello (and perhaps Sullivan fits here as well) attempt to reach a reconciliation between probabilism and explanationism.⁸ Maggie Wittlin is largely unmoved, thinking that relative plausibility is a water-downed version of probabilism (which has it backwards).⁹ Even our most visceral critics, Schwartz & Sober, suggest that there may be something to relative plausibility (although they also think that law professors need some training in the basics of probability theory).¹⁰ The last of the commentators, Hock Lai Ho, appears to reject relative plausibility for the idiosyncratic reason that he thinks that it cannot explain the bizarre *Popi M* case, but as we will return to below, it does.¹¹ In sum, the

⁵ In alphabetical order: Amaya, Bex & Walton, Brennan-Marquez, Clermont, Hastie, Kolflaath, Ribeiro, Simon, Sullivan, Spottswood, Taruffo, Tuzet, and Vazquez. Each of these commentaries has criticism and disagreements, of course. For example, Taruffo more or less accepts relative plausibility as the best explanation of American juridical proof but dissents “from the narrativistic analyses insofar as the nature on the final decision about the facts in issue is concerned.” Michele Taruffo, *Some Remarks about Relative Plausibility* (this issue), at 3.

⁶ Kevin M. Clermont, *The Silliness of Magical Realism* (this issue).

⁷ To repeat a point from our target article, Nance says that commonsense, plausible reasoning:

serve[s] important functions relative to both the assessment of discriminatory power and the choice of Keynesian weight. . . . [P]lausible reasoning serves as a tool for the analysis of evidence in commonsense terms. Even as litigation comes with ready-made contending hypotheses (C and not-C), those general claims typically will be refined at trial to specific theories of the case, one or more for the claimant instantiating C and one or more for the defendant instantiating not-C. In deliberation, though, the fact-finder will often find it necessary to consider other alternatives. And as Peirce noted, abduction (or inference to the most plausible explanation) becomes a critical tool by which commonsense reasoning develops such additional hypotheses. An assessment of Keynesian weight must be made relative to the contending hypotheses, and as these hypotheses change, some modification of the practical optimization of Keynesian weight may become necessary.

Allen & Pardo, *supra* note 1, at 58-59 (citing Dale A. Nance, *The Burdens of Proof: Discriminatory Power, Weight of Evidence, and the Tenacity of Belief* 140-41 (2016)).

⁸ Jonah B. Gelbach, *It’s All Relative: Explanationism and Probabilistic Evidence Theory* (this issue); Marcello Di Bello, *Plausibility and Probability in Juridical Proof* (this issue).

⁹ Maggie Wittlin, *Common Problems of Plausibility and Probabilism* (this issue)

¹⁰ David S. Schwartz & Elliott Sober, *What is Relative Plausibility?* (this issue). Nonetheless, out of an abundance of caution we included them with the Skeptics.

¹¹ Hock Lai Ho, *How Plausible is the Relative Plausibility Theory of Proof?* (this issue); *Rhesa Shipping Co SA v. Edmunds (The Popi M)* (1983) *Lloyd’s Law Reports* 235 .

commentators for the most part either embrace, or see the influence of, the two central ideas in this shift, which are that (1) juridical proof is both comparative and explanatory, and (2) to date relative plausibility best explains the sprawling entity that we refer to as “juridical proof” (more on this below).

Yet the comments, along with much agreement with the basic thrust of relative plausibility, contain many criticisms. The nature of this criticism is interesting. It stems from many of the commentators focusing on the second and more contestable part of our claims, which is that relative plausibility is the best explanation presently on offer of how explanationism works in the legal context. Here we simply want to express our deep appreciation for all this insightful work because it helpfully points to the future of this research program and admirably lays out some of the directions it should go. We agree with the critics that all the issues they have raised may be irritants that are worthy of further study. However, it is also interesting that for all the criticism only the remaining few probabilists, Nance, and perhaps Ho have alternative programs.¹² In other words, most of the criticisms are internal to relative plausibility in particular, or explanationism in general, rather than designed to defend an alternative.¹³ And some of the probabilists are not really advancing alternatives at all but instead

¹² And, again, Clermont argues that his approach subsumes relative plausibility, and Nance embraces the central tenets of the theory.

¹³ This makes some of the criticism somewhat difficult to assess. For example, Schauer writes: “we might wish for more consideration of those items of American legal doctrine that seem inconsistent with the holism of the comparative plausibility model, such as the sequential structuring of trials, the Bayesian relevance standards of Rule 401 of the Federal Rules of Evidence, and the fact that judges determining relevance make those determinations with respect to individual pieces of evidence and not after all of the evidence has been presented.” Schauer, *supra* note 2, at 14. As to why these criticisms are difficult to assess in the absence of a competing theory of proof, consider, first, that relative plausibility is “holistic” only in the limited sense in which we use the term, which is that parties present and fact-finders evaluate evidence in light of contrasting explanations (and not merely as the confirmation of independent propositions or their negations). See Allen & Pardo, *supra* note 1, at 3 n.7. Second, it is not clear exactly what Schauer means by “sequential”; trials are disjointed, and bookended by brief explanations in opening statements and more argumentative closing arguments. And the elements are not defined until the end. This is perfectly sensible if the objective is to provide evidence to support an explanation briefly laid out in an opening, but it makes no sense in a probabilistic updating event. Moreover, how else can trials occur? Schauer seems to suggest that all the evidence could somehow be presented to the fact-finder “holistically,” which in turn is necessary to give support to relative plausibility. We have no idea what this would look like. Would it involve presenting all of the evidence to the fact-finder at once? Regardless, relative plausibility does not depend on such a process. Third, the “Bayesian relevance standards of Rule 401” make false predictions: because of the overlap problem, most admitted evidence is not “relevant” if this probabilistic explanation were true. See Michael S. Pardo, *The Nature and Purpose of Evidence Theory*, 66 *Vand. L. Rev.* 547, 576-89 (2013). This is not at all peculiar if the question is whether evidence supports a party’s explanation. Fourth, judges cannot possibly make probabilistic determinations with respect to individual pieces of evidence without hearing the other, contingent, evidence; in short, this criticism, like the preceding ones, seems to have it backwards *if the alternative is probabilism*. But Schauer does not articulate and defend a competitor theory, and thus it is unclear how to assess his critique. If he is just noting what he thinks are certain inadequacies in our

trying to demonstrate the compatibility between probabilism and explanationism. Whether this is a paradigm shift, a conceptual revolution, or something else, explanationism is supplanting probabilism as the best explanation of juridical proof.

With these general comments in mind about the nature of our enterprise, we move in this rejoinder to focus on four recurrent topics in the commentaries. First, we spell out further details regarding relative plausibility and the scope of our project. Second, we address some important methodological considerations. Third, we clarify the significance of the conjunction problem and its role in the debates surrounding juridical proof. Finally, we note a number of avenues for further work consistent with an explanatory account of juridical proof.

I. Explaining Relative Plausibility

The commentaries raise several questions regarding the scope of relative plausibility, and the relationship between plausibility and probability. In this Part, we attempt to clarify these issues.

One point of clarification concerns the scope of relative plausibility. Or as Schauer puts it, “what precisely is it . . . a theory of,” a question on which he expresses doubt.¹⁴ Simon raises similar issues, thinking that our canvas is too sprawling: “This multiplicity of focal points makes for a rather elusive endeavor, especially given that each of these constructs is a heterogeneous mix of features,”¹⁵ a concern also expressed by Reid Hastie.¹⁶ By contrast, other commentators take our focus to be quite narrow. Schwartz & Sober, for example, assert that our reliance on how lawyers typically construct and present cases is irrelevant because “the question is not what *trial lawyers* do, but what *juries* do.”¹⁷ This assertion seems to assume that the sole aims of relative plausibility are to rationalize the jury instructions and to explain how jurors reach conclusions. A few other commentaries share this assumption. But in fact this leaves out much of what the project is about. Responsibility for confusion on this point lies with us because we focused in our target article primarily on standards of proof (at the expense of other issues) in our attempt to summarize decades of literature.¹⁸

presentation, then we take his points to be helpful suggestions for future work rather than criticism designed to defend an alternative.

¹⁴ Schauer, *supra* note 2, at 11.

¹⁵ Dan A. Simon, *Thin Empirics* (this issue), at 1.

¹⁶ Reid Hastie, *The Case for Relative Plausibility Theory: Promising, but Insufficient* (this issue).

¹⁷ Schwartz & Sober, *supra* note 8, at 6.

¹⁸ In our defense, it is already a very long article!

To be clear, relative plausibility is not only about jury decision-making and the decision rules at trial. Its scope is much broader. It is about the entire process of proof, including (1) the form, securing, and presentation of evidence, (2) the forms of argumentation employed at trial, (3) the manner in which humans process and deliberate on evidence, (4) the trial structure created by the rules of evidence and procedure, (5) the structure of litigation before and after trial, (6) the manner in which judges and juries, on the one hand, and trial and appellate judges, on the other hand, interact, and (7) to some extent, the meaning and nature of rationality. In other words, all of these features comprise the sprawling entity that we refer to as “juridical proof,” and relative plausibility is an attempt to explain that entity in all of its aspects, from beginning to end.¹⁹ How any part of the process operates is thus relevant to the project. Thus, to return to the quotation from Schwartz & Sober above, what would be the best explanation of how lawyers behave if it is not that they are implementing an approach to the proof process? This is also true of judges, and of the committees and legislatures that draft rules of procedure and evidence. It is also true of the general structure of trials and its various components.

Relative plausibility explains this sprawling entity and its interconnected parts better than conventional probabilism. Relative plausibility explains the behavior of lawyers in preparing for trial, judicial involvement in pre-trial hearings, and the formulation of theories of the case. It explains virtually all of the procedural context at trial from the opening statements through disjointed presentations of evidence to closing arguments to the meaning of relevance (where by contrast probabilism cannot explain the massive overlap of evidence so that it predicts that most of the evidence actually admitted at trial is irrelevant).²⁰ Relative plausibility explains the behavior of trial and appellate judges.²¹ It is explained by (the relationships are bilateral²²) the

¹⁹ At the beginning of litigation, see, for example, the U.S. Supreme Court’s insistence that a plaintiff’s allegations in a complaint must be “plausible,” and that plausibility is assessed by comparing the allegations with other possible alternative explanations. See *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 567-78 (2007); *Ashcroft v. Iqbal*, 556 U.S. 662, 682 (2009). Toward the end of the process, see, for example, the fact that appellate courts routinely evaluate the sufficiency of evidence to support a verdict by comparing alternative explanations. See *Anderson v. Griffin*, 397 F.3d 515, 521-22 (7th Cir. 2005); *Bammerlin v. Navistar*, 30 F.3d 898, 902 (7th Cir. 1994); *Yeschick v. Mineta*, 675 F.3d 622, 627 (6th Cir. 2012); *O’Laughlin v. O’Brien*, 568 F.3d 287, 304-08 (1st Cir. 2009); *United States v. Beard*, 354 F.3d 691, 692-93 (7th Cir. 2004); *United States v. Newell*, 239 F.2d 917, 920 (7th Cir. 2001). See also *United States v. Sever*, 603 F.3d 747, 753 (9th Cir. 2010) (abuse of discretion in denying defendant’s discovery request for evidence to support defendant’s “alternative explanation”).

²⁰ See Shari Seidman Diamond, Beth Murphy & Mary R. Rose, *The “Kettleful Of Law” In Real Jury Deliberations: Successes, Failures, And Next Steps*, 105 *Nw. L. Rev.* 1537, 1605 (2012); Neil Vidmar & Valerie P. Hans, *American Juries: The Verdict* 135 (2007); W. Lance Bennett & Martha S. Feldman, *Reconstructing Reality in the Courtroom* (1981); Willem A. Wagenaar, Peter J. van Koppen & Hans F.M. Crombag, *Anchored Narratives: The Psychology of Criminal Evidence* (1993). On overlapping evidence see, Pardo, *supra* note 13, at 576-89.

²¹ See *supra* note 19.

²² We thus agree with Ribeiro’s elegant presentation of this point: “What I am suggesting is that the testimony is relevant because it makes the hypothesis that the employee stole the necklace a better

basic requirements of rationality and the potential and limits of cognition. Most of which the conventional probability explanation fails utterly to accommodate. Indeed, to the extent that relative plausibility relies on what decision-makers do, it exploits the necessity of knowing what the alternatives are and how they are examined for truth value in the process of rational decision-making. The primary message of relative plausibility is that from beginning to end the legal system pushes the parties to provide competing explanations, and these explanations structure the decision that is subsequently made (even if the decision is based on an explanation not advanced by the parties).

A second point of clarification concerns the relationship between relative plausibility and probability. On this issue, there is a certain irony in Schwartz & Sober's mistaken suggestion that a core objective of relative plausibility is to extirpate probability theory from the jury's domain. Quite to the contrary, one of the attractions of relative plausibility is that it provides a realistic explanation of how decision-makers can in fact get to the most probable outcome.²³ Here the point is, as we have said, that a probabilistic outcome is achieved through plausible reasoning, and further that plausible reasoning obviously involves probability as a component—it is just not the only component in fact-finders' reasoning. Moreover, no plausible account of jury decision-making can be given as either a relative frequency or Bayesian event.²⁴

In misinterpreting the scope of relative plausibility and its relationship with probability, Schwartz & Sober offer three different “interpretations” of relative plausibility, which they list in order of “increasing hostility to a probability model of legal factfinding.”²⁵ Given that they

explanation, not because the evidence is explained by this hypothesis.” Gustavo Ribeiro, *Relevance, Probative Value, and Explanatory Considerations* (this issue), at 6.

²³ See Sullivan, *supra* note 4; Gelbach, *supra* note 9. Of course, explanatory reasoning (like all reasoning) can lead to mistakes. And we agree that empirical research may help to uncover systematic types of errors in explanatory reasoning and perhaps also help to improve decision-making. See Simon, *supra* note 15. Similarly, nothing in our account precludes the rigorous analysis of individual items of evidence. See Taruffo, *supra* note 5. Moreover, as Schauer correctly notes, such analysis of individual items of evidence may or may not be probabilistic. Schauer, *supra* note 2 (distinguishing the issue of holistic versus atomistic analysis from the issue of probabilistic versus non-probabilistic analysis).

²⁴ Recognizing the problems with these two options, two commentaries suggest the possibility of imposing external constraints on subjective credences. See Wittlin, *supra* note 10; Mark Spottswood, *On the Limitations of a Unitary Model of the Proof Process* (this issue). We note that such constraints would include or would depend upon explanatory considerations, which are precisely the considerations courts already employ in examining the reasonableness of party explanations in light of the evidence. See *supra* note 19. See also Kiel Brennan-Marquez, *The Probabilism Debate that Never Was?* (this issue), at 2 (noting that the “problem with this route [i.e., imposing explanatory constraints on subjective credences] is not that it makes subjective probabilism wrong per se; it’s that it turns subjective probabilism into a species of explanationism, thus draining probabilism of descriptive power”). We are skeptical that asking fact-finders (or judges reviewing sufficiency of evidence) to attach numbers to their explanatory inferences would improve outcomes, but it is an open empirical question whether such a possibility would lead to beneficial consequences.

²⁵ Schwartz & Sober, *supra* note 8, at 3.

misapprehend our aim, perhaps not surprisingly none of their three interpretations captures relative plausibility. Rather, aspects of each of their interpretations are contained within the structure of our theory. In order to clarify further, we take each in turn:

1. “Anti-Halfism”: They first speculate that maybe we are merely opposed to a “greater than 0.5 rule” for the preponderance standard.²⁶ On this score we are saying that a greater-than-0.5 conclusion is not necessary for a verdict but it is certainly sufficient.²⁷ If a fact-finder is convinced that the probability of an explanation exceeds 0.5, given the alternative explanations (a conclusion that will be reached through plausible reasoning), then no other explanation or combination of explanations could be more plausible than this one and of course it should win. But, such cases do not exist outside of a few isolated statistical cases (and even there we doubt that such purity is obtained). And it is sufficient for a verdict if the fact-finder finds one party’s explanation (or explanations) is more plausible (and thus more probable) than the opponent’s.
2. “Probabilistic holism”: Here, the claim is that “jurors can decide the probabilities of a whole but can’t say *anything at all* about the probabilities of elements.”²⁸ Maybe jurors can say something about the probability of elements and the conjunction, and maybe they cannot. If they can, more power to them, as it will simplify the comparison of the competing explanations. If not, they can still decide the case based on other cognitive tools.²⁹
3. “Total anti-probabilism”: According to this interpretation, we “might be rejecting probability theory entirely.”³⁰ Again, as we explained above, it is peculiar to suggest that an explanation that points out that probabilistic conclusions are reached through plausible reasoning is “anti-probabilistic” rather than trying to be careful about how and where probabilistic approaches makes sense and are employed. If a party chooses, or both parties choose, to litigate a case without ever once whispering the word “probability” and any of its derivatives, they would be perfectly within their rights to do so. No judge is going to stop them and say, “you need to talk about probability and probability theory at some point.” The parties can employ the cognitive tools they think best suited to the case, and that can include probability or the utter lack of attention to probability. Parties do not even need to explain that the most plausible explanation is the most likely; they can just argue about which explanation is better in whatever terms meet the minimal demands of rationality of the trial process.

²⁶ *Id.* at 3.

²⁷ Whether the evidence is sufficient to support that conclusion is, of course, a different question.

²⁸ *Id.* at 4.

²⁹ And we note the complete absence ever since *People v. Collins*, 438 P.2d 33 (1968), of arguments to juries about conjunctions.

³⁰ Schwartz & Sober, *supra* note 8, at 4.

Although Schwartz & Sober are mistaken in trying to force relative plausibility into one of these three analytical boxes, their deconstructive approach raises a number of important methodological issues. What they appear to be asking for is a highly specific theory, with the usual necessary and sufficient conditions, that might pass muster in philosophy departments. As interesting and useful as this approach may be on certain issues, it is of minimal use in exploring the nature of complex adaptive structures like trials, the legal system, and systems of government. No one is going to construct a watertight logical argument that would satisfy Schwartz & Sober (or anyone else) that explains the complex entity of juridical proof from beginning to end and not just one single part of it (even that would be difficult). We address the reasons for this in the next Part.

II. The Complexity of Juridical Proof

Many of the criticisms suggest a lack of concern on our part about philosophical distinctions, the empirical literature on jury decision-making, or particular legal cases. Of course, the critics may be right, but there is an explanation for this apparent disregard. A number of the commentators are approaching this project as though the object of inquiry (juridical proof) were a static system capable of being analyzed in the normal manner that most legal scholarship (including empirical legal scholarship) unfolds. One tries to be very clear (a la Schauer, Simon, and Hastie in this symposium) about the object of the inquiry and to nail down as tightly as possible the analytical structure built around it. So, for example, Schauer asks what precisely it is we are theorizing about; Simon, Hastie, and others ask about the empirical work on jury decision-making. What exactly do we mean by an “explanation,” and what are, precisely, the cognitive tools that go into deciding that one explanation is better than another?

On the one hand, these are precisely the kind of questions that should be pursued to see what progress can be made on them. But on the other hand, this approach is likely to have limited utility in furthering the understanding of an entity such as juridical proof at the level at which we are focusing. That entity is big, sprawling, and adaptive. It is not a static system but a dynamic and organic one.³¹ The implications of this, if we are right, are profound in a way that in our opinion Amaya’s excellent contribution highlights.³² Asking about how legal actors reason in a way that might satisfy Schauer, Simon, and Hastie is akin to asking for a precise and determinant theory of rationality, which will defy formulation. There is a remarkably rich set of cognitive tools that people call on to resolve conventional problems (which most lawsuits involve) that can interact in an infinite variety of ways in light of the evidence at a trial or

³¹ See, e.g., Ronald J. Allen, *Rationality and the Taming of Complexity*, 62 *Alabama L. Rev.* 1047 (2011); Ronald J. Allen, *Complexity, the Generation of Legal Knowledge and the Future of Litigation*, 60 *UCLA L. Rev.* 1384-1411 (2013).

³² Amaya, *supra* note 3.

hearing, and there are even deeper questions about the essence of rationality itself.³³ Others may disagree, but we doubt that specifying the nature of rationality will be accomplished or derivatively the precise nature of explanation.

All of this cognitive complexity interacts with the factual complexity of the millions of cases a year that the “legal system” deals with in one manner or another. This is not to say that discrete empirical studies cannot discern interesting phenomena and patterns, nor that philosophical inquiry into the nature of explanations is entirely problematic.³⁴ Such work should be done by those embracing traditional methodologies, but we predict that the results will be quite discrete. How a particular fact-finder approached a particular problem in a particular context perhaps should be studied, but the generalizability of such conclusions is highly problematic.³⁵ Similarly, we doubt that there will be a well-organized science (or philosophical thought) of how people decide one explanation is better than another, even though that is precisely what people do in a virtually infinite number of ways. In doing so, they employ a multitude of different ways to approach that task, some of which will probably be specifically identified (a proposition itself that is subject to empirical inquiry). But the overridingly important aspect of this phenomena is its bewildering complexity. Indeed, even at the level of what is an explanation we find the same phenomenon. A number of commentators criticize us for our lack of attention to this matter but perhaps they doth protest too much. An “explanation” for purposes of the legal system is usually (probably always) an answer to the question “what happened” in the particular context of the dispute in question.³⁶ But how an answer to that

³³ See, e.g. Ronald J. Allen, *Taming Complexity: Rationality, The Law of Evidence, And The Nature of The Legal System*, 12 *Law, Probability & Risk* 99 (2013).

³⁴ See, e.g., Tania Lombrozo, *Explanation and Abductive Inference*, in *The Oxford Handbook of Thinking and Reasoning* 260 (Keith J. Holyoak & Robert G. Morrison eds., 2012); Paul Thagard, *Evaluating Explanations in Law, Science, and Everyday Life*, 15 *Current Directions Psychol. Sci.* 141 (2006); Peter Lipton, *Inference to the Best Explanation* (2d ed. 2004); Peter Achinstein, *The Nature of Explanation* (1983).

³⁵ As we explained in our article, see Allen & Pardo, *supra* note 1, because of the absence of a general method for ranking explanations or combining explanatory criteria, the details of how explanations are evaluated will vary from case to case. But this does mean that explanatory inferences are on a par with subjective credences, as some comments suggest. Rather, it means that one must attend to the details of particular cases. For detailed discussions of relative plausibility and explanatory considerations in civil and criminal cases, see Pardo, *supra* note 13, at 603-610; Michael S. Pardo, *Pleadings, Proof, and Judgment: A Unified Theory of Civil Litigation*, 51 *B.C. L. Rev.* 1451 (2010) (discussing civil cases); Michael S. Pardo, *Epistemology, Psychology, and Standards of Proof: An Essay on Risinger’s “Surprise” Theory*, 48 *Seton Hall L. Rev.* 1039 (2018) (discussing criminal cases). See also Floris Bex & Douglas Walton, *Taking the Dialectical Stance in Reasoning with Evidence and Proof* (this issue).

³⁶ See Eivind Kolflaath, *Relative Plausibility and a Prescriptive Theory of Evidence Assessment* (this issue), at 4: “the notion of explanation relied on by Allen and Pardo is more straightforward. This is the conception we are all familiar with—that is, the non-symmetrical relation between something explaining and something being explained. In short, to explain is to answer a ‘why’ question. Why did the witness testify as she did? Maybe because what she reported is what actually happened. Or maybe because she

simple question is reached depends on all the prior complexity of cognition and its interaction with the infinitely varied array of “facts” and “evidence” considered by fact-finders.³⁷ Relative plausibility is not attempting to account for the myriad ways that decisions can be reached in individual cases. That would be akin to the fool’s errand of trying to identify the precise meaning of rationality. Again, the primary message of relative plausibility is that from beginning to end the legal system pushes the parties to provide competing explanations, and these explanations structure the decision that is subsequently made (even if the decision is based on an explanation not advanced by the parties).

Of course, one can always point to what are believed to be regrettable decisions in the legal system and set about trying to suppress them, but that will not come from a general theory or explanation of rationality. It will come instead from a highly specific inquiry into the details of a particular case and its decision, and the political, social, and economic issues at stake, a process that obviously has precisely the same generalizability problems just discussed.

Overlaying all of this is another attribute of the sprawling entity that we refer to as “juridical proof.” Any such entity will generate outliers and mistakes. No general theory or explanation is going to be able to account for everything that occurs within that entity. A possible example of this is Ho’s contribution—he argues that relative plausibility is wrong because it cannot explain the *Popi M* case.³⁸ But, the case is absurd. A ship was lost at sea and later found to have a gash in its hull. The plaintiffs sued the insurance company, and the insurance company pointed out that there was no explanation of how the ship sank. The plaintiffs responded, literally, by asserting that perhaps the ship hit a submerged submarine. There was, again literally, no evidence of a submarine, submerged or otherwise in the area, nor any evidence of a collision between two seagoing vessels. Nonetheless, the trial judge found for the plaintiffs on the ground that, however absurd the plaintiffs’ explanation might have seemed, there was no other explanation offered that was less absurd. We suspect there are cases that relative plausibility cannot explain for just the reasons spelled out above—a sprawling system will produce anomalies. Testing a general hypothesis about such systems by any peculiar datum

was mistaken. If so, why was she mistaken? And so on. Or at the global level: Why do we have this body of evidence? Our intuitive notion of explanation seems well suited for exploring evidence and hypotheses in legal fact-finding.” In addition to explanations concerning “what happened,” litigation disputes may also involve current or future conditions (e.g., the extent of a plaintiff’s current injuries or projected future earnings).

³⁷ This complexity explains some of the reasons why explanations in our account differ from the story model. Although Schauer, *supra* note 2, at 9-11, is correct that stories can serve as explanations (and that the concept of explanation plays an important role in the story model developed by Pennington & Hastie), fact-finders may evaluate explanations in light of the standard of proof without necessarily constructing a mental account of the events consistent with the story model (e.g., when concluding that a disjunction of inconsistent alternatives satisfies the standard). For other differences between explanations (in our account) and the story model, see Pardo, *supra* note 13, at 598-99.

³⁸ Ho, *supra* note 11; *Rhesa Shipping Co SA v Edmunds (The Popi M)* (1983) Lloyd’s Law Reports 235.

that might turn up is a tough standard, and frankly one that we reject out of hand. But, more to the point, Ho is wrong about what the case stands for.³⁹ There are two possible explanations for the case, neither of which supports Ho's view. On the one hand, the *Popi M* case is a straightforward case of the plaintiff having no evidence. At least in the American system (which is what we are trying to explain for the most part), absent some sort of burden-shifting, a plaintiff with no evidence loses.⁴⁰ Simple as that. And this result does not depend on what theory of juridical proof one embraces. On the other hand, it is simply a case in which, because of the lack of evidence from the plaintiff, something else must have happened, which as we have said is a perfectly sensible position to take.⁴¹ Indeed, *pace* Ho, the House of Lords more or less embraced relative plausibility by suggesting that when all other possible alternatives have been eliminated, whatever remains must be true—but that condition was not met in this case. According to the Court, Sherlock Holmes' "dictum" that "when you have eliminated the impossible, whatever remains, however improbable must be the truth . . . can only apply when all the relevant facts are known, so that all possible explanations, except a single extremely improbable one, can properly be eliminated. That state of affairs does not exist in the present case."⁴²

III. The Conjunction Problem

³⁹ *Rhesa Shipping Co. SA v. Edmunds*, (1985) 2 Lloyd's Law Reports 1.

⁴⁰ A perfect, and common but old, example is *Warren v. Jeffries*, 139 S.E.2d 718 (N.C. 1965), which involved a suit for negligence for a car running over a child that alleged that the defendant failed to set the car's hand brake, or failed to engage the transmission, or neglected to maintain adequate brakes. In concluding that the plaintiff's case was insufficient, the court explained that there was no evidence at all to support the negligence allegations: "Plaintiff alleges defendant was negligent in that (1) he failed to set the hand brake, (2) failed to engage the transmission, and (3) neglected to maintain adequate brakes . . . There is no evidence as to the condition of the brakes, whether the hand brake had been set, or whether the car was in gear." *Id.* at 720. Therefore, a verdict for the defendant was required. More recently, the court in *Alvarez v. City of Brownsville*, 904 F.3d 382, 389 (5th Cir. 2018), commented:

Summary judgment is appropriate "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). "A complete failure of proof concerning an essential element of the nonmoving party's case necessarily renders all other facts immaterial" and "mandates the entry of summary judgment" for the moving party." *United States ex rel. Farmer v. City of Houston*, 523 F.3d 333, 337 (5th Cir. 2008) (quoting *Celotex Corp. v. Catrett*, 477 U.S. 317, 322–23, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986)). "We resolve factual controversies in favor of the nonmoving party, but only when there is an actual controversy, that is, when both parties have submitted evidence of contradictory facts." *State Farm Fire & Casualty Co. v. Flowers*, 854 F.3d 842, 844 (5th Cir. 2017) (quoting *Little v. Liquid Air Corp.*, 37 F.3d 1068, 1075 (5th Cir. 1993)).

⁴¹ *Allen & Pardo*, *supra* note 1, at 24–25.

⁴² *Rhesa Shipping Co. SA v. Edmunds*, (1985) 2 Lloyd's Law Reports 1, 6.

The conjunction problem has a curious history in the debates regarding legal evidence and proof. As Schwartz & Sober point out in their commentary,⁴³ it was viewed initially as one of the most pressing problems in the seminal article that gave rise to the literature culminating in our target article for this symposium.⁴⁴ The probability paradigm appeared quite powerful at the time, but there was (and is) a nagging and direct conflict between the prescriptions of probability theory and the goals of trials. In that original article, this incompatibility of probability theory with the law of evidence was viewed as a purely analytical one, and the article was a thought experiment examining ways to minimize the conflict (hence the title, “A Reconceptualization of Civil Trials”). Over the ensuing thirty-two years, the literature and its understanding of the problem have evolved. Whereas it was viewed previously as an analytical problem to be solved, it is now understood as a feature of the world that must be accommodated by any explanation of juridical proof. Because the conjunction effect is a feature of the world, there are only two choices. One can, as relative plausibility does, show how its effects are domesticated (but not eliminated) by the legal system, or one can argue as Schwartz & Sober and Nance do, that the law embraces, not what the jury instructions on elements say, but instead a *sub silentio* requirement that the conjunction of the elements be found.

In one sense, this is a quite peculiar debate. The conventional reading of the instructions to find each of the elements serially is a problem for everyone, including relative plausibility. However, this reading makes the probabilistic account almost silly. If fact-finders find each element to the pertinent burden of persuasion, massive and unjustified numbers of wrongful decisions against defendants, civil and criminal, must be made on a regular basis by the legal system (which no one has demonstrated, and probably no one believes, to be the case). That is why those who defend a probabilistic approach to juridical proof focus so much effort on arguing that there is no conjunction problem because fact-finders are finding the conjunction of the elements already.⁴⁵ Relative plausibility’s interest in the matter is, to the contrary, to show that

⁴³ Schwartz & Sober, *supra* note 8.

⁴⁴ Ronald J. Allen, *A Reconceptualization of Civil Trials*, 66 B.U. L. Rev. 401 (1986).

⁴⁵ In addition to arguing that jurors find conjunctions, Schwartz & Sober also note that the conjunction effect creates a practical problem only when cases fall in the “probability gap” (i.e., when the elements each surpass the standard-of-proof threshold but the conjunction does not). They speculate that there are unlikely to be many such cases because “most elements have high conditional probabilities.” Schwartz & Sober, *supra* note 8, at 2. We have no idea why they think this is true, as they provide no evidence in support of this speculation. In fact there are a lot of causes of action with complex elements in which it is plain that there will often be a considerable gap between individual elements and their conjunction. To even begin to justify Schwartz & Sober’s assertion would require a reasonable empirical methodology for selection purposes. As a preliminary matter to see whether such an inquiry would be interesting, we suggest they look at the pattern federal jury instructions for theft, theft concerning federally funded programs, securities fraud, trademark dilution, retaliation claims under the Family and Medical Leave Act, among others. In the states, it would be instructive to look at the elements and jury instructions of causes of action for medical monitoring relating to the use of medical devices and prescription drugs, prescriptive easements, and again many others. Just to be clear, we came up with this list essentially randomly.

there is, literally, no support for that position, and thus that the instructions remain a problem for all theories of juridical proof, but a particular embarrassment to the conventional probabilistic account. The “solution” to the problem within relative plausibility is to notice that the legal system does not “solve” the conjunction problem in some mysterious way (such as embracing unconventional logics⁴⁶), nor does it embrace probabilism by requiring a conjunction to be found and compared to its negation. Rather, the legal system reduces and domesticates the problem by distributing it over both parties’ cases by essentially requiring the articulation of alternative explanations, and by relying on the parties to reduce the scope of litigated ambiguity.⁴⁷ Of course, one can always point out “but that’s not what the jury instructions say.” That is correct, and as we have explained in detail, this aspect of the instructions is the odd man out (not just at trial but throughout the litigation system).⁴⁸ The rest of the juridical process is best explained by explanationism.

The manner in which the legal system domesticates this problem, it is interesting to note, could be employed by competing theories of proof. Rather than embrace that approach, a few holdouts on the conventional probabilistic account remain committed to demonstrating that there is no conjunction problem because the conjunction is what fact-finders find. In our target article, we demonstrated that this is false. There is literally no evidence supporting this interpretation. In particular, we demonstrated that the argument by Schwartz & Sober to the contrary was (1) based on empty rhetoric that mischaracterized the pertinent literature (i.e., suggesting that legal scholars had not previously thought about probabilistic dependence)⁴⁹; (2) a preposterous claim about the canons of interpretation for legal texts (i.e., suggesting that the general controls the specific)⁵⁰; and (3) an evidence-free argument that legal texts mean whatever they are logically consistent with. In addition, we pointed out how evidence to support the conjunction interpretation could be found, if Schwartz & Sober, Nance (who takes a similar position), or anyone else were interested in looking.

⁴⁶ Because we take the conjunction effect to be a feature of the world, and not a feature of one’s thinking about the world, we disagree with Clermont’s ongoing attempt to dissolve the conjunction issue by adopting a combination of belief functions and fuzzy set theory. See Clermont, *supra* note 6. Nevertheless, we take the points of convergence between our approach and his, see *id.*, as further evidence of the general shift away from the conventional probabilistic account and toward explanationism.

⁴⁷ In addition, as we have explained, parties may each advance alternative (or disjunctive) explanations, and jurors may select explanations advanced by neither party (including ones comprised of parts advanced by the parties). See Wittlin, *supra* note 10.

⁴⁸ Ronald J. Allen, *The Nature of Juridical Proof: Probability as a Tool in Plausible Reasoning*, 17 *Int’l J. Evid & Proof* 133, 140 (2017).

⁴⁹ See Allen, *supra* note 44, at 405.

⁵⁰ See Allen & Pardo, *supra* note 1 (Part III). See also: *ejusdem generis* (general words are limited by specific words that precede them); *generalia specialibus non derogant* (If there is a conflict between a general provision and a specific provision, the specific provision prevails).

In the face of these difficulties, Schwartz & Sober respond by doubling down on their rhetoric, declining the offer to produce evidence for their position. They rely instead on the false assertion that their previous article established that the instructions do what literally no juror (or judge) would realize they do. In addition, Nance doubles down on the “consistency” argument, claiming that we employ the same kind of consistency argument that we criticize others for employing.⁵¹ We will briefly explain these errors, brief because in our opinion this is no longer likely to be a fruitful debate.

As we pointed out, if instructions that said X really meant Y, somewhere in the legal system there would be evidence of it: for example, actually telling the jurors in clear English what was expected of them, or in judges reviewing cases from the perspective of Y rather than X, or imposing Y rather than X in proceedings using special verdicts, and so on.⁵² We looked for such evidence and found literally none, but did find overwhelming evidence of the conventional interpretation. We further explained how Schwartz & Sober and Nance could investigate further. They declined to do so, which we interpret as a tacit admission that the task would fail.

Both Schwartz & Sober and Nance, rather than adduce supporting evidence, continue to rest their argument primarily on the logical consistency between the instructions as conventionally understood and the conjunction reading (distinguishing between necessary conditions and sufficient conditions). Nance goes one step further and alleges inconsistency in our presentation because, he asserts, like him we rely on the consistency of relative plausibility with legal practices as evidence in support of it. Thus, he suggests, it is inappropriate for us to criticize the use of consistency as an argument by others. It should be obvious, however, that the word “consistency” is being used inconsistently in this critique, as it were. Nance and Schwartz & Sober mean by the term simple logical consistency. We pointed out something quite different; we pointed out an explanatory relationship between relative plausibility and the data, and it is in that sense that they are “consistent.” If Schwartz & Sober and Nance are correct that jury instructions require the conjunction of elements to be found, then one would predict that certain data would exist; alternatively, if the instructions mean what they say and require each element to be found to the applicable burden of persuasion, then one would predict that different data would exist. It turns out that there is no data supporting their position, and a mass of data supporting the normal reading of these instructions. And again, we pointed out precisely how the normal reading could be falsified through a search for support in the case law and elsewhere. By contrast, their argument about the conjunction issue makes predictions that are systematically disverified by the actual operation of the system: no one is ever told that “each element” means “all the elements,” sufficiency review is done element by element, there is no way to reconcile their view with special verdicts, and in any event if they were right, plaintiffs not defendants would want special verdicts because it would lower the standard of proof (but the exact opposite

⁵¹ See Dale A. Nance, *The Limits of Relative Plausibility Theory* (this issue).

⁵² By contrast, we provided substantial evidence for relative plausibility, including evidence about jury behavior, lawyer behavior, and citations to numerous judicial opinions.

is observed), and so on.⁵³ Whatever the merits of consistency, inconsistency with large portions of the underlying data is a devastating attribute for an explanation, and it permeates Schwartz & Sober's and Nance's positions.⁵⁴ In our view, the conjunction interpretation should be put to rest at least until new evidence and not just rhetoric is produced.

There is a related issue that should be addressed. A number of commentators think that the possibility of disjunctive theories of a case (or in Wittlin's case a cause of action that may involve distinct elements and distinct explanations) needs to be explained away or else relative plausibility is imperiled. Let us be clear once more that the conjunction problem is not something that can be solved (in the sense that the potential consequences of conjunction are entirely eliminated from the proof process); it is a feature of the world. Thus, Nance, Schwartz & Sober, and others are correct that if all possible explanations are put on the table, then relative plausibility converges with probabilism.⁵⁵ The problem is that no such case can be identified. Parties do not "fill up the probability space" with all possible explanations. Rather, they articulate a theory of the case, although once in a while they advance alternatives. The reasons for this are obvious. First, generally no one has a clue what the probability space looks like. Second, making up a series of explanations is almost surely going to be viewed as a confession of the unsoundness of a case. Imagine a criminal defendant defending on the ground that he didn't do it, but if he did he was coerced, but if he weren't he was entrapped, but if he weren't he was insane.

Causes of action with distinct elements that must be found trouble Wittlin because she thinks they will replicate the conjunction problem and derivatively somehow undercut relative plausibility. She is right about the former and wrong about the latter. A legislature or the common law could certainly structure a cause of action that would require two unrelated explanations, and we agree that errors in the case would accumulate as errors on the two unrelated explanations, ergo the conjunction problem. But it turns out that there does not seem to be a plenitude of such examples, and again judging an explanation of a sprawling system like juridical proof by an idiosyncratic example seems misplaced. More importantly, though, the two "explanations" will surely be tried just as a single explanation would—in other words, consistent with relative plausibility. The parties will construct their theories of these cases within a case, and so on. The success of relative plausibility does not depend on idiosyncratic legislative

⁵³ See Allen & Pardo, *supra* note 1 (Part III).

⁵⁴ Consistency plays a similar role at the trial level. On the one hand, consistency with the trial evidence may by itself provide a relatively weak constraint on the plausibility of a party's explanation (i.e. several alternatives may be consistent with the evidence but inconsistent with each other), but inconsistency with key pieces of trial evidence may render an explanation implausible (absent a compelling reason to discount or explain away the evidence).

⁵⁵ Note that, even in this scenario, this would not mean that relative plausibility would reduce to probabilism. It would remain the case, for example, that explanatory criteria would still guide inferences and that explanatory considerations would be used to evaluate the possibilities on each side.

decision-making, just as it does not depend on idiosyncratic legal choices (such as defending on the ground of identity, coercion, entrapment, and insanity serially).

IV. Paths Forward

Collectively, the commentaries raise a host of issues that future scholarly work may illuminate. We do not have the space to discuss the details of these issues, but we will conclude by mentioning what we see as four broad categories of potential avenues for further work in this area.

First, and perhaps least controversially, some of the commentaries point out the need for more empirical work on the underlying issues.⁵⁶ We of course agree that more information about how jurors and judges make decisions, and how the legal system operates at various litigation stages, has the potential to improve our understanding and perhaps also improve aspects of the law. An important component of the empirical work ought to involve the relationships between legal doctrine and the behavior of various legal actors.⁵⁷

Second, a number of commentaries raise issues that may help with the refinement of relative plausibility specifically or with explanatory approaches more generally.⁵⁸ These possibilities include how best to account for specific evidentiary rules, concepts, or practices within an explanatory framework, as well as the need for greater understanding of the roles played by specific explanatory criteria in legal inferences and decision-making.

Third, several commentaries discuss different possibilities for formalizing aspects of relative plausibility. Some of this formal work is aimed at illustrating some of the compatibilities between the explanatory and probabilistic perspectives⁵⁹, and other work is aimed at developing alternative theoretical frameworks.⁶⁰

Fourth, and finally, several commentaries raise normative issues of various sorts.⁶¹ Some of these discussions take a prescriptive perspective, some an aspirational one, and others are more critical. As we explained, the primary aim of relative plausibility is more descriptive and explanatory than normative, and we have somewhat differing views about the potential

⁵⁶ See Simon, *supra* note 15; Hastie, *supra* note 16.

⁵⁷ See Schauer, *supra* note 2.

⁵⁸ See Amaya, *supra* note 3; Ribeiro, *supra* note 22; Giovanni Tuzet, *Abduction, IBE & Standards of Proof* (this issue); Carmen Vazquez, *Less Probabilism and More about Explanationism* (this issue).

⁵⁹ See Sullivan, *supra* note 4; Gelbach, *supra* note 9; Di Bello, *supra* note 9.

⁶⁰ See Bex & Walton, *supra* note 35.

⁶¹ See Kolflaath, *supra* note 36; Brennan-Marquez, *supra* note 24; Ho, *supra* note 11; Spottswood, *supra* note 24.

normative implications of relative plausibility. More generally, we also have differing views about the value and promise of normative work in this space. Nevertheless, we wholeheartedly agree that if one is going to engage in such work, then one ought to proceed from the best understanding of juridical proof—and this, we maintain, continues to be relative plausibility.

We end where we began, with deep appreciation for the extraordinary efforts of the commentators. Together, we hope, with the target article, these varied and interesting commentaries make a substantial contribution to the literature concerning the nature of juridical proof. As is true of much excellent scholarship, they open more doors than they close by pointing to the future directions of this research program. There is a dizzying array of conceptual, empirical, and doctrinal matters ripe for investigation. In that sense, we view relative plausibility as only the next tentative step forward in trying to understand a critically important human institution.